Are you in danger of electricution, fire, vapor, fumes or other issues?

YES

Turn off Electricity, Stop Vehicle, Put out Fire, Or Call 911 for help if danger persists.

NO

Is Someone Hurt?

NO

Is there Property Damage?

NO

Was there more than $500.00 Damage, a moving violation charged to our driver or someone taken to seek medical attention?

NO

Call Safety Director

Write out Accident Report.

End

YES

Are They Conscious?

NO

Try to Wake or arouse victim.

Were you able to wake the victim?

NO

Call 911 for help.

YES

Check for Vital Signs (Breathing & Heart Beat)

Are there Vital signs?

YES, Both Breathing & Heart Beat

NO

Continue CPR until Paramedics take over.

YES

Administer 1st Aid until Paramedics Take over.

YES

Is the Accident on a public road?

YES

NO

Is someone else's poperty damaged?

YES

Contact Owner & explain situation.

NO

Is any property Unsafe as it is? (Fuel Spill, Fire, Equipment not operative, power lines down, public could harm themselves if in area, Vapors or fumes)?

YES

Use Lockout Tagout to Shut off all Mechanical or Electrical devices on unsafe Equipment, cover all areas which may cause fall hazards.

NO

Fill out accident report.

Call Safety Director.

END

YES

Call Police or Sheriff

Call Safety Director.

Post Accident Drug & Alcohol Test Required.

Are all areas normal & safe?

NO

Call 911 For Help.

YES

Do They seem Disoriented or unable to tell what is wrong with them?

YES

NO

Does the 1st Aid Kit have the means to solve the Problem?

NO

YES

Use 1st Aid Kit on Patient.

Fill out accident report.

Go to Green Section.

Can the Victim be moved to the hospital by our vehicle in a safe & practical manner?

NO

YES

Move Victim to Hospital by our vehicle.

Call Safety Director.

Return to Work

HEARTLAND ASPHALT SDS BOOK
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MATHESON
The Gas Professionals

Safety Data Sheet

Material Name: ETHYL ACETYLENE **SDS ID: MAT08762**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
ETHYL ACETYLENE
Synonyms
1-BUTYNE; BUTYNE; ETHYLACETYLENE; ETHYLETHYNE; ETHYL ACETYLENE, INHIBITED; UN 2452; C4H6
Chemical Family
Hydrocarbons, aliphatic
Product Use
Industrial and Specialty Gas Applications.
Restrictions on Use
None known.
Details of the supplier of the safety data sheet
MATHESON TRI-GAS, INC.
909 Lake Carolyn Parkway
Suite 1300
Irving, TX 75039
General Information: 1-800-416-2505
Emergency #: 1-800-424-9300 (CHEMTREC)
Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Flammable Gases - Category 1
Gases Under Pressure - Liquefied gas
Simple Asphyxiant
GHS Label Elements
Symbol(s)

Signal Word
Danger
Hazard Statement(s)
Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
Precautionary Statement(s)
Prevention
Keep away from heat, sparks, open flame, and hot surfaces - No smoking.
Response
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
Eliminate all ignition sources if safe to do so.
May displace oxygen and cause rapid suffocation.

Storage
Store in a well-ventilated place.
Protect from sunlight.
Disposal
Dispose in accordance with all applicable regulations.
Other Hazards
May cause frostbite upon sudden release of liquefied gas. May polymerize if not stabilized.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
107-00-6	ETHYL ACETYLENE	>99.0
Not Available	STABILIZERS	<0.1

Section 4 - FIRST AID MEASURES

Inhalation
If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.
Skin
If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.
Eyes
Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.
Ingestion
If swallowed, get medical attention.
Most Important Symptoms/Effects
Acute
suffocation, frostbite
Delayed
no information on significant adverse effects.
Note to Physicians
For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media
carbon dioxide, regular dry chemical, Large fires: water spray or fog
Unsuitable Extinguishing Media
None known.
Special Hazards Arising from the Chemical
Extremely flammable gas. Severe explosion hazard. Vapor/air mixtures are explosive above flash point. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Electrostatic discharges may be generated by flow or agitation resulting in ignition or explosion.
Hazardous Combustion Products
Oxides of carbon
Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Stop leak if possible without personal risk. Let burn unless leak can be stopped immediately. For smaller tanks or cylinders, extinguish and isolate from other flammables. Evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Evacuate if fire gets out of control or containers are directly exposed to fire. Evacuation radius: 500 meters (1/3 mile). Consider downwind evacuation if material is leaking.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Stop leak if safe to do so - Prevent entry into waterways, drains, or confined areas. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304).

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Keep away from heat/sparks/open flame/hot surfaces - No smoking.

Conditions for Safe Storage, Including any Incompatibilities

Store in a well-ventilated place.

Protect from sunlight.

Subject to storage regulations: U.S. OSHA 29 CFR 1910.101.

Incompatible Materials

Acids, metals, halogens, oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory Protection

Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Glove Recommendations

For the gas: Wear insulated gloves. For the gas: Wear appropriate protective, cold insulating clothing.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	**Physical State**	gas
Odor	garlic odor	**Color**	colorless
Odor Threshold	Not available	**pH**	Not available
Melting Point	-126 °C (-195 °F)	**Boiling Point**	8 °C (46 °F)
Boiling Point Range	Not available	**Freezing point**	Not available
Evaporation Rate	Not available	**Flammability (solid, gas)**	Flammable gas
Autoignition Temperature	Not available	**Flash Point**	<-7 °C Tag Open Cup (<19 °F)
Lower Explosive Limit	Not available	**Decomposition temperature**	Not available
Upper Explosive Limit	Not available	**Vapor Pressure**	1201 mmHg @ 21.1 °C
Vapor Density (air=1)	1.93	**Specific Gravity (water=1)**	0.6784 at 0 °C
Water Solubility	(Insoluble)	**Partition coefficient: n-octanol/water**	Not available
Viscosity	0.00727 cp	**Kinematic viscosity**	Not available
Solubility (Other)	Not available	**Density**	Not available
Physical Form	Liquified gas	**Volatility**	100 %
Molecular Formula	C-H3-C-H2-C-C-H	**Molecular Weight**	54.09

Solvent Solubility

Soluble
alcohol, ether

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.
Chemical Stability
May explode when heated.
Possibility of Hazardous Reactions
May polymerize. Avoid contact with heat, air, light, initiators or curing agents.
Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Minimize contact with material. Containers may rupture or explode if exposed to heat.
Incompatible Materials
Acids, metals, halogens, oxidizing materials
Hazardous decomposition products
Oxides of carbon

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure
Inhalation
nausea, vomiting, symptoms of drunkenness, suffocation, convulsions, coma
Skin Contact
frostbite
Eye Contact
frostbite
Ingestion
no information on significant adverse effects
Acute and Chronic Toxicity
Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and no selected endpoints have been identified.
Product Toxicity Data
Acute Toxicity Estimate
No data available.
Immediate Effects
suffocation, frostbite
Delayed Effects
no information on significant adverse effects.
Irritation/Corrosivity Data
No animal testing data available for skin or eyes.
Respiratory Sensitization
No data available.
Dermal Sensitization
No data available.
Component Carcinogenicity
None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.
Germ Cell Mutagenicity
No data available.
Tumorigenic Data

No data available

Reproductive Toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

No information on significant adverse effects.

Specific Target Organ Toxicity - Repeated Exposure

No information on significant adverse effects.

Aspiration hazard

Not applicable.

Medical Conditions Aggravated by Exposure

None known.

Additional Data

Stimulants such as epinephrine may induce ventricular fibrillation.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

No LOLI ecotoxicity data are available for this product's components.

Persistence and Degradability

No information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262.
Hazardous Waste Number(s): D001. D003.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: ETHYLACETYLENE, STABILIZED
Hazard Class: 2.1
UN/NA #: UN2452
Required Label(s): 2.1

IMDG Information:
Shipping Name: ETHYLACETYLENE, STABILIZED
Hazard Class: 2.1
UN#: UN2452
Required Label(s): 2.1

TDG Information:
Shipping Name: ETHYLACETYLENE, STABILIZED
Hazard Class: 2.1
UN#: UN2452
Required Label(s): 2.1
International Bulk Chemical Code

This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories

Flammable; Gas Under Pressure; Simple Asphyxiant

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
ETHYL ACETYLENE	**107-00-6**	No	No	No	Yes	No

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)

Not listed under California Proposition 65.

Component Analysis - Inventory

ETHYL ACETYLENE (107-00-6)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	No	Yes	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	No	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 1 Fire: 4 Instability: 3

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

Updated: 05/01/2015

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan

Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TH-TECI - Thailand - FDA Existing Chemicals Inventory (TECI); TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

Matheson Tri-Gas, Inc. makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Matheson Tri-Gas, Inc. shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/14/2017 *Reviewed on 06/14/2017*

1 Identification

· **Product identifier**

· **Trade name: Asphalt Solutions Additive**

· **Article number:** 180108

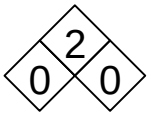
· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Flavorchem Corporation
1525 Brook Drive
Downers Grove, IL 60515
USA
800.435.2867

· **Information department:** Regulatory department
· **Emergency telephone number:**
During normal opening times: Call Chemtrec Day or Night
Domestic North America 800.424.9300/International 703.527.3887 (Collect calls accepted)

2 Hazard(s) identification

· **Classification of the substance or mixture**
Flam. Liq. 4 H227 Combustible liquid.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** Void
· **Signal word** Warning
· **Hazard statements**
Combustible liquid.
· **Precautionary statements**
Keep away from flames and hot surfaces. – No smoking.
Wear protective gloves / eye protection / face protection.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 2
Reactivity = 0

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 06/14/2017 Reviewed on 06/14/2017

Trade name: Asphalt Solutions Additive

(Contd. of page 1)

· **HMIS-ratings (scale 0 - 4)**

HEALTH 0	Health = 0
FIRE 2	Fire = 2
REACTIVITY 0	Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

100-52-7	benzaldehyde Acute Tox. 4, H302; Flam. Liq. 4, H227	10-<25%
628-63-7	pentyl acetate Flam. Liq. 3, H226	2.5-<10%
105-54-4	ETHYL BUTYRATE Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335-H336	0.1-<2.5%
121-33-5	VANILLIN Acute Tox. 4, H302	0.1-<2.5%

4 First-aid measures

· **Description of first aid measures**
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:** If symptoms persist consult doctor.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Trade name: Asphalt Solutions Additive

(Contd. of page 2)

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in tightly sealed containers in a cool, dry place that is well ventilated. Away from heat, spark, and open flame.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

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Trade name: Asphalt Solutions Additive

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· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

100-52-7 benzaldehyde	
WEEL	Short-term value: 4 ppm Long-term value: 2 ppm DSEN
628-63-7 pentyl acetate	
PEL	Long-term value: 525 mg/m³, 100 ppm
REL	Long-term value: 525 mg/m³, 100 ppm
TLV	Short-term value: 532 mg/m³, 100 ppm Long-term value: 266 mg/m³, 50 ppm
121-33-5 VANILLIN	
WEEL	Long-term value: 10 mg/m³

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
· **Breathing equipment:** Not required.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Goggles recommended during refilling.

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Clear colorless to pale yellow
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	121 °C (250 °F)
· **Flash point:**	63 °C (145 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	190 °C (374 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Not determined.
· **Explosion limits:**	
Lower:	1.4 Vol %
Upper:	60.0 Vol %
· **Vapor pressure:**	Not determined.
· **Density at 20 °C (68 °F):**	0.90803 g/cm³ (7.578 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.

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· **Solvent content:**	
Organic solvents:	3.8 %
VOC content:	3.8 % 34.1 g/l / 0.28 lb/gl
Solids content:	1.3 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
100-52-7 benzaldehyde		
Oral	LD50	1300 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**
None of the ingredients is listed.

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

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· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· **UN-Number**
· **DOT, ADN, IMDG, IATA** not regulated

· **UN proper shipping name**
· **DOT, ADN, IMDG, IATA** not regulated

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· **Transport hazard class(es)**	
· **DOT, ADN, IMDG, IATA**	
· **Class**	not regulated
· **Packing group**	
· **DOT, IMDG, IATA**	not regulated
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	not regulated

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act) (Substances not listed):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

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· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** Void
· **Signal word** Warning
· **Hazard statements**
Combustible liquid.
· **Precautionary statements**
Keep away from flames and hot surfaces. – No smoking.
Wear protective gloves / eye protection / face protection.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H226 Flammable liquid and vapor.
H227 Combustible liquid.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.

· **Department issuing SDS:** Regulatory department
· **Contact:** Stacie Obman
· **Date of preparation / last revision** 06/14/2017 / -
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation

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IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 3: Flammable liquids – Category 3
Flam. Liq. 4: Flammable liquids – Category 4
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

US

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Vendor

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Product Name:	PG 46-34, PG 52-28, PG 52-34, PG 58-22, PG 58-28, PG 58-34, PG 64-22
Revision Date:	9/4/2015
SDS Number:	BMS 101
Common Name:	Petroleum Asphalt
CAS Number:	Mixture
Chemical Family:	Complex Petroleum Hydrocarbon
Synonyms:	Superpave Asphalt
Product Use:	Highway and Hot Mix Paving Mixtures

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):
Health, Acute toxicity, 5 Inhalation

GHS Label elements, including precautionary statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

no GHS pictograms indicated for this product

GHS Hazard Statements:

H333 - May be harmful if inhaled. Vapors containing hydrogen sulfide may accumulate during storage or transport. High level (700 ppm) acute exposure can result in sudden death.

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Hazards not otherwise classified (HNOC) or not covered by GHS

Inhalation:

Breathing vapors, fumes, or mists may cause irritation to nasal and respiratory tract and central nervous system effects. Symptoms may include labored breathing, sore throat, coughing, wheezing, headache, and nausea. Some asphalts may contain sulfur compounds, which may form Hydrogen Sulfide when heating.

At normal temperatures and pressures, this product is not likely to present an inhalation hazard. However, when heated, high concentrations of vapor may irritate the respiratory tract and hydrogen sulfide, a highly toxic gas, may be present. Inhaling hydrogen sulfide released from hot products in enclosed areas may cause unconsciousness, convulsions, suffocation, coma, and death. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness.

Hydrogen Sulfide effects:

0.02 ppm	Odor threshold.
10 ppm	8-hour per day exposure limit to Hydrogen Sulfide.
10-20 ppm	Borderline concentration for eye irritation.
10-100 ppm	Leads to eye damage.
100-150 ppm	Olfactory nerve paralyzed after a few minutes, sense of smell disappears, and often awareness of danger.
320-530 ppm	Leads to pulmonary edema with the possibility of death.
530-1,000 ppm	Causes strong stimulation of central nervous system and rapid breathing.
800 ppm	Lethal concentration of 50% of humans for a 5-minute exposure (LC50).
>1,000 ppm	Immediate collapse with loss of breathing, even after inhalation of a single breath.

Do not depend on sense of smell for warning. Hydrogen Sulfide causes rapid olfactory fatigue (deadens sense of smell).

Skin Contact: Contact with hot asphalt can cause thermal burns. Prolonged exposure to vapors, fumes, or mists may cause irritation and redness.

Eye Contact: Contact with hot asphalt can cause thermal burns to the eyes. Prolonged exposure to vapors, fumes, or mists may cause irritation, redness, and tearing.

Ingestion: Ingestion is not likely. Ingestion may cause thermal burns. If ingestion of molten material occurs, keep victim's head below their hips to prevent asphalt from reaching the lungs. Take victim to obtain medical assistance immediately.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
8052-42-4	98-100%	Asphalt (typical)
0	0-2%	Antistrip Adhesion Promoter, Proprietary

Asphalt: Asphalt is a complex mixture of high molecular weight hydrocarbons produced from crude petroleum. Composition varies depending on the source of the crude and the specifications of the final product.

ACGIH: The American Conference of Governmental Industrial Hygienists recommends an exposure limit of 0.5 mg/m^3 as benzene-extractable inhalable particulate (or equivalent method) to avoid irritation of the conjunctive mucous membranes. Historical information on exposure of asphalt workers used methods different than those recommended by ACGIH, so comparisons to the recommended exposure limits are not known.

Hydrogen Sulfide: Trace amounts of Hydrogen Sulfide may be present as a naturally-occurring constituent in the petroleum stream and are not added separately to the product.

4 FIRST AID MEASURES

Inhalation: If irritation occurs from inhalation overexposure, immediately remove victim from source to fresh air and seek medical attention.

Skin Contact: Hot Molten Material: Cool the affected body parts immediately by submerging in cold water until the material has cooled. Do not attempt to remove solidified material from burn area as this may further tissue damage. Take the victim to obtain medical assistance immediately.

Cold Material: Remove cold asphalt by soaking dressing in mineral oil and place over affected area for 2-3 hours. If irritation occurs, call a physician.

Never try to remove material with solvents.

Eye Contact: Gently flush immediately with cold water for 15 minutes. Do not attempt to remove solidified material from the eye, as this may further injury. Take victim to obtain medical assistance.

Ingestion: Ingestion is not likely. If large amounts are swallowed, do not induce vomiting and immediately call a physician.

5 FIRE FIGHTING MEASURES

Flammability:	NFPA Class IIIB
Flash Point:	>500°F
Flash Point Method:	ASTM D-92
Autoignition Temp:	>800°F
LEL:	1.0%
UEL:	6.0%

Fire and Explosion Hazards:

- May produce severe burns on contact.
- May produce Hydrogen Sulfide (H2S) gas in confined spaces, closed containers, and tank headspaces.
- Vapors can explode.

Extinguishing Media:

- Foam, Carbon Dioxide, Dry Chemical, and water spray may all be suitable in extinguishing fires involving this product.

Fire Fighting Instructions:

- Avoid water streams to prevent frothing. Use water spray to cool exposed surfaces and to assist in solidifying hot asphalt material.

6 ACCIDENTAL RELEASE MEASURES

Stop source of leak if safe to do so. Eliminate sources of ignition. Contain by diking or impounding. Absorbents can be used to contain small spills. After containment and solidification, asphalt can be collected for disposal. Advise authorities if product has entered a drainage sewer or a water source. Assure conformity with local, state, and federal government regulations for disposal.

7 HANDLING AND STORAGE

Handling Precautions:

When opening covers and outlet caps on storage tanks, use faceshield and gloves to avoid possible injury from pressurized hot asphalt. Long sleeved shirts and pants should be worn to minimize thermal burns. Hydrogen Sulfide can be generated and accululated in storage tanks and bulk transport compartments. Stay upwind and vent storage tanks before unloading. Keep heating units and flues in storage tanks covered with at least 12 inches of asphalt. Do not overheat.

Empty Container Warning: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY BURN OR EXPLODE AND CAUSE INJURY OR DEATH.

Hot Material Warning: Hot material (above 212°F) contact with water results in a violent expansion as water turns to steam. This can lead to a dangerous boilover and a pressurized container or cargo tank, which can cause damage, rupture of the container or cargo tank, and thermal burn injuries. Never load hot asphalt product into cargo tanks with water condensation or emulsion residue from the previous load without servicing the cargo tank. Keep away from incompatible materials.

Wear body covering clothes to avoid prolonged or repeated exposure. Launder soiled clothing before reuse.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Local or general exhaust required if in an enclosed area to remain below the TLV. If workplace exposure limits are exceeded, a NIOSH/MSHA-approved air-supplied respirator is advised in the absence of proper environmental engineering controls.

Personal Protective Equipment: Eye and Face Protection: Safety glasses or chemical splash goggles should be worn with faceshield if splashing is anticipated.

Skin Protection: Insulated, oil-impervious gloves for hot asphalt or cloth gloves for cold asphalt. Long-sleeve shirts and long pants should be worn at all times around hot asphalt to prevent thermal burns.

Respiratory Protection: Respiratory protection is not normally required under normal conditions and adequate ventilation. If high vapors and expected, use a respirator approved for organic vapors. Observe respirator protection factor criteria cited in ANSI Z88.2 (1980) and other OSHA requirements found in 29 CFR 1910.134. Use air-supplied respirators or self-contained breathing apparatus for fire fighting and in confined spaces when asphalt vapor or Hydrogen Sulfide gas exceends permissible limits.

Work/Hygienic Practices: Skin contact and the breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects. Thoroughly wash exposed skin areas after work to avoid dermatitis. Consider the use of lanolin skin treatments before handling or working around asphalt mixtures.

Other Protection: Wear body-covering clothes to avoid prolonged or repeated exposure. Launder before reuse.

PETROLEUM ASPHALT:

OSHA PEL:	Not established for this material.
ACGIH TLV:	0.5 mg/m³ as benzene-extractable inhalable particulate (or equivalent method)
NIOSH REL:	5.0 mg/m³ as a 15-minute ceiling limit measured as total particulates.

HYDROGEN SULFIDE:

ACGIH TLV:	1 ppm (1.4 mg/m³) for 8 hours
ACGIH STEL:	5 ppm (7 mg/m³) for 15 minutes

ANTISTRIP ADHESION PROMOTER, Proprietary:

OSHA PEL:	Not established for this material.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Black/Brown viscous solid. Liquid when hot.		
Physical State:	Solid when cold, Liquid when hot.	Odor:	Characteristic asphalt odor
Spec Grav./Density:	0.95 - 1.10	Solubility:	Negligible
Viscosity:	Thin fluid when hot. Solid when cold.	Softening Point:	110 degrees F and above
Boiling Point:	>750°F	Heat Value:	18,000 BTU per pound
Flammability:	Class IIIB Combustible	Freezing/Melting Pt.:	115 - 130°F
Vapor Pressure:	1.9 E-9 psia	Flash Point:	>500°F
Evap. Rate:	Negligible	Vapor Density:	Lighter than air
Molecular weight:	320	VOC:	Negligible
Decomp Temp:	>750 F	Bulk Density:	8.46 lb./gallon
		Auto-Ignition Temp:	>800°F
		UFL/LFL:	6.0% / 1.0%

10 STABILITY AND REACTIVITY

Chemical Stability:	Product is stable under normal conditions.
Conditions to Avoid:	Contact with oxidizers
Materials to Avoid:	Strong Oxidizing Agents.
Hazardous Decomposition:	Fumes, smoke, carbon monoxide, hydrogen sulfide, aldehydes, and hydrocarbons.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

International Agency for Research on Cancer Ruling

Occupational exposures to straight-run bitumens and their emissions during road paving:
On the basis of an earlier meta-analysis, the IARC multi-center study and several more recent independent studies, the Working Group concluded that there was inadequate evidence in humans for the carcinogenicity of occupational exposures during road paving with straight-run bitumens. Also, there was inadequate evidence in experimental animals for the carcinogenicity of extracts and of fume condensates of this type of bitumens. However, studies of workers exposed to bitumen emissions during paving with straight-run bitumens showed mutagenic and genotoxic/cytogenetic effects in these workers. Similar effects were also observed in experimental systems under controlled conditions. This strong mechanistic evidence led to the classification of occupational exposures to straight-run bitumens and their emissions during road paving as "possibly carcinogenic to humans" (Group 2B).

Health Hazard Characterization:

Uncertainties exist in the hazard characterization of asphalt fumes by many factors including its chemical complexity, limitation of the information, the inclusion of coal tar in asphalts in past decades, other confounders and mixed results of human studies. Concise International Chemical Assessment Documents relating to asphalt and fumes can be obtained on the internet at http://inchem.org/documents/cicads/cicads/cicad59.htm. Despite conflicting reports, the following bullet points should be noted:

- Currently classified as A4 (not classifiable as a human carcinogen). Asphalt Coal Tar Free
- Breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects.
- Asphalt and asphalt fumes contain trace levels of polynuclear aromatic hydrocarbons that are known carcinogens.
- Chronic health effects would not be expected as long as good hygiene and proper safety precautions are practiced and exposures are less than the TLVs/RELs.
- After using material or being around fumes, wash exposed areas thoroughly with soap and water. Showering immediately after work is a good personal hygiene practice.

12 ECOLOGICAL INFORMATION

May cause fouling of water. Once solidified, this product will no longer exhibit these characteristics.

13 DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state, and federal regulations. After cooling, waste or contaminated asphalt mixtures may be scooped and stockpiled for later recycling into asphalt pavement mixtures, pugmilled into cold mix, or disposed in an approved special waste, industrial waste, or construction debris landfill.

RCRA Information:
This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261). Along with properly characterizing all waste materials, consult state and local regulations regarding proper disposal of this material.

14 TRANSPORT INFORMATION

UN3257, Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.), 9, PGIII, (Contains Petroleum Asphalt)

Packaging Requirements - Bulk:	49 CFR 173.247
Packaging Requirements - Non-Bulk:	None
Packaging Exceptions:	None

15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Asphalt (typical) (8052-42-4) [98-100%] MASS, NRC, PA, TSCA, TXAIR

Antistrip Adhesion Promoter, Proprietary (0) [0-2%]

Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List
NRC = Nationally Recognized Carcinogens
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level

SARA Section 313 Notification:

This product contains the following toxic chemicals that are subject to the reporting requirements of Section 313 of the Emergency Planninig and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372:

Polycyclic Aromatic Compounds (PACs) (Category N590) = <178 ppm (US EPA default concentration)

Hydrogen Sulfide (CASRN 7783-06-4) is found in varying trace amounts 0-1% depending on temperature, source of crude, etc.

This information must be included on all SDSs that are copied and distributed for this material.

16 OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Bituminous Materials and Supply, LP

SAFETY DATA SHEET

1. Identification

Product identifier **Asphalt Binder**

Other means of identification

SDS number 9569

Product code FHR_AB_US_EN

Synonyms ASPHALT FLUX * ALL ASPHALT CEMENT BINDERS * ALL POLYMER MODIFIED ASPHALT CEMENT BINDERS * BITUMINOUS BASE

Recommended use Hot mix asphalt production.

Recommended restrictions Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier

Flint Hills Resources Pine Bend, LLC
3120 117th Street East
Inver Grove Heights, MN
55077
United States

Telephone Numbers - 24 hour Emergency Assistance

Chemtrec (US) 800-424-9300 (CCN: 8586)

Telephone numbers

General Assistance

8-5 (M-F, CST) 316-828-7988

SDS Assistance E-mail msdsrequest@fhr.com

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (bone marrow, liver, thymus)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 3
	Hazardous to the aquatic environment, long-term hazard	Category 3

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Causes skin irritation. May cause drowsiness or dizziness. Suspected of causing cancer. May cause damage to organs (bone marrow, liver, thymus) through prolonged or repeated exposure. Harmful to aquatic life with long lasting effects.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF ON SKIN: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Hydrogen Sulfide (H2S) may be present in trace quantities (by weight), but may accumulate to toxic concentrations such as in tank headspace. The presence of H2S is highly variable, unpredictable and does not correlate with sulfur content. Studies with similar products have shown that 1 ppm H2S by weight in liquid may produce 100 ppm or more H2S in the vapor headspace of the storage tank.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Petroleum Asphalt	8052-42-4	≤ 100
Oil Distillates	Proprietary	≤ 20
Polymer Modifier	Proprietary	≤ 12

Components

Chemical name	CAS number	%
Antistrip	Proprietary	≤ 3
Additive	Proprietary	≤ 3
Vulcanizing Agent	Proprietary	≤ 2
Polycyclic aromatic hydrocarbons	130498-29-2	≤ .1
Hydrogen sulfide	7783-06-4	≤ .1

Composition comments

Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

The specific identities of some of the components of this product are being withheld as trade secrets. However, all pertinent hazards are addressed in this SDS.

This Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your Flint Hills Resources, LP representative.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	May cause drowsiness or dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain. Jaundice. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Foam. Dry powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Hydrogen sulfide can react with the iron in an asphalt storage tank to form iron sulfide. Iron sulfide is pyrophoric. When exposed to air, iron sulfide is capable of igniting spontaneously.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Stay away from ends of tanks. As with any fire, toxic gases, vapors, and fumes can be generated. Use pressure-demand self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear. Using water can cause frothing with increased fire intensity.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Material will burn in a fire. Hydrogen sulfide (H2S) may be given off when this material is heated. Do not depend on sense of smell for warning.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	The product is immiscible with water and will spread on the water surface. Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	20 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Petroleum Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m3	Inhalable fume.

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	STEL	5 ppm
	TWA	1 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Petroleum Asphalt (CAS 8052-42-4)	Ceiling	5 mg/m3	Fume.

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	15 mg/m3
		10 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Wear approved respiratory protection when working with this material unless ventilation or other engineering controls are adequate to keep airborne concentrations below recommended exposure standards. Follow respirator protection program requirements (OSHA 1910.134 or CSA-Z94.4-02(R2008), and ANSI / AIHA Z88.6) for all respirator use. Note: If any of the applicable hydrogen sulfide standards are likely to be exceeded, positive pressure supplied-air respiratory protection must be used.

Thermal hazards Wear appropriate thermal protective clothing, when necessary. Thermally protective apron and long sleeves are recommended when volume of hot material is significant.

General hygiene considerations Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Viscous liquid.

Color Dark brown to black.

Odor Asphalt.

Odor threshold Not available.

pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 600 °F (> 315.6 °C)
Flash point	> 450.0 °F (> 232.2 °C) Cleveland Open Cup (ASTM D92)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.9 - 1.1
Relative density temperature	60 °F (15.56 °C)
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	250 - 24000 P
Viscosity temperature	140 °F (60 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness or dizziness. Headache. Nausea, vomiting. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness or dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain. Jaundice.

Information on toxicological effects

Acute toxicity

Components	Species	Test Results
Petroleum Asphalt (CAS 8052-42-4)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 hours
Inhalation		
LC50	Rat	> 94.4 mg/m3

Components	Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)		
Acute		
Inhalation		
Gas		
LC50	Rat	444 ppm, 4 Hours

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Petroleum Asphalt (CAS 8052-42-4) 2B Possibly carcinogenic to humans.

NTP Report on Carcinogens

Polycyclic aromatic hydrocarbons (CAS 130498-29-2) Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs (bone marrow, liver, thymus) through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Components		Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)			
Aquatic			
Acute			
Crustacea	EC50	Crustacea	0.042 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0243 mg/l, 96 hours

Persistence and degradability Not readily biodegradable.

Bioaccumulative potential Has the potential to bioaccumulate.

Mobility in soil May partition into air, soil and water.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Hydrogen sulfide (CAS 7783-06-4)	U135

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN3257
UN proper shipping name	Elevated temperature liquid, n.o.s., (Petroleum Asphalt)
Transport hazard class(es)	
Class	9
Subsidiary risk	-
Label(s)	9
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB1, T3, TP3, TP29
Packaging exceptions	None
Packaging non bulk	None
Packaging bulk	49 CFR 173.24
ERG number	128

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not classified for MARPOL. Please contact the Transportation Compliance CSO if transportation mode is a ship or vessel to determine the need for a MARPOL classification.

General information This description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information or Transport Compliance Specialist (CSO).

In accordance with US DOT, bulk and non-bulk shipments of this product, which are offered for transportation below 212°F (100°C), are not regulated.

BILL OF LADING - NON-BULK (U. S. DOT): Non-regulated by DOT

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hydrogen sulfide (CAS 7783-06-4)	Listed.
Petroleum Asphalt (CAS 8052-42-4)	Listed.

SARA 304 Emergency release notification

HYDROGEN SULFIDE (CAS 7783-06-4)	100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) One or more components of the mixture are not on the TSCA 8(b) inventory or are designated “inactive”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Hydrogen sulfide	7783-06-4	100	500		

SARA 311/312 Hazardous chemical Yes

Classified hazard categories
Skin corrosion or irritation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Polycyclic aromatic hydrocarbons	130498-29-2	≤ .1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Hydrogen sulfide (CAS 7783-06-4)

Safe Drinking Water Act (SDWA) Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Hydrogen sulfide (CAS 7783-06-4) High priority

US state regulations

US. Massachusetts RTK - Substance List

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)

US. New Jersey Worker and Community Right-to-Know Act

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

US. Rhode Island RTK

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)

California Proposition 65

WARNING: This product can expose you to Petroleum Asphalt, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Petroleum Asphalt (CAS 8052-42-4) Listed: January 1, 1990

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 09-November-2020

Revision date -

Version # 01

HMIS® ratings Health: 2*
Flammability: 1
Physical hazard: 0

NFPA ratings

Disclaimer

NOTICE: The information contained in this document is based on data considered to be accurate as of the preparation date of this Safety Data Sheet (SDS) and was prepared pursuant to applicable Government regulation(s). This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the above data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided about any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. Purchasers and users of the product are responsible for determining that this product is suitable for the intended use and application. No responsibility can be assumed by vendor for any damage or injury resulting from failure to adhere to recommended uses, or from any hazards inherent to the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product should explicitly advise their employees, agents, contractors and customers who will use the product of this SDS.

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Vendor

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Product Name:	MC-30, MC-70, MC-250, MC-800, MC-3000
Revision Date:	12/17/2015
SDS Number:	BMS-301
Common Name:	Cutback Asphalt
CAS Number:	Mixture
Chemical Family:	Complex Petroleum Hydrocarbon Mixture
Synonyms:	Cutback Asphalt, Prime Asphalt
Product Use:	Highway Paving Applications and Mixtures

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Health, Acute toxicity, 5 Inhalation
Physical, Flammable Liquids, 3
Health, Acute toxicity, 5 Dermal
Health, Serious Eye Damage/Eye Irritation, 2 B

GHS Label elements, including precautionary statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

GHS Hazard Statements:

H333 - May be harmful if inhaled. Vapors containing hydrogen sulfide may accumulate during storage or transport. High level (700 ppm) acute exposure can result in sudden death.
H226 - Flammable liquid and vapor
H313 - May be harmful in contact with skin
H320 - Causes eye irritation

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking

Hazards not otherwise classified (HNOC) or not covered by GHS

Inhalation: Breathing vapors, fumes, or mists may cause irritation to nasal and respiratory tract and central nervous system effects. Symptoms may include labored breathing, sore throat, coughing, wheezing, headache, and nausea. Some asphalts may contain sulfur compounds, which may form Hydrogen Sulfide when heating.

At normal temperatures and pressures, this product is not likely to present an inhalation hazard. However, when heated, high concentrations of vapor may irritate the respiratory tract and hydrogen sulfide, a highly toxic gas, may be present. Inhaling hydrogen sulfide released from hot products in enclosed areas may cause unconsciousness, convulsions, suffocation, coma, and death. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness.

Hydrogen Sulfide effects:

0.02 ppm	Odor threshold.
10 ppm	8-hour per day exposure limit to Hydrogen Sulfide.
10-20 ppm	Borderline concentration for eye irritation.
10-100 ppm	Leads to eye damage.
100-150 ppm	Olfactory nerve paralyzed after a few minutes, sense of smell disappears, and often awareness of danger.
320-530 ppm	Leads to pulmonary edema with the possibility of death.
530-1,000 ppm	Causes strong stimulation of central nervous system and rapid breathing.
800 ppm	Lethal concentration of 50% of humans for a 5-minute exposure (LC50).
>1,000 ppm	Immediate collapse with loss of breathing, even after inhalation of a single breath.

Do not depend on sense of smell for warning. Hydrogen Sulfide causes rapid olfactory fatigue (deadens sense of smell).

Skin Contact: Contact with hot cutback asphalt can cause thermal burns. Prolonged exposure to vapors, fumes, or mists may cause irritation and redness.

Eye Contact: Contact with hot cutback asphalt can cause thermal burns to the eyes. Prolonged exposure to vapors, fumes, or mists may cause irritation, redness, and tearing.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
8052-42-4	>50%	Asphalt (typical)
0	<2%	Antistrip Adhesion Promoter, Proprietary
8008-20-6	<50%	Kerosene
68476-30-2	<45%	Fuel oil no. 2

Asphalt: Asphalt is a complex mixture of high molecular weight hydrocarbons produced from crude petroleum. Composition varies depending on the source of the crude and the specifications of the final product.

ACGIH: The American Conference of Governmental Industrial Hygienists recommends an exposure limit of 0.5 mg/m^3 as benzene-extractable inhalable particulate (or equivalent method) to avoid irritation of the conjunctive mucous membranes. Historical information on exposure of asphalt workers used methods different than those recommended by ACGIH, so comparisons to the recommended exposure limits are not known.

Hydrogen Sulfide: Trace amounts of Hydrogen Sulfide may be present as a naturally-occurring constituent in the petroleum stream and are not added separately to the product.

4 FIRST AID MEASURES

Inhalation:	If irritation occurs from inhalation overexposure, immediately remove victim from source to fresh air and seek medical attention.
Skin Contact:	Hot Molten Material: Cool the affected body parts immediately by submerging in cold water until the material has cooled. Do not attempt to remove solidified material from burn area as this may further tissue damage. Take the victim to obtain medical assistance immediately. Cold Material: Remove cold asphalt by soaking dressing in mineral oil and place over affected area for 2-3 hours. If irritation occurs, call a physician. Never try to remove material with solvents.
Eye Contact:	Gently flush immediately with cold water for 15 minutes. Do not attempt to remove solidified material from the eye, as this may further injury. Take victim to obtain medical assistance.
Ingestion:	Ingestion is not likely. If large amounts are swallowed, do not induce vomiting and immediately call a physician.

5 FIRE FIGHTING MEASURES

Flammability:	NFPA Class II
Flash Point:	>135°F
Flash Point Method:	Pensky-Martens Closed Cup
Autoignition Temp:	>410°F
LEL:	0.7%
UEL:	7.5%

Fire and Explosion Hazards:

- Cutback Asphalts at elevated temperatures may be above their flashpoints and therefore extremely flammable.
- May produce severe burns on contact.
- May produce Hydrogen Sulfide (H2S) gas in confined spaces, closed containers, and tank headspaces.
- Vapors can explode.

Extinguishing Media:

- Foam, Carbon Dioxide, Dry Chemical, and water spray may all be suitable in extinguishing fires involving this product.

Fire Fighting Instructions:

- Avoid water streams to prevent frothing. Use water spray to cool exposed surfaces and to assist in solidifying hot asphalt material.

6 ACCIDENTAL RELEASE MEASURES

Stop source of leak if safe to do so. Eliminate sources of ignition. Contain by diking or impounding. Absorbents can be used to contain small spills. After containment and solidification, asphalt can be collected for disposal. Advise authorities if product has entered a drainage sewer or a water source. Assure conformity with local, state, and federal government regulations for disposal.

7 HANDLING AND STORAGE

Handling Precautions:	When opening covers and outlet caps on storage tanks, use faceshield and gloves to avoid possible injury from pressurized hot asphalt. Long sleeved shirts and pants should be worn to minimize thermal burns. Hydrogen Sulfide can be generated and accululated in storage tanks and bulk transport compartments. Stay upwind and vent storage tanks before unloading. Keep heating units and flues in storage tanks covered with at least 12 inches of asphalt. Do not overheat. Hot Flash Warning: Studies have shown that relatively low flash point substances, such as low boiling hydrocarbons and hydrogen sulfide, may accumulate in the vapor space of hot storage tanks and bulk transport compartments. Such vapors may exhibit high flammability characteristics when stored above their flash point. As a precaution, keep ignition sources away from vents and openings. Asphalt Institute publication IS-180 contains further information and guidance for the safe storage and handling of asphalt primes.

Empty Container Warning: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY BURN OR EXPLODE AND CAUSE INJURY OR DEATH.

Hot Material Warning: Hot material (above 212°F) contact with water results in a violent expansion as water turns to steam. This can lead to a dangerous boilover and a pressurized container or cargo tank, which can cause damage, rupture of the container or cargo tank, and thermal burn injuries. Never load hot asphalt product into cargo tanks with water condensation or emulsion residue from the previous load without servicing the cargo tank. Keep away from incompatible materials.

Wear body covering clothes to avoid prolonged or repeated exposure. Launder soiled clothing before reuse.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Local or general exhaust required if in an enclosed area to remain below the TLV. If workplace exposure limits are exceeded, a NIOSH/MSHA-approved air-supplied respirator is advised in the absence of proper environmental engineering controls.

Personal Protective Equipment: Eye and Face Protection: Safety glasses or chemical splash goggles should be worn with faceshield if splashing is anticipated.

Skin Protection: Insulated, oil-impervious gloves for hot asphalt or cloth gloves for cold asphalt. Long-sleeve shirts and long pants should be worn at all times around hot asphalt to prevent thermal burns.

Respiratory Protection: Respiratory protection is not normally required under normal conditions and adequate ventilation. If high vapors and expected, use a respirator approved for organic vapors. Observe respirator protection factor criteria cited in ANSI Z88.2 (1980) and other OSHA requirements found in 29 CFR 1910.134. Use air-supplied respirators or self-contained breathing apparatus for fire fighting and in confined spaces when asphalt vapor or Hydrogen Sulfide gas exceends permissible limits.

Work/Hygienic Practices: Skin contact and the breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects. Thoroughly wash exposed skin areas after work to avoid dermatitis. Consider the use of lanolin skin treatments before handling or working around asphalt mixtures.

Other Protection: Wear body-covering clothes to avoid prolonged or repeated exposure. Launder before reuse.

PETROLEUM ASPHALT:

OSHA PEL:	Not established for this material.
ACGIH TLV:	0.5 mg/m³ as benzene-extractable inhalable particulate (or equivalent method)
NIOSH REL:	5.0 mg/m³ as a 15-minute ceiling limit measured as total particulates.

ANTISTRIP ADHESION PROMOTER, Proprietary:

OSHA PEL:	Not established for this material.

KEROSENE:

OSHA PEL:	Not established for this material.

No. 2 FUEL OIL

OSHA PEL:	Not established for this material

HYDROGEN SULFIDE:

ACGIH TLV:	1 ppm (1.4 mg/m³) for 8 hours
ACGIH STEL:	5 ppm (7 mg/m³) for 15 minutes

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Black/Brown Liquid when hot.		
Physical State:	Solid when cold, Liquid when hot.	Odor:	Characteristic asphalt odor
Spec Grav./Density:	0.87 - 0.96	Solubility:	Negligible
Viscosity:	Thin fluid when hot. Solid when cold.	Softening Point:	110 degrees F and above
Boiling Point:	350°F	Freezing/Melting Pt.:	115 - 130°F
Flammability:	NFPA Class II Combustible	Flash Point:	>135°F
Vapor Pressure:	1.3 E-4 psia	Vapor Density:	Lighter than air
Evap. Rate:	Negligible	Bulk Density:	7.36 - 8.12 lb./gallon
Molecular weight:	300	Auto-Ignition Temp:	>410°F
Decomp Temp:	>750 F	UFL/LFL:	7.5% / 0.7%

10 STABILITY AND REACTIVITY

Chemical Stability:	Product is stable under normal conditions.
Conditions to Avoid:	Contact with oxidizers
Materials to Avoid:	Strong Oxidizing Agents.
Hazardous Decomposition:	Fumes, smoke, carbon monoxide, hydrogen sulfide, aldehydes, and hydrocarbons.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

International Agency for Research on Cancer Ruling

Occupational exposures to straight-run bitumens and their emissions during road paving:
On the basis of an earlier meta-analysis, the IARC multi-center study and several more recent independent studies, the Working Group concluded that there was inadequate evidence in humans for the carcinogenicity of occupational exposures during road paving with straight-run bitumens. Also, there was inadequate evidence in experimental animals for the carcinogenicity of extracts and of fume condensates of this type of bitumens. However, studies of workers exposed to bitumen emissions during paving with straight-run bitumens showed mutagenic and genotoxic/cytogenetic effects in these workers. Similar effects were also observed in experimental systems under controlled conditions. This strong mechanistic evidence led to the classification of occupational exposures to straight-run bitumens and their emissions during road paving as "possibly carcinogenic to humans" (Group 2B).

Health Hazard Characterization:

Uncertainties exist in the hazard characterization of asphalt fumes by many factors including its chemical complexity, limitation of the information, the inclusion of coal tar in asphalts in past decades, other confounders and mixed results of human studies. Concise International Chemical Assessment Documents relating to asphalt and fumes can be obtained on the internet at http://inchem.org/documents/cicads/cicads/cicad59.htm. Despite conflicting reports, the following bullet points should be noted:

- Currently classified as A4 (not classifiable as a human carcinogen). Asphalt Coal Tar Free
- Breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects.
- Asphalt and asphalt fumes contain trace levels of polynuclear aromatic hydrocarbons that are known carcinogens.
- Chronic health effects would not be expected as long as good hygiene and proper safety precautions are practiced and exposures are less than the TLVs/RELs.
- After using material or being around fumes, wash exposed areas thoroughly with soap and water. Showering immediately after work is a good personal hygiene practice.

KEROSENE and No. 2 FUEL OIL:
Lifetime skin painting studies in animals with similar distillate fuels have produced weak carcinogenic activity following prolonged and repeated exposure. Repeated dermal application has produced severe irritation and systematic toxicity in subacute toxicity studies. Some components of distillate fuels, i.e., paraffins and olefins, have been shown to produce a species-specific, sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Jet fuel and No. 1 fuel oil were found to be positive in a few mutagenicity tests while negative in the majority of others. The exact relationship between these results and human health is not known. Chronic human health effects would not be expected as long as good personal hygiene and proper safety precautions are practiced.

12 ECOLOGICAL INFORMATION

May cause fouling of water. May be toxic to aquatic animals. Once solidified, this product will no longer exhibit these characteristics.

13 DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state, and federal regulations. After cooling, waste or contaminated asphalt mixtures may be scooped and stockpiled for later recycling into asphalt pavement mixtures, pugmilled into cold mix, or disposed in an approved special waste, industrial waste, or construction debris landfill.

RCRA Information:
This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261). Along with properly characterizing all waste materials, consult state and local regulations regarding proper disposal of this material.

14 TRANSPORT INFORMATION

UN1999, HOT Asphalt, Cutback, 3, PGIII, (Delete "HOT" if shipped below 212°F.)

Packaging Requirements - Bulk:	49 CFR 173.242
Packaging Requirements - Non-Bulk:	49 CFR 173.202
Packaging Exceptions:	49 CFR 173.150

15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Asphalt (typical) (8052-42-4) [>50%] MASS, NRC, PA, TSCA, TXAIR
Antistrip Adhesion Promoter, Proprietary (0) [<2%]
Kerosene (8008-20-6) [<50%] MASS, PA, TSCA
Fuel oil no. 2 (68476-30-2) [<45%] TSCA

Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List
NRC = Nationally Recognized Carcinogens
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level

SARA Section 313 Notification:
This product contains the following toxic chemicals that are subject to the reporting requirements of Section 313 of the Emergency Planninig and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372:

Polycyclic Aromatic Compounds (PACs) (Category N590)

Hydrogen Sulfide (CASRN 7783-06-4) is found in varying trace amounts 0-1% depending on temperature, source of crude, etc.

This information must be included on all SDSs that are copied and distributed for this material.

16 OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Bituminous Materials and Supply, LP

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Vendor

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Product Name:	CM-300, HPCM-300
Revision Date:	9/8/2015
SDS Number:	BMS-351
Common Name:	Cutback Asphalt
CAS Number:	Mixture
Chemical Family:	Complex Petroleum Hydrocarbon Mixture
Synonyms:	Multigrade Asphalt
Product Use:	Highway Paving Applications and Mixtures

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Health, Acute toxicity, 5 Inhalation
Physical, Flammable Liquids, 3
Health, Acute toxicity, 5 Dermal
Health, Serious Eye Damage/Eye Irritation, 2 B

GHS Label elements, including precautionary statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

GHS Hazard Statements:

H333 - May be harmful if inhaled. Vapors containing hydrogen sulfide may accumulate during storage or transport. High level (700 ppm) acute exposure can result in sudden death.
H226 - Flammable liquid and vapor
H313 - May be harmful in contact with skin
H320 - Causes eye irritation

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking

Hazards not otherwise classified (HNOC) or not covered by GHS

Inhalation: Breathing vapors, fumes, or mists may cause irritation to nasal and respiratory tract and central nervous system effects. Symptoms may include labored breathing, sore throat, coughing, wheezing, headache, and nausea. Some asphalts may contain sulfur compounds, which may form Hydrogen Sulfide when heating.

At normal temperatures and pressures, this product is not likely to present an inhalation hazard. However, when heated, high concentrations of vapor may irritate the respiratory tract and hydrogen sulfide, a highly toxic gas, may be present. Inhaling hydrogen sulfide released from hot products in enclosed areas may cause unconsciousness, convulsions, suffocation, coma, and death. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness.

Hydrogen Sulfide effects:

0.02 ppm	Odor threshold.
10 ppm	8-hour per day exposure limit to Hydrogen Sulfide.
10-20 ppm	Borderline concentration for eye irritation.
10-100 ppm	Leads to eye damage.
100-150 ppm	Olfactory nerve paralyzed after a few minutes, sense of smell disappears, and often awareness of danger.
320-530 ppm	Leads to pulmonary edema with the possibility of death.
530-1,000 ppm	Causes strong stimulation of central nervous system and rapid breathing.
800 ppm	Lethal concentration of 50% of humans for a 5-minute exposure (LC50).
>1,000 ppm	Immediate collapse with loss of breathing, even after inhalation of a single breath.

Do not depend on sense of smell for warning. Hydrogen Sulfide causes rapid olfactory fatigue (deadens sense of smell).

Skin Contact: Contact with hot CM Multigrade asphalt can cause thermal burns. Prolonged exposure to vapors, fumes, or mists may cause irritation and redness.

Eye Contact: Contact with hot CM Multigrade asphalt can cause thermal burns to the eyes. Prolonged exposure to vapors, fumes, or mists may cause irritation, redness, and tearing.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
8052-42-4	>70%	Asphalt (typical)
0	0-5%	Antistrip Adhesion Promoter, Proprietary
8008-20-6	<15%	Kerosene
68476-30-2	<30%	Fuel oil no. 2
65997-01-5	1-5%	Tall oil, sodium salt

Asphalt: Asphalt is a complex mixture of high molecular weight hydrocarbons produced from crude petroleum. Composition varies depending on the source of the crude and the specifications of the final product.

ACGIH: The American Conference of Governmental Industrial Hygienists recommends an exposure limit of 0.5 mg/m^3 as benzene-extractable inhalable particulate (or equivalent method) to avoid irritation of the conjunctive mucous membranes. Historical information on exposure of asphalt workers used methods different than those recommended by ACGIH, so comparisons to the recommended exposure limits are not known.

Hydrogen Sulfide: Trace amounts of Hydrogen Sulfide may be present as a naturally-occurring constituent in the petroleum stream and are not added separately to the product.

4 FIRST AID MEASURES

Inhalation:	If irritation occurs from inhalation overexposure, immediately remove victim from source to fresh air and seek medical attention.
Skin Contact:	Hot Molten Material: Cool the affected body parts immediately by submerging in cold water until the material has cooled. Do not attempt to remove solidified material from burn area as this may further tissue damage. Take the victim to obtain medical assistance immediately. Cold Material: Remove cold asphalt by soaking dressing in mineral oil and place over affected area for 2-3 hours. If irritation occurs, call a physician. Never try to remove material with solvents.
Eye Contact:	Gently flush immediately with cold water for 15 minutes. Do not attempt to remove solidified material from the eye, as this may further injury. Take victim to obtain medical assistance.
Ingestion:	Ingestion is not likely. If large amounts are swallowed, do not induce vomiting and immediately call a physician.

5 FIRE FIGHTING MEASURES

Flammability:	NFPA Class IIIA
Flash Point:	>150°F
Flash Point Method:	Pensky-Martens Closed Cup
Autoignition Temp:	>410°F
LEL:	0.7%
UEL:	7.5%

Fire and Explosion Hazards:

- CM Multigrade Asphalts at elevated temperatures may be above their flashpoints and therefore extremely flammable.
- May produce severe burns on contact.
- May produce Hydrogen Sulfide (H2S) gas in confined spaces, closed containers, and tank headspaces.
- Vapors can explode.

Extinguishing Media:

- Foam, Carbon Dioxide, Dry Chemical, and water spray may all be suitable in extinguishing fires involving this product.

Fire Fighting Instructions:

- Avoid water streams to prevent frothing. Use water spray to cool exposed surfaces and to assist in solidifying hot asphalt material.

6 ACCIDENTAL RELEASE MEASURES

Stop source of leak if safe to do so. Eliminate sources of ignition. Contain by diking or impounding. Absorbents can be used to contain small spills. After containment and solidification, asphalt can be collected for disposal. Advise authorities if product has entered a drainage sewer or a water source. Assure conformity with local, state, and federal government regulations for disposal.

7 HANDLING AND STORAGE

Handling Precautions:	When opening covers and outlet caps on storage tanks, use faceshield and gloves to avoid possible injury from pressurized hot asphalt. Long sleeved shirts and pants should be worn to minimize thermal burns. Hydrogen Sulfide can be generated and accululated in storage tanks and bulk transport compartments. Stay upwind and vent storage tanks before unloading. Keep heating units and flues in storage tanks covered with at least 12 inches of asphalt. Do not overheat. Hot Flash Warning: Studies have shown that relatively low flash point substances, such as low boiling hydrocarbons and hydrogen sulfide, may accumulate in the vapor space of hot storage tanks and bulk transport compartments. Such vapors may exhibit high flammability characteristics when stored above their flash point. As a precaution, keep ignition sources away from vents and openings. Asphalt Institute publication IS-180 contains further information and guidance for the safe storage and handling of asphalt primes.

Empty Container Warning: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY BURN OR EXPLODE AND CAUSE INJURY OR DEATH.

Hot Material Warning: Hot material (above 212°F) contact with water results in a violent expansion as water turns to steam. This can lead to a dangerous boilover and a pressurized container or cargo tank, which can cause damage, rupture of the container or cargo tank, and thermal burn injuries. Never load hot asphalt product into cargo tanks with water condensation or emulsion residue from the previous load without servicing the cargo tank. Keep away from incompatible materials.

Wear body covering clothes to avoid prolonged or repeated exposure. Launder soiled clothing before reuse.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Local or general exhaust required if in an enclosed area to remain below the TLV. If workplace exposure limits are exceeded, a NIOSH/MSHA-approved air-supplied respirator is advised in the absence of proper environmental engineering controls.

Personal Protective Equipment:

Eye and Face Protection: Safety glasses or chemical splash goggles should be worn with faceshield if splashing is anticipated.

Skin Protection: Insulated, oil-impervious gloves for hot asphalt or cloth gloves for cold asphalt. Long-sleeve shirts and long pants should be worn at all times around hot asphalt to prevent thermal burns.

Respiratory Protection: Respiratory protection is not normally required under normal conditions and adequate ventilation. If high vapors and expected, use a respirator approved for organic vapors. Observe respirator protection factor criteria cited in ANSI Z88.2 (1980) and other OSHA requirements found in 29 CFR 1910.134. Use air-supplied respirators or self-contained breathing apparatus for fire fighting and in confined spaces when asphalt vapor or Hydrogen Sulfide gas exceends permissible limits.

Work/Hygienic Practices: Skin contact and the breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects. Thoroughly wash exposed skin areas after work to avoid dermatitis. Consider the use of lanolin skin treatments before handling or working around asphalt mixtures.

Other Protection: Wear body-covering clothes to avoid prolonged or repeated exposure. Launder before reuse.

PETROLEUM ASPHALT:

OSHA PEL:	Not established for this material.
ACGIH TLV:	0.5 mg/m³ as benzene-extractable inhalable particulate (or equivalent method)
NIOSH REL:	5.0 mg/m³ as a 15-minute ceiling limit measured as total particulates.

ANTISTRIP ADHESION PROMOTER, Proprietary:

OSHA PEL:	Not established for this material.

KEROSENE:

OSHA PEL:	Not established for this material.

No. 2 FUEL OIL

OSHA PEL:	Not established for this material

TALL OIL, SODIUM SALT:

OSHA PEL:	Not established for this material.

HYDROGEN SULFIDE:

ACGIH TLV:	1 ppm (1.4 mg/m³) for 8 hours
ACGIH STEL:	5 ppm (7 mg/m³) for 15 minutes

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Black/Brown Liquid when hot.		
Physical State:	Solid when cold, Liquid when hot.	Odor:	Characteristic asphalt odor
Spec Grav./Density:	0.87 - 0.96	Solubility:	Negligible
Viscosity:	Thin fluid when hot. Solid when cold.	Softening Point:	110 degrees F and above
Boiling Point:	350°F	Freezing/Melting Pt.:	115 - 130°F
Flammability:	NFPA Class IIIA Combustible	Flash Point:	>150°F
Vapor Pressure:	1.3 E-4 psia	Vapor Density:	Lighter than air
Evap. Rate:	Negligible	Bulk Density:	7.36 - 8.12 lb./gallon
Molecular weight:	300	Auto-Ignition Temp:	>410°F
Decomp Temp:	>750 F	UFL/LFL:	7.5% / 0.7%

10 STABILITY AND REACTIVITY

Chemical Stability:	Product is stable under normal conditions.
Conditions to Avoid:	Contact with oxidizers
Materials to Avoid:	Strong Oxidizing Agents.
Hazardous Decomposition:	Fumes, smoke, carbon monoxide, hydrogen sulfide, aldehydes, and hydrocarbons.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

International Agency for Research on Cancer Ruling

Occupational exposures to straight-run bitumens and their emissions during road paving:
On the basis of an earlier meta-analysis, the IARC multi-center study and several more recent independent studies, the Working Group concluded that there was inadequate evidence in humans for the carcinogenicity of occupational exposures during road paving with straight-run bitumens. Also, there was inadequate evidence in experimental animals for the carcinogenicity of extracts and of fume condensates of this type of bitumens. However, studies of workers exposed to bitumen emissions during paving with straight-run bitumens showed mutagenic and genotoxic/cytogenetic effects in these workers. Similar effects were also observed in experimental systems under controlled conditions. This strong mechanistic evidence led to the classification of occupational exposures to straight-run bitumens and their emissions during road paving as "possibly carcinogenic to humans" (Group 2B).

Health Hazard Characterization:

Uncertainties exist in the hazard characterization of asphalt fumes by many factors including its chemical complexity, limitation of the information, the inclusion of coal tar in asphalts in past decades, other confounders and mixed results of human studies. Concise International Chemical Assessment Documents relating to asphalt and fumes can be obtained on the internet at http://inchem.org/documents/cicads/cicads/cicad59.htm. Despite conflicting reports, the following bullet points should be noted:

- Currently classified as A4 (not classifiable as a human carcinogen). Asphalt Coal Tar Free
- Breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects.
- Asphalt and asphalt fumes contain trace levels of polynuclear aromatic hydrocarbons that are known carcinogens.
- Chronic health effects would not be expected as long as good hygiene and proper safety precautions are practiced and exposures are less than the TLVs/RELs.
- After using material or being around fumes, wash exposed areas thoroughly with soap and water. Showering immediately after work is a good personal hygiene practice.

KEROSENE and No. 2 FUEL OIL:
Lifetime skin painting studies in animals with similar distillate fuels have produced weak carcinogenic activity following prolonged and repeated exposure. Repeated dermal application has produced severe irritation and systematic toxicity in subacute toxicity studies. Some components of distillate fuels, i.e., paraffins and olefins, have been shown to produce a species-specific, sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Jet fuel and No. 1 fuel oil were found to be positive in a few mutagenicity tests while negative in the majority of others. The exact relationship between these results and human health is not known. Chronic human health effects would not be expected as long as good personal hygiene and proper safety precautions are practiced.

12 ECOLOGICAL INFORMATION

May cause fouling of water. May be toxic to aquatic animals. Once solidified, this product will no longer exhibit these characteristics.

13 DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state, and federal regulations. After cooling, waste or contaminated asphalt mixtures may be scooped and stockpiled for later recycling into asphalt pavement mixtures, pugmilled into cold mix, or disposed in an approved special waste, industrial waste, or construction debris landfill.

RCRA Information:
This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261). Along with properly characterizing all waste materials, consult state and local regulations regarding proper disposal of this material.

14 TRANSPORT INFORMATION

UN3256, Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point, 3, PGIII, (Contains Asphalt and Petroleum Distillates)

Packaging Requirements - Bulk:	49 CFR 173.247
Packaging Requirements - Non-Bulk:	None
Packaging Exceptions:	None

High temperature asphalt product normally shipped ABOVE its flashpoint. If shipped below the flashpoint, other proper DOT shipping descriptions may be applicable.

15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Asphalt (typical) (8052-42-4) [>70%] MASS, NRC, PA, TSCA, TXAIR
Antistrip Adhesion Promoter, Proprietary (0) [0-5%]
Kerosene (8008-20-6) [<15%] MASS, PA, TSCA
Fuel oil no. 2 (68476-30-2) [<30%] TSCA
Tall oil, sodium salt (65997-01-5) [1-5%] TSCA

Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List
NRC = Nationally Recognized Carcinogens
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level

SARA Section 313 Notification:
This product contains the following toxic chemicals that are subject to the reporting requirements of Section 313 of the Emergency Planninig and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372:

Polycyclic Aromatic Compounds (PACs) (Category N590)

Hydrogen Sulfide (CASRN 7783-06-4) is found in varying trace amounts 0-1% depending on temperature, source of crude, etc.

This information must be included on all SDSs that are copied and distributed for this material.

16 OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Bituminous Materials and Supply, LP

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Vendor

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Product Name:	CSS-1, CSS-1h, CRS-2
Revision Date:	6/1/2015
SDS Number:	BMS-401
Common Name:	Asphalt Emulsion Cationic
CAS Number:	Mixture
Chemical Family:	Emulsified complex petroleum hydrocarbon and water
Synonyms:	Cationic Asphalt Emulsion, Emulsified Asphalt
Product Use:	Highway Paving Applications and Mixtures

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Health, Acute toxicity, 5 Dermal
Health, Serious Eye Damage/Eye Irritation, 2 B

GHS Label elements, including precautionary statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

no GHS pictograms indicated for this product

GHS Hazard Statements:

H313 - May be harmful in contact with skin
H320 - Causes eye irritation

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Hazards not otherwise classified (HNOC) or not covered by GHS

Inhalation:	Breathing vapors, fumes, or mists may cause irritation to nasal and respiratory tract and central nervous system effects. Symptoms may include labored breathing, sore throat, coughing, wheezing, headache, and nausea.
Skin Contact:	Contact with hot emulsified asphalt can cause minor thermal burns. Prolonged exposure to vapors, fumes, or mists may cause irritation and redness.
Eye Contact:	Contact with hot emulsified asphalt can cause thermal burns to the eyes. Prolonged exposure to vapors, fumes, or mists may cause irritation, redness, and tearing.
Ingestion:	Ingestion is not likely. Ingestion may cause thermal burns. If ingestion of emulsified material occurs, keep victim's head below their hips to prevent asphalt from reaching the lungs. Take victim to obtain medical

assistance immediately.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
8052-42-4	55-75%	Asphalt (typical)
7732-18-5	25-45%	Water
68476-30-2	<25%	Fuel oil no. 2
0	<3%	Hydrochloride Salt, Proprietary

Asphalt: Asphalt is a complex mixture of high molecular weight hydrocarbons produced from crude petroleum. Composition varies depending on the source of the crude and the specifications of the final product.

ACGIH: The American Conference of Governmental Industrial Hygienists recommends an exposure limit of 0.5 mg/m^3 as benzene-extractable inhalable particulate (or equivalent method) to avoid irritation of the conjunctive mucous membranes. Historical information on exposure of asphalt workers used methods different than those recommended by ACGIH, so comparisons to the recommended exposure limits are not known.

4 FIRST AID MEASURES

Inhalation: If irritation occurs from inhalation overexposure, immediately remove victim from source to fresh air and seek medical attention.

Skin Contact: Hot Emulsified Material: Cool the affected body parts immediately by submerging in cold water until the material has cooled. Do not attempt to remove solidified material from burn area as this may further tissue damage. Take the victim to obtain medical assistance immediately.

Cold Emulsified Material: Remove cold emulsified asphalt by soaking dressing in mineral oil and place over affected area for 2-3 hours. If irritation occurs, call a physician.

Never try to remove material with solvents.

Eye Contact: Gently flush immediately with cold water for 15 minutes. Do not attempt to remove solidified material from the eye, as this may further injury. Take victim to obtain medical assistance.

Ingestion: Ingestion is not likely. If large amounts are swallowed, do not induce vomiting and immediately call a physician.

5 FIRE FIGHTING MEASURES

Flash Point: Not Applicable

Autoignition Temp: >400°F

LEL: Not Applicable

UEL: Not Applicable

Extinguishing Media:

Foam, Carbon Dioxide, Dry Chemical, and water spray may all be suitable in extinguishing fires involving this product.

Fire Fighting Instructions:

Avoid water streams to prevent frothing. Use water spray to cool exposed surfaces.

6 ACCIDENTAL RELEASE MEASURES

Stop source of leak if safe to do so. Eliminate sources of ignition. Contain by diking or impounding. Absorbents can be used to contain small spills. After containment, emulsified asphalt can be collected for disposal. Advise authorities if product has entered a drainage sewer or a water source. Assure conformity with local, state, and federal government regulations for disposal.

7 HANDLING AND STORAGE

Handling Precautions: When opening covers and outlet caps on storage tanks, monitor the vapor space for hydrogen sulfide levels. Use faceshield and gloves to avoid possible injury from pressurized asphalt. Long sleeved shirts and pants should be worn to minimize thermal burns. Stay upwind and vent storage tanks before unloading. Keep heating units and flues in storage tanks covered with at least 12 inches of asphalt. Do not overheat.

Empty Container Warning: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY BURN OR EXPLODE AND CAUSE INJURY OR DEATH.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Local or general exhaust required if in an enclosed area to remain below the TLV. If workplace exposure limits are exceeded, a NIOSH/MSHA-approved air-supplied respirator is advised in the absence of proper environmental engineering controls.

Personal Protective Equipment: Eye and Face Protection: Safety glasses or chemical splash goggles with faceshield if splashing is anticipated.

Skin Protection: Oil-impervious gloves, such as Neoprene, if frequent or prolonged contact is expected. Long-sleeve shirts and long pants should be worn at all times around asphalt to prevent thermal burns.

Respiratory Protection: Respiratory protection is not normally required under normal conditions and adequate ventilation. If high vapors and expected, use a respirator approved for organic vapors. Observe respirator protection factor criteria cited in ANSI Z88.2 (1980) and other OSHA requirements found in 29 CFR 1910.134. Use air-supplied respirators or self-contained breathing apparatus for fire fighting and in confined spaces when asphalt vapor or Hydrogen Sulfide gas exceeds permissible limits.

Work/Hygienic Practices: Skin contact and the breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects. Thoroughly wash exposed skin areas after work to avoid dermatitis. Consider the use of lanolin skin treatments before handling or working around asphalt mixtures.

Other Protection: Wear body-covering clothes to avoid prolonged or repeated exposure. Launder before reuse.

PETROLEUM ASPHALT:

OSHA PEL:	Not established for this material.
ACGIH TLV:	0.5 mg/m³ as benzene-extractable inhalable particulate (or equivalent method)
NIOSH REL:	5.0 mg/m³ as a 15-minute ceiling limit measured as total particulates.

HYDROCHLORIDE SALT, Proprietary:

OSHA PEL:	Not established for this material.

No. 2 FUEL OIL:

OSHA PEL:	Not established for this material.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Brown Liquid		
Physical State:	Liquid	Odor:	Characteristic asphalt odor
Spec Grav./Density:	0.96 - 1.05	Solubility:	Completely
Boiling Point:	212°F	Flash Point:	Not Applicable
Flammability:	Aqueous, Non-Flammable	Vapor Density:	>1.0
Vapor Pressure:	1.9 E-9 psia	Bulk Density:	8.12 - 8.89 lb/gallon
pH:	2 - 5	Auto-Ignition Temp:	>400°F
Molecular weight:	280	UFL/LFL:	Not Applicable

10 STABILITY AND REACTIVITY

Chemical Stability:	Product is stable under normal conditions.
Conditions to Avoid:	Contact with oxidizers
Materials to Avoid:	Strong Oxidizing Agents.
Hazardous Decomposition:	Fumes, smoke, carbon monoxide, hydrogen sulfide, aldehydes, and hydrocarbons.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

International Agency for Research on Cancer Ruling

Occupational exposures to straight-run bitumens and their emissions during road paving:
On the basis of an earlier meta-analysis, the IARC multi-center study and several more recent independent studies, the Working Group concluded that there was inadequate evidence in humans for the carcinogenicity of occupational exposures during road paving with straight-run bitumens. Also, there was inadequate evidence in experimental animals for the carcinogenicity of extracts and of fume condensates of this type of bitumens. However, studies of workers exposed to bitumen emissions during paving with straight-run bitumens showed mutagenic and genotoxic/cytogenetic effects in these workers. Similar effects were also observed in experimental systems under controlled conditions. This strong mechanistic evidence led to the classification of occupational exposures to straight-run bitumens and their emissions during road paving as "possibly carcinogenic to humans" (Group 2B).

Health Hazard Characterization:

Uncertainties exist in the hazard characterization of asphalt fumes by many factors including its chemical complexity, limitation of the information, the inclusion of coal tar in asphalts in past decades, other confounders and mixed results of human studies. Concise International Chemical Assessment Documents relating to asphalt and fumes can be obtained on the internet at http://inchem.org/documents/cicads/cicads/cicad59.htm. Despite conflicting reports, the following bullet points should be noted:

- Currently classified as A4 (not classifiable as a human carcinogen). Asphalt Coal Tar Free
- Breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects.
- Asphalt and asphalt fumes contain trace levels of polynuclear aromatic hydrocarbons that are known carcinogens.
- Chronic health effects would not be expected as long as good hygiene and proper safety precautions are practiced and exposures are less than the TLVs/RELs.
- After using material or being around fumes, wash exposed areas thoroughly with soap and water. Showering immediately after work is a good personal hygiene practiced.

No. 2 FUEL OIL:
Lifetime skin painting studies in animals with similar distillate fuels have produced weak carcinogenic activity following prolonged and repeated exposure. Repeated dermal application has produced severe irritation and systematic toxicity in subacute toxicity studies. Some components of distillate fuels, i.e., paraffins and olefins, have been shown to produce a species-specific, sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Jet fuel and No. 1 fuel oil were found to be positive in a few mutagenicity tests while negative in the majority of others. The exact relationship between these results and human health is not known. Chronic human health effects would not be expected as long as good personal hygiene and proper safety precautions are practiced.

12 ECOLOGICAL INFORMATION

May cause fouling of water. May be toxic to aquatic animals. Once solidified, this product will no longer exhibit these characteristics.

13 DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state, and federal regulations. After cooling, waste or contaminated asphalt mixtures may be scooped and stockpiled for later recycling into asphalt pavement mixtures, pugmilled into cold mix, or disposed in an approved special waste, industrial waste, or construction debris landfill.

RCRA Information:
This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261). Along with properly characterizing all waste materials, consult state and local regulations regarding proper disposal of this material.

14 TRANSPORT INFORMATION

This product as produced and shipped is not considered a hazardous material by the U.S. Department of Transportation.

15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Asphalt (typical) (8052-42-4) [55-75%] MASS, NRC, PA, TSCA, TXAIR

Water (7732-18-5) [25-45%] TSCA

Fuel oil no. 2 (68476-30-2) [<25%] TSCA

Hydrochloride Salt, Proprietary (0) [<3%]

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Regulatory CODE Descriptions
-----------------------------------------------------------------
MASS = MA Massachusetts Hazardous Substances List
NRC = Nationally Recognized Carcinogens
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level
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16 OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Bituminous Materials and Supply, LP

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Vendor

Bituminous Materials and Supply, LP
5400 West 86th Street
Indianapolis, Indiana 46268

Emergency:	CHEMTREC: 800-424-9300
Contact:	Douglas Lozier
Phone:	317-872-6010
Fax:	317-875-4673
Email:	doug.lozier@asphalt-materials.com
Web:	www.asphalt-materials.com

Product Name:	CRS-2P
Revision Date:	6/1/2015
SDS Number:	BMS-404
Common Name:	Asphalt Emulsion Cationic
CAS Number:	Mixture
Chemical Family:	Emulsified complex petroleum hydrocarbon and water
Synonyms:	Cationic Asphalt Emulsion, Emulsified Asphalt
Product Use:	Highway Paving Applications and Mixtures

2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):

Health, Acute toxicity, 5 Dermal
Health, Serious Eye Damage/Eye Irritation, 2 B

GHS Label elements, including precautionary statements

GHS Signal Word: WARNING

GHS Hazard Pictograms:

no GHS pictograms indicated for this product

GHS Hazard Statements:

H313 - May be harmful in contact with skin
H320 - Causes eye irritation

GHS Precautionary Statements:

P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Hazards not otherwise classified (HNOC) or not covered by GHS

Inhalation:	Breathing vapors, fumes, or mists may cause irritation to nasal and respiratory tract and central nervous system effects. Symptoms may include labored breathing, sore throat, coughing, wheezing, headache, and nausea.
Skin Contact:	Contact with hot emulsified asphalt can cause minor thermal burns. Prolonged exposure to vapors, fumes, or mists may cause irritation and redness.
Eye Contact:	Contact with hot emulsified asphalt can cause thermal burns to the eyes. Prolonged exposure to vapors, fumes, or mists may cause irritation, redness, and tearing.
Ingestion:	Ingestion is not likely. Ingestion may cause thermal burns. If ingestion of emulsified material occurs, keep victim's head below their hips to prevent asphalt from reaching the lungs. Take victim to obtain medical

assistance immediately.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas#	%	Chemical Name
8052-42-4	55-75%	Asphalt (typical)
7732-18-5	25-45%	Water
0	0.5-2%	Hydrochloride Salt, Proprietary
0	<5%	Polymer Modifier, Proprietary
68476-30-2	<18%	Fuel oil no. 2

Asphalt: Asphalt is a complex mixture of high molecular weight hydrocarbons produced from crude petroleum. Composition varies depending on the source of the crude and the specifications of the final product.

ACGIH: The American Conference of Governmental Industrial Hygienists recommends an exposure limit of 0.5 mg/m^3 as benzene-extractable inhalable particulate (or equivalent method) to avoid irritation of the conjunctive mucous membranes. Historical information on exposure of asphalt workers used methods different than those recommended by ACGIH, so comparisons to the recommended exposure limits are not known.

4 FIRST AID MEASURES

Inhalation: If irritation occurs from inhalation overexposure, immediately remove victim from source to fresh air and seek medical attention.

Skin Contact: Hot Emulsified Material: Cool the affected body parts immediately by submerging in cold water until the material has cooled. Do not attempt to remove solidified material from burn area as this may further tissue damage. Take the victim to obtain medical assistance immediately.

Cold Emulsified Material: Remove cold emulsified asphalt by soaking dressing in mineral oil and place over affected area for 2-3 hours. If irritation occurs, call a physician.

Never try to remove material with solvents.

Eye Contact: Gently flush immediately with cold water for 15 minutes. Do not attempt to remove solidified material from the eye, as this may further injury. Take victim to obtain medical assistance.

Ingestion: Ingestion is not likely. If large amounts are swallowed, do not induce vomiting and immediately call a physician.

5 FIRE FIGHTING MEASURES

Flash Point: Not Applicable

Autoignition Temp: >400°F

LEL: Not Applicable

UEL: Not Applicable

Extinguishing Media:

Foam, Carbon Dioxide, Dry Chemical, and water spray may all be suitable in extinguishing fires involving this product.

Fire Fighting Instructions:

Avoid water streams to prevent frothing. Use water spray to cool exposed surfaces.

6 ACCIDENTAL RELEASE MEASURES

Stop source of leak if safe to do so. Eliminate sources of ignition. Contain by diking or impounding. Absorbents can be used to contain small spills. After containment, emulsified asphalt can be collected for disposal. Advise authorities if product has entered a drainage sewer or a water source. Assure conformity with local, state, and federal government regulations for disposal.

7 HANDLING AND STORAGE

Handling Precautions:

When opening covers and outlet caps on storage tanks, monitor the vapor space for hydrogen sulfide levels. Use faceshield and gloves to avoid possible injury from pressurized asphalt. Long sleeved shirts and pants should be worn to minimize thermal burns. Stay upwind and vent storage tanks before unloading. Keep heating units and flues in storage tanks covered with at least 12 inches of asphalt. Do not overheat.

Empty Container Warning: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, OR OTHER SOURCES OF IGNITION; THEY MAY BURN OR EXPLODE AND CAUSE INJURY OR DEATH.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Local or general exhaust required if in an enclosed area to remain below the TLV. If workplace exposure limits are exceeded, a NIOSH/MSHA-approved air-supplied respirator is advised in the absence of proper environmental engineering controls.

Personal Protective Equipment:

Eye and Face Protection: Safety glasses or chemical splash goggles with faceshield if splashing is anticipated.

Skin Protection: Oil-impervious gloves, such as Neoprene, if frequent or prolonged contact is expected. Long-sleeve shirts and long pants should be worn at all times around asphalt to prevent thermal burns.

Respiratory Protection: Respiratory protection is not normally required under normal conditions and adequate ventilation. If high vapors and expected, use a respirator approved for organic vapors. Observe respirator protection factor criteria cited in ANSI Z88.2 (1980) and other OSHA requirements found in 29 CFR 1910.134. Use air-supplied respirators or self-contained breathing apparatus for fire fighting and in confined spaces when asphalt vapor or Hydrogen Sulfide gas exceends permissible limits.

Work/Hygienic Practices: Skin contact and the breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects. Thoroughly wash exposed skin areas after work to avoid dermatitis. Consider the use of lanolin skin treatments before handling or working around asphalt mixtures.

Other Protection: Wear body-covering clothes to avoid prolonged or repeated exposure. Launder before reuse.

PETROLEUM ASPHALT:

OSHA PEL:	Not established for this material.
ACGIH TLV:	0.5 mg/m³ as benzene-extractable inhalable particulate (or equivalent method)
NIOSH REL:	5.0 mg/m³ as a 15-minute ceiling limit measured as total particulates.

HYDROCHLORIDE SALT, Proprietary:

OSHA PEL:	Not established for this material.

POLYMER MODIFIER, Proprietary:

OSHA PEL:	Not established for this material.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Brown Liquid		
Physical State:	Liquid	Odor:	Characteristic asphalt odor
Spec Grav./Density:	0.96 - 1.05	Solubility:	Completely
Boiling Point:	212°F	Flash Point:	Not Applicable
Flammability:	Aqueous, Non-Flammable	Vapor Density:	>1.0
Vapor Pressure:	1.9 E-9 psia	Bulk Density:	8.12 - 8.89 lb/gallon
pH:	2 - 5	Auto-Ignition Temp:	>400°F
Molecular weight:	280	UFL/LFL:	Not Applicable

10 STABILITY AND REACTIVITY

Chemical Stability:	Product is stable under normal conditions.
Conditions to Avoid:	Contact with oxidizers
Materials to Avoid:	Strong Oxidizing Agents.
Hazardous Decomposition:	Fumes, smoke, carbon monoxide, hydrogen sulfide, aldehydes, and hydrocarbons.
Hazardous Polymerization:	Will not occur.

11 TOXICOLOGICAL INFORMATION

International Agency for Research on Cancer Ruling

Occupational exposures to straight-run bitumens and their emissions during road paving:
On the basis of an earlier meta-analysis, the IARC multi-center study and several more recent independent studies, the Working Group concluded that there was inadequate evidence in humans for the carcinogenicity of occupational exposures during road paving with straight-run bitumens. Also, there was inadequate evidence in experimental animals for the carcinogenicity of extracts and of fume condensates of this type of bitumens. However, studies of workers exposed to bitumen emissions during paving with straight-run bitumens showed mutagenic and genotoxic/cytogenetic effects in these workers. Similar effects were also observed in experimental systems under controlled conditions. This strong mechanistic evidence led to the classification of occupational exposures to straight-run bitumens and their emissions during road paving as "possibly carcinogenic to humans" (Group 2B).

Health Hazard Characterization:

Uncertainties exist in the hazard characterization of asphalt fumes by many factors including its chemical complexity, limitation of the information, the inclusion of coal tar in asphalts in past decades, other confounders and mixed results of human studies. Concise International Chemical Assessment Documents relating to asphalt and fumes can be obtained on the internet at http://inchem.org/documents/cicads/cicads/cicad59.htm. Despite conflicting reports, the following bullet points should be noted:

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- Breathing of mists, fumes, or vapors should be reduced to a minimum to avoid any ill effects.
- Asphalt and asphalt fumes contain trace levels of polynuclear aromatic hydrocarbons that are known carcinogens.
- Chronic health effects would not be expected as long as good hygiene and proper safety precautions are practiced and exposures are less than the TLVs/RELs.
- After using material or being around fumes, wash exposed areas thoroughly with soap and water. Showering immediately after work is a good personal hygiene practiced.

No. 2 FUEL OIL:
Lifetime skin painting studies in animals with similar distillate fuels have produced weak carcinogenic activity following prolonged and repeated exposure. Repeated dermal application has produced severe irritation and systematic toxicity in subacute toxicity studies. Some components of distillate fuels, i.e., paraffins and olefins, have been shown to produce a species-specific, sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Jet fuel and No. 1 fuel oil were found to be positive in a few mutagenicity tests while negative in the majority of others. The exact relationship between these results and human health is not known. Chronic human health effects would not be expected as long as good personal hygiene and proper safety precautions are practiced.

12 ECOLOGICAL INFORMATION

May cause fouling of water. May be toxic to aquatic animals. Once solidified, this product will no longer exhibit these characteristics.

13 DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state, and federal regulations. After cooling, waste or contaminated asphalt mixtures may be scooped and stockpiled for later recycling into asphalt pavement mixtures, pugmilled into cold mix, or disposed in an approved special waste, industrial waste, or construction debris landfill.

RCRA Information:
This material, if discarded as produced, is not a RCRA "listed" hazardous waste. Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. It is the responsibility of the generator to fully characterize for toxicity and other RCRA parameters prior to disposal (40 CFR 261). Along with properly characterizing all waste materials, consult state and local regulations regarding proper disposal of this material.

14 TRANSPORT INFORMATION

This product as produced and shipped is not considered a hazardous material by the U.S. Department of Transportation.

15 REGULATORY INFORMATION

Component (CAS#) [%] - CODES

Asphalt (typical) (8052-42-4) [55-75%] MASS, NRC, PA, TSCA, TXAIR

Water (7732-18-5) [25-45%] TSCA

Hydrochloride Salt, Proprietary (0) [0.5-2%]

Polymer Modifier, Proprietary (0) [<5%]

Fuel oil no. 2 (68476-30-2) [<18%] TSCA

Regulatory CODE Descriptions

MASS = MA Massachusetts Hazardous Substances List
NRC = Nationally Recognized Carcinogens
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level

16 OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

Bituminous Materials and Supply, LP

SAFETY DATA SHEET

1. Identification

Product identifier **CSS-1H**

Other means of identification

SDS number 9586

Synonyms CSS-1 * CSS-1H D30 * CSS-1H D50

Recommended use Road maintenance applications.

Recommended restrictions Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Flint Hills Resources Pine Bend, LLC
P.O. Box 64596
Pine Bend, MN
55164-0596
United States

Telephone Numbers - 24 hour Emergency Assistance
Chemtrec (US) 800-424-9300 (CCN: 8586)

Telephone numbers
General Assistance
8-5 (M-F, CST) 316-828-7988
SDS Assistance E-mail msdsrequest@fhr.com

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, skin	Category 1
	Carcinogenicity	Category 1B
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (liver, thymus, bone marrow)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement

May be fatal if swallowed and enters airways. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause drowsiness or dizziness. May cause cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response

If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. If skin irritation or rash occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

Hydrogen Sulfide (H2S) may be present in trace quantities (by weight), but may accumulate to toxic concentrations such as in tank headspace. The presence of H2S is highly variable, unpredictable and does not correlate with sulfur content. Studies with similar products have shown that 1 ppm H2S by weight in liquid may produce 100 ppm or more H2S in the vapor headspace of the storage tank.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Water	7732-18-5	25 - 93
Asphalt Binder	Mixture	7 - 75
Cationic Emulsifier Salt	Proprietary	≤ 5
Oil Distillates	Proprietary	≤ 5

Components

Chemical name	CAS number	%
Petroleum Asphalt	8052-42-4	≤ 75
Polymer Modifier	Proprietary	≤ 7
Polycyclic aromatic hydrocarbons	130498-29-2	≤ .1
Hydrogen sulfide	7783-06-4	≤ .1

Composition comments

The manufacturer has claimed one or more hazardous ingredients as trade secret under the OSHA Hazard Communication Standard. The hazards of this (these) ingredient(s) are given on this SDS.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

For contact with hot material, immediately immerse affected area of skin in large amounts of cold water to dissipate heat and reduce the extent of thermal burns.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Hydrogen sulfide can react with the iron in an asphalt storage tank to form iron sulfide. Iron sulfide is pyrophoric. When exposed to air, iron sulfide is capable of igniting spontaneously.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus. Self-contained breathing apparatus and full protective clothing should be worn when fighting chemical fires.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Stay away from ends of tanks. As with any fire, toxic gases, vapors, and fumes can be generated. Use pressure-demand self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear. Using water can cause frothing with increased fire intensity.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted. Material will burn in a fire. Hydrogen sulfide (H2S) may be given off when this material is heated. Do not depend on sense of smell for warning.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	The product is immiscible with water and will spread on the water surface. Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist/vapors. Avoid contact with eyes, skin, and clothing. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	20 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Hydrogen sulfide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	
Petroleum Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m3	Inhalable fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	15 mg/m3	
		10 ppm	
Petroleum Asphalt (CAS 8052-42-4)	Ceiling	5 mg/m3	Fume.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Face shield is recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Wear approved respiratory protection when working with this material unless ventilation or other engineering controls are adequate to keep airborne concentrations below recommended exposure standards. Follow respirator protection program requirements (OSHA 1910.134 or CSA-Z94.4-02(R2008), and ANSI / AIHA Z88.6) for all respirator use. Note: If any of the applicable hydrogen sulfide standards are likely to be exceeded, positive pressure supplied-air respiratory protection must be used.

Thermal hazards Wear appropriate thermal protective clothing, when necessary. Thermally protective apron and long sleeves are recommended when volume of hot material is significant.

General hygiene considerations Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Viscous liquid.

Color	Dark brown.
Odor	Musty.
Odor threshold	Not available.
pH	2.1 - 11.4
Melting point/freezing point	< 32 °F (< 0 °C)
Initial boiling point and boiling range	> 212 °F (> 100 °C)
Flash point	> 212.0 °F (> 100.0 °C) Pensky-Martens Closed Cup (ASTM D93)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor density	Not available.
Relative density	0.9 - 1.1
Relative density temperature	60 °F (15.56 °C)
Solubility(ies)	
Solubility (water)	Dispersible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	10 - 700 SFS
Viscosity temperature	77 °F (25 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Toxicological data

Components	Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)		
Acute		
Inhalation		
Gas		
LC50	Rat	444 ppm, 4 Hours
Petroleum Asphalt (CAS 8052-42-4)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 hours
Inhalation		
LC50	Rat	> 94.4 mg/m3

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Petroleum Asphalt (CAS 8052-42-4) 2B Possibly carcinogenic to humans.

NTP Report on Carcinogens

Polycyclic aromatic hydrocarbons (CAS 130498-29-2) Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)			
Aquatic			
Acute			
Crustacea	EC50	Crustacea	0.042 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0243 mg/l, 96 hours

Persistence and degradability Not readily biodegradable.

Bioaccumulative potential Has the potential to bioaccumulate.

Mobility in soil May partition into air, soil and water.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Hydrogen sulfide (CAS 7783-06-4) U135

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not classified for MARPOL. Please contact the Transportation Compliance CSO if transportation mode is a ship or vessel to determine the need for a MARPOL classification.

General information This description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information or Transport Compliance Specialist (CSO).

In accordance with US DOT, bulk and non-bulk shipments of this product, which are offered for transportation below 212°F (100°C), are not regulated.

BILL OF LADING - NON-BULK (U. S. DOT): Non-regulated by DOT

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hydrogen sulfide (CAS 7783-06-4) Listed.
Petroleum Asphalt (CAS 8052-42-4) Listed.

SARA 304 Emergency release notification

HYDROGEN SULFIDE (CAS 7783-06-4) 100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) All components on the TSCA 8(b) inventory are designated "active" or are exempt from reporting under the Inventory Update Rule.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Hydrogen sulfide	7783-06-4	100	500		

SARA 311/312 Hazardous chemical Yes

Classified hazard categories	Skin corrosion or irritation Serious eye damage or eye irritation Respiratory or skin sensitization Carcinogenicity Reproductive toxicity Specific target organ toxicity (single or repeated exposure) Aspiration hazard

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Polycyclic aromatic hydrocarbons	130498-29-2	≤ .1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Hydrogen sulfide (CAS 7783-06-4)

Safe Drinking Water Act (SDWA) Not regulated.

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Hydrogen sulfide (CAS 7783-06-4) High priority

US state regulations

US. Massachusetts RTK - Substance List

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)

US. New Jersey Worker and Community Right-to-Know Act

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

US. Pennsylvania Worker and Community Right-to-Know Law

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

US. Rhode Island RTK

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)

California Proposition 65

WARNING: This product can expose you to Asphalt, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Petroleum Asphalt (CAS 8052-42-4) Listed: January 1, 1990

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)

16. Other information, including date of preparation or last revision

Issue date	24-July-2019
Revision date	-
Version #	01
HMIS® ratings	Health: 3* Flammability: 0 Physical hazard: 0
NFPA ratings	

Disclaimer

NOTICE: The information contained in this document is based on data considered to be accurate as of the preparation date of this Safety Data Sheet (SDS) and was prepared pursuant to applicable Government regulation(s). This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the above data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided about any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. Purchasers and users of the product are responsible for determining that this product is suitable for the intended use and application. No responsibility can be assumed by vendor for any damage or injury resulting from failure to adhere to recommended uses, or from any hazards inherent to the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product should explicitly advise their employees, agents, contractors and customers who will use the product of this SDS.

SAFETY DATA SHEET

1. Identification

Product identifier	**Medium Curing Cutback Asphalt**
Other means of identification	
SDS number	9567
Product code	FHR_MCCA_US_EN
Synonyms	CRP-2 * MC ASPHALT * MC CUTBACK * MC-70 * MC-250 * MC-500 * MC-800 * MC-3000
Recommended use	Road maintenance applications.
Recommended restrictions	Other uses are not recommended unless an assessment is completed, prior to commencement of that use, which demonstrates that the use will be controlled.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier	Flint Hills Resources Pine Bend, LLC P.O. Box 64596 Pine Bend, MN 55164-0596 United States
Supplier	Flint Hills Resources, LP 4111 E. 37th St. North Wichita, KS 67220-3203 United States

Telephone Numbers - 24 hour Emergency Assistance	
Chemtrec (US)	800-424-9300 (CCN: 8586)
Flint Hills Resources, LP	651-437-0676

Telephone numbers	
General Assistance	
8-5 (M-F, CST)	651-437-0700
Customer Service	
8-5 (M-F, CST)	316-828-7988
SDS Assistance E-mail	msdsrequest@fhr.com

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 4
Health hazards	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (bone marrow, liver, thymus)
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements

Signal word Danger

Hazard statement Combustible liquid. Causes skin irritation. May cause drowsiness or dizziness. May cause cancer. May cause damage to organs (bone marrow, liver, thymus) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces. - No smoking. Do not breathe mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response IF ON SKIN: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.

Storage Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Hydrogen Sulfide (H2S) may be present in trace quantities (by weight), but may accumulate to toxic concentrations such as in tank headspace. The presence of H2S is highly variable, unpredictable and does not correlate with sulfur content. Studies with similar products have shown that 1 ppm H2S by weight in liquid may produce 100 ppm or more H2S in the vapor headspace of the storage tank.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Asphalt Binder	Mixture	45 - 95
Oil Distillates	Proprietary	5 - 55

Components

Chemical name	CAS number	%
Petroleum Asphalt	8052-42-4	≤ 95
1,2,4-Trimethylbenzene	95-63-6	≤ 3
Ethylbenzene	100-41-4	≤ 2
Xylene	1330-20-7	≤ 1
Toluene	108-88-3	≤ 1
Polycyclic aromatic hydrocarbons	130498-29-2	< 0.1
Hydrogen sulfide	7783-06-4	≤ .1

Composition comments Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

The specific identities of some of the components of this product are being withheld as trade secrets. However, all pertinent hazards are addressed in this SDS.

This Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your Flint Hills Resources, LP representative.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	May cause drowsiness or dizziness. Headache. Nausea, vomiting. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. Jaundice. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Foam. Dry powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Hydrogen sulfide can react with the iron in an asphalt storage tank to form iron sulfide. Iron sulfide is pyrophoric. When exposed to air, iron sulfide is capable of igniting spontaneously.
Special protective equipment and precautions for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Stay away from ends of tanks. As with any fire, toxic gases, vapors, and fumes can be generated. Use pressure-demand self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear. Using water can cause frothing with increased fire intensity.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Material will burn in a fire. Hydrogen sulfide (H2S) may be given off when this material is heated. Do not depend on sense of smell for warning.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. The product is immiscible with water and will spread on the water surface. Prevent product from entering drains. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from open flames, hot surfaces and sources of ignition. When using do not smoke. Do not breathe mist/vapors. Avoid contact with eyes, skin, and clothing. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H2S) and flammability.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Xylene (CAS 1330-20-7)	PEL	435 mg/m3
		100 ppm
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3
		100 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	20 ppm
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Hydrogen sulfide (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	
Toluene (CAS 108-88-3)	TWA	20 ppm	
Xylene (CAS 1330-20-7)	STEL	150 ppm	
	TWA	100 ppm	
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm	
1,2,4-Trimethylbenzene (CAS 95-63-6)	TWA	25 ppm	
Petroleum Asphalt (CAS 8052-42-4)	TWA	0.5 mg/m3	Inhalable fume.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Hydrogen sulfide (CAS 7783-06-4)	Ceiling	15 mg/m3	
		10 ppm	
Toluene (CAS 108-88-3)	STEL	560 mg/m3	
		150 ppm	
	TWA	375 mg/m3	
		100 ppm	
Xylene (CAS 1330-20-7)	STEL	655 mg/m3	
		150 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
	TWA	435 mg/m3	
		100 ppm	
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3	
		125 ppm	
	TWA	435 mg/m3	
		100 ppm	
1,2,4-Trimethylbenzene (CAS 95-63-6)	TWA	125 mg/m3	
		25 ppm	
Petroleum Asphalt (CAS 8052-42-4)	Ceiling	5 mg/m3	Fume.

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)	2.5 µg/l	1-Hydroxypyrene, with hydrolysis (1-HP)	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*
Xylene (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Toluene (CAS 108-88-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Toluene (CAS 108-88-3) Skin designation applies.

Appropriate engineering controls Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Wear approved respiratory protection when working with this material unless ventilation or other engineering controls are adequate to keep airborne concentrations below recommended exposure standards. Follow respirator protection program requirements (OSHA 1910.134 or CSA-Z94.4-02(R2008), and ANSI / AIHA Z88.6) for all respirator use. Note: If any of the applicable hydrogen sulfide standards are likely to be exceeded, positive pressure supplied-air respiratory protection must be used.

Thermal hazards	Wear appropriate thermal protective clothing, when necessary. Thermally protective apron and long sleeves are recommended when volume of hot material is significant.
General hygiene considerations	Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Viscous liquid.
Color	Dark brown to black.
Odor	Fuel oil.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	> 250 °F (> 121.1 °C)
Flash point	> 141.0 °F (> 60.6 °C) Pensky-Martens Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.8 - 1.2
Relative density temperature	60 °F (15.56 °C)
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	30 - 7000 cSt
Viscosity temperature	140 °F (60 °C)
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness or dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	May cause drowsiness or dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain. Jaundice.

Information on toxicological effects

Acute toxicity

Toxicological data

Components	Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)		
Acute		
Inhalation		
Gas		
LC50	Rat	444 ppm, 4 Hours
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	12200 mg/kg
Inhalation		
Vapor		
LC50	Rat	28.1 mg/l, 4 Hours
Xylene (CAS 1330-20-7)		
Acute		
Oral		
LD50	Rat	3523 mg/kg
Ethylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	15400 mg/kg
Inhalation		
LC50	Rat	17.4 mg/l, 4 hours
Oral		
LD50	Rat	3500 - 4700 mg/kg
1,2,4-Trimethylbenzene (CAS 95-63-6)		
Acute		
Oral		
LD50	Rat	2720 - 3960 mg/kg
Petroleum Asphalt (CAS 8052-42-4)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 hours
Inhalation		
LC50	Rat	> 94.4 mg/m3

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.
Petroleum Asphalt (CAS 8052-42-4)	2B Possibly carcinogenic to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.
Xylene (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Polycyclic aromatic hydrocarbons (CAS 130498-29-2)	Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure May cause damage to organs (bone marrow, liver, thymus) through prolonged or repeated exposure.

Aspiration hazard Not an aspiration hazard.

Chronic effects May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Hydrogen sulfide (CAS 7783-06-4)			
Aquatic			
Acute			
Crustacea	EC50	Crustacea	0.042 mg/l, 48 Hours
Fish	LC50	Fathead minnow (Pimephales promelas)	0.0243 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Acute			
Crustacea	EC50	Daphnia magna	11.5 mg/l, 48 hours
Fish	LC50	Oncorhynchus kisutch	5.5 mg/l, 96 hours
Chronic			
Crustacea	NOEC	Ceriodaphnia dubia	0.74 mg/l, 7 days
Fish	NOEC	Oncorhynchus kisutch	1.4 mg/l, 40 days
Xylene (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.6 mg/l, 96 hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	1.81 - 2.38 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4.2 mg/l, 96 hours
Chronic			
Crustacea	EC50	Ceriodaphnia dubia	3.6 mg/l, 7 days

Components	Species	Test Results
1,2,4-Trimethylbenzene (CAS 95-63-6)		
Aquatic		
Acute		
Fish	LC50 Fathead minnow (Pimephales promelas)	7.72 mg/l, 96 hours

Persistence and degradability Not readily degradable.

Bioaccumulative potential Has the potential to bioaccumulate.

Mobility in soil May partition into air, soil and water.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

US RCRA Hazardous Waste U List: Reference

Hydrogen sulfide (CAS 7783-06-4)	U135
Toluene (CAS 108-88-3)	U220
Xylene (CAS 1330-20-7)	U239

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number UN3257

UN proper shipping name Elevated temperature liquid, n.o.s., (Petroleum Asphalt)

Transport hazard class(es)

Class 9

Subsidiary risk -

Label(s) 9

Packing group III

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions IB1, T3, TP3, TP29

Packaging exceptions None

Packaging non bulk None

Packaging bulk 49 CFR 173.24

ERG number 128

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not classified for MARPOL. Please contact the Transportation Compliance CSO if transportation mode is a ship or vessel to determine the need for a MARPOL classification.

General information This description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information or Transport Compliance Specialist (CSO).

In accordance with US DOT, bulk and non-bulk shipments of this product, which are offered for transportation below 212°F (100°C), are not regulated.

BILL OF LADING - NON-BULK (U. S. DOT): Non-regulated by DOT

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ethylbenzene (CAS 100-41-4)	Listed.
Hydrogen sulfide (CAS 7783-06-4)	Listed.
Petroleum Asphalt (CAS 8052-42-4)	Listed.
Toluene (CAS 108-88-3)	Listed.
Xylene (CAS 1330-20-7)	Listed.

SARA 304 Emergency release notification

HYDROGEN SULFIDE (CAS 7783-06-4)	100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) One or more components of the mixture are not on the TSCA 8(b) inventory or are designated “inactive”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity (pounds)	Threshold planning quantity (pounds)	Threshold planning quantity, lower value (pounds)	Threshold planning quantity, upper value (pounds)
Hydrogen sulfide	7783-06-4	100	500		

SARA 311/312 Hazardous chemical Yes

Classified hazard categories
Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
1,2,4-Trimethylbenzene	95-63-6	≤ 3
Ethylbenzene	100-41-4	≤ 2
Polycyclic aromatic hydrocarbons	130498-29-2	< 0.1
Toluene	108-88-3	≤ 1
Xylene	1330-20-7	≤ 1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Ethylbenzene (CAS 100-41-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Hydrogen sulfide (CAS 7783-06-4)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Toluene (CAS 108-88-3)	6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Toluene (CAS 108-88-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Toluene (CAS 108-88-3)	594

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Hydrogen sulfide (CAS 7783-06-4)	High priority

US state regulations

US. Massachusetts RTK - Substance List

1,2,4-Trimethylbenzene (CAS 95-63-6)
Ethylbenzene (CAS 100-41-4)
Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)

Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

US. New Jersey Worker and Community Right-to-Know Act

1,2,4-Trimethylbenzene (CAS 95-63-6)
Ethylbenzene (CAS 100-41-4)
Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

US. Pennsylvania Worker and Community Right-to-Know Law

1,2,4-Trimethylbenzene (CAS 95-63-6)
Ethylbenzene (CAS 100-41-4)
Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

US. Rhode Island RTK

1,2,4-Trimethylbenzene (CAS 95-63-6)
Ethylbenzene (CAS 100-41-4)
Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

California Proposition 65

WARNING: This product can expose you to chemicals including Ethylbenzene, which is known to the State of California to cause cancer, and Toluene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Ethylbenzene (CAS 100-41-4)	Listed: June 11, 2004
Petroleum Asphalt (CAS 8052-42-4)	Listed: January 1, 1990

California Proposition 65 - CRT: Listed date/Developmental toxin

Toluene (CAS 108-88-3)	Listed: January 1, 1991

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

1,2,4-Trimethylbenzene (CAS 95-63-6)
Ethylbenzene (CAS 100-41-4)
Hydrogen sulfide (CAS 7783-06-4)
Petroleum Asphalt (CAS 8052-42-4)
Polycyclic aromatic hydrocarbons (CAS 130498-29-2)
Toluene (CAS 108-88-3)
Xylene (CAS 1330-20-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 14-December-2020

Revision date -

Version # 01

HMIS® ratings Health: 2*
Flammability: 2
Physical hazard: 0

NFPA ratings

Disclaimer

NOTICE: The information contained in this document is based on data considered to be accurate as of the preparation date of this Safety Data Sheet (SDS) and was prepared pursuant to applicable Government regulation(s). This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the above data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided about any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. Purchasers and users of the product are responsible for determining that this product is suitable for the intended use and application. No responsibility can be assumed by vendor for any damage or injury resulting from failure to adhere to recommended uses, or from any hazards inherent to the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product should explicitly advise their employees, agents, contractors and customers who will use the product of this SDS.

Final Charge Global 50/50 Prediluted Antifreeze & Coolant

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : Final Charge Global 50/50 Prediluted Antifreeze & Coolant

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Heavy Duty Engine Coolant

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
4065 Commercial Ave.
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : (800) 424-9300; (703) 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute Tox. 4 (Oral)	H302
Repr. 2	H361
STOT RE 2	H373

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS07 GHS08

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) :
H302 - Harmful if swallowed
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs (kidneys) through prolonged or repeated exposure (oral)

Precautionary statements (GHS-US) :
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe mist, spray, vapors
P264 - Wash affected areas thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P280 - Wear personal protective equipment as required
P301+P310 - If swallowed: Immediately call doctor/physician or poison center
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention
P405 - Store locked up
P501 - Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% by wt	GHS-US classification
ethylene glycol	(CAS No) 107-21-1	<= 50	Acute Tox. 4 (Oral), H302
water	(CAS No) 7732-18-5	< 50	Not classified
diethylene glycol	(CAS No) 111-46-6	< 3	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
potassium p-tert-butylbenzoate	(CAS No) 16518-26-6	< 2	Repr. 2, H361
denatonium benzoate	(CAS No) 3734-33-6	30 - 50 ppm	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek immediate medical advice. Allow the victim to rest. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

First-aid measures after skin contact : Remove contaminated clothing. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Rinse immediately with plenty of water (for at least 15 minutes). Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label).

First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water for 15 minutes, lifting lower and upper lids. If eye irritation persists: Rinse immediately with plenty of water. Get medical advice/attention.

First-aid measures after ingestion : Obtain emergency medical attention. Rinse mouth. If the person is fully conscious, make him/her drink two glasses of water. Never give an unconscious person anything to drink. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whiskey. For children, give proportionally less liquor, according to weight.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Causes damage to organs (kidneys) (oral). Suspected of damaging fertility or the unborn child.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

4.3. Indication of any immediate medical attention and special treatment needed

A more effective intravenous antidote for physician uses is 4-methylpyrazaole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occured.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Carbon dioxide. Sand. Water fog. Fine water spray. Alcohol-resistant foam. Dry chemical powder.

Unsuitable extinguishing media : Do not use a heavy water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion prodcuts may include and are not limited to: Carbon monoxide. Carbon Dioxide.

Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

Special protective equipment for fire fighters : Wear positive pressure self-contained breathing apparatus (SCBA). Protective fire fighting clothing (includes fire-fighting helmet, coat, pants, boots and gloves).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Refer to section 8.2.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash affected areas thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use. Product may become solid at temperatures below -37 ºC (-34 ºF). Do not store near food, foodstuffs, drugs or potable water supplies. Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty.

Incompatible products : Keep away from strong acids, strong bases and oxidizing agents.

Incompatible materials : Sources of ignition.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethylene glycol (107-21-1)		
USA ACGIH	ACGIH Ceiling (mg/m³)	100.00 mg/m³
USA ACGIH	Remark (ACGIH)	Upper Respiratory Tract (URT) & Eye irritant

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gloves. Safety glasses.

Hand protection : Wear protective gloves.

Eye protection : Chemical goggles or safety glasses.

Respiratory protection : If exposed to levels above exposure limits wear appropriate respiratory protection.

Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color	:	Red
Odor	:	Mild
Odor threshold	:	No data available
pH	:	8.6
Relative evaporation rate (butylacetate=1)	:	Nil
Freezing point	:	-37 °C (-34 °F)
Boiling point	:	107 °C (224 °F)
Flash point	:	116 °C (241 °F) [100% Ethylene Glycol] *ASTM D56*
Auto-ignition temperature	:	400 °C (752 °F) [100% Ethylene Glycol] *Literature*
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	< 0.1 mm Hg @ 20 °C
Relative vapor density at 20 °C	:	No data available
Specific Gravity	:	1.04
Density	:	1.04 kg/l (8.7 lbs/gal)
Solubility	:	Water: Complete
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	Not applicable.
Oxidizing properties	:	Not applicable.
Explosive limits	:	Not applicable.

9.2. Other information

VOC content : 0.00

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from any flames or sparking source. Extremely high or low temperatures.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Fume. Alcohols. Aldehydes. Ethers.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

Final Charge Global 50/50 Prediluted Antifreeze & Coolant	
ATE US (oral)	943 mg/kg bodyweight

denatonium benzoate (3734-33-6)	
LD50 oral rat	584 mg/kg (Rat)
LD50 dermal rabbit	> 2,000 mg/kg (Rabbit)
ATE US (oral)	584 mg/kg bodyweight
ethylene glycol (107-21-1)	
LD50 oral rat	> 5,000 mg/kg (Rat)

denatonium benzoate (3734-33-6)	
ATE US (oral)	500 mg/kg bodyweight
diethylene glycol (111-46-6)	
LD50 oral rat	12,565 mg/kg (Rat)
LD50 dermal rabbit	11,890 mg/kg (Rabbit)
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	11,890 mg/kg bodyweight

Skin corrosion/irritation : Not classified
pH: 9

Serious eye damage/irritation : Not classified
pH: 9

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Aspiration hazard : Not classified

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met. Harmful if swallowed.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion : Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

SECTION 12: Ecological information

12.1. Toxicity

denatonium benzoate (3734-33-6)	
LC50 fish 1	> 1,000 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss)
EC50 Daphnia 1	13 mg/l (48 h; Daphnia magna)
ethylene glycol (107-21-1)	
LC50 fish 1	53,000 mg/l (96 h; Pimephales promelas; Static system)
EC50 Daphnia 1	> 10,000 mg/l (24 h; Daphnia magna)
LC50 fish 2	40,761 mg/l (96 h; Salmo gairdneri (Oncorhynchus mykiss); Static system)
Threshold limit algae 1	> 10,000 mg/l (168 h; Scenedesmus quadricauda)
Threshold limit algae 2	2,000 mg/l (192 h; Microcystis aeruginosa)
diethylene glycol (111-46-6)	
LC50 fish 1	> 5,000 ppm (24 h; Carassius auratus)
LC50 other aquatic organisms 1	1,174 mg/l (Xenopus laevis)
EC50 Daphnia 1	> 10,000 mg/l (24 h; Daphnia magna)
LC50 fish 2	61,072 ppm (168 h; Poecilia reticulata)
TLM fish 1	> 32,000 mg/l (96 h; Gambusia affinis)
TLM other aquatic organisms 1	> 1,000 ppm (96 h)
Threshold limit other aquatic organisms 1	1,174 mg/l (72 h; Xenopus laevis; Toxicity test)
Threshold limit other aquatic organisms 2	10,745 mg/l (16 h; Protozoa; Toxicity test)
Threshold limit algae 1	2,700 mg/l (168 h; Scenedesmus quadricauda)
Threshold limit algae 2	100 mg/l (Selenastrum capricornutum)

12.2. Persistence and degradability

denatonium benzoate (3734-33-6)	
Persistence and degradability	Biodegradability in water: no data available. No (test) data on mobility of the substance available.
ethylene glycol (107-21-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Not established.

denatonium benzoate (3734-33-6)	
Biochemical oxygen demand (BOD)	0.47 g O_2/g substance
Chemical oxygen demand (COD)	1.24 g O_2/g substance
ThOD	1.29 g O_2/g substance
BOD (% of ThOD)	0.36 % ThOD
diethylene glycol (111-46-6)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Photolysis in the air.
Biochemical oxygen demand (BOD)	0.02 g O_2/g substance
Chemical oxygen demand (COD)	1.51 g O_2/g substance
ThOD	1.51 g O_2/g substance
BOD (% of ThOD)	0.015 % ThOD

12.3. Bioaccumulative potential

denatonium benzoate (3734-33-6)	
Log Pow	1.78 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
ethylene glycol (107-21-1)	
BCF fish 1	10 (72 h; Leuciscus idus)
BCF other aquatic organisms 1	0.21 - 0.6 (Procambarus sp.; Chronic)
BCF other aquatic organisms 2	190 (24 h; Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500). Not established.
diethylene glycol (111-46-6)	
Log Pow	-1.98
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

ethylene glycol (107-21-1)	
Surface tension	0.048 N/m (20 °C / 68 °F)
diethylene glycol (111-46-6)	
Surface tension	0.0485 N/m

12.5. Other adverse effects

Effect on ozone layer : No known effect on the ozone layer

Effect on global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III

UN-No.(DOT) : 3082

DOT NA no. : UN3082

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s.

Department of Transportation (DOT) Hazard Classes : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Hazard labels (DOT)	:	9 - Class 9 (Miscellaneous dangerous materials)

DOT Symbols	:	G - Identifies PSN requiring a technical name
Packing group (DOT)	:	III - Minor Danger
DOT Packaging Exceptions (49 CFR 173.xxx)	:	155
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	203
DOT Packaging Bulk (49 CFR 173.xxx)	:	241
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	No limit
DOT Vessel Stowage Location	:	A - The material may be stowed ''on deck'' or ''under deck'' on a cargo vessel and on a passenger vessel.
Other information	:	Non Bulk: Not regulated by the US D.O.T. (in quantities under 5,000 lbs in any one inner package).

ADR

No additional information available

Transport by sea

UN-No. (IMDG)	:	Not regulated by IMDG (in quantities under 5,000 lbs in any one inner package)

Air transport

UN-No.(IATA)	:	Not regulated by IATA (in quantities under 5,000 lbs in any one inner package)

SECTION 15: Regulatory information

15.1. US Federal regulations

Final Charge Global 50/50 Prediluted Antifreeze & Coolant	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed

denatonium benzoate (3734-33-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

ethylene glycol (107-21-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Listed on United States SARA Section 313	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb(s)
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Ethylene glycol is subject to Tier 1 and/or Tier II annual inventory reporting.
SARA Section 313 - Emission Reporting	Ethylene glycol is subject to Form R Reporting requirements.

diethylene glycol (111-46-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Final Charge Global 50/50 Prediluted Antifreeze & Coolant	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

WHMIS Classification

Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

Final Charge Global 50/50 Prediluted Antifreeze & Coolant
DSL (Canada): The intentional ingredients of this product are listed ECL (South Korea): The intentional ingredients of this product are listed. EINECS (Europe): The intentional ingredients of this product are listed ENCS (Japan): The intentional ingredients of this product are listed

15.3. US State regulations

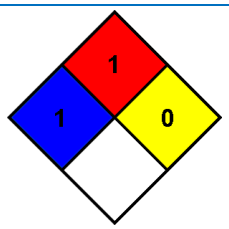
ethylene glycol (107-21-1)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure

NFPA health hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	: 1 - Must be preheated before ignition can occur.
NFPA reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health	: 2 Moderate Hazard - Temporary or minor injury may occur
Flammability	: 1 Slight Hazard
Physical	: 0 Minimal Hazard
Personal Protection	: B

SDS GHS US (GHS HazCom 2012) OWI

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Full Force Long Life 50/50 Prediluted Antifreeze and Coolant

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 01/01/2024

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : Full Force Long Life 50/50 Prediluted Antifreeze and Coolant

SDS ID : 115071

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Antifreeze & Coolant

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
3100 Sanders Road
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : 800 424 9300 (United States); 00 1 703 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Reproductive toxicity, Category 2	H361	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity — Repeated exposure, Category 2	H373	May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS07 GHS08

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : Harmful if swallowed.
Suspected of damaging fertility or the unborn child.
May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Precautionary statements (GHS-US) : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist, spray, vapors
Wash affected areas thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear personal protective equipment as required.
If swallowed: Immediately call doctor/physician or poison center
If swallowed: rinse mouth. Do NOT induce vomiting
If inhaled: Remove person to fresh air and keep comfortable for breathing
If exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents/container to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	% by wt	GHS-US classification
ethylene glycol (antifreezing agent)	(CAS-No.) 107-21-1	45 - 50	Acute Tox. 4 (Oral), H302
water (solvent0	(CAS-No.) 7732-18-5	45 - 50	Not classified
diethylene glycol (antifreezing agent)	(CAS-No.) 111-46-6	0.5 - 5	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
potassium 2-ethylhexanoate (corrsion inhibitor)	(CAS-No.) 3164-85-0	0 - 5	Repr. 2, H361
sodium 2-ethylhexanoate (corrsion inhibitor)	(CAS-No.) 19766-89-3	0 - 5	Repr. 2, H361
denatonium benzoate (embittering agent)	(CAS-No.) 3734-33-6	.003 - .005 [30 - 50 ppm]	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash with plenty of water. Remove contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Rinse immediately with plenty of water (for at least 15 minutes), Get medical advice/attention.

First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water for 15 minutes, lifting lower and upper lids. If eye irritation persists: Get medical advice and attention.

First-aid measures after ingestion : Obtain emergency medical attention. Rinse mouth. If the person is fully conscious, make him/her drink two glasses of water. Never give an unconscious person anything to drink. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whiskey. For children, give proportionally less liquor, according to weight.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Causes damage to organs (kidneys) Oral. Suspected of damaging fertility or the unborn child.

Symptoms/effects after skin contact : May cause moderate irritation.

Symptoms/effects after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

4.3. Indication of any immediate medical attention and special treatment needed

A more effective intravenous antidote for physician uses is 4-methylpyrazaole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occured.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry chemical. Foam. Sand. Water fog.

Unsuitable extinguishing media : Do not use a heavy water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Product is not flammable or combustible but may burn under fire conditions.

Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Refer to section 8.2.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Store away from other materials.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use. Product may become solid at temperatures below -37 °C (-34 °F). Do not store near food, foodstuffs, drugs or potable water supplies. Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty.

Incompatible products : Keep away from strong acids, strong bases and oxidizing agents.

Incompatible materials : Sources of ignition.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

denatonium benzoate (3734-33-6)
Not applicable

ethylene glycol (107-21-1)		
ACGIH	Local name	Ethylene glycol
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
ACGIH	ACGIH TWA (ppm)	25 ppm (Vapor fraction)

ethylene glycol (107-21-1)		
ACGIH	ACGIH STEL (mg/m³)	10 mg/m³ (Inhalable fraction, Aerosol only)
ACGIH	ACGIH STEL (ppm)	50 ppm (Vapor fraction)
ACGIH	Remark (ACGIH)	Upper respiratory tract & eye irritant
ACGIH	Regulatory reference	ACGIH 2018

diethylene glycol (111-46-6)
Not applicable

water (7732-18-5)
Not applicable

potassium 2-ethylhexanoate (3164-85-0)
Not applicable

sodium 2-ethylhexanoate (19766-89-3)
Not applicable

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Safety glasses.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

Respiratory protection not required in normal conditions. If exposed to levels above exposure limits wear appropriate respiratory protection.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Molecular mass	:	62.07 g/mol Ethylene Glycol
Color	:	Yellow
Odor	:	Mild
Odor threshold	:	No data available
pH	:	8 - 9
Relative evaporation rate (butylacetate=1)	:	Nil
Freezing point	:	-37 °C (-34 °F)
Boiling point	:	108.3 °C (226.9 °F)
Flash point	:	116 °C (241 °F) [100% Ethylene Glycol] *ASTM D56*
Auto-ignition temperature	:	400 °C (752 °F) [100% Ethylene Glycol] *Literature*

Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	< 0.1 @ 20 °C
Relative vapor density at 20 °C	:	No data available
Specific Gravity	:	1.06
Density	:	1.06 kg/l (8.84 lbs/gal)
Solubility	:	Water: Complete
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	Not applicable
Explosive properties	:	Not applicable.
Oxidizing properties	:	Not applicable.

9.2. Other information

VOC content : 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Extremely high or low temperatures. Keep away from any flames or sparking source.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

Alcohols. Aldehydes. Carbon dioxide. Carbon monoxide. Ethers. Fume.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

denatonium benzoate (3734-33-6)	
LD50 oral rat	584 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit, Literature study, Dermal)
ATE US (oral)	584 mg/kg bodyweight

ethylene glycol (107-21-1)	
LD50 oral rat	7712 mg/kg bodyweight (according to BASF-internal standards, Rat, Male / female, Experimental value, Aqueous solution, Oral, 7 day(s))
LC50 inhalation rat (mg/l)	> 2.5 mg/l (6 h, Rat, Male / female, Experimental value, Inhalation (aerosol))
ATE US (oral)	500 mg/kg bodyweight

diethylene glycol (111-46-6)	
LD50 oral rat	19600 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value, Oral)
LD50 dermal rabbit	11890 mg/kg (Rabbit, Dermal)
LC50 inhalation rat (mg/l)	> 4.6 mg/l/4h (Other, 4 h, Rat, Weight of evidence)
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	11890 mg/kg bodyweight

Skin corrosion/irritation : Not classified

pH: 8 - 9

Serious eye damage/irritation	:	Not classified pH: 8 - 9
Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Suspected of damaging fertility or the unborn child.
STOT-single exposure	:	Not classified
STOT-repeated exposure	:	May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).
Aspiration hazard	:	Not classified
Potential adverse human health effects and symptoms	:	Based on available data, the classification criteria are not met.
Symptoms/effects	:	Causes damage to organs (kidneys) Oral. Suspected of damaging fertility or the unborn child.
Symptoms/effects after skin contact	:	May cause moderate irritation.
Symptoms/effects after eye contact	:	Direct contact with the eyes is likely to be irritating.
Symptoms/effects after ingestion	:	Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

SECTION 12: Ecological information

12.1. Toxicity

denatonium benzoate (3734-33-6)	
LC50 fish 1	> 1,000.00 mg/l (96 h, Salmo gairdneri, Literature study)
EC50 Daphnia 1	13.00 mg/l (48 h, Daphnia magna, Literature study)

ethylene glycol (107-21-1)	
LC50 fish 1	40,761.00 mg/l (96 h, Salmo gairdneri, Static system)
EC50 Daphnia 1	> 10,000.00 mg/l (24 h, Daphnia magna)

diethylene glycol (111-46-6)	
LC50 fish 1	> 5,000.00 ppm (24 h, Carassius auratus)
EC50 Daphnia 1	> 10,000.00 mg/l (24 h, Daphnia magna)
LC50 fish 2	75,200.00 mg/l (Other, 96 h, Pimephales promelas, Flow-through system, Experimental value)
EC50 Daphnia 2	> 10,000.00 mg/l (DIN 38412-11, 24 h, Daphnia magna, Static system, Fresh water, Experimental value)

12.2. Persistence and degradability

denatonium benzoate (3734-33-6)	
Persistence and degradability	Biodegradability in water: no data available. No (test) data on mobility of the substance available.

ethylene glycol (107-21-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.47 g O_2/g substance
Chemical oxygen demand (COD)	1.24 g O_2/g substance
ThOD	1.29 g O_2/g substance
BOD (% of ThOD)	0.36

diethylene glycol (111-46-6)	
Persistence and degradability	Biodegradable in the soil. Biodegradable in water.
Biochemical oxygen demand (BOD)	0.02 g O_2/g substance
Chemical oxygen demand (COD)	1.51 g O_2/g substance
ThOD	1.51 g O_2/g substance
BOD (% of ThOD)	0.02

12.3. Bioaccumulative potential

denatonium benzoate (3734-33-6)	
Log Pow	1.78 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

ethylene glycol (107-21-1)	
BCF fish 1	10.00 (72 h, Leuciscus idus)
BCF other aquatic organisms 1	0.21 - 0.6 (Procambarus sp., Chronic)
BCF other aquatic organisms 2	190.00 (24 h, Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.

diethylene glycol (111-46-6)	
BCF fish 1	100.00 (Other, 3 day(s), Leuciscus melanotus, Static system, Fresh water, Experimental value)
Log Pow	-1.98 (Calculated, Other)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

denatonium benzoate (3734-33-6)	
Ecology - soil	No (test)data on mobility of the substance available.

ethylene glycol (107-21-1)	
Surface tension	48.00 mN/m (20 °C)
Ecology - soil	No (test)data on mobility of the substance available.

diethylene glycol (111-46-6)	
Surface tension	0.05 N/m
Log Koc	0.00 (log Koc, SRC PCKOCWIN v1.66, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

Effect on the ozone layer : No known effect on the ozone layer

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to an approved waste disposal plant.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Non Bulk (in quantities under 5,000 lbs in any one inner package):
Not regulated by the US DOT

Bulk (in quantities 5,000 lbs or over in any one inner package):

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s. (Ethylene Glycol), 9, III

UN-No.(DOT) : UN3082

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s.
Ethylene Glycol

Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Packing group (DOT) : III - Minor Danger

Hazard labels (DOT)	:	9 - Class 9 (Miscellaneous dangerous materials)

DOT Packaging Non Bulk (49 CFR 173.xxx)	:	203
DOT Packaging Bulk (49 CFR 173.xxx)	:	241
DOT Symbols	:	G - Identifies PSN requiring a technical name
DOT Packaging Exceptions (49 CFR 173.xxx)	:	155
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	No limit
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
Other information	:	No supplementary information available.

Transportation of Dangerous Goods

Refer to current TDG Canada for further Canadian regulations

Transport by sea

In accordance with IMDG / IMO

Proper Shipping Name (IMDG)	:	Not regulated by IMDG (in quantites under 5,000 lbs in any one inner package)

Air transport

In accordance with IATA / ICAO

Proper Shipping Name (IATA)	:	Not regulated by IATA (in quantites under 5,000 lbs in any one inner package)

SECTION 15: Regulatory information

15.1. US Federal regulations

Full Force Long Life 50/50 Prediluted Antifreeze and Coolant	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed

denatonium benzoate (3734-33-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

ethylene glycol (107-21-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
CERCLA RQ	5000 lb(s)
SARA Section 311/312 Hazard Classes	Refer to Section 2 for the OSHA hazard classification Ethylene glycol is subject to Tier I and/or Tier II annual inventory reporting.
SARA Section 313 - Emission Reporting	Ethylene glycol is subject to Form R Reporting requirements.

diethylene glycol (111-46-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

potassium 2-ethylhexanoate (3164-85-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

sodium 2-ethylhexanoate (19766-89-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Full Force Long Life 50/50 Prediluted Antifreeze and Coolant	
WHMIS Classification	This SDS has been prepared according to the criteria of the Hazardous Products Regulations (HPR) (WHMIS 2015) and the SDS contains all of the information required by the HPR. Applicable GHS information is listed in section 2.2 of this SDS.

sodium 2-ethylhexanoate (19766-89-3)
Listed on the Canadian DSL (Domestic Substances List)

15.3. US State regulations

⚠ **WARNING:** This product can expose you to ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

ethylene glycol (107-21-1)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
No	Yes	No	No		(ingested) 8,700 (oral) µg/day

ethylene glycol (107-21-1)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

diethylene glycol (111-46-6)
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

Revision date : 01/01/2024

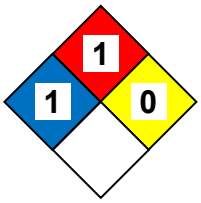
Full text of H-statements:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



SDS GHS US (GHS HazCom 2012) OWI 1

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Full Force Long Life Concentrate Antifreeze and Coolant

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 01/01/2024

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : Full Force Long Life Concentrate Antifreeze and Coolant

SDS ID : 115072

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Antifreeze & Coolant

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
3100 Sanders Road
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : 800 424 9300 (United States); 00 1 703 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Reproductive toxicity, Category 2	H361	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity — Repeated exposure, Category 2	H373	May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS07 GHS08

Signal word (GHS-US) : Warning

Hazard statements (GHS-US) : Harmful if swallowed.
Suspected of damaging fertility or the unborn child.
May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).

Precautionary statements (GHS-US) : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe mist, spray, vapors
Wash affected areas thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear personal protective equipment as required.
If swallowed: Immediately call doctor/physician or poison center
If swallowed: rinse mouth. Do NOT induce vomiting
If inhaled: Remove person to fresh air and keep comfortable for breathing
If exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents/container to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	% by wt	GHS-US classification
ethylene glycol (antifreezing agent)	(CAS-No.) 107-21-1	90 - 97	Acute Tox. 4 (Oral), H302
diethylene glycol (antifreezing agent)	(CAS-No.) 111-46-6	0.5 - 5	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
water (solvent0	(CAS-No.) 7732-18-5	1 - 5	Not classified
potassium 2-ethylhexanoate (corrsion inhibitor)	(CAS-No.) 3164-85-0	0 - 5	Repr. 2, H361
sodium 2-ethylhexanoate (corrsion inhibitor)	(CAS-No.) 19766-89-3	0 - 5	Repr. 2, H361
denatonium benzoate (embittering agent)	(CAS-No.) 3734-33-6	0.003 - 0.005 [30 - 50 ppm]	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash skin with plenty of water. Remove contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Rinse immediately with plenty of water (for at least 15 minutes), Get medical advice/attention.

First-aid measures after eye contact : Remove contact lenses, if present and easy to do. Continue rinsing. Rinse immediately with plenty of water for 15 minutes, lifting lower and upper lids. If eye irritation persists: Get medical advice and attention.

First-aid measures after ingestion : Obtain emergency medical attention. Rinse mouth. If the person is fully conscious, make him/her drink two glasses of water. Never give an unconscious person anything to drink. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell. If medical advice is delayed, and if the person has swallowed a moderate volume of material (a few ounces), then give three to four ounces of hard liquor, such as whiskey. For children, give proportionally less liquor, according to weight.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Causes damage to organs (kidneys) Oral. Suspected of damaging fertility or the unborn child.

Symptoms/effects after skin contact : May cause moderate irritation.

Symptoms/effects after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/effects after ingestion : Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

4.3. Indication of any immediate medical attention and special treatment needed

A more effective intravenous antidote for physician uses is 4-methylpyrazaole, a potent inhibitor of alcohol dehydrogenases, which effectively blocks the formation of toxic metabolites of ethylene glycol. It has been used to decrease the metabolic consequences of ethylene glycol poisoning before metabolic acidosis coma, seizures, and renal failure have occured.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry chemical. Foam. Sand. Water fog.

Unsuitable extinguishing media : Do not use a heavy water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Product is not flammable or combustible but may burn under fire conditions.

Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Use personal protective equipment as required.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Store away from other materials.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources. Keep container closed when not in use. Product may become solid at temperatures below -18 ºC (0 ºF). Do not store near food, foodstuffs, drugs or potable water supplies. Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty.

Incompatible products : Keep away from strong acids, strong bases and oxidizing agents.

Incompatible materials : Sources of ignition.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

denatonium benzoate (3734-33-6)
Not applicable

ethylene glycol (107-21-1)		
ACGIH	Local name	Ethylene glycol
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
ACGIH	ACGIH TWA (ppm)	25 ppm (Vapor fraction)

ethylene glycol (107-21-1)		
ACGIH	ACGIH STEL (mg/m³)	10 mg/m³ (Inhalable fraction, Aerosol only)
ACGIH	ACGIH STEL (ppm)	50 ppm (Vapor fraction)
ACGIH	Remark (ACGIH)	Upper respiratory tract & eye irritant
ACGIH	Regulatory reference	ACGIH 2018

diethylene glycol (111-46-6)
Not applicable

water (7732-18-5)
Not applicable

potassium 2-ethylhexanoate (3164-85-0)
Not applicable

sodium 2-ethylhexanoate (19766-89-3)
Not applicable

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Safety glasses.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

Respiratory protection not required in normal conditions. If exposed to levels above exposure limits wear appropriate respiratory protection.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Molecular mass	:	62.07 g/mol Ethylene Glycol
Color	:	Yellow
Odor	:	Mild
Odor threshold	:	No data available
pH 50% water solution	:	8
Relative evaporation rate (butylacetate=1)	:	Nil
Freezing point	:	-18 °C (0 ºF)
Boiling point	:	158 °C (317 ºF)
Flash point	:	116 °C (241 ºF) [100% Ethylene Glycol] *ASTM D56*
Auto-ignition temperature	:	400 °C (752 ºF) [100% Ethylene Glycol] *Literature*

Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	< 0.1 @ 20 °C
Relative vapor density at 20 °C	:	No data available
Specific Gravity	:	1.12
Density	:	1.12 kg/l (9.34 lbs/gal)
Solubility	:	Water: Complete
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	3.2 - 15.3 vol %
Explosive properties	:	Not applicable.
Oxidizing properties	:	Not applicable.

9.2. Other information

VOC content : 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Extremely high or low temperatures. Keep away from any flames or sparking source.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

Alcohols. Aldehydes. Carbon dioxide. Carbon monoxide. Ethers. Fume.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

denatonium benzoate (3734-33-6)	
LD50 oral rat	584 mg/kg (Rat, Literature study, Oral)
LD50 dermal rabbit	> 2000 mg/kg (Rabbit, Literature study, Dermal)
ATE US (oral)	584 mg/kg bodyweight

ethylene glycol (107-21-1)	
LD50 oral rat	7712 mg/kg bodyweight (according to BASF-internal standards, Rat, Male / female, Experimental value, Aqueous solution, Oral, 7 day(s))
LC50 inhalation rat (mg/l)	> 2.5 mg/l (6 h, Rat, Male / female, Experimental value, Inhalation (aerosol))
ATE US (oral)	500 mg/kg bodyweight

diethylene glycol (111-46-6)	
LD50 oral rat	19600 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male, Experimental value, Oral)
LD50 dermal rabbit	11890 mg/kg (Rabbit, Dermal)
LC50 inhalation rat (mg/l)	> 4.6 mg/l/4h (Other, 4 h, Rat, Weight of evidence)
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	11890 mg/kg bodyweight

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Suspected of damaging fertility or the unborn child.
STOT-single exposure	:	Not classified
STOT-repeated exposure	:	May cause damage to organs (kidneys) through prolonged or repeated exposure (oral).
Aspiration hazard	:	Not classified
Potential adverse human health effects and symptoms	:	Based on available data, the classification criteria are not met.
Symptoms/effects	:	Causes damage to organs (kidneys) Oral. Suspected of damaging fertility or the unborn child.
Symptoms/effects after skin contact	:	May cause moderate irritation.
Symptoms/effects after eye contact	:	Direct contact with the eyes is likely to be irritating.
Symptoms/effects after ingestion	:	Swallowing a small quantity of this material will result in serious health hazard. The lethal dose in humans is estimated to be 100 mL (3 oz).

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No additional information available.

denatonium benzoate (3734-33-6)	
LC50 fish 1	> 1,000.00 mg/l (96 h, Salmo gairdneri, Literature study)
EC50 Daphnia 1	13.00 mg/l (48 h, Daphnia magna, Literature study)

ethylene glycol (107-21-1)	
LC50 fish 1	40,761.00 mg/l (96 h, Salmo gairdneri, Static system)
EC50 Daphnia 1	> 10,000.00 mg/l (24 h, Daphnia magna)

diethylene glycol (111-46-6)	
LC50 fish 1	> 5,000.00 ppm (24 h, Carassius auratus)
EC50 Daphnia 1	> 10,000.00 mg/l (24 h, Daphnia magna)
LC50 fish 2	75,200.00 mg/l (Other, 96 h, Pimephales promelas, Flow-through system, Experimental value)
EC50 Daphnia 2	> 10,000.00 mg/l (DIN 38412-11, 24 h, Daphnia magna, Static system, Fresh water, Experimental value)

12.2. Persistence and degradability

denatonium benzoate (3734-33-6)	
Persistence and degradability	Biodegradability in water: no data available. No (test) data on mobility of the substance available.

ethylene glycol (107-21-1)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.47 g O_2/g substance
Chemical oxygen demand (COD)	1.24 g O_2/g substance
ThOD	1.29 g O_2/g substance
BOD (% of ThOD)	0.36

diethylene glycol (111-46-6)	
Persistence and degradability	Biodegradable in the soil. Biodegradable in water.
Biochemical oxygen demand (BOD)	0.02 g O_2/g substance
Chemical oxygen demand (COD)	1.51 g O_2/g substance
ThOD	1.51 g O_2/g substance
BOD (% of ThOD)	0.02

12.3. Bioaccumulative potential

denatonium benzoate (3734-33-6)	
Log Pow	1.78 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

ethylene glycol (107-21-1)	
BCF fish 1	10.00 (72 h, Leuciscus idus)
BCF other aquatic organisms 1	0.21 - 0.6 (Procambarus sp., Chronic)
BCF other aquatic organisms 2	190.00 (24 h, Algae)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Not bioaccumulative.

diethylene glycol (111-46-6)	
BCF fish 1	100.00 (Other, 3 day(s), Leuciscus melanotus, Static system, Fresh water, Experimental value)
Log Pow	-1.98 (Calculated, Other)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

denatonium benzoate (3734-33-6)	
Ecology - soil	No (test)data on mobility of the substance available.

ethylene glycol (107-21-1)	
Surface tension	48.00 mN/m (20 °C)
Ecology - soil	No (test)data on mobility of the substance available.

diethylene glycol (111-46-6)	
Surface tension	0.05 N/m
Log Koc	0.00 (log Koc, SRC PCKOCWIN v1.66, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

Effect on the ozone layer : No known effect on the ozone layer

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Non Bulk (in quantities under 5,000 lbs in any one inner package):
Not regulated by the US DOT

Bulk (in quantities 5,000 lbs or over in any one inner package):

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s. (Ethylene Glycol), 9, III

UN-No.(DOT) : UN3082

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s.
Ethylene Glycol

Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Packing group (DOT) : III - Minor Danger

Hazard labels (DOT)	:	9 - Class 9 (Miscellaneous dangerous materials)

DOT Packaging Non Bulk (49 CFR 173.xxx)	:	203
DOT Packaging Bulk (49 CFR 173.xxx)	:	241
DOT Symbols	:	G - Identifies PSN requiring a technical name
DOT Packaging Exceptions (49 CFR 173.xxx)	:	155
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	No limit
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
Other information	:	No supplementary information available.

Transportation of Dangerous Goods

Refer to current TDG Canada for further Canadian regulations

Transport by sea

In accordance with IMDG / IMO

Proper Shipping Name (IMDG)	:	Not regulated by IMDG (in quantites under 5,000 lbs in any one inner package)

Air transport

In accordance with IATA / ICAO

Proper Shipping Name (IATA)	:	Not regulated by IATA (in quantites under 5,000 lbs in any one inner package)

SECTION 15: Regulatory information

15.1. US Federal regulations

Full Force Long Life Concentrate Antifreeze and Coolant	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed

denatonium benzoate (3734-33-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

ethylene glycol (107-21-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
EPA TSCA Regulatory Flag	T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.
CERCLA RQ	5000 lb(s)
SARA Section 311/312 Hazard Classes	Refer to Section 2 for the OSHA hazard classification Ethylene glycol is subject to Tier I and/or Tier II annual inventory reporting.
SARA Section 313 - Emission Reporting	Ethylene glycol is subject to Form R Reporting requirements.

diethylene glycol (111-46-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

potassium 2-ethylhexanoate (3164-85-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

sodium 2-ethylhexanoate (19766-89-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Full Force Long Life Concentrate Antifreeze and Coolant	
WHMIS Classification	This SDS has been prepared according to the criteria of the Hazardous Products Regulations (HPR) (WHMIS 2015) and the SDS contains all of the information required by the HPR. Applicable GHS information is listed in section 2.2 of this SDS.

sodium 2-ethylhexanoate (19766-89-3)
Listed on the Canadian DSL (Domestic Substances List)

15.3. US State regulations

⚠ WARNING: This product can expose you to ethylene glycol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

ethylene glycol (107-21-1)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
No	Yes	No	No		(ingested) 8,700 (oral) µg/day

ethylene glycol (107-21-1)
U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

diethylene glycol (111-46-6)
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

Revision date : 01/01/2024

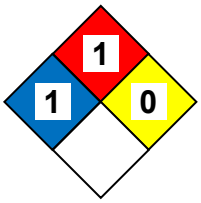
Full text of H-statements:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



SDS GHS US (GHS HazCom 2012) OWI 1

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

SAFETY DATA SHEET

1. Identification

Product identifier **Motor Medic Air Brake System Anti-Freeze & Rust Guard**

Other means of identification

SDS number M2832

Part No. M2832, M2834

Tariff code 3820.00.0000

Recommended use Air Brake Anti-Freeze

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name RSC Chemical Solutions

Address 600 Radiator Road
Indian Trail, NC 28079
United States

Telephone Customer Service: (704) 821-7643
Technical: (704) 684-1811

Website www.rscbrands.com

E-mail sds@rscbrands.com

Emergency phone number Emergency Telephone: (303) 623-5716
Emergency Contact: RMPDC (877-740-5015)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, oral	Category 3
	Acute toxicity, dermal	Category 3
	Acute toxicity, inhalation	Category 3
	Serious eye damage/eye irritation	Category 2A
	Reproductive toxicity	Category 2
	Specific target organ toxicity, single exposure	Category 1
	Specific target organ toxicity, repeated exposure	Category 1

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Highly flammable liquid and vapor. Toxic if swallowed. Toxic in contact with skin. Causes serious eye irritation. Toxic if inhaled. Suspected of damaging fertility or the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response	If swallowed: Immediately call a poison center/doctor. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor. Rinse mouth. If eye irritation persists: Get medical advice/attention. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate media to extinguish.
Storage	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.
Supplemental information	0.11% of the mixture consists of component(s) of unknown acute oral toxicity. 0.4% of the mixture consists of component(s) of unknown acute dermal toxicity. 0.11% of the mixture consists of component(s) of unknown acute inhalation toxicity.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
METHANOL		67-56-1	90 - 100
Other components below reportable levels			< 1

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Call a POISON CENTER or doctor/physician.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical advice/attention if you feel unwell. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Most important symptoms/effects, acute and delayed	Dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off immediately all contaminated clothing. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Water fog. Carbon dioxide (CO2). Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static electricity accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Material will float and may ignite on surface of water. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Transfer by mechanical means such as vacuum truck to a salvage tank or other suitable container for recovery or safe disposal. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Explosion-proof general and local exhaust ventilation. Minimize fire risks from flammable and combustible materials (including combustible dust and static accumulating liquids) or dangerous reactions with incompatible materials. Handling operations that can promote accumulation of static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices. For additional information on equipment bonding and grounding, refer to the Canadian Electrical Code in Canada, (CSA C22.1), or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising out of Static, Lightning, and Stray Currents" or National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity" or National Fire Protection Association (NFPA) 70, "National Electrical Code".

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep out of the reach of children. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
METHANOL (CAS 67-56-1)	PEL	260 mg/m3 200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
METHANOL (CAS 67-56-1)	STEL	250 ppm
	TWA	200 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
METHANOL (CAS 67-56-1)	STEL	325 mg/m3 250 ppm
	TWA	260 mg/m3 200 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
METHANOL (CAS 67-56-1)	15 mg/l	Methanol	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

METHANOL (CAS 67-56-1) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

METHANOL (CAS 67-56-1) Skin designation applies.

US - Tennessee OELs: Skin designation

METHANOL (CAS 67-56-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

METHANOL (CAS 67-56-1) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

METHANOL (CAS 67-56-1) Can be absorbed through the skin.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Individual protection measures, such as personal protective equipment

Eye/face protection wear safety glasses with side shields (or goggles)

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection Chemical respirator with organic vapor cartridge and full facepiece if threshold limits are exceeded.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Clear.
Physical state	Liquid.
Form	Liquid.
Color	Blue
Odor	Alcohol ammonia
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	-144.04 °F (-97.8 °C) estimated
Initial boiling point and boiling range	148.46 °F (64.7 °C) estimated
Flash point	54.0 °F (12.2 °C) Tag Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	7.3 % estimated
Flammability limit - upper (%)	36 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	169.3 hPa estimated
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	464 °F (240 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	6.59 lbs/gal
Explosive properties	Not explosive.
Flammability class	Flammable IB estimated
Oxidizing properties	Not oxidizing.
Percent volatile	99.6 % estimated
Specific gravity	0.79
VOC (Weight %)	99.6 % estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Toxic if inhaled. May cause damage to organs by inhalation. May cause damage to organs through prolonged or repeated exposure by inhalation.
Skin contact	Toxic in contact with skin.
Eye contact	Causes serious eye irritation.
Ingestion	Toxic if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Headache. Dizziness. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Information on toxicological effects

Acute toxicity Toxic if inhaled. Toxic in contact with skin. Toxic if swallowed.

Components	Species	Test Results
METHANOL (CAS 67-56-1)		
Acute		
Dermal		
LD50	Rabbit	15800 mg/kg
Inhalation		
LC50	Cat	85.41 mg/l, 4.5 Hours
		43.68 mg/l, 6 Hours
	Rat	64000 ppm, 4 Hours
		87.5 mg/l, 6 Hours
Oral		
LD50	Dog	8000 mg/kg
	Monkey	2 g/kg
	Mouse	7300 mg/kg
	Rabbit	14.4 g/kg
	Rat	5628 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure	Causes damage to organs.
Specific target organ toxicity - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Causes damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components		Species	Test Results
METHANOL (CAS 67-56-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	> 10000 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)
METHANOL -0.77

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number Not available.
UN proper shipping name Consumer Commodity
Transport hazard class(es)
Class ORM-D
Subsidiary risk -
Packing group Not applicable.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

UN number UN1230
UN proper shipping name Methanol
Transport hazard class(es)
Class 3
Subsidiary risk 6.1
Packing group Not applicable.
Environmental hazards No.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Other information
Passenger and cargo aircraft Forbidden.
Cargo aircraft only Forbidden.

IMDG

UN number UN1230
UN proper shipping name METHANOL SOLUTION (METHANOL)
Transport hazard class(es)
Class 3

Subsidiary risk	6.1(PGI, II)
Packing group	II
Environmental hazards	
Marine pollutant	No.
EmS	F-E, S-D
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

IATA; IMDG

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

METHANOL (CAS 67-56-1) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
METHANOL	67-56-1	90 - 100

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

METHANOL (CAS 67-56-1)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

METHANOL (CAS 67-56-1)

US. Massachusetts RTK - Substance List

METHANOL (CAS 67-56-1)

US. New Jersey Worker and Community Right-to-Know Act

METHANOL (CAS 67-56-1)

US. Pennsylvania Worker and Community Right-to-Know Law

METHANOL (CAS 67-56-1)

US. Rhode Island RTK

METHANOL (CAS 67-56-1)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

METHANOL (CAS 67-56-1) Listed: March 16, 2012

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-06-2015

Revision date 01-19-2016

Version # 02

HMIS® ratings Health: 4*
Flammability: 3
Physical hazard: 0

NFPA ratings Health: 4
Flammability: 3
Instability: 0

NFPA ratings

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision Information	Exposure controls/personal protection: Eye/face protection Exposure controls/personal protection: Respiratory protection Physical & Chemical Properties: Multiple Properties Regulatory Information: TSCA 12b Exported Products Regulatory information: US federal regulations HazReg Data: International Inventories

DRUMMOND™
A LAWSON BRAND

Safety Data Sheet

Issue date 22-May-2018 **Revision date** 18-May-2018 **Revision Number** 1

1. IDENTIFICATION

Product identification

Product identifier	Drummond™ Road Runner Asphalt And Tar Remover
Other means of identification	DL1321 05
Recommended use	Cleaner, Solvent
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Drummond™, A Lawson Brand
Lawson Products, Inc.
8870 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable liquids	Category 4

Symbol

Signal word DANGER

Hazard statements

H227 - Combustible liquid
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer

Precautionary statements

General
P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash hands thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing and eye/face protection

Response

General
P312 - Call a POISON CENTER or doctor if you feel unwell
P321 - Specific treatment (see supplemental first aid instructions on this label)
P308 + P313 - IF exposed or concerned: Get medical advice/attention

Skin
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Inhalation
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell

Ingestion
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting

Fire
P370 + P378 - In case of fire: Use appropriate method to extinguish

Storage
P403 + P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up

Disposal
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)
None known.

Physical Hazards Not Otherwise Classified (PHNOC)
None known.

Unknown acute toxicity
Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition
Mixture.

Chemical name	CAS-No	Weight %
Isopar M Fluid	64742-47-8	50-75
Naphtha (petroleum), heavy aromatic	64742-94-5	25-50
Naphthalene	91-20-3	2.5-10
Nonionic Surfactant	127087-87-0	1-2.5
Ethylene oxide	75-21-8	<1
1,2,4 Trimethyl Benzene	95-63-6	<1

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation Rescuers should put on appropriate protective gear. Remove from exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep warm and quiet. Get medical attention immediately. Keep head below hips to prevent aspiration into the lungs.

Ingestion Wash out mouth with water. Do NOT induce vomiting. Do not give liquids. Call a physician immediately.

Skin contact Remove contaminated clothing and footwear. Wash off immediately with soap and plenty of water. Get medical attention. Wash clothing separately and clean shoes before reuse.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical attention IMMEDIATELY. Remove contact lenses.

Most important symptoms (acute) Not available.

Most important symptoms (over-exposure) Not available.

Indication of any immediate medical attention and special treatment needed Not available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Dry Chemical, Carbon Dioxide, Foam or Water Fog.

Unsuitable extinguishing media Avoid directing water stream directly into flame; it may cause frothing with subsequent spread of flame.

Specific hazards Combustible liquid. Vapors or dust may cause flash fire or explosion. Vapors can travel to a source of ignition and flash back. Empty containers contain residue and/or vapors. Do not weld, cut, pressurize, braze, solder, drill, grind, or expose such containers to heat, sparks, flame, static electricity, or other sources of ignition. They may explode and cause injury or death. Do Not reuse empty containers without commercial cleaning or reconditioning.

Special protective equipment for fire-fighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Avoid directing water stream directly into flame; it may cause frothing with subsequent spread of flame. Cool drums with water spray. Use water spray to knock down vapors. Water spray and foam must be applied carefully to avoid frothing. Water runoff can cause environmental damage. Dike and collect water used to fight fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear personal protective clothing and equipment, see section 8. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Prevent further leakage or spillage if safe to do so. Do not touch or walk through spilled material. Avoid run-off into storm sewers and ditches which lead to waterways. Ventilate the area. Keep people away from and upwind of spill/leak.

Methods and materials for containment and cleaning up

If leak or spill has not ignited, use water spray to disperse the vapors. Collect spillage. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Use clean non-sparking tools to collect absorbed material. Absorb with earth, sand, or another dry inert material.

7. HANDLING AND STORAGE

Precautions for safe handling

Use only in a well ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Use spark-proof tools and explosion proof equipment. Ground and bond containers when transferring material. Use only non-sparking tools. Do not load into compartments adjacent to heated cargo. Always open containers slowly to allow any excess pressure to vent. Follow label cautions even after the container is empty since empty containers could retain product residues.

Conditions for safe storage, including any incompatibilities

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Containers can build up pressure if exposed to heat (fire). Keep containers tightly closed in a cool, well-ventilated place. Keep container closed when not in use. Protect from sunlight. Store away from direct sunlight. Static discharge, materials can accumulate static charges which can cause an incendiary electrical discharge. Material is a static accumulator which has the potential of forming ignitable vapor-air mixtures in storage tanks.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Isopar M Fluid	-	-	-
Naphtha (petroleum), heavy aromatic	-	-	-
Naphthalene	10 ppm TWA 50 mg/m³ TWA	10 ppm TWA Skin	15 ppm STEL 75 mg/m³ STEL 10 ppm TWA 50 mg/m³ TWA
Nonionic Surfactant	-	-	-
Ethylene oxide	5 ppm STEL (see 29 CFR 1910.1047) 1 ppm TWA	1 ppm TWA	0.1 ppm TWA 0.18 mg/m³ TWA
1,2,4 Trimethyl Benzene	-	25 ppm TWA	25 ppm TWA 125 mg/m³ TWA

Appropriate engineering controls

Ensure adequate ventilation. A safety shower and eye wash station should be available for emergency use.

Individual protection measures, such as personal protective equipment

Eye protection

ANSI approved safety glasses or splash goggles with face shield are recommended.

Skin and body protection

Wear impervious gloves to prevent contact with the skin. Wear protective gear as needed: apron, suit, boots. Where contact is likely, wear chemical resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield.

Respiratory protection Use NIOSH-approved air-purifying respirator with organic vapor cartridge or canister, as appropriate. If the exposure limits are exceeded, a NIOSH/MSHA approved respirator is recommended.

Hygiene measures When using, do not eat, drink or smoke. Avoid breathing vapors or mists. Remove and wash contaminated clothing before re-use. Wash hands after handling the product. Wash hands before eating or using the washroom.

Canadian Province Occupational Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick - OEL	Newfoundland & Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
Isopar M Fluid	-	200 mg/m³ TWA	-	-	-	-	-	-	-	-
Naphtha (petroleum), heavy aromatic	-	-	-	-	-	-	-	-	-	-
Naphthalene	15 ppm STEL 79 mg/m³ STEL 10 ppm TWA 52 mg/m³ TWA	15 ppm STEL 10 ppm TWA	10 ppm TWA	15 ppm STEL 79 mg/m³ STEL 10 ppm TWA 52 mg/m³ TWA	10 ppm TWA	10 ppm TWA	10 ppm TWA	10 ppm TWA	15 ppm STEV 79 mg/m³ STEV 10 ppm TWAEV 52 mg/m³ TWAEV	15 ppm STEL 0.6 mg/m³ STEL 10 ppm TWA 0.2 mg/m³ TWA
Nonionic Surfactant	-	-	-	-	-	-	-	-	-	-
Ethylene oxide	1 ppm TWA 1.8 mg/m³ TWA	1 ppm STEL 0.1 ppm TWA	1 ppm TWA	1 ppm TWA 1.8 mg/m³ TWA	1 ppm TWA	1 ppm TWA	10 ppm STEL 18 mg/m³ STEL 1 ppm TWA 1.8 mg/m³ TWA 1 ppm TWA	1 ppm TWA	1 ppm TWAEV 1.8 mg/m³ TWAEV	2 ppm STEL 1 ppm TWA
1,2,4 Trimethyl Benzene	25 ppm TWA 123 mg/m³ TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA 123 mg/m³ TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWAEV 123 mg/m³ TWAEV	30 ppm STEL 25 ppm TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Liquid

Color Clear

Odor Slight Hydrocarbon

Odor threshold Not available

pH Not available

Melting point/range °C Not available

Melting point/range °F Not available

Boiling point/range °C 183 - 218 °C

Boiling point/range °F	363 - 426 °F
Flash point °C	62.7
Flash point °F	145
Flash point method used	Not available
Evaporation rate	Not available
Flammability (Solid, Gas)	Not available
Lower explosion limit	0.8 %
Upper explosion limit	5.7 %
Vapor pressure	Not available
Vapor density	Not available
Relative density	0.838
Solubility	insoluble
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	Not available.
Chemical stability	Not available.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Avoid impact, friction. Avoid heat, sparks, and other sources of ignition.
Incompatible materials	Keep separate from alkalis. Incompatible with oxidizing agents. Incompatible with acids.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Toxic gases or fumes are given off during burning or thermal decomposition. During combustion carbon monoxide and/or carbon dioxide may be formed. Upon decomposition, this product emits:. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes	Dermal. Inhalation. Ingestion. Eyes.

of exposure

Symptoms

May cause respiratory irritation. Vapors can cause irritation of the respiratory tract. High concentrations can cause headache, nausea, weakness, lightheadedness, and stupor (CNS depression). May cause central nervous system depression. Adverse symptoms may include the following:. Nausea. Vomiting. Headache. Drowsiness. Fatigue. Dizziness/vertigo. Unconsciousness. May cause delayed lung injury. Causes skin irritation. Skin contact may cause reddening, itching and swelling. Prolonged skin contact results include: chemical burns, discomfort or pain, severe excess redness, swelling, tissue destruction, fissures, ulceration, possibly bleeding into the injured area. Effects may cause scar formation. Prolonged or widespread contact may result in absorption of potentially harmful amounts of material. May cause damage to kidneys. Harmful in contact with skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash). Personnel with pre-existing skin disorders should avoid contact with this product. Causes eye irritation. May cause tearing of the eye, redness and discomfort. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach. Ingestion may cause nausea or vomiting.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Suspected of causing cancer. Risk of cancer depends on duration and level of exposure. This product contains naphthalene. A National Toxicology Program (NTP) draft report states that lifetime inhalation exposure to naphthalene resulted in increases in tumors of the nose in rats. In a previous NTP study, lifetime inhalation exposure to naphthalene increased lung tumors in female mice. The relevance of the rodent findings to humans is questionable. Overexposure may cause nervous system damage. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Significant exposure to this chemical may adversely affect people with chronic disease of the respiratory system, skin, and /or eyes.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Isopar M Fluid	> 5.2 mg/L (Rat) 4 h	> 2000 mg/kg (Rabbit)	> 5000 mg/kg (Rat)
Naphtha (petroleum), heavy aromatic	> 590 mg/m³ (Rat) 4 h	> 2 mL/kg (Rabbit)	> 5000 mg/kg (Rat)
Naphthalene	> 340 mg/m³ (Rat) 1 h	= 1120 mg/kg (Rabbit) > 20 g/kg (Rabbit)	= 1110 mg/kg (Rat) = 490 mg/kg (Rat)
Nonionic Surfactant	-	= 1780 µL/kg (Rabbit) = 2 mL/kg (Rabbit)	= 1310 mg/kg (Rat) = 2590 mg/kg (Rat)
Ethylene oxide	= 800 ppm (Rat) 4 h	-	= 72 mg/kg (Rat)
1,2,4 Trimethyl Benzene	= 18 g/m³ (Rat) 4 h	> 3160 mg/kg (Rabbit)	= 3280 mg/kg (Rat) = 8970 mg/kg (Rat)

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA RTK Carcinogens	NTP
Isopar M Fluid	-	-	-	-

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA RTK Carcinogens	NTP
Naphtha (petroleum), heavy aromatic	-	-	-	-
Naphthalene	A3	Group 2A Group 2B	Listed	Reasonably Anticipated
Nonionic Surfactant	-	-	-	-
Ethylene oxide	A2	Group 1 Group 2A	Listed	Known
1,2,4 Trimethyl Benzene	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Isopar M Fluid	-	-	-	-	-	-
Naphtha (petroleum), heavy aromatic	-	-	-	-	-	-
Naphthalene	-	IARC 2B	ACGIH A3	ACGIH A4	ACGIH A3	-
Nonionic Surfactant	-	-	-	-	-	-
Ethylene oxide	A2 - Suspected Human Carcinogen	ACGIH A2 IARC 1	ACGIH A2	ACGIH A2	ACGIH A2	C2 carcinogen
1,2,4 Trimethyl Benzene	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish
Isopar M Fluid	-	45: 96 h Pimephales promelas mg/L LC50 flow-through 2.2: 96 h Lepomis macrochirus mg/L LC50 static 2.4: 96 h Oncorhynchus mykiss mg/L LC50 static
Naphtha (petroleum), heavy aromatic	2.5: 72 h Skeletonema costatum mg/L EC50	1740: 96 h Lepomis macrochirus mg/L LC50 static 45: 96 h Pimephales promelas mg/L LC50 flow-through 41: 96 h Pimephales promelas mg/L LC50 19: 96 h Pimephales promelas mg/L LC50 static 2.34: 96 h Oncorhynchus mykiss mg/L LC50
Naphthalene	0.4: 72 h Skeletonema costatum mg/L EC50	1.6: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 5.74 - 6.44: 96 h Pimephales promelas mg/L LC50 flow-through 1.99: 96 h Pimephales promelas mg/L LC50 static 31.0265: 96 h Lepomis macrochirus mg/L LC50 static 0.91 - 2.82: 96 h Oncorhynchus mykiss mg/L LC50 static
Nonionic Surfactant	-	-
Ethylene oxide	-	73 - 96: 96 h Pimephales promelas mg/L LC50
1,2,4 Trimethyl Benzene	-	7.19 - 8.28: 96 h Pimephales promelas mg/L LC50 flow-through 7.72: 96 h Pimephales promelas mg/L LC50 flow-through

Persistence and degradability Not available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)
Isopar M Fluid 64742-47-8	64742-47-8	-
Naphtha (petroleum), heavy aromatic 64742-94-5	64742-94-5	2.9 - 6.1
Naphthalene 91-20-3	91-20-3	3.6
Nonionic Surfactant 127087-87-0	127087-87-0	-
Ethylene oxide 75-21-8	75-21-8	-0.3 25 °C
1,2,4 Trimethyl Benzene 95-63-6	95-63-6	3.63

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations.

Contaminated packaging Dispose in accordance with local, state and federal regulations. Empty containers retain product residue and can be hazardous.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	NA1993
Proper shipping name	Combustible liquid, n.o.s. (naphthalene, d-limonene)
Hazard Class(es)	Combustible Liquid
Packing group	III

TDG

ID-No	UN1993
Proper shipping name	Flammable Liquid, n.o.s. (Naphthalene, D-limonene)
Hazard Class(es)	3
Packing group	III

IATA

ID-No	UN1993
Proper shipping name	Flammable Liquid, n.o.s. (Naphthalene, D-limonene)
Hazard Class(es)	3
Packing group	III

IMDG/IMO

ID-No	UN1993
Proper shipping name	Flammable Liquid, n.o.s. (Naphthalene, D-limonene)
Hazard Class(es)	3
Packing group	III
Marine pollutant	Yes

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Isopar M Fluid	64742-47-8	-	-	-
Naphtha (petroleum), heavy aromatic	64742-94-5	-	-	-
Naphthalene	91-20-3	X	-	X X
Nonionic Surfactant	127087-87-0	-	-	-
Ethylene oxide	75-21-8	-	-	-
1,2,4 Trimethyl Benzene	95-63-6	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Isopar M Fluid	64742-47-8	-	-	-
Naphtha (petroleum), heavy aromatic	64742-94-5	-	-	-
Naphthalene	91-20-3	X	X	X
Nonionic Surfactant	127087-87-0	-	-	-
Ethylene oxide	75-21-8	X	X	X
1,2,4 Trimethyl Benzene	95-63-6	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Isopar M Fluid	64742-47-8	-
Naphtha (petroleum), heavy aromatic	64742-94-5	-
Naphthalene	91-20-3	Carcinogen
Nonionic Surfactant	127087-87-0	-
Ethylene oxide	75-21-8	Carcinogen Developmental Female Reproductive Male Reproductive
1,2,4 Trimethyl Benzene	95-63-6	-

U.S. Federal Regulations

EPA pesticide registration number Not applicable

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Isopar M Fluid	64742-47-8	-	-
Naphtha (petroleum), heavy aromatic	64742-94-5	-	-
Naphthalene	91-20-3	100 lb 45.4 kg 1 lb 0.454 kg	0.1 %
Nonionic Surfactant	127087-87-0	-	-
Ethylene oxide	75-21-8	10 lb 4.54 kg	0.1 %
1,2,4 Trimethyl Benzene	95-63-6	-	1.0 %

US EPA SARA 311/312 hazardous categorization
Fire Hazard
Acute Health Hazard
Chronic Health Hazard

International inventories
All components of this product are listed on the following inventories: U.S.A. (TSCA 8(b)), Canada (DSL/NDSL) or are exempt.

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Isopar M Fluid	X	X	-
Naphtha (petroleum), heavy aromatic	X	X	-
Naphthalene	X	X	-
Nonionic Surfactant	X	X	X
Ethylene oxide	X	X	-
1,2,4 Trimethyl Benzene	X	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health Not available
Flammability Not available
Instability Not available

HMIS

Health 1
Flammability 2
Physical hazards 0
Personal protection X

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 22-May-2018

Revision date 18-May-2018

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER AND NAME: **MARC 93-OT ORANGE TERPENE TAR REMOVER & DEGREASER**

SDS DATE: 02/01/2019

SUPPLIER: Mid-American Research Chemical Corp. **ADDRESS:** P. O. Box 927 • Columbus, NE 68602-0927
PHONE: 402-564-7104 **FAX:** 402-563-1290
EMERGENCY PHONE: InfoTrac 1-800-535-5053
E-MAIL: marc@marc1.com **WEBSITE:** www.marc1.com

RECOMMENDED USE: Tar remover and degreaser.

PREPARED BY: MARC

SECTION 2: HAZARDS IDENTIFICATION

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

CLASSIFICATION: Flammable Liquid Category 3, Aspiration Hazard Category 1, Skin Irritation Category 2, Skin sensitization Category 1B, Environmental Hazard (Acute and Chronic) Category 1.

SIGNAL WORD AND HAZARD STATEMENTS - DANGER: Flammable liquid and vapor. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H400 Very toxic to aquatic life H410 Very toxic to aquatic life with long lasting effects. **Precautionary Statements—Prevention-** P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking. P240 Ground/bond container and receiving equipment. P241 Use rated explosion-proof electrical equipment. P242 Use only non-sparking tools. P243 Take precautionary measures against static discharge. P261 Avoid breathing dust/fumes/gas/mist/vapors/spray. P264 Wash skin thoroughly after handling. P272 Contaminated work clothing should not be allowed out of the workplace. P273 Avoid release into the environment. P280 Wear protective gloves/eye protection/face protection. **Response-**P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P303+P361+P353 IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water/shower. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. P370+P378 In case of fire: Use appropriate fire extinguishers for fire control. P391 Collect spillage. P331 Do NOT induce vomiting. P362 Take off contaminated clothing and wash before reuse. **Storage-**P405 Store locked up. **Disposal-**P501 Dispose on contents/container in accordance with local, regional national and/or international regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NO.	Weight-%
Orange Terpenes	5989-27-5	80-99
Nonyl Phenol Ethoxylate	9016-45-9	1-5

The exact percentages of composition has been withheld as a trade secret

SECTION 4: FIRST AID MEASURES

EYES: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician. Immediately flush with plenty of water. After initial flushing, remove contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Seek medical attention.

SKIN: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If skin irritation persists, call a physician. Immediate medical attention is not required.

INGESTION: **DO NOT** induce vomiting! Clean mouth with water and afterwards drink one glass of water or milk. Never give anything by mouth to an unconscious person. Do not leave victim unattended. Call a physician.

INHALATION: Move to fresh air in case of accidental inhalation of vapors or decomposition products. If not breathing, give artificial respiration. If symptoms persist, call a physician.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use: dry chemical . Carbon dioxide (CO2). Water spray (fog). Alcohol resistant foam.

UNSUITABLE EXTINGUISHING MEDIA: Caution- Use of water spray when fighting fire may be inefficient.

SPECIAL FIRE FIGHTING PROCEDURES/PROTECTION FOR FIREFIGHTERS : As in any fire, firefighters should wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

UNUSUAL FIRE AND EXPLOSION HAZARDS: In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. Thermal decomposition can lead to release of irritating and toxic gases and vapors. Keep product and empty container away from heat and sources of ignition. Risk of ignition.

HAZARDOUS DECOMPOSITION PRODUCTS: None under normal processing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES: Remove all sources of ignition. Evacuate personnel to safe areas. Ensure adequate ventilation, especially in confined areas. Keep people away from and upwind of spill/leak. Pay attention to flashback. Take precautionary measures against static discharges.

PROTECTIVE EQUIPMENT: Use personal protective devices as stated in Section 8.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANUP: Same as Emergency Procedures. Eliminate all sources of ignition.

ENVIRONMENTAL PRECAUTIONS: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system.

SECTION 7: HANDLING AND STORAGE

GENERAL HANDLING: Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded. Use with local exhaust ventilation. Use personal protective equipment as required (See Section 8). Do not breathe vapors. Keep away from hot surfaces. – No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).

OTHER PRECAUTIONS: KEEP OUT OF REACH OF CHILDREN!! CAREFULLY READ ENTIRE LABEL BEFORE USE!

STORAGE: Keep tightly closed in a dry, cool, well-ventilated place. Keep in properly labeled containers. Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat.

INCOMPATIBLE MATERIALS: None known based on information supplied.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES: This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

ENGINEERING CONTROLS/ VENTILATION: Use in well ventilated area. Keep away from sparks and flames.

RESPIRATORY PROTECTION: No protective equipment is needed under normal use conditions. If exposure limits are exceededor irritation is experienced, ventilation and evacuation may be required.

EYE PROTECTION: Wear safety glasses with side shields (or goggles). Wear a face shield if splashing hazard exists.

SKIN & BODY PROTECTIVE CLOTHING OR EQUIPMENT: Wear impervious protective clothing, including boots, gloves, lab coat, apron, or coveralls, as appropriate, to prevent skin contact. Have showers, eyewash stations and ventilation systems.

WORK HYGIENIC PRACTICES: Practice good personal hygiene. When using do not eat, drink or smoke. Wash hands thoroughly after use and handling. Regular cleaning of equipment, work area and clothing is recommended.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	Clear orange
ODOR:	Orange
ODOR THRESHOLD:	No information available.
pH:	Not an aqueous solution.
FREEZE/THAW STABILITY:	No information available.

BOILING POINT:	No information available.
FLASH POINT:	>113°F/45°C
EVAPORATION RATE:	0.2 (Butyl Acetate =1)
SPECIFIC GRAVITY:	0.841
FLAMMABILITY LIMITS:	No information available.
VAPOR PRESSURE (mmHg) :	No information available.
VAPOR DENSITY (AIR = 1):	No information available.
SOLUBILITY IN WATER:	Emulsifies
LOG POW (n-OCTANOL/ WATER PARTITION COEFFICIENT)	No information available.
AUTO-IGNITION TEMPERATURE:	No information available.
DECOMPOSITION TEMPERTAURE:	No information available.
VISCOSITY:	Water thin.
DENSITY LBS/GAL:	7.0
VOC CONTENT (%):	80-99

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: No data available.

STABILITY: Stable under recommended storage conditions.

CONDITIONS TO AVOID: Keep away from heat, sparks, and flame.

INCOMPATIBILITY (MATERIAL TO AVOID): None known based on information supplied.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None known based on information supplied.

POSSIBILITY OF HAZARDOUS REACTIONS: None known based on information supplied.

HAZARDOUS POLYMERIZATION: None known. **CONDITIONS TO AVOID (POLYMERIZATION):** NA

SECTION 11: TOXICOLOGICAL INFORMATION

Routes of Exposure: Exposure will most likely occur through eye and skin contact or from inhalation of vapors and/or mists.

EYES: Avoid contact with eyes. Contact with eyes may cause irritation.

SKIN: Avoid contact with skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. Repeated exposure may cause skin dryness or cracking. May cause sensitization by skin contact.

INGESTION: Do not taste or swallow. May be harmful if swallowed.

INHALATION: Avoid breathing vapors or mists. Inhalation of vapors in high concentration may cause irritation of respiratory system.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Orange Terpenes 5989-27-5	=4400 mg/lg (Rat)	>5 g/kg (Rabbit)	-

Information on toxicological effects symptoms: No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Orange Terpenes 5989-27-5	-	Group 3	-	-

IARC (International Agency for Research on Cancer): Not classifiable as a human carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)--
Reproductive toxicity: No information available.
STOT – single exposure: No information available.
STOT – repeated exposure: No information available.
Chronic toxicity: Repeated contact may cause allergic reactions in very susceptible persons. Avoid repeated exposure.

Aspiration hazard: No information available.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Orange Terpenes 5989-27-5	-	0.619 – 0.796: 96 h Pimephales promelas mg/L LC50 flow-through 35: 96 h Oncorhynchus mykiss mg/L LC50	-

PERSISTENCE/DEGRADABILITY: No information available.
BIOACCUMULATION: No information available.
OTHER ADVERSE EFFECTS: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (for ground/non-bulk containers)--

CONTAINER SIZES(S): All Sizes
PROPER SHIPPING NAME: COMPOUND, CLEANING LIQUID
HAZARD CLASS: None
ID NUMBER: None
PACKING GROUP: None
LABEL STATEMENT: None

SECTION 15: REGULATORY INFORMATION

TSCA (United States Toxic Substances control Act Section 8(b) Inventory): Complies

SARA 313 of Title III of the superfund Amendments and Reauthorization Act of 1986 (SARA): This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA311/312 Hazard Categories
Acute health hazard: Yes
Chronic health hazard: No
Fire hazard: Yes
Sudden release of pressure hazard: No
Reactive Hazard: No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). **California Proposition 65:**
WARNING: This product contains less than 0.1% of a chemical known to the State ofCalifornia to cause cancer.
WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.
Ingredient name: Ethylene oxide-- Cancer-Yes, Reproductive-Yes.

SECTION 16: OTHER INFORMATION

HMIS/NFPA Ratings: Health = 2, Flammability = 2, Reactivity = 1, Protection = B

REVISION DATE: 02/01/2019

DISCLAIMER: While the information contained herein is believed to be correct, no warranties are made with respect thereto, and all liability from reliance thereon is disclaimed.

Item 89

SAFETY DATA SHEET

WORKING COPY

OSHA Hazard Communication Standard 29 CFR 1910.1200. Prepared to GHS Rev03.

Date issued : 07/10/2023

SDS number : 50 State Compliant Brake Cleaner

50 State Compliant Brake Cleaner

1. Identification

Product identifier: 50 State Compliant Brake Cleaner
Product description: Brake Cleaner
Chemical family: Chemical Blend
Relevant identified uses: Cleaning Compound

Manufacturer / Supplier

1st Ayd Corp
1325 Gateway Dr.
Elgin, IL 60124
Emergency Phone: 847-622-0001
Customer Service: 847-622-0001
Fax: 847-622-9199
E-Mail: orders@1stayd.com
Web: 1stayd.com

Emergency telephone number (24 hour)

AAPCC Poison Help : (800) 424-9300
CANUTEC (Canadian Transportation) : (613) 996-6666
CHEMTREC (US Transportation) : (800) 424-9300

2. Hazard identification

Classification of the substance or mixture

Health hazards:

Acute Toxicity (Oral), Category 4
Skin Corrosion, Category 2
Skin Irritation, Category 2
Serious Eye Damage, Category 2
Target Organ Toxicity (Repeated exposure), Category 2
Aspiration Hazard, Category 1
Acute Toxicity (Inhalation), Category 3
Acute Toxicity (Dermal), Category 3

Environmental hazards:

Acute Hazards to the Aquatic Environment, Category 3

Physical hazards:

Flammable Liquids, Category 2

Label elements

Flammable liquid and vapour

Flame | Exclamation mark | Health hazard | Environment

Signal word: DANGER

Hazard statement(s)

H225: Highly flammable liquid and vapour.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H332: Harmful if inhaled.
H315: Causes skin irritation.

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H373: May cause damage to organs (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).
H413: May cause long lasting harmful effects to aquatic life.
H304: May be fatal if swallowed and enters airways.
H301: Toxic if swallowed.

Precautionary statement(s)

Prevention:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P284: [In case of inadequate ventilation] wear respiratory protection.
P233: Keep container tightly closed.
P240: Ground and bond container and receiving equipment.
P241: Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242: Use non-sparking tools.
P243: Take action to prevent static discharges.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P264: Wash exposed skin thoroughly after handling.

Response:

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312: Call a POISON CENTER/doctor/...if you feel unwell.
P337+P313: If eye irritation persists: Get medical advice/attention.
P370+P378: In case of fire: Use ... to extinguish.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

P405: Store locked up.
P235: Keep cool.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501: Dispose of contents and container in accordance with local regulations.

Potential health effects

Eye: Contact may cause eye irritation.

Skin: Can cause irritation if absorbed through the skin.

Ingestion: Can be harmful if ingested.

Inhalation: Can be harmful if inhaled. Can cause respiratory tract irritation. Vapors can cause drowsiness and dizziness.

Target organ statement: May Cause (target organ or system) damage. (e.g., lung, nervous system, blood disorders, liver, kidney, immune system, cardiovascular system, thyroid, testicular, ovarian, etc.).

3. Composition/information on ingredients

Chemical name	% w/w	CAS No.
Acetone	80-90	67-64-1
N-heptane	10-20	142-82-5
D-limonene	1-3	5989-27-5

Comments: Formulation is based on weight % Formulation is based on weight % Formulation is based on weight %

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4. First-aid measures

Eye: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Skin: Remove contaminated clothing and shoes. Immediately flush skin with plenty of water for at least 15 minutes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Ingestion: Get medical attention immediately. Call a poison center or physician. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. Call doctor. If vomiting occurs, keep head below hip to prevent aspiration of liquid into lungs.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention. If unconcious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt, or waistband.

Most important symptoms and effects, both acute and delayed

Eye: Adverse symptoms may include pain or irritation, watering, and redness.

Skin: Adverse symptoms may include irritation and redness.

Ingestion: Adverse symptoms may include nausea and vomiting.

Inhalation: Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

Indication of immediate medical attention and special treatment needed, if necessary: If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gatsric lavage. If patient is obtunded, protect the airway by endotracheal intubation or by placement of the body in a trendelenburg and left lateral decubitus position.

5. Fire-fighting measures

Flammable class: Flammable class 1B liquid.

Suitable extinguishing media: Dry chemical, alcohol foam or carbon dioxide or water spray (fog). Water may be ineffective. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

Hazardous combustion products: On combustion, may emit toxic fumes of carbon monoxide.

Explosion hazards: Above flash point, vapor-air mixtures are explosive within flammable limits noted. Vapors can flow along surfaces to distant ignition sources and flash back. Contact with strong oxidizers may cause fire. Sealed containers may rupture when heated. This material may produce a floating fire hazard. Sensitive to static discharge.

Fire fighting procedures: Promtly remove all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Fire fighting equipment: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Hazardous decomposition products: Decomposition products may include carbon dioxide and carbon monoxide.

6. Accidental release measures

Small spill: Absorb the liquid and scrub the area with detergent and water.

Large spill: Avoid runoff into storm sewers and ditches which lead to waterways.

Environmental precautions

Water spill: Avoid dispersal of spilled material and runoff and contact with waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers or waterways).

Land spill: Avoid dispersal of spilled material and runoff and contact with soil. Inform the relevant authorities if the product has caused environmental pollution (soil).

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General procedures: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air). Water polluting material. May be harmful to the environment if released in large quantities.

Special protective equipment: Put on appropriate personal protective equipment (protective gloves, clothing, eye protection, and face protection). Wear appropriate respirator when ventilation is inadequate. Use explosion-proof equipment. Use only non-sparking tools.

7. Handling and storage

General procedures: Use only in a well ventilated area.

Precautions for safe handling: Loosen closure cautiously before opening. Keep away from heat and flame. Follow all SDS/label precautions even after container is emptied because it may retain product residues.

Conditions for safe storage: Store in accordance with local regulations. Store in a segregated and approved area in original container protected from sunlight in a dry, cool and well-ventilated and approved area away from incompatible materials. Keep container closed to prevent drying out. Move container away from oxidizing materials. Use appropriate containment to avoid environmental contamination.

Storage temperature: Store in a cool place below (120) F (49) C.

8. Exposure controls/personal protection

Exposure controls

Control parameters				
	Occupational exposure limit values			
Chemical name	**Type**		**ppm**	**mg/m³**
Acetone	**OSHA PEL**	**TWA**	1000	2400
	ACGIH TLV	**TWA**	500	
		STEL	750	
	Supplier OEL	**TWA**	NL	NL
		STEL	NL	NL

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures, such as personal protective equipment

Eye / face protection: Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent).

Skin protection - hand protection: Glove permeation data does not exist for this material. Viton or heavy nitrile rubber gloves should be used for splash protection only.

Respiratory protection: Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product.

Skin protection - other: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Occupational hygiene practices: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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Other use precautions: Do not eat, drink or smoke during use.

9. Physical and chemical properties

Physical state: Liquid

Appearance: Clear, colorless, transparent liquid

Color: Water-white

Odor: Solvent Odor

Odor threshold: Not Established

Physical state comments: Flammable Liquid

pH: ~ 7

Melting point: < 5°C (42°F)

Initial boiling point and boiling range: > 56.5°C (133°F)

Flash point: < 0°C (32°F) Tag Closed-Cup (ASTM D56)

Evaporation rate (n-butyl acetate = 1): > 2

Lower explosion limit / flammability limit: >0.7

Upper explosion limit / flammability limit: >6.1

Vapor pressure: > 2 mm Hg at 20°C (68°F)

Relative vapor density: > 3.14 Air=1

Density: ~ 5.9

Relative density: ~ 0.7137

Solubility: Negligible

Auto-ignition temperature: > 204°C (399°F)

Decomposition temperature: Not Available

Percent volatiles: 100 at (70°F)

10. Stability and reactivity

Reactivity: Normally reactive if handled properly. But may react with some plastic, rubber, and coatings.

Dangerous polymerization: Product will not undergo polymerization.

Chemical stability: Stable under ordinary conditions of use and storage.

Conditions to avoid: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Possibility of hazardous reactions: No hazardous reactions when stored and handled according to instructions.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Carbon monoxide and carbon dioxide are possible decomposition products.

Incompatible materials: Heat, flame, strong oxidizers, nitric and sulfuric acids, chlorine, nitrogen tetraoxide; will attack some forms of plastic, rubber, coatings.

11. Toxicological information

Acute toxicity

Acute dermal toxicity LD_{50}: > 5000 mg/kg

Notes: Rabbit

Acute oral toxicity LD_{50}: > 870 mg/kg

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Notes: Rat

Acute inhalation toxicity LC_{50}: > 71 mg/L/4hrs

Notes: Rat

Notes: Investigated as a tumorigen, mutagen, and a reproductive effector.

Germ cell mutagenicity: ug/l- Gambusia affinisNo data available. Contact Env. Dept.

Carcinogenicity

IARC: Possible group 3 carcinogen

NTP: Cancer lists: NTP Carcinogen

OSHA: Possible group 3 carcinogen

Reproductive toxicity: Adverse reproductive effects have occurred in experimental animals.

12. Ecological information

Ecotoxicological information: This mixture contains components that are potentially toxic to freshwater and saltwater ecosystems.

Aquatic toxicity, both acute and chronic

96-hour LC_{50}: > 7.3 ug/l- Fish

48-hour EC_{50}: > 1.5 mg/l- Water Flea (Daphnia magna)

Persistence and degradability: The material is expected to form a slick on the surface of waters after release in calm sea conditions. This is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxyl radicals.

Bioaccumulative potential: Bioaccumulation factor (BCF) is 1.67-380.

Other adverse effects: This product will normally float on water. Components will evaporate rapidly. This material may be harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment. The log Kow value for this product is expected to be in the range of 3.3-6.

General comments: Water hazard class 1 (Assessment by list): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized whenever possible. Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to an RCRA approved incinerator or disposed in an RCRA approved waste facility. Dispose in accordance with all local, state, and federal regulations.

For large spills: Do not allow product to reach sewage system.

Product disposal: Disposal must be made according to official regulations.

Empty container: Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container.

RCRA/EPA waste information: Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not listed as an RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

RCRA hazard class: Water hazard class 1

14. Transport information

USA Department of Transport Regulations (DOT)

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UN proper shipping name: Flammable Liquids,N.O.S.(Contains Acetone, Heptane)3.PGII.

Technical name: 50 State Compliant Brake Cleaner

Transport hazard class(es): 3

UN number: UN1993

Packing group, if applicable: II

Hazard label: Flammable Liquid

15. Regulatory information

UNITED STATES

Dot label symbol and hazard classification

Flammable Liquid

SARA Section 311/312 Hazard Categories

311/312 Health hazards: Immediate, Delayed/Fire hazard

313 reportable ingredients: This material does contain chemical components with known CAS numbers that exceed the threshold.

CERCLA Hazardous Substances and Reportable Quantities (RQ)

CERCLA regulatory: This product is listed on the CERCLA Inventory.

Chemical name	% w/w	CERCLA rq
Acetone	90	5,000

TSCA (The Toxic Substances Control Act)

Chemical name	CAS No.
Acetone	67-64-1
N-heptane	142-82-5
D-limonene	5989-27-5

TSCA regulatory: This product is listed on the TSCA Inventory.

California Proposition 65: This product does contain a chemical known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Clean water act: CAS# 108-88-3 is listed as a hazardous substance, a priority pollutant, and a toxic pollutant under the Clean Water Act.

CANADA

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL): This product is listed on Canada's DSL list.

16. Other information

Prepared by: Mike Ryniec **Date Prepared:** 07/10/2023

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HMIS rating

Health	2
Flammability	3
Physical hazard	0
Personal protection	H

NFPA codes

Manufacturer disclaimer: While reasonable care has been taken to ensure the accuracy and completeness of the information regarding the material described herein, it is the purchaser's responsibility to ensure the suitability of such information as it applies to the purchaser's intended use of the material. LA Chemicals, LTD assumes no responsibility resulting from the use of this SDS.

SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard (29 CFR 1910.1200) and Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR)

Revision Date 05-Mar-2025 **Version** 1

1. Identification

Product identifier

Product Name SA9 BATTERY PROTECTOR & SEALER 5 OZ AE

Other means of identification

Product Code 80370

UN number or ID number 1950

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Battery Sealant

Restrictions on use No information available

Details of the supplier of the safety data sheet

Manufacturer Address
ITW Permatex, Inc.
6875 Parkland Blvd.
Solon, Ohio 44139 USA
Telephone: 1-87-Permatex
(866) 732-9502

May Also Be Distributed by:
ITW Permatex Canada
101-2360 Bristol Circle
Oakville, ON Canada L6H 6M5
Telephone: (800) 924-6994

E-mail address mail@permatex.com

Emergency telephone number

Company Phone Number 866-732-9502

24 Hour Emergency Phone Number Chem-Tel: 800-255-3924
International Emergency:
00+1+ 813-248-0585
Contract Number: MIS0003453

24-hour emergency phone number No information available

2. Hazard(s) identification

Classification

Aerosols	Category 1
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3

Specific target organ toxicity (repeated exposure)	Category 2

Label elements

Contains ACETONE; PETROLATUM; CUMENE; ETHYL BENZENE

Danger

Hazard statements
Extremely flammable aerosol.
Pressurized container: May burst if heated.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements - Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Use personal protective equipment as required.
Wash face, hands and any exposed skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Do not breathe dust.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Pressurized container: Do not pierce or burn, even after use.
Do not spray on an open flame or other ignition source.
Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention.
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice and attention.
Skin
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: Get medical advice and attention.
Take off contaminated clothing and wash before reuse.
Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary Statements - Storage
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
Protect from sunlight.
Precautionary Statements - Disposal
Dispose of contents and container in accordance with local, regional, national, and international regulations as applicable.

25 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
31 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
55 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas).
80 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor).
37 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist).

Other Information

May be harmful in contact with skin. May be harmful if inhaled. Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No.	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
PROPANE	74-98-6	10-30%	-	-
ACETONE	67-64-1	10-30%	-	-
PETROLATUM	8009-03-8	10-30%	-	-
XYLENE	1330-20-7	10-30%	-	-
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	3-7%	-	-
ETHYL BENZENE	100-41-4	1-5%	-	-
CUMENE	98-82-8	0.1-1%	-	-

4. First-aid measures

Description of first aid measures

General advice IF exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if irritation develops and persists.

Ingestion Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician.

Self-protection of the first aider Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms May cause redness and tearing of the eyes. Burning sensation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Effects of Exposure May cause cancer. May cause damage to organs through prolonged or repeated exposure.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO2). Water spray. Alcohol resistant foam.

Small Fire In case of fire, use water spray, foam, dry chemical, or CO2.
Large Fire In case of fire, use water spray, foam, dry chemical, or CO2.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Hazardous combustion products No information available.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge Yes.

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

8. Exposure controls/personal protection

Control Parameters

Exposure Limits

Chemical name	ACGIH TLV	OSHA PEL	NIOSH
PROPANE 74-98-6	: See Appendix F: Minimal Oxygen Content, explosion hazard Simple asphyxiant	TWA: 1000 ppm TWA: 1800 mg/m^3 (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m^3	IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m^3
ACETONE 67-64-1	TWA: 250 ppm STEL: 500 ppm	TWA: 1000 ppm TWA: 2400 mg/m^3 (vacated) TWA: 750 ppm (vacated) TWA: 1800 mg/m^3 (vacated) STEL: 2400 mg/m^3 The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors. (vacated) STEL: 1000 ppm	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m^3
XYLENE 1330-20-7	TWA: 20 ppm	TWA: 100 ppm TWA: 435 mg/m^3 (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m^3 (vacated) STEL: 150 ppm (vacated) STEL: 655 mg/m^3	-
ETHYL BENZENE 100-41-4	TWA: 20 ppm Ototoxicant - potential to cause hearing disorders	TWA: 100 ppm TWA: 435 mg/m^3 (vacated) TWA: 100 ppm (vacated) TWA: 435 mg/m^3 (vacated) STEL: 125 ppm (vacated) STEL: 545 mg/m^3	IDLH: 800 ppm TWA: 100 ppm TWA: 435 mg/m^3 STEL: 125 ppm STEL: 545 mg/m^3
CUMENE 98-82-8	TWA: 5 ppm	TWA: 50 ppm TWA: 245 mg/m^3 (vacated) TWA: 50 ppm (vacated) TWA: 245 mg/m^3 (vacated) Sk* Sk*	IDLH: 900 ppm TWA: 50 ppm TWA: 245 mg/m^3

Chemical name	Alberta	British Columbia	Ontario	Quebec
PROPANE 74-98-6	TWA: 1000 ppm	Simple asphyxiant	TWA: Simple asphyxiant (See Appendix F: Minimal Oxygen Content;explosion hazard)	Simple asphyxiant
ACETONE 67-64-1	TWA: 500 ppm TWA: 1200 mg/m³ STEL: 750 ppm STEL: 1800 mg/m³	TWA: 250 ppm STEL: 500 ppm	TWA: 250 ppm STEL: 500 ppm	TWA: 500 ppm TWA: 1190 mg/m³ STEL: 1000 ppm STEL: 2380 mg/m³
XYLENE 1330-20-7	TWA: 100 ppm TWA: 434 mg/m³ STEL: 150 ppm STEL: 651 mg/m³	TWA: 100 ppm STEL: 150 ppm	TWA: 100 ppm STEL: 150 ppm	TWA: 100 ppm TWA: 434 mg/m³ STEL: 150 ppm STEL: 651 mg/m³
ETHYL BENZENE 100-41-4	TWA: 100 ppm TWA: 434 mg/m³ STEL: 125 ppm STEL: 543 mg/m³	TWA: 20 ppm	TWA: 20 ppm	TWA: 20 ppm
CUMENE 98-82-8	TWA: 50 ppm TWA: 246 mg/m³	TWA: 25 ppm STEL: 75 ppm	TWA: 50 ppm	TWA: 5 ppm

Chemical name	Manitoba	New Brunswick	Newfoundland and Labrador	Nova Scotia
PROPANE	TWA: Simple asphyxiant (See Appendix F: Minimal Oxygen Content)	TWA:	TWA:	TWA: Simple asphyxiant
ACETONE	TWA: 250 ppm STEL: 500 ppm	TWA: 250 ppm STEL: 500 ppm	TWA: 250 ppm STEL: 500 ppm	TWA: 250 ppm STEL: 500 ppm
XYLENE	TWA: 20 ppm	TWA: 100 ppm STEL: 150 ppm	TWA: 20 ppm	TWA: 20 ppm
ETHYL BENZENE	TWA: 20 ppm	TWA: 20 ppm	TWA: 20 ppm	TWA: 20 ppm
CUMENE	TWA: 5 ppm	TWA: 50 ppm	TWA: 5 ppm	TWA: 5 ppm

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
PROPANE	TWA: 1000 ppm STEL: 1250 ppm	TWA:	TWA: 1000 ppm STEL: 1250 ppm	Simple asphyxiant
ACETONE	TWA: 500 ppm STEL: 750 ppm	TWA: 250 ppm STEL: 500 ppm	TWA: 500 ppm STEL: 750 ppm	TWA: 1000 ppm TWA: 2400 mg/m³ STEL: 1250 ppm STEL: 3000 mg/m³
XYLENE	TWA: 100 ppm STEL: 150 ppm	TWA: 20 ppm	TWA: 100 ppm STEL: 150 ppm	TWA: 100 ppm TWA: 435 mg/m³ STEL: 150 ppm STEL: 650 mg/m³ Sk*
ETHYL BENZENE	TWA: 100 ppm STEL: 125 ppm Designated substance	TWA: 20 ppm	TWA: 100 ppm STEL: 125 ppm Designated Chemical Substance	TWA: 100 ppm TWA: 435 mg/m³ STEL: 125 ppm STEL: 545 mg/m³
CUMENE	TWA: 50 ppm STEL: 74 ppm	TWA: 5 ppm	TWA: 50 ppm STEL: 74 ppm	TWA: 50 ppm TWA: 245 mg/m³ STEL: 75 ppm

Chemical name	Nunavut	Prince Edward Island	Saskatchewan	Yukon
				STEL: 365 mg/m³ Sk*

Biological occupational exposure limits

Chemical name	ACGIH
ACETONE 67-64-1	25 mg/L - urine (Acetone) - end of shift
XYLENE 1330-20-7	0.3 g/g creatinine - urine (total of all isomers of Methylhippuric acids) - end of shift
ETHYL BENZENE 100-41-4	150 mg/g creatinine - urine (Sum of mandelic acid and phenylglyoxylic acid) - end of shift

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron. Antistatic boots.

Respiratory protection Appropriate respiratory protection should be selected and used according to the chemical nature, hazards and use of this product and safety requirements of the local jurisdiction. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

Thermal hazards No information available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state Aerosol
Appearance No information available
Color Purple
Odor No information available
Odor threshold No information available

Property	Values	Remarks • Method
pH	No data available	
Melting point / freezing point	No data available	
Boiling point / boiling range	32 °C / 89.6 °F	

Flash point	-104 °C / -155.2 °F	Gives a flame projection at full valve opening or flashback at any degree of valve opening
Evaporation rate	Not applicable	
Flammability (solid, gas)	No data available	
Flammability Limit in Air		
Upper flammability limit:	12%	-
Lower flammability limit:	2.5%	-
Vapor pressure	>60 psig @ 21.1°C (70°F)	
Vapor density	No data available	
Relative density	0.85	
Water solubility	No data available	
Solubility(ies)	No Data Available	
Partition coefficient	No Data Available	
Autoignition temperature	451.3°C (844.35°F)	
Decomposition temperature	No data available	
Kinematic viscosity	No Data Available	
Dynamic viscosity	No data available	

Other information

Explosive properties	No information available
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	No information available
VOC content	No information available
Density	No information available
Bulk density	No information available

10. Stability and reactivity

Reactivity No information available.

Chemical stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization No information available.

Conditions to avoid Heat, flames and sparks.

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. May cause drowsiness or dizziness. May be harmful if inhaled.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.

Skin contact Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause

gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. May cause redness and tearing of the eyes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Acute toxicity .

Numerical measures of toxicity

The following ATE values have been calculated for the mixture

ATEmix (oral)	6,327.40 mg/kg
ATEmix (dermal)	3,745.20 mg/kg
ATEmix (inhalation-gas)	360,000.00 ppm
ATEmix (inhalation-vapor)	99,999.0000 mg/l
ATEmix (inhalation-dust/mist)	5.14 mg/l

25 % of the mixture consists of ingredient(s) of unknown acute oral toxicity
31 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity
55 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)
80 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (vapor)
37 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
PROPANE 74-98-6	-	-	> 800000 ppm (Rat) 15 min
ACETONE 67-64-1	= 5800 mg/kg (Rat)	> 15700 mg/kg (Rabbit)	= 50100 mg/m³ (Rat) 8 h
PETROLATUM 8009-03-8	-	= 3600 mg/kg (Rabbit)	-
XYLENE 1330-20-7	= 3500 mg/kg (Rat)	> 4350 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
ETHYL BENZENE 100-41-4	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 17.4 mg/L (Rat) 4 h
CUMENE 98-82-8	= 1400 mg/kg (Rat)	= 12300 µL/kg (Rabbit)	> 3577 ppm (Rat) 6 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes serious eye irritation.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	ACGIH	IARC	NTP	OSHA
XYLENE 1330-20-7	-	Group 3	-	-
ETHYL BENZENE 100-41-4	A3	Group 2B	-	X
CUMENE 98-82-8	A3	Group 2B	Reasonably Anticipated	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
Group 3 - Not Classifiable as to Carcinogenicity in Humans
NTP (National Toxicology Program)
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
Occupational Safety and Health Administration of the US Department of Labor
X - Present

Reproductive toxicity No information available.

STOT - single exposure May cause drowsiness or dizziness.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
ACETONE 67-64-1	-	LC50: 4.74 - 6.33mL/L (96h, Oncorhynchus mykiss) LC50: 6210 - 8120mg/L (96h, Pimephales promelas) LC50: =8300mg/L (96h, Lepomis macrochirus)	-	EC50: 10294 - 17704mg/L (48h, Daphnia magna) EC50: 12600 - 12700mg/L (48h, Daphnia magna)
XYLENE 1330-20-7	-	LC50: =13.4mg/L (96h, Pimephales promelas) LC50: 2.661 - 4.093mg/L (96h, Oncorhynchus mykiss) LC50: 13.5 - 17.3mg/L (96h, Oncorhynchus mykiss) LC50: 13.1 - 16.5mg/L (96h, Lepomis macrochirus) LC50: =19mg/L (96h, Lepomis macrochirus)	-	EC50: =3.82mg/L (48h, water flea) LC50: =0.6mg/L (48h, Gammarus lacustris)

		LC50: 7.711 - 9.591mg/L (96h, Lepomis macrochirus) LC50: 23.53 - 29.97mg/L (96h, Pimephales promelas) LC50: =780mg/L (96h, Cyprinus carpio) LC50: >780mg/L (96h, Cyprinus carpio) LC50: 30.26 - 40.75mg/L (96h, Poecilia reticulata)		
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT 64742-47-8	-	LC50: =45mg/L (96h, Pimephales promelas) LC50: =2.2mg/L (96h, Lepomis macrochirus) LC50: =2.4mg/L (96h, Oncorhynchus mykiss)	-	-
ETHYL BENZENE 100-41-4	EC50: =4.6mg/L (72h, Pseudokirchneriella subcapitata) EC50: >438mg/L (96h, Pseudokirchneriella subcapitata) EC50: 2.6 - 11.3mg/L (72h, Pseudokirchneriella subcapitata) EC50: 1.7 - 7.6mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 11.0 - 18.0mg/L (96h, Oncorhynchus mykiss) LC50: =4.2mg/L (96h, Oncorhynchus mykiss) LC50: 7.55 - 11mg/L (96h, Pimephales promelas) LC50: =32mg/L (96h, Lepomis macrochirus) LC50: 9.1 - 15.6mg/L (96h, Pimephales promelas) LC50: =9.6mg/L (96h, Poecilia reticulata)	-	EC50: 1.8 - 2.4mg/L (48h, Daphnia magna)
CUMENE 98-82-8	EC50: =2.6mg/L (72h, Pseudokirchneriella subcapitata)	LC50: 6.04 - 6.61mg/L (96h, Pimephales promelas) LC50: =4.8mg/L (96h, Oncorhynchus mykiss) LC50: =2.7mg/L (96h, Oncorhynchus mykiss) LC50: =5.1mg/L (96h, Poecilia reticulata)	-	EC50: =0.6mg/L (48h, Daphnia magna) EC50: 7.9 - 14.1mg/L (48h, Daphnia magna)

Persistence and degradability No information available.

Bioaccumulation

Component Information

Chemical name	Partition coefficient
PROPANE 74-98-6	1.09
ACETONE 67-64-1	-0.24
XYLENE 1330-20-7	3.15
ETHYL BENZENE 100-41-4	3.6
CUMENE	3.55

98-82-8	

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

US EPA Waste Number Waste designations and classifications should be determined by the end user based on the application for which the product was used.

14. Transport information

DOT

UN number or ID number 1950
Proper shipping name Aerosols, Limited Quantity (LQ)
Transport hazard class(es) 2.1
Emergency Response Guide Number 126

TDG

UN number or ID number 1950
UN proper shipping name Aerosols, Limited Quantity (LQ)
Transport hazard class(es) 2.1

MEX

UN number or ID number 1950
UN proper shipping name Aerosols, Limited Quantity (LQ)
Transport hazard class(es) 2.1

IATA

UN number or ID number ID 8000
UN proper shipping name Consumer Commodity
Transport hazard class(es) 9
ERG Code 9L

IMDG

UN number or ID number 1950
UN proper shipping name Aerosols, Limited Quantity (LQ)
Transport hazard class(es) 2.1
EmS-No. F-D, S-U

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECI	Complies
PICCS	Complies
AICS	Complies
NZIoC	Complies

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing Chemicals Inventory
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical name	SARA 313 - Threshold Values %
XYLENE - 1330-20-7	1.0
ETHYL BENZENE - 100-41-4	0.1
CUMENE - 98-82-8	0.1

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
XYLENE 1330-20-7	100 lb	-	-	X
ETHYL BENZENE 100-41-4	1000 lb	X	X	X

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

Chemical name	Hazardous Substances RQs	Extremely Hazardous	Reportable Quantity (RQ)

		Substances RQs	
ACETONE 67-64-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
XYLENE 1330-20-7	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ
ETHYL BENZENE 100-41-4	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ
CUMENE 98-82-8	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical name	California Proposition 65
ETHYL BENZENE - 100-41-4	Carcinogen
CUMENE - 98-82-8	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
ACETONE 67-64-1	X	X	X
PROPANE 74-98-6	X	X	X
XYLENE 1330-20-7	X	X	X
ETHYL BENZENE 100-41-4	X	X	X
CUMENE 98-82-8	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA **Health hazards** 2 **Flammability** 4 **Instability** 0 **Special hazards** -

HMIS **Health hazards** 2 * **Flammability** 4 **Physical hazards** 0 **Personal protection** X

Chronic Hazard Star Legend ** = Chronic Health Hazard*

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend

SVHC: Substances of Very High Concern for Authorization:
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Substances
vPvB: Very Persistent and very Bioaccumulative (vPvB) Substances
STOT: Specific Target Organ Toxicity
ATE: Acute Toxicity Estimate
LC50: 50% Lethal Concentration
LD50: 50% Lethal Dose

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitizers		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine’s PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision Date 05-Mar-2025

Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Safety Data Sheet

Material Name: USED OIL **SDS ID: 81451**

*** * * Section 1 - Identification * * ***

Product Identifier

USED OIL

Product Code

Not applicable

Synonyms

Waste oil; Used lubricating oil; Oil and water mixture

Recommended Use

Oil or water mixture for re-refining or reprocessing. If this product is used in combination with other products, refer to the Safety Data Sheet for those products.

Restrictions on Use

None known

Manufacturer Information

Cedar Falls Oil Co
PO 785
Cedar Falls, IA 50613
800-373-5421
www.cedarfallsoil.com

Cedar Falls Oil Co
319 W 7th St
Janesville, IA 50647
319-987-2192
cedarfalls.oil@gmail.com

Issue Date

May 1, 2015

*** * * Section 2 - Hazard(s) Identification * * ***

Classification in Accordance with 29 CFR 1910.1200.

Skin Corrosion / Irritation, Category 2
Eye Damage / Irritation, Category 2B
Sensitization - Respiratory, Category 1
Sensitization - Skin, Category 1
Germ Cell Mutagenicity, Category 1B
Carcinogenicity, Category 1B
Toxic to Reproduction, Category 1B
Specific Target Organ Toxicity - Single Exposure, Category 1 (kidneys, central nervous system, lungs)
Specific Target Organ Toxicity - Single Exposure, Category 3 (central nervous system and respiratory tract)
Aspiration Hazard, Category 1

GHS LABEL ELEMENTS

Symbol(s)

Signal Word

DANGER!

Safety Data Sheet

Material Name: USED OIL **SDS ID: 81451**

Hazard Statement(s)

Harmful if swallowed.
Causes skin irritation and eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause allergic skin reaction.
May cause genetic defects and cancer.
May damage fertility or the unborn child.
Causes damage to kidneys, central nervous system, and lungs.
May cause respiratory irritation, drowsiness or dizziness.
May be fatal if swallowed and enters airways.

Precautionary Statement(s)

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe gas, fumes, vapor, or spray. In case of inadequate ventilation wear respiratory protection. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Response

IF exposed or concerned: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Disposal

Dispose in accordance with all applicable regulations.

*** * * Section 3 - Composition / Information on Ingredients * * ***

CAS	Component	Percent
70514-12-4	Lubricating oils, used	80-100*
7732-18-5	Water/Solids	0-20*
Not Available	Hydrocarbon solvents. May include gasoline, diesel fuel, jet fuel, mineral spirits, etc.	0-10*
Not Available	Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel and others: each below 1.0 WT%.	0-1.5*
Not Available	Polynuclear aromatics. May include naphthalene, Fluoranthene, phenanthrene, pyrene, and others: each below 0.3%	0-1*
Not Available	Chlorinated solvents	0-0.5*

Material Name: USED OIL **SDS ID: 81451**

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Zinc (7440-66-6), Iron (7439-89-6), Lead (7439-92-1), Nickel (7440-02-0), Arsenic (7440-38-2), Copper (7440-50-8), Chromium (7440-47-3),Pyrene (129-00-0), Phenanthrene (85-01-8), Naphthalene (91-20-3), Fluoranthene (206-44-0).

Component Information/Information on Non-Hazardous Components

* Even though the concentration range does not fall under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product.

* * * Section 4 - First Aid Measures * * *

Description of Necessary Measures

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing is difficult, oxygen should be administered by qualified personnel.

Skin

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

IF SWALLOWED: Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.

Most Important Symptoms/Effects

Acute

Harmful if swallowed., Causes skin irritation and eye irritation., May cause allergic skin reaction, asthma, allergic reactions, respiratory tract irritation, and central nervous system depression., Causes damage to kidneys, central nervous system, and lungs.

Delayed

May damage fertility or the unborn child., May cause cancer and mutagenic effects.

Indication of Immediate Medical Attention and Special Treatment Needed, If Needed

Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-
468-1760 for additional information.

* * * Section 5 - Fire-Fighting Measures * * *

Suitable Extinguishing Media

Carbon dioxide, regular foam, dry chemical, water spray, or water fog.

Unsuitable Extinguishing Media

Do not use high-pressure water streams.

Specific Hazards Arising from the Chemical

Fire may produce irritating, poisonous and/or corrosive fumes. Vapors may cause drowsiness and dizziness. Containers may rupture or explode if exposed to heat. Empty product containers may retain product residue and can be dangerous. Product is not sensitive to mechanical impact or static discharge.

Hazardous Combustion Products

Decomposition and combustion materials may be toxic., Burning may produce oxides of carbon, oxides of nitrogen, oxides of metal, oxides of chlorine, phosgene, and miscellaneous decomposition products.

Special Protective Equipment and Precautions for Firefighter

A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

Fire Fighting Measures

Keep storage containers cool with water spray. Move container from fire area if it can be done without risk.

NFPA Ratings: Health: 1 **Fire:** 1 **Reactivity:** 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** * * Section 6 - Accidental Release Measures * * ***

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

Methods and Materials for Containment and Clean Up

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal. Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see **Section 15: Regulatory Information.**

*** * * Section 7 - Handling and Storage * * ***

Precautions for Safe Handling

Keep away from sparks or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean tools and explosion-proof equipment. When transferring large volumes of product, metal containers, including trucks and tank cars, should be grounded and bonded. This product has a low vapor pressure and is not expected to present an inhalation hazard under normal temperatures and pressures. However, when aerosolizing, misting, or heating this product, do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes.

Conditions for Safe Storage, Including Any Incompatibilities

Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from flame or other sources of ignition. Empty product containers may retain product residue and can be dangerous.

Incompatibilities

Avoid acids, alkalis, oxidizing agents, reducing agents, halogens, or reactive metals.

*** * * Section 8 - Exposure Controls / Personal Protection * * ***

Component Exposure Limits

Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel and others: each below 1.0 WT%. (Not Available)

ACGIH: 0.05 mg/m3 TWA (related to Lead)

OSHA Final: 30 µg/m3 Action Level (See 29 CFR 1910.1025); 50 µg/m3 TWA (See 29 CFR 1910.1025, related to Lead)
50 µg/m3 TWA (related to Lead)

OSHA Vacated: 1 mg/m3 TWA (related to Nickel)

NIOSH: 0.050 mg/m3 TWA (related to Lead)
0.002 mg/m3 Ceiling (15 min, related to Arsenic)

Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3%
(Not Available)

ACGIH: 10 ppm TWA (related to Naphthalene)
Skin - potential significant contribution to overall exposure by the cutaneous route (related to Naphthalene)

OSHA Final: 0.2 mg/m3 TWA (related to Pyrene)

OSHA Vacated: 10 ppm TWA; 50 mg/m3 TWA (related to Naphthalene)
15 ppm STEL; 75 mg/m3 STEL (related to Naphthalene)

NIOSH: 10 ppm TWA; 50 mg/m3 TWA (related to Naphthalene)
15 ppm STEL; 75 mg/m3 STEL (related to Naphthalene)

Appropriate Engineering Controls

Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

Individual Protective Measures, such as Personal Protective Equipment

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to regulatory requirements. The following PPE should be considered the minimum required: Safety glasses, Gloves, and/or Lab coat or apron.

Eyes/Face Protection

Safety glasses with side shields should be worn at a minimum. Additional protection like goggles, face shields, or respiratorsmay be needed dependent upon anticipated use and

concentrations of mists or vapors. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. Contact lens use is not recommended.

Skin Protection

Where skin contact is likely, wear neoprene, nitrile, or equivalent protective gloves; use of natural rubber or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

Respiratory Protection

A respiratory protection program which meets USA's OSHA General Industry Standard 29 CFR 1910.134 or Canada's CSA Standard Z94.4-M1982 requirements must be followed whenever workplace conditions warrant a respirator's use. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance/Odor : Black and viscous (thick) liquid, petroleum odor

pH: Not applicable.

Boiling Point: Not available.

Odor Threshold: Not available.

Solubility (H2O): Slight.

Melting Point: Not applicable.

Density: 7.3 LB/US gal (880 g/l) (approximately)

Specific Gravity: 0.8 - 1.0 @ 60°F (15.6°C) (water = 1)

Evaporation Rate: Less than 1 (butyl acetate = 1)

Octanol/H2O Coeff.: Not available.

LFL: Not available

Auto Ignition Temperature: Not Available

UFL: Not available

Flash Point: >200ºF (>93ºC) (minimum) Pensky-Martens Closed Cup

Vapor Pressure: Not available.

Viscosity: Not available

Vapor Density: Greater than 1 (air = 1) (Based on kerosene)

Other Property Information

No additional information is available.

* * * Section 10 - Stability & Reactivity * * *

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions

Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.

Conditions To Avoid

Avoid heat, sparks, or flame.

Incompatible Materials

Avoid acids, alkalis, oxidizing agents, reducing agents, halogens, or reactive metals.

Hazardous Decomposition Products

Burning may produce oxides of carbon, oxides of nitrogen, oxides of chlorine, oxides of metal, phosgene, and miscellaneous decomposition products.

* * * Section 11 - Toxicological Information * * *

Toxicity Data and Information

Component Analysis - LD50/LC50

Lubricating oils, used (70514-12-4)

Dermal LD50 Rabbit >4480 mg/kg; Oral LD50 Rat >2000 mg/kg

Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel and others: each below 1.0 WT%. (Not Available)

Oral LD50 Rat 984 mg/kg (related to Iron)

Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3% (Not Available)

Oral LD50 Rat 2700 mg/kg (related to Pyrene)

Information on Likely Routes of Exposure

Inhalation

May cause respiratory tract irritation, dizziness, drowsiness, asthma, and allergic reactions.

Ingestion

Harmful if swallowed. May be fatal if swallowed and enters airways.

Skin Contact

Causes skin irritation. May cause an allergic skin reaction.

Eye Contact

Causes eye irritation.

Immediate Effects

Harmful if swallowed. Causes skin irritation and eye irritation., May be fatal if swallowed and enters airways., May cause asthma or allergic reactions., Causes damage to kidneys, central nervous system, and lungs.

Delayed Effects

Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis)., May cause cancer and mutagenic effects., May damage fertility or the unborn child.

Irritation/Corrosivity

Causes skin and eye irritation. May cause respiratory tract irritation.

Respiratory Sensitization

May cause sensitization.

Skin Sensitization

May cause sensitization.

Carcinogenicity

May cause cancer.

Component Carcinogenicity

Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel and others: each below 1.0 WT%. (Not Available)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (related to Lead)

OSHA: 30 µg/m3 Action Level (See 29 CFR 1910.1025); 50 µg/m3 TWA (See 29 CFR 1910.1025) (specifically regulated carcinogen, related to Lead) Present (select carcinogen, related to Lead)

NIOSH: potential occupational carcinogen (related to Nickel)

NTP: Known Human Carcinogen (Known Carcinogen, related to Arsenic) Reasonably Anticipated To Be A Human Carcinogen (Suspect Carcinogen, related to Lead)

IARC: Monograph 100C [2012]; Monograph 84 [2004] (in drinking water); Supplement 7 [1987]; Monograph 23 [1980] (Group 1 (carcinogenic to humans), related to Arsenic)

Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3% (Not Available)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (related to Naphthalene)

OSHA: Present (select carcinogen, related to Naphthalene)

NTP: Reasonably Anticipated To Be A Human Carcinogen (Suspect Carcinogen, related to Naphthalene)

IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans), related to Naphthalene)

Germ Cell Mutagenicity

May cause genetic defects.

Teratogenicity

Contains material which may have reproductive toxicity, teratogenic or mutagenic effects.

Reproductive Effects

Based on best current information, there may be reproductive toxicity associated with this product.

Specific Target Organ Effects - Single Exposure

Kidneys, central nervous system, lungs, respiratory tract

Specific Target Organ Effects - Repeated Exposure

Prolonged or repeated inhalation of oil mist may cause oil pneumonia, lung tissue inflammation, and/or fibrous tissue formation.

Aspiration Hazard

This material is an aspiration hazard.

Medical Conditions Aggravated by Exposure

Individuals with pre-existing cardiovascular, liver, kidney, central nervous system, respiratory tract (nose, throat, and lungs), eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

*** * * Section 12 - Ecological Information * * ***

Ecotoxicity

Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Component Analysis - Ecotoxicity - Aquatic Toxicity

Lubricating oils, used (70514-12-4)

Duration/Test/Species	Concentration/Conditions	Notes
96 Hr LC50 Brachydanio rerio	79.6 mg/L [semi-static]	
96 Hr LC50 Pimephales promelas	3.2 mg/L [semi-static]	
48 Hr EC50 Artemia salina	>22500 mg/L	

Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel and others: each below 1.0 WT%. (Not Available)

Duration/Test/Species	Concentration/Conditions	Notes
96 Hr LC50 Pimephales promelas	2.16 - 3.05 mg/L [flow-through]	
96 Hr LC50 Pimephales promelas	0.211 - 0.269 mg/L [semi-static]	
96 Hr LC50 Pimephales promelas	2.66 mg/L [static]	
96 Hr LC50 Cyprinus carpio	30 mg/L	
96 Hr LC50 Cyprinus carpio	0.45 mg/L [semi-static]	
96 Hr LC50 Cyprinus carpio	7.8 mg/L [static]	
96 Hr LC50 Lepomis macrochirus	3.5 mg/L [static]	
96 Hr LC50 Oncorhynchus mykiss	0.24 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	0.59 mg/L [semi-static]	
96 Hr LC50 Oncorhynchus mykiss	0.41 mg/L [static]	related to Zinc
96 Hr EC50 Pseudokirchneriella subcapitata	0.11 - 0.271 mg/L [static]	
72 Hr EC50 Pseudokirchneriella subcapitata	0.09 - 0.125 mg/L [static]	related to Zinc
48 Hr EC50 Daphnia magna	0.139 - 0.908 mg/L [Static]	related to Zinc

Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3% (Not Available)

Duration/Test/Species	Concentration/Conditions	Notes
96 Hr LC50 Pimephales promelas	5.74 - 6.44 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	1.6 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	0.91 - 2.82 mg/L [static]	
96 Hr LC50 Pimephales promelas	1.99 mg/L [static]	
96 Hr LC50 Lepomis macrochirus	31.0265 mg/L [static]	related to Naphthalene
48 Hr EC50 water flea	1.8 mg/L	related to Pyrene

Persistence and Degradability

No information available for the product.

Bioaccumulation Potential

No information available for the product.

Mobility in Soil

No information available for the product.

Other Adverse Effects

No additional information is available.

*** * * Section 13 - Disposal Considerations * * ***

Disposal Methods

Dispose in accordance with all applicable federal, state/regional and local laws and regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Cedar Falls Oil Co regarding proper recycling or disposal. This product, if discarded, is not expected to be a characteristic or listed hazardous waste. If recycled in the USA, it must be managed in accordance with 40 CFR Part 279. Processing, use, or contamination by the user may change the waste code(s) applicable to the disposal of this product.

*** * * Section 14 - Transport Information * * ***

Transportation Regulations

DOT Shipping Name: Not regulated as a hazardous material.

TDG Shipping Name: Not regulated as a dangerous good.

*** * * Section 15 - Regulatory Information * * ***

Federal Regulations

SARA 302/304

Component Analysis

Based on the ingredient(s) listed in SECTION 3, this product does contain "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B:

Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3% (Not Available)	1000 lb lower TPQ; 10000 lb upper TPQ (related to Pyrene)

SARA 311/312 Hazardous Categories

This product poses the following health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):

Health: Yes **Chronic Health:** Yes **Fire:** No **Pressure:** No **Reactive:** No

SARA Section 313

Component Analysis

This product contains a "toxic" chemical subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel and others: each below 1.0 WT%. (Not Available)	1.0 % de minimis concentration (dust or fume only, related to Zinc)
Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3% (Not Available)	1.0 % de minimis concentration (related to Phenanthrene)

CERCLA

Component Analysis

Based on the ingredient(s) listed in SECTION 3, this product contains the following "hazardous substance" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4 with the following reportable quantities (RQ):

Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel and others: each below1.0 WT%. (Not Available)	454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of thepieces of the solid metal released is >100 µm); 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm, related to Zinc)
Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3% (Not Available)	5000 lb final RQ; 2270 kg final RQ (related to Pyrene)

TSCA Inventory

Component Analysis

Component	CAS #	TSCA
Lubricating oils, used	70514-12-4	No
Water/Solids	7732-18-5	Yes

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	MA	MN	NJ	PA	CA
Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel and others: each below 1.0 WT%. ([1]related to: Zinc) ([2]related to: Lead)	Not Available	Yes[1]	Yes[1]	Yes[2]	Yes[1]	Yes[1]
Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3% ([1]related to: Pyrene) ([2]related to: Naphthalene)	Not Available	Yes[1]	Yes[1]	Yes[2]	Yes[1]	Yes[1]

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects.

* * * Section 16 - Other Information * * *

Revision Information

New SDS: May 1, 2015

Key/Legend

ACGIH - American Conference of Governmental Industrial Hygienists; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA – Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Disclaimer

User assumes all risks incident to the use of this product. To the best of our knowledge, the information contained herein is accurate. However, Cedar Falls Oil Co. assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information or the product to which the information refers. The data contained on this sheet apply to the product as supplier to the user.

Safety Data Sheet Portland Cement

Section 1. Identification

GHS product identifier: Portland Cement

Chemical name: Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.

Other means of identification: Cement, ASTM Type I, II, III, V, Portland Limestone Cement, Plastic Cement, Hydraulic Cement, Oilwell Cement, Well Cement, Class G Cement, InterCem, EcoCemPLC, Type IL, CSA Type GU, GUb, GUL, MS, MH, MHL, HE, HEL, LH, LHL, HS

Relevant identified uses of the substance or mixture and uses advised against: Building materials, construction, a basic ingredient in concrete.

Supplier's details: 300 E. John Carpenter Freeway, Suite 1645
Irving, TX 75062
(972) 653-5500

Emergency telephone number (24 hours): **CHEMTREC: (800) 424-9300**

Section 2. Hazards Identification

Overexposure to portland cement can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry portland cement.

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture:
SKIN SENSITIZATION – Category 1; H317
CARCINOGENICITY – Category 1A; H350
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) – Category 3; H335
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) – Category 1; H372
SKIN CORROSION/IRRITATION – Category 2; H315
SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1; H318

GHS label elements

Hazard pictograms:

Signal word: Danger

Hazard statements:
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer.

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Use outdoors in a well ventilated area. Wash any exposed body parts thouroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.Contaminated clothing must not be allowed out of the workplace.

Response: If exposed or concerned: Immediately get medical advice/attention if you feel unwell or irritation or rash occurs.If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: Rinse mouth. Do not induce vomiting.

Storage: Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains cement without an effective procedure for assuring safety. Store in a well ventilated area. Keep container tightly closed.

Disposal:

Hazards not otherwise classified (HNOC):	Dispose of contents/container in accordance with local/regional/national/international regulations.
Supplemental Information:	None known
	Respirable Crystalline Silica (RCS) may cause cancer. Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

Section 3. Composition/information on ingredients

Substance/mixture:	Mixture
Chemical Name:	Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.

CAS number/other identifiers

Ingredient name	%	CAS number
Portland Cement	100%	65997-15-1
The structure of Portland cement may contain the following in some concentration ranges:		
Calcium oxide	0-5	1305-78-8
Quartz	0-0.1	14808-60-7
Gypsum	4-9	13397-24-5
Limestone	0-5	1317-65-3
Magnesium oxide	0-4	1309-48-4
Gypsum, limestone and magnesium oxide are not classifiable as a hazard under Title 29 Code of Federal Regulations 1910.1200.		
Hexavalent chromium*	Trace	18450-29-9
***Hexavalent chromium is included due to dermal sensitivity associated with the component.**		

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye Contact:	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.
Inhalation:	Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of portland cement requires immediate medical attention. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway.
Skin Contact:	Get medical attention immediately. Heavy exposure to portland cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess portland cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH natural soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposure to wet cement, cement mixtures or liquids from wet cement. Burns should be treated as caustic burns. Portland cement causes skin burns with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure.
Ingestion:	Get medical attention immediately. Call a poison center or physician. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small

quantities of water to drink. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed potential acute health effects

Eye contact:	Causes serious eye damage.
Inhalation:	May cause respiratory irritation.
Skin contact:	Causes severe burns. May cause an allergic skin reaction.
Ingestion:	May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact:	Adverse symptoms may include the following: pain, watering and redness.
Inhalation:	Adverse symptoms may include the following: respiratory tract irritation and coughing.
Skin contact:	Adverse symptoms may include the following: pain or irritation, redness and blistering may occur, skin burns, ulceration and necrosis may occur.
Ingestion:	Adverse symptoms may include the following: stomach pains.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments:	Not applicable.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media:	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media:	Do not use water jet or water-based fire extinguishers.
Specific hazards arising from the chemical:	No specific fire or explosion hazard.
Hazardous thermal decomposition Products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides and metal oxide/oxides.
Special protective actions for fire-fighters:	Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders:	For personal protective clothing requirements, please see Section 8.
Environmental precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has entered the environment, including waterways, soil or air. Materials can enter waterways through drainage systems.

Methods and materials for containment and cleaning up

Small spill: Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of waste material by using a licensed waste disposal contractor.

Large spill: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place dust in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Large spills to waterways may be hazardous due to alkalinity of the product. Dispose of waste material using a licensed waste disposal contractor. Note: see section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material and keep the container tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: A key to using the product safely requires the user to recognize that portland cement reacts chemically with water to produce calcium hydroxide which can cause severe chemical burns. Every attempt should be made to avoid skin and eye contact with cement. Do not get portland cement inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement mixtures. Launder/clean clothing and shoes before reuse. Do not enter a confined space that stores or contains portland cement unless appropriate procedures and protection are available. Portland cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Particulates not otherwise classified (CAS SEQ250)	**ACGIH TLV (United States, Canada)** TWA: 3 mg/m³. Form: Respirable particles TWA: 10 mg/m³. Form: Inhalable particles **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Portland Cement	**ACGIH TLV (United States and Canada)** TWA: 1 mg/m³. Form: Respirable dust **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust

Calcium oxide	**ACGIH TLV (United States and Canada)** TWA: 2 mg/m³ 8 hours **OSHA/MSHA PEL (United States)** TWA: 5 mg/m³ 8 hours.
Limestone	**ACGIH TLV (United States, Canada)** TWA: 3 mg/m³. Form: Respirable particles TWA: 10 mg/m³. Form: Inhalable particles **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Magnesium oxide	**ACGIH TLV (United States and Canada)** TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL (United States)** TWA: 15 mg/m³ 8 hours. Form: Total particulates
Calcium sulfate (gypsum)	**ACGIH TLV (United States, Canada)** TWA: 10 mg/m³ 8 hours. Form: Respirable fraction **OSHA PEL Z-1 (United States)** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust
Crystalline Silica (Quartz) (CAS 14808-60-7)	**ACGIH TLV (United States)** TWA: 0.025 mg/m³. Form: Respirable fraction **OSHA PEL (United States)** TWA: 0.05 mg/m³. Form: Respirable **MSHA PEL (United States)** TWA: 10/(%SiO2 + 2) in mg/m3 **Provincial Exposure Limits (Canada, various)** ▪ **Alberta (OHS Code)** 0.025 mg/m³ 8 hour TWA ▪ **British Columbia (WorkSafeBC OHS Regulation)** 0.025 mg/m³ 8 hour TWA ▪ **British Columbia (Health, Safety & Reclamation Code, Mines Act)** 0.1 mg/m³ 8 hour TWA ▪ **Manitoba (Workplace Safety and Health Regulation)** 0.025 mg/m³ 8 hour TWA ▪ **New Brunswick** 0.025 mg/m³ 8 hour TWA ▪ **Newfoundland** 0.025 mg/m³ 8 hour TWA ▪ **Nova Scotia** 0.025 mg/m³ 8 hour TWA ▪ **Ontario (O. Reg 490/09; and O. Reg. 833)** 0.1 mg/m³ 8 hour TWA ▪ **Prince Edward Island** 0.025 mg/m³ 8 hour TWA ▪ **Quebec (Regulation Respecting OHS, Chapter S-2.1, r. 13)** 0.1 mg/m³ 8 hour TWA ▪ **Saskatchewan (OHS Regulations)** 0.05 mg/m³ 8 hour TWA

Appropriate engineering controls: Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Exposure guidelines: OSHA PELs, MSHA PELs, Canadian Provincial OELs, and ACGIH TLVs are 8-hr TWA values. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including “Particulates Not Otherwise Classified,” “Particulates Not Otherwise Regulated,” Particulates Not Otherwise Specified,” and “Inert or Nuisance Due” are often used interchangeably; however, the user should review each agency’s terminology for differences in meanings.

Individual protection measures

Hygiene measures: Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by portland cement with a pH neutral soap and clean, uncontaminated water. If clothing becomes saturated with portland cement, garments should be removed and replaced with clean, dry clothing.

Eye/face protection: To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Wearing contact lenses when working with cement is not recommended.

Skin protection

Hand protection: Use impervious, waterproof, abrasion and alkali-resistant gloves. Do not rely on barrier creams in place of impervious gloves. Do not get portland cement inside gloves.

Body protection: Use impervious, waterproof, abrasion and alkali-resistant boots and protective long-sleeved and long-legged clothing to protect the skin from contact with wet portland cement. To reduce foot and ankle exposure, wear impervious boots that are high enough to prevent portland cement from getting inside them. Do not get portland cement inside boots, shoes, or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas of the body.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. .

Respiratory protection: Use properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical State:	Solid. [Powder]	**Lower and Upper explosive flammable limits**	Not applicable
Color:	Gray or white	**Vapor pressure:**	Not applicable
Odor:	Odorless	**Vapor density:**	Not applicable
Odor threshold:	Not available	**Relative density:**	2.3 to 3.1
pH:	>11.5 [Conc. (% w/w): 1%]	**Solubility:**	Slightly soluble in water
Melting point:	Not available	**Solubility in water:**	0.1 to 1%
Boiling point:	>1000°C (>1832°F)	**Partition coefficient: n-octanol/water:**	Not applicable
Flash point:	Not flammable. Not combustible	**Auto-ignition temperature:**	Not applicable
Burning time:	Not available	**Decomposition temperature:**	Not available
Burning rate:	Not available	**SADT:**	Not available
Evaporation Rate:	Not applicable	**Viscosity:**	Not applicable
Flammability (solid, gas):	Not applicable		

Section 10. Stability and reactivity

Reactivity: Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.

Chemical Stability: The product is stable.

Possibility of hazardous reactions: Under normal circumstances of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Portland cement is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved. Reacts with acids, aluminum metals and ammonium salts. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity: Portland Cement LD50/LC50 = Not available

Irritation/Corrosion: **Skin:** May cause skin irritation. May cause serious burns in the presence of moisture.
Eyes: Causes serious eye damage. May cause burns in the presence of moisture.
Respiratory: May cause respiratory tract irritation.

Sensitization: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.

Mutagenicity: There are no data available.

Carcinogenicity:
Classification below:

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Cement, portland, chemicals	-	-	A4	-
Crystalline Silica (Quartz) (CAS 14808-60-7)	Listed	1	A2	Known to be a human carcinogen.

Reproductive toxicity: There are no data available.

Teratogenicity: There are no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of Exposure	Target Organs
Calcium oxide	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation
Cement, portland, chemicals	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) (CAS 14808-60-7)	Category 1	Inhalation	Respiratory tract and kidneys

Aspiration hazard: There are no data available.

Information on the likely routes of exposure

Potential acute health effects:
Eye contact: Causes serious eye damage.
Inhalation: May cause respiratory irritation.
Skin contact: Causes severe burns. May cause an allergic skin reaction.
Ingestion: May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics:
Eye contact: Adverse symptoms may include the following: pain, watering, redness.
Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing
Skin contact: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, skin burns, ulcerations and necrosis may occur
Ingestion: Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure:
Short term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Long term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects:
General: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. If sensitized to hexavalent chromium, a severe allergic dermal reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Portland cement is not classifiable as a human carcinogen. Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity. Excessive exposure to crystalline silica can cause silicosis, a non-cancerous lung disease.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity: Acute toxicity estimates: There are no data available.

Section 12. Ecological Information

Toxicity

Product/ingredient name	Result	Species	Exposure
Calcium oxide	Chronic NOEC 100 mg/L Fresh water	Fish-Oreochromis niloticus-Juvenile (Fledgling, Hatchling, Weanling)	46 days

Persistence and degradability: There are not data available.
Bioaccumulative potential: There are not data available.
Mobility in soil: Soil/water partition coefficient (Koc): Not available.
Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Untreated waste should not be released to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe manner. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff, and contact with soil, waterways, drains and sewers.

Section 14. Transportation information

	DOT Classification	IMDG	IATA
UN number	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	None	None	None
Canada TDG	-	-	-
Additional information	-	-	-

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory Information

TSCA 6 final risk management: Chromium, ion (Cr6+)
United States inventory (TSCA 8b): Cements are considered to be statutory mixtures under TSCA. CAS 65997-15-1 is included on the TSCA inventory.
CERCLA: This product is not listed as a CERCLA substance
Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs) – Not listed
Clean Air Act Section 602: Class I Substances - Not listed
Clean Air Act Section 602: Class II Substances - Not listed
DEA List I Chemicals: (Precursor Chemicals) – Not listed
DEA List II Chemicals: (Essential Chemicals) – Not listed
Canada NSNR Status – Listed on DSL or exempt

SARA 311/312

Classification: Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Calcium oxide	0-5	No	No	No	Yes	No
Quartz	>0.1	No	No	No	No	Yes
Chromium, ion (Cr6+)	<0.1	No	No	No	Yes	Yes

SARA 313

	Product name	CAS number	%
Form R-Report requirements	Chromium, ion (Cr6+)	8540-29-9	<0.1

State regulations

Massachusetts: The following components are listed: cement, portland, chemicals, limestone
New York: None of the components are listed.
New Jersey: The following components are listed: cement, portland, chemicals, gypsum, limestone
Pennsylvania: The following components are listed: cement, portland, chemicals, gypsum, limestone

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the above warning in the absence of definitive testing to prove the defined risks do not exist.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Quartz	Yes	No	No	No
Chromium, ion (Cr6+)	Yes	Yes	0.001µg/day (inhalation)	8.2 micrograms/day (ingestion)

International regulations

International lists: **Canadian Domestic Substances List (DSL):** Portland cement is included on the DSL.
Mexico Inventory (INSQ): All components are listed or exempted.

WHMIS Classification: D2A “Materials Causing Other Toxic Effects”

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Section 16. *Other Information*

Date of issue: 01/01/2023
Replaces: 01/01/2022
Revised Section(s):

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of portland cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with portland cement to produce portland cement products. Users should review other relevant material safety data sheets before working with this portland cement or working on portland cement products, for example, portland cement concrete.

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Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation
GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations

SAFETY DATA SHEET

Nonflammable Gas Mixture: Carbon Monoxide / Hydrogen Sulfide / Methane / Nitrogen / Oxygen

Section 1. Identification

GHS product identifier : Nonflammable Gas Mixture: Carbon Monoxide / Hydrogen Sulfide / Methane / Nitrogen / Oxygen

Other means of identification : 50018;

Product type : Gas.

Product use : Synthetic/Analytical chemistry.

Synonym : 50018;

SDS # : 012738

Supplier's details : Calgaz, a division of Airgas USA LLC
821 Chesapeake Drive
Cambridge, MD 21613 USA
Email: info@calgaz.com
Tel: 1-410-228-6400

24-hour telephone : For Chemical Emergency
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC Day or Night
Within USA and Canada: 1-800-424-9300
International: 1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Do not depend on odor to detect presence of gas.

Prevention : Not applicable.

Response : Not applicable.

Storage : Protect from sunlight. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : 50018;

Product code : 012738

Ingredient name	%	CAS number
Nitrogen	77.159 - 99	7727-37-9
Oxygen	1 - 19.5	7782-44-7
Methane	0.0001 - 3	74-82-8
Hydrogen Sulfide	0.0001 - 0.2499	7783-06-4
Carbon Monoxide	0.0001 - 0.0999	630-08-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

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Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.
Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Nitrogen	**ACGIH TLV (United States, 1/2021). Oxygen Depletion [Asphyxiant].**
oxygen	None.
methane	**ACGIH TLV (United States, 1/2021). Oxygen Depletion [Asphyxiant]. Explosive potential.**
hydrogen sulfide	**ACGIH TLV (United States, 1/2021).** STEL: 5 ppm 15 minutes. TWA: 1 ppm 8 hours. **NIOSH REL (United States, 10/2020).** CEIL: 15 mg/m³ 10 minutes. CEIL: 10 ppm 10 minutes. **OSHA PEL 1989 (United States, 3/1989).** STEL: 21 mg/m³ 15 minutes. STEL: 15 ppm 15 minutes. TWA: 14 mg/m³ 8 hours. TWA: 10 ppm 8 hours. **OSHA PEL Z2 (United States, 2/2013).** AMP: 50 ppm 10 minutes. CEIL: 20 ppm
carbon monoxide	**California PEL for Chemical Contaminants (*Table AC-1*) (United States).** PEL: 25 ppm 8 hours. CEIL: 200 ppm **ACGIH TLV (United States, 1/2021).** TWA: 25 ppm 8 hours. TWA: 29 mg/m³ 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 35 ppm 8 hours. TWA: 40 mg/m³ 8 hours. CEIL: 200 ppm CEIL: 229 mg/m³ **NIOSH REL (United States, 10/2020).** TWA: 35 ppm 10 hours. TWA: 40 mg/m³ 10 hours. CEIL: 200 ppm CEIL: 229 mg/m³ **OSHA PEL (United States, 5/2018).** TWA: 50 ppm 8 hours. TWA: 55 mg/m³ 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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Section 8. Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point : -187.6°C (-305.7°F) This is based on data for the following ingredient: methane. Weighted average: -210.53°C (-347°F)

Boiling point : Not available.

Critical temperature : Lowest known value: -146.95°C (-232.5°F) (nitrogen).

Flash point : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Highest known value: 1.1 (Air = 1) (oxygen). Weighted average: 0.98 (Air = 1)

Gas Density (lb/ft ^{3}) : Weighted average: 0.07

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Section 9. Physical and chemical properties

Relative density : Not applicable.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
hydrogen sulfide carbon monoxide	LC50 Inhalation Gas. LC50 Inhalation Gas.	Rat Rat	712 ppm 3760 ppm	1 hours 1 hours

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

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Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
hydrogen sulfide	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
carbon monoxide	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

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Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
hydrogen sulfide	Acute EC50 62 µg/l Fresh water Acute LC50 2 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus Fish - Coregonus clupeaformis - Yolk-sac fry	2 days 96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Nitrogen	0.67	-	low
oxygen	0.65	-	low
methane	1.09	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1956	UN1956	UN1956	UN1956	UN1956
UN proper shipping name	Compressed gas, n.o.s. (nitrogen, oxygen)	COMPRESSED GAS, N.O.S. (nitrogen, oxygen)	GAS COMPRIMIDO, N. E.P. (nitrogen, oxygen)	COMPRESSED GAS, N.O.S. (nitrogen, oxygen)	Compressed gas, n.o.s. (nitrogen, oxygen)
Transport hazard class(es)	2.2	2.2	2.2	2.2	2.2
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

Section 14. Transport information

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity** Yes.
Packaging instruction Exceptions: 306, 307. Non-bulk: 302, 305. Bulk: 314, 315.
Quantity limitation Passenger aircraft/rail: 75 kg. Cargo aircraft: 150 kg.

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).
Explosive Limit and Limited Quantity Index 0.125
Passenger Carrying Road or Rail Index 75
Special provisions 16, 148

Mexico Classification : **Special provisions** 274

IMDG : **Emergency schedules** F-C, S-V
Special provisions 274, 378, 392

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 75 kg. Packaging instructions: 200. Cargo Aircraft Only: 150 kg. Packaging instructions: 200. Limited Quantities - Passenger Aircraft: Forbidden. Packaging instructions: Forbidden.
Special provisions A202

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined
Clean Water Act (CWA) 311: hydrogen sulphide
Clean Air Act (CAA) 112 regulated flammable substances: methane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ (lbs)	SARA 302 TPQ (gallons)	SARA 304 RQ (lbs)	SARA 304 RQ (gallons)
hydrogen sulfide	0.0001 - 0.2499	Yes.	500	-	100	-

SARA 304 RQ : 80000 lbs / 36320 kg

SARA 311/312

Classification : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

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Section 15. Regulatory information

Massachusetts : The following components are listed: NITROGEN; NITROGEN (LIQUIFIED); OXYGEN (LIQUID); METHANE; MARSH GAS

New York : None of the components are listed.

New Jersey : The following components are listed: NITROGEN; OXYGEN; METHANE

Pennsylvania : The following components are listed: NITROGEN; OXYGEN; METHANE

California Prop. 65

⚠ **WARNING**: This product can expose you to Carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Carbon monoxide	-	-

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Eurasian Economic Union : **Russian Federation inventory**: Not determined.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : All components are listed or exempted.

Philippines : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Thailand : All components are listed or exempted.

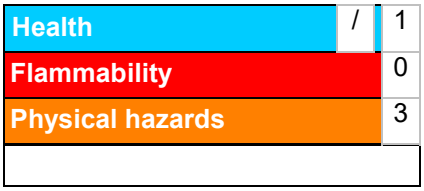
Turkey : Not determined.

United States : Not determined.

Viet Nam : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



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Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
GASES UNDER PRESSURE - Compressed gas	On basis of test data

History

Date of printing : 9/21/2022

Date of issue/Date of revision : 9/21/2022

Date of previous issue : 8/17/2022

Version : 4

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

DRUMMOND™
A LAWSON BRAND

Safety Data Sheet

Issue date 21-May-2018 **Revision date** 03-Nov-2022 **Revision Number** 4

1. IDENTIFICATION

Product identification

Product identifier	Drummond™ Prizm PTFE Penetrating Gel Lubricant
Other means of identification	DA6881
Recommended use	Lubricant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Drummond™, A Lawson Brand
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

Methylene Chloride notification No Information Available

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin corrosion/irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Liquefied Gas

Symbol

Signal word DANGER

Hazard statements
H222 - Extremely flammable aerosol
H280 - Contains gas under pressure; may explode if heated

H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness

Precautionary statements

General
P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves

Response

General
P321 - For Specific treatment see section 4 of this sds

Skin
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Inhalation
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell

Ingestion
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting

Storage
P403 - Store in a well-ventilated place
P405 - Store locked up
P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant
P501 -Dispose of contents and container in accordance with local, regional, and federal regulations.

Hazard(s) Not Otherwise Classified (HNOC)
Not applicable.

Physical Hazards Not Otherwise Classified (PHNOC)
Not applicable.

Unknown acute toxicity
No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition
Mixture.

Chemical name	CAS-No	Weight %
Propane	68476-86-8	30-40
Heptanes	142-82-5	20-30
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	1-5

The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation Remove to fresh air. Provide oxygen if breathing is difficult. Artificial respiration and/or oxygen may be necessary. If breathing has stopped, contact emergency medical services immediately.

Ingestion Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately. Keep head below hips if vomiting occurs. Risk of aspiration into the lungs.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

Eye contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If symptoms persist, call a physician.

Most important symptoms (acute) Causes skin irritation. Respiratory irritation. Harmful if swallowed. Symptoms include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Eye irritation. eye pain, redness, and watering.

Most important symptoms (over-exposure) Causes skin irritation. Respiratory irritation. Harmful if swallowed. Vapors can cause irritation of the respiratory tract. High concentrations can cause headache, nausea, weakness, lightheadedness, and stupor (CNS depression). Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

Indication of any immediate medical attention and special treatment needed Treat symptomatically. NOTE TO PHYSICIAN: If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Dry chemical. Carbon dioxide (CO2). Foam.

Unsuitable extinguishing media Do not use water jet. Water stream may spread fire.

Specific hazards Extremely flammable. Contents under pressure. Pressurized container may explode when exposed to heat or flame. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Vapors can travel to a source of ignition and flash back. Fire water contained with this material must be contained and prevented from being discharged to any waterway, sewer, or drain.

Special protective equipment for fire-fighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Avoid contact with eyes. Avoid breathing vapor or mist. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate

area). Do not touch or walk through spilled material. Use personal protection recommended in Section 8. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labeled containers.
Large Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry in sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Small Spill: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with eyes. Contents under pressure. Wear personal protective equipment. Keep away from sources of ignition - No smoking. Do not breathe vapor. Keep away from oxidising agents, strongly acid or alkaline materials and amines.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not store above 120 degrees F. Observe label precautions. Store away from direct sunlight in dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Pressurized container: Do not pierce or burn, even after use. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Workers should wash hands and face before eating, drinking, and smoking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Propane	-			
Heptanes	500 ppm TWA 2000 mg/m³ TWA	400 ppm PEL; 1600 mg/m³ PEL	400 ppm TWA	85 ppm TWA 350 mg/m³ TWA
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	Not listed			

Appropriate engineering controls

A safety shower and eye wash station should be available for emergency use. Ensure adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye protection

Safety glasses with side-shields.

Skin and body protection

Chemical resistant apron. Protective gloves. Nitrile gloves are recommended. Wash hands after handling the product. Wash contaminated clothing before reuse.

Respiratory protection

If the exposure limits are exceeded, a NIOSH/MSHA approved respirator is recommended. Use a positive pressure supplied air respirator. Follow OSHA respirator regulations (29 CFR 1910.134) and if necessary, wear a MSHA/NIOSH approved respirator. Chemical respirator with organic vapor cartridge and full face piece.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Propane	-	-	-	-	-	-	-	-	-	-
Heptanes	400 ppm TWA 1640 mg/m³ TWA	400 ppm TWA	400 ppm TWA	400 ppm TWA 1640 mg/m³ TWA	400 ppm TWA 400 ppm TWA	400 ppm TWA	400 ppm TWA	400 ppm TWA 400 ppm TWA	400 ppm TWAEV	400 ppm TWA
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	-	-	-	-	-	-	-	-	-	-

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Aerosol

Color Clear

Odor Solvent

Odor threshold Not available

pH Not applicable

Melting point/range °C Not available

Melting point/range °F Not available

Boiling point/range °C Not available

Boiling point/range °F Not available

Flash point °C -97

Flash point °F -142

Flash point method used based on propellant

Evaporation rate Not available

Flammability (Solid, Gas) Extremely Flammable Aerosol

Lower explosion limit Not available

Upper explosion limit Not available

Vapor pressure Not available

Vapor density Not available

Relative density 0.77-0.81

Solubility Practically insoluble in water

Partition coefficient Not available

(n-octanol/water)

Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	Not available.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	None under normal conditions of use.
Conditions to avoid	Avoid direct sunlight. Avoid extreme temperatures. Keep away from open flames, hot surfaces, and sources of ignition. Exposure to temperatures above 120F may cause bursting.
Incompatible materials	Strong oxidizing agents. Strong acids. Incompatible with some plastics and painted surfaces, pre-test before using.
Hazardous decomposition products	Not available.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Inhalation. Eyes. Ingestion. Dermal.
Symptoms	May cause irritation of respiratory tract. Irritation of the throat. May cause irritation of the respiratory system. Vapors may cause drowsiness and dizziness. Avoid breathing vapors or mists. Avoid contact with eyes. Causes serious eye irritation. Avoid contact with skin. Causes skin irritation. Repeated exposure may cause skin dryness or cracking. Prolonged skin contact may defat the skin and produce dermatitis. Harmful if swallowed. Aspiration hazard. Harmful or fatal if aspirated into the lungs from ingestion or vomiting.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. May be fatal if swallowed and enters airways. May cause respiratory irritation. May cause drowsiness and dizziness. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Propane	-	-	-
Heptanes	>73.5 mg/L Rat	= 5000 mg/kg Mouse 3000 mg/kg Rabbit	5000 mg/kg Mouse = 3000 mg/kg Rabbit
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	no data available	> 5000 mg/kg Rat >2000 mg/kg Rabbit	>5000 mg/kg Rat > 2000 mg/kg Rabbit

ATEmix (dermal)	Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Propane	-	-	-	-
Heptanes	-	-	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Propane	-	-	-	-	-	-
Heptanes	-	-	-	-	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Propane	-	-
Heptanes	-	= 375.0mg/L Cichlid fish 96h
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	-	= 2.2mg/L Lepomis macrochirus 96h = 2.4mg/L Oncorhynchus mykiss 96h = 45mg/L Pimephales promelas 96h

Persistence and degradability Not available.

Bioaccumulation Not available

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Propane 68476-86-8	68476-86-8	<=2.8	-
Heptanes 142-82-5	142-82-5	4.66	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable) 64742-47-8	64742-47-8	-	61 - 159 dimensionless species: fish

Mobility in soil Not available.

Other adverse effects Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal information Discard container or liner in accordance with federal, state, and local regulations. As supplied, this product is a RCRA Hazardous Waste.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Subsidiary Risk	
Packing group	
Marine pollutant	Yes.
Special Provisions	LTD QTY

TDG

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Subsidiary Risk	None
Packing group	
Marine pollutant	Yes.
Special Provisions	LTD QTY

IATA

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Subsidiary Risk	
Packing group	
Special Provisions	LTD QTY

IMDG/IMO

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Packing group	
Marine pollutant	Yes
Special Provisions	LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Propane	68476-86-8	-	-	-
Heptanes	142-82-5	X	X	X
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Propane	68476-86-8	-	-	-
Heptanes	142-82-5	X	X	X
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	-	-	-

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Propane	68476-86-8	-
Heptanes	142-82-5	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

U.S. Federal Regulations

Methylene Chloride notification No Information Available

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Propane	68476-86-8	-	-
Heptanes	142-82-5	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	-	-

US EPA SARA 311/312 hazardous categorization

Acute Health Hazard
Chronic Health Hazard
Fire Hazard
Sudden Release of Pressure Hazard

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Propane	X	-	X	-
Heptanes	X	X	X	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	X	-	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	2
Flammability	3
Instability	0

HMIS

Health	2
Flammability	3
Physical hazards	0
Personal protection	B

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 21-May-2018

Revision date 03-Nov-2022

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and

suitable to their circumstances.

End of Safety Data Sheet

Safety Data Sheet
acc. to OSHA HCS

Printing date 04/19/2023 Reviewed on 04/19/2023

1 Identification

· **Product identifier**

· **Trade name: White Wax Cure J9A**

· **Article number:** 69165
· **Application of the substance / the mixture**

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Dayton® Superior
4226 Kansas Avenue Tel.: (866) 329-8724
Kansas City, KS 66106

Emergency Telephone Number: Use only in the event of an emergency involving a spill, leak, fire, exposure, or accident involving chemicals. Within the U.S., Canada, or the U.S. Virgin Islands, call ChemTrec at (800) 424-9300, 24 hours a day. Or, outside these areas, call international number, +1 703 741-5970. Collect calls are accepted.

· **Information department:** Environmental, Health, and Safety department.

2 Hazard(s) identification

· **Classification of the substance or mixture**

Skin Sens. 1	H317	May cause an allergic skin reaction.
Carc. 2	H351	Suspected of causing cancer.
Aquatic Acute 3	H402	Harmful to aquatic life.
Aquatic Chronic 3	H412	Harmful to aquatic life with long lasting effects.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
titanium dioxide
Distilled Tall Oil Fatty Acids
· **Hazard statements**
May cause an allergic skin reaction.
Suspected of causing cancer.
Harmful to aquatic life.
Harmful to aquatic life with long lasting effects.
· **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

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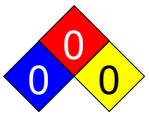
Trade name: White Wax Cure J9A

(Contd. of page 1)

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH	0
FIRE	0
PHYSICAL HAZARD	0

Health = 0
Fire = 0
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**		
13463-67-7	titanium dioxide	≥0.1-<1.9%
68131-87-3	Petroleum Hydrocarbon Resin	≥0.25-<1.4%
1332-58-7	Kaolin	<1.1%
61790-12-3	Distilled Tall Oil Fatty Acids	≤1.0%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
In the event of persistent symptoms recieve medical treatment.
· **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
Immediately move exposed person to fresh air. If breathing difficulty persists or develops get prompt medical attention.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:** Seek medical treatment.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Trade name: White Wax Cure J9A

(Contd. of page 2)

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:**
Because fire may produce thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Dilute with plenty of water.
Do not allow product to reach sewage system or any water course.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Wear appropriate personal protective clothing to prevent eye and skin contact. Avoid breathing vapors or mists of this product. Use with adequate ventilation. Do not take internally.
· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:** cool and dry
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

(Contd. on page 4)

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1332-58-7 Kaolin	
PEL	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV	Long-term value: 2* mg/m³ E; as respirable fraction

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**

Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
· **Eye protection:** Wear appropriate eye protection to prevent eye contact.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	Clear
· **Odor:**	Mild
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.

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Trade name: White Wax Cure J9A

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Upper:	Not determined.
· **Vapor pressure at 20 °C (68 °F):**	23 hPa (17.3 mm Hg)
· **Density at 20 °C (68 °F):**	0.993 g/cm³ (8.28659 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	0.9-1.1 %
Water:	73.5 %
Solids content:	25.1 %
· **Other information**	No further relevant information available.
· **Volatile Organic Compounds:**	Contains less than 50 g/L.

10 Stability and reactivity

· **Reactivity** No decomposition if stored and applied as directed.
· **Chemical stability** No decomposition if stored and applied as directed
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** Keep away from heat and sources of ignition.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** May cause skin irritation.
· **on the eye:** No irritating effect known.
· **Sensitization:** Sensitization possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
13463-67-7	titanium dioxide	2B
7631-86-9	silicon dioxide, chemically prepared	3
14808-60-7	Quartz (SiO2)	1

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Trade name: White Wax Cure J9A

(Contd. of page 5)

67-63-0	isopropanol	3
128-37-0	Butylated hydroxytoluene	3
111-42-2	2,2'-iminodiethanol	2B
91-20-3	naphthalene	2B
79-10-7	acrylic acid	3

· **NTP (National Toxicology Program)**

14808-60-7	Quartz (SiO2)	K
91-20-3	naphthalene	R

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
At present there are no ecotoxicological assessments.
Water hazard class 1 (Self-assessment): slightly hazardous for water
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of as normal garbage. Do not allow product to reach sewage system.
It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous waste. State and local regulations may differ from federal disposal regulations. Dispose of waste material according to local, state, federal, and provincial environmental regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to Federal, State, and Local regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**
· **DOT, ADR, ADN, IMDG, IATA** Not Regulated

· **UN proper shipping name**
· **DOT, ADR, ADN, IMDG, IATA** Not Regulated

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Trade name: White Wax Cure J9A

(Contd. of page 6)

· **Transport hazard class(es)**	
· **DOT, ADR, ADN, IMDG, IATA**	
· **Class**	Not Regulated
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	Not Regulated
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **U.S. Domestic Ground Shipments:**	Same as listed for Standard Shipments above.
· **U.S. Domestic Ground Non-Bulk (119 gal or less per container) Shipments:**	Same as listed for Standard Shipments above.
· **Emergency Response Guide (ERG) Number:**	Not determine
· **UN "Model Regulation":**	Not Regulated

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (extremely hazardous substances):**
None of the ingredient is listed.

· **Section 313 (Specific toxic chemical listings):**
This product may contain 1 or more toxic chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR part 372. If so, the chemicals are listed below.

67-63-0	isopropanol	<0.1%
111-42-2	2,2'-iminodiethanol	<0.1%
91-20-3	naphthalene	<0.025%
79-10-7	acrylic acid	<0.1%

· **TSCA (Toxic Substances Control Act):**

13463-67-7	titanium dioxide	ACTIVE
68131-87-3	Petroleum Hydrocarbon Resin	ACTIVE
1332-58-7	Kaolin	ACTIVE
61790-12-3	Distilled Tall Oil Fatty Acids	ACTIVE
64742-88-7	Solvent naphtha (petroleum), medium aliph.	ACTIVE
57-10-3	Palmitic acid	ACTIVE
57-11-4	stearic acid, pure	ACTIVE
141-43-5	monoethanolamine	ACTIVE
7631-86-9	silicon dioxide, chemically prepared	ACTIVE
21645-51-2	aluminium hydroxide	ACTIVE
11138-66-2	Xanthan Gum	ACTIVE

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Trade name: White Wax Cure J9A

(Contd. of page 7)

544-63-8	Myristic acid	ACTIVE
14808-60-7	Quartz (SiO2)	ACTIVE
67-63-0	isopropanol	ACTIVE
4719-04-4	2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	ACTIVE
1310-73-2	sodium hydroxide	ACTIVE
128-37-0	Butylated hydroxytoluene	ACTIVE
111-42-2	2,2'-iminodiethanol	ACTIVE
91-20-3	naphthalene	ACTIVE
2634-33-5	1,2-benzisothiazol-3(2H)-one	ACTIVE
107-22-2	glyoxal	ACTIVE
79-10-7	acrylic acid	ACTIVE
7732-18-5	water, distilled, conductivity or of similar purity	ACTIVE

· **Hazardous Air Pollutants**

111-42-2	2,2'-iminodiethanol
91-20-3	naphthalene
79-10-7	acrylic acid

· **Proposition 65**

· **Chemicals known to the State of California (Prop. 65) to cause cancer:**

13463-67-7	titanium dioxide
14808-60-7	Quartz (SiO2)
111-42-2	2,2'-iminodiethanol
91-20-3	naphthalene

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

91-20-3	naphthalene	C, CBD

· **TLV (Threshold Limit Value established by ACGIH)**

13463-67-7	titanium dioxide	A4
1332-58-7	Kaolin	A4
14808-60-7	Quartz (SiO2)	A2
67-63-0	isopropanol	A4
128-37-0	Butylated hydroxytoluene	A4
111-42-2	2,2'-iminodiethanol	A3
91-20-3	naphthalene	A4
107-22-2	glyoxal	A4
79-10-7	acrylic acid	A4

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Trade name: White Wax Cure J9A

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· **MAK (German Maximum Workplace Concentration)**		
13463-67-7	titanium dioxide	3A
14808-60-7	Quartz (SiO2)	1
128-37-0	Butylated hydroxytoluene	4
111-42-2	2,2'-iminodiethanol	3B
91-20-3	naphthalene	2
107-22-2	glyoxal	3B

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**	
13463-67-7	titanium dioxide
14808-60-7	Quartz (SiO2)

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS07 GHS08

· **Signal word** Warning

· **Hazard-determining components of labeling:**
titanium dioxide
Distilled Tall Oil Fatty Acids
· **Hazard statements**
May cause an allergic skin reaction.
Suspected of causing cancer.
Harmful to aquatic life.
Harmful to aquatic life with long lasting effects.
· **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Water hazard class:** Water hazard class 3 (Self-assessment): extremely hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

The provided information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environmental, Health & Safety Department
· **Contact:** Environmental, Health & Safety Manager
· **Date of preparation / last revision** 04/19/2023 / 427
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

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Trade name: White Wax Cure J9A

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IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 2: Carcinogenicity – Category 2
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

US

UPM® Liquid Blend – Above Ambient
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : **UPM** Liquid Blend

Other means of identification : **UPM** Liquid Blend
(Shipped obove flash point)

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.3. Details of the supplier of the safety data sheet

UNIQUE Paving Materials Corp.
3993 East 93rd Street
Cleveland, 44106 - United States of America
T (216) 341-7711
http://www.uniquepavingmaterials.com/

1.4. Emergency telephone number

Emergency number : (800) 424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irrit. 2 H315
Skin Sens. 1 H317
Carc. 1B H350
STOT RE 2 H373

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS07 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H350 - May cause cancer
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS-US) :
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe fumes or vapours
P261 - Avoid breathing fumes
P264 - Wash hands thoroughly after handling
P272 - Contaminated work clothing must not be allowed out of the workplace
P280 - Wear personal protective equipment
P302+P352 - If on skin: Wash with plenty of water for at least 15 minutes
P308+P313 - If exposed or concerned: Get medical advice/attention
P314 - Get medical advice/attention if you feel unwell
P321 - Specific treatment (see first aid measures on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P362+P364 - Take off contaminated clothing and wash it before reuse
P405 - Store locked up
P501 - Dispose of contents/container to meet all regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

1.12 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
1.12 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Petroleum Asphalt Base	(CAS No) 8052-42-4	75 - 95	Carc. 1B, H350
Petroleum Solvent	(CAS No) 68476-34-6	3 - 25	Flam. Liq. 3, H226 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Carc. 2, H351 STOT RE 2, H373 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Polyamines		0 - 3	Skin Sens. 1, H317 Carc. 1B, H350

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention. Specific treatment (see first aid measures on this label).

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Inhaling this product can result in respiratory tract irritation, leading to mild to severe irritation of the nose, throat and lungs. Dizziness, headaches, nausea.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Severe irritation including redness, teraing and blurred vision.

Symptoms/injuries after ingestion : May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract. Ingestion may cause nausea, vomiting and diarrhea.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapor.

Explosion hazard : Never use a welding or cutting torch on or near drums of this material (even empty drums) because the material can ignite explosively. May form flammable/explosive vapour-air mixture.

Reactivity : Stable under normal conditions.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Water or foam may cause frothing which can be violent and may present a life-threatening situation. Frothing is most likely to occur when streams of water or foam are sprayed into hot or burning containers. . Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.

6.1.1. For non-emergency personnel

Protective equipment : Wear personal protective equipment.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Dike the product for recovery.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing fumes.

Hygiene measures : Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Container remains hazardous when empty. Continue to observe all precautions. Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.

Storage conditions : Keep container tightly closed. Keep only in the original container in a cool, well ventilated place away from high temperature or ignition sources. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources.

Storage temperature : Short term store near 200F; Pump at 170F and above; Long term may be stored at ambient temperature to minimize the volatilization of petroleum solvent.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

UPM Liquid Blend/ SC cutback Asphalt	
ACGIH	Not applicable
OSHA	Not applicable

Petroleum Asphalt Base (8052-42-4)		
ACGIH	ACGIH TWA (mg/m³)	5
OSHA	OSHA PEL (Ceiling) (ppm)	5 ppm as fumes

Petroleum Solvent (68476-34-6)		
ACGIH	ACGIH TWA (mg/m³)	100 mg/m³
OSHA	Not applicable	

Polyamines	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Personal protective equipment : Avoid all unnecessary exposure.

Materials for protective clothing : Impervious clothing. Footwear (shoes, boots).
Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or safety glasses.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Dark, Viscous Liquid.
Color : Black;Dark
Odor : ammonia odor;Tar, Petroleum
Odor threshold : No data available
pH : No data available
Relative evaporation rate (butyl acetate=1) : Slower than Ether
Melting point : No data available
Freezing point : No data available
Boiling point : 400 °F
Flash point : 200 - 230 °F Cleveland Tag Open Cup Method
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : Heavier than air.
Relative density : Lower than water.
Specific gravity / density : lower than water

Solubility	:	Negligible. Water: Solubility in water of component(s) of the mixture : • : 0.4 % • .epsilon.-Caprolactam: 4560 g/l (at 20 °C)
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Flammable liquid and vapor. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Overheating. Heat. Sparks.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Petroleum Asphalt Base (8052-42-4)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	> 94.4 ml/m³

Petroleum Solvent (68476-34-6)	
LD50 oral rat	5000 mg/kg
LD50 dermal rabbit	2000 mg/kg
ATE US (oral)	5000.000 mg/kg body weight
ATE US (dermal)	2000.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h
ATE US (dust, mist)	1.500 mg/l/4h

Skin corrosion/irritation	:	Causes skin irritation.
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitization	:	May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	May cause cancer.

Petroleum Asphalt Base (8052-42-4)	
IARC group	2A - Probably carcinogenic to humans, 2B - Possibly carcinogenic to humans

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : Inhaling this product can result in respiratory tract irritation, leading to mild to severe irritation of the nose, throat and lungs. Dizziness, headaches, nausea.

Symptoms/injuries after skin contact : Causes skin irritation.

Symptoms/injuries after eye contact : Severe irritation including redness, tearing and blurred vision.

Symptoms/injuries after ingestion : May cause a light irritation of the linings of the mouth, throat, and gastrointestinal tract. Ingestion may cause nausea, vomiting and diarrhea.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Avoid release to the environment.

12.2. Persistence and degradability

UPM Liquid Blend/ SC cutback Asphalt	
Persistence and degradability	Not established.

Petroleum Asphalt Base (8052-42-4)	
Persistence and degradability	Not established.

Petroleum Solvent (68476-34-6)	
Persistence and degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative potential

UPM Liquid Blend/ SC cutback Asphalt	
BCF fish 1	<=
Bioaccumulative potential	Not established.

Petroleum Asphalt Base (8052-42-4)	
Bioaccumulative potential	Not established.

Petroleum Solvent (68476-34-6)	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on ozone layer :

Effect on the global warming : No known ecological damage caused by this product.

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose in accordance with all applicable Federal, State and Local regulations.

Sewage disposal recommendations : Do not dispose of waste into sewer.

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to meet all regulations.

Additional information : Handle empty containers with care because residual vapors are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

Not evaluated

Additional information

Other information : No supplementary information available.

ADR

No additional information available

Transport by sea

Proper Shipping Name (IMDG) : ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S.

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

UPM Liquid Blend/ SC cutback Asphalt
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

Hydrogen Sulfide	CAS No 7783-06-4	C<=0.095%
Polyamines	CAS No	C<=1.12%
Tall Oil	CAS No Trade secret	C<=5.32%
Distilled Tall Oil	CAS No 8002-26-4	C<=2.80%

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

15.2.2. National regulations

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm

Petroleum Asphalt Base (8052-42-4)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information : None.

Full text of H-phrases:

------	Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
------	Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
------	Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
------	Asp. Tox. 1	Aspiration hazard Category 1
------	Carc. 1B	Carcinogenicity Category 1B
------	Carc. 2	Carcinogenicity Category 2
------	Flam. Liq. 3	Flammable liquids Category 3
------	Skin Irrit. 2	Skin corrosion/irritation Category 2
------	Skin Sens. 1	Skin sensitization Category 1
------	STOT RE 2	Specific target organ toxicity (repeated exposure) Category 2
------	H226	Flammable liquid and vapour
------	H304	May be fatal if swallowed and enters airways
------	H312	Harmful in contact with skin
------	H315	Causes skin irritation
------	H317	May cause an allergic skin reaction
------	H332	Harmful if inhaled
------	H350	May cause cancer
------	H351	Suspected of causing cancer
------	H373	May cause damage to organs through prolonged or repeated exposure
------	H411	Toxic to aquatic life with long lasting effects

GHS US SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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Safety Data Sheet

Issue Date: 18-Jul-2006 **Revision Date:** 5 February 2018 **Version** 2

1. IDENTIFICATION

Product Identifier

Product Name Radnor® 16 Ounce Bottle Alcohol-Free Lens Cleaner For Polycarbonate, Plastic And Glass Eyewear Lenses

Other means of identification

SDS #

Product Numbers RAD64051476

Recommended use of the chemical and restrictions on use

Recommended Use Eyeglass lens cleaner.

Details of the supplier of the safety data sheet

Supplier Address
Hilsinger Company
33 West Bacon Street
Plainville, MA 02762

Emergency Telephone Number

Company Phone Number 1-508-699-4406
Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Appearance Clear, pale pink or pale blue liquid **Physical State** Liquid **Odor** Mild citrus

Classification

The information below is for the liquid in industrial quantities when used in an industrial setting. The solution as packed in a consumer quantity is considered a consumer good and when used as intended is unlikely to present a hazard

Hazards Not Otherwise Classified (HNOC)

Causes mild skin irritation

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Ethylene Glycol Monobutyl Ether	111-76-2	<6

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin Contact Wash with soap and water.

Inhalation Remove to fresh air.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects

Symptoms Causes mild skin irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical
Not determined.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with skin, eyes or clothing.

Environmental Precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Keep out of the reach of children.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethylene Glycol Monobutyl Ether 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m^3 (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m^3 (vacated) S* S*	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m^3

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Avoid contact with eyes.

Skin and Body Protection Wear suitable protective clothing.

Respiratory Protection Ensure adequate ventilation, especially in confined areas.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid		
Appearance	Clear, pale pink or pale blue liquid	**Odor**	Mild citrus
Color	Clear, pale pink or pale blue	**Odor Threshold**	Not determined

Property	Values	Remarks • Method
pH	7	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	100 °C / 210 °F	
Flash Point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	1.3	
Specific Gravity	1.010	
Water Solubility	Soluble in water	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	

Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined
VOC Content	5.09

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
Keep out of reach of children.

Incompatible Materials
None known based on information supplied.

Hazardous Decomposition Products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Avoid contact with eyes.

Skin Contact Causes mild skin irritation.

Inhalation Do not inhale.

Ingestion Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethylene Glycol Monobutyl Ether 111-76-2	= 470 mg/kg (Rat)	= 2270 mg/kg (Rat) = 220 mg/kg (Rabbit)	= 2.21 mg/L (Rat) 4 h = 450 ppm (Rat) 4 h
Sodium Bicarbonate 144-55-8	= 4220 mg/kg (Rat)	-	-

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity Group 3 IARC components are "not classifiable as human carcinogens".

Chemical Name	ACGIH	IARC	NTP	OSHA
Ethylene Glycol Monobutyl Ether 111-76-2	A3	Group 3		

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 3 IARC components are "not classifiable as human carcinogens"

Numerical measures of toxicity
Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Ethylene Glycol Monobutyl Ether 111-76-2		1490: 96 h Lepomis macrochirus mg/L LC50 static 2950: 96 h Lepomis macrochirus mg/L LC50		1698 - 1940: 24 h Daphnia magna mg/L EC50 1000: 48 h Daphnia magna mg/L EC50
Sodium Bicarbonate 144-55-8	650: 120 h Nitzschia linearis mg/L EC50	8250 - 9000: 96 h Lepomis macrochirus mg/L LC50 static		2350: 48 h Daphnia magna mg/L EC50

Persistence/Degradability
Not determined.

Bioaccumulation
Not determined.

Mobility

Chemical Name	Partition Coefficient
Ethylene Glycol Monobutyl Ether 111-76-2	0.81

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Does not comply
NDSL	Does not comply
EINECS	Does not comply
ELINCS	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

AICS *- Australian Inventory of Chemical Substances*

US Federal Regulations

SARA 313

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Ethylene Glycol Monobutyl Ether - 111-76-2	111-76-2	5-15	1.0

US State Regulations

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Ethylene Glycol Monobutyl Ether 111-76-2	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	1	0	0	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	1	0	0	Not determined

Issue Date: 18-Jul-2006
Revision Date: 5-Feb-2018
Revision Note: Removed obsolete part numbers

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Safety Data Sheet

Issue Date: 30-Jan-2009 **Revision Date:** 24-Nov-2014 **Version** 1

1. IDENTIFICATION

Product Identifier

Product Name Radnor® 5" X 8" Pre-Moistened Lens Cleaning Towelettes (Individually Packaged) (100 Per Dispenser Box)

Other means of identification

SDS # 004161

Product Code RAD64051461

Recommended use of the chemical and restrictions on use

Recommended Use Lens cleaner. Instrument care. Water based cleaner.

Details of the supplier of the safety data sheet

Supplier Address
Radnor Products
259 North Radnor - Chester Road
Suite 100
Radnor, PA, 19087-5283

Emergency Telephone Number

Company Phone Number 1-866-734-3438
Emergency Telephone (24 hr) 1-866-734-3438

2. HAZARDS IDENTIFICATION

Appearance Liquid absorbed onto a towelette **Physical State** Solid containing liquid **Odor** Mild alcohol odor

Classification

The information below is for the liquid absorbed onto the wipe when used in an industrial setting. The wipe itself is considered a consumer good and when used as intended is unlikely to present a hazard.

Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Flammable Liquids	Category 2

Hazards Not Otherwise Classified (HNOC)
Causes mild skin irritation

Signal Word
Danger

Hazard Statements
Causes serious eye irritation
May cause respiratory irritation. May cause drowsiness or dizziness
Highly flammable liquid and vapor

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a poison center or doctor/physician if you feel unwell
IN CASE OF FIRE: Use CO2, dry chemical, or foam for extinction

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Keep cool

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Isopropyl Alcohol	67-63-0	20-30
Ethylene Glycol Monobutyl Ether	111-76-2	1-10

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.

Skin Contact Wash with soap and water. If irritation persists or an allergic reaction occurs, call a physician.

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. If symptoms persist, call a physician.

Ingestion Do not induce vomiting. Rinse mouth. Drink plenty of water. Never give anything by mouth to a person who is unconscious or convulsing. Consult a physician.

Most important symptoms and effects

Symptoms Causes serious eye irritation. Causes mild skin irritation. May cause respiratory irritation. May cause drowsiness or dizziness. May cause nausea, vomiting, stomach ache, and diarrhea. Ingestion may cause central nervous system depression.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical
Flammable.

Hazardous Combustion Products Carbon oxides.

Sensitivity to Mechanical Impact Not sensitive.
Sensitivity to Static Discharge Yes.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required. Avoid contact with eyes and skin. Remove all sources of ignition.

Environmental Precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Use personal protective equipment as required. Wipe or soak up with absorbent material for disposal. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Wear appropriate personal protective equipment. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep out of the reach of children.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep away from incompatible materials, open flames, and high temperatures. Keep container tightly closed and store in a cool, dry and well-ventilated place. Keep out of the reach of children.

Incompatible Materials Strong oxidizing agents. Acids. Chlorinated compounds.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Isopropyl Alcohol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m^3 (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m^3 (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m^3	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m^3 STEL: 500 ppm STEL: 1225 mg/m^3
Ethylene Glycol Monobutyl Ether 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/m^3 (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/m^3 (vacated) S* S*	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/m^3

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations. Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Avoid contact with eyes.

Skin and Body Protection Protective gloves.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before reuse. Provide regular cleaning of equipment, work areas and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Solid containing liquid		
Appearance	Liquid absorbed onto a towelette	**Odor**	Mild alcohol odor
Color	Colorless	**Odor Threshold**	No information available

Property	Values	Remarks • Method
pH	7	
Melting Point/Freezing Point	No information available	
Boiling Point/Boiling Range	No information available	
Flash Point	12 °C / 54 °F	
Evaporation Rate	No information available	
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	No information available	
Lower Flammability Limit	No information available	
Vapor Pressure	No information available	
Vapor Density	No information available	
Specific Gravity	No information available	
Water Solubility	No information available	
Solubility in other solvents	No information available	
Partition Coefficient	Not determined	
Auto-ignition Temperature	No information available	
Decomposition Temperature	No information available	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	
VOC Content	No information available	

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
Hazardous polymerization does not occur.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
Heat, flames and sparks. Incompatible Materials.

Incompatible Materials
Strong oxidizing agents. Acids. Chlorinated compounds.

Hazardous Decomposition Products
Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact Causes serious eye damage.

Skin Contact Causes mild skin irritation.

Inhalation Do not inhale.

Ingestion Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Isopropyl Alcohol 67-63-0	= 4396 mg/kg (Rat)	= 12800 mg/kg (Rat) = 12870 mg/kg (Rabbit)	= 72.6 mg/L (Rat) 4 h
Ethylene Glycol Monobutyl Ether 111-76-2	= 470 mg/kg (Rat)	= 2270 mg/kg (Rat) = 220 mg/kg (Rabbit)	= 2.21 mg/L (Rat) 4 h = 450 ppm (Rat) 4 h

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested.

Chemical Name	ACGIH	IARC	NTP	OSHA
Isopropyl Alcohol 67-63-0		Group 3		X
Ethylene Glycol Monobutyl Ether 111-76-2	A3	Group 3		

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 3 IARC components are "not classifiable as human carcinogens"
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

STOT - single exposure May cause respiratory irritation. May cause drowsiness or dizziness.

Chronic toxicity Avoid repeated exposure. Contains a known or suspected reproductive toxin.

Numerical measures of toxicity
Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Isopropyl Alcohol 67-63-0	1000: 96 h Desmodesmus subspicatus mg/L EC50 1000: 72 h Desmodesmus subspicatus mg/L EC50	9640: 96 h Pimephales promelas mg/L LC50 flow-through 11130: 96 h Pimephales promelas mg/L LC50 static 1400000: 96 h Lepomis macrochirus µg/L LC50		13299: 48 h Daphnia magna mg/L EC50
Ethylene Glycol Monobutyl Ether 111-76-2		1490: 96 h Lepomis macrochirus mg/L LC50 static 2950: 96 h Lepomis macrochirus mg/L LC50		1698 - 1940: 24 h Daphnia magna mg/L EC50 1000: 48 h Daphnia magna mg/L EC50

Persistence/Degradability
Not determined.

Bioaccumulation
Not determined.

Mobility

Chemical Name	Partition Coefficient
Isopropyl Alcohol 67-63-0	0.05
Ethylene Glycol Monobutyl Ether 111-76-2	0.81

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Isopropyl Alcohol 67-63-0	Toxic Ignitable

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Isopropyl Alcohol	Present	X		Present		Present	X	Present	X	X
Ethylene Glycol Monobutyl Ether	Present	X		Present		Present	X	Present	X	X

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

AICS *- Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Isopropyl Alcohol - 67-63-0	67-63-0	27	1.0
Ethylene Glycol Monobutyl Ether - 111-76-2	111-76-2	3.72	1.0

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Isopropyl Alcohol 67-63-0	X	X	X
Ethylene Glycol Monobutyl Ether 111-76-2	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	2	3	Not determined	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	2	3	0	B- Safety Glasses, Gloves

Issue Date: 30-Jan-2009
Revision Date: 24-Nov-2014
Revision Note: New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Product: MARC 41-S HEAVY-DUTY INDUSTRIAL SOLVENT

Form R04132

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER AND NAME: **MARC 41-S HEAVY-DUTY INDUSTRIAL SOLVENT**

SDS DATE: 11/19/18

SUPPLIER: Mid-American Research Chemical Corp. **ADDRESS: P. O. Box 927 Columbus, NE 68602-0927**
PHONE: 402-564-7104 FAX: 402-563-1290
EMERGENCY PHONE: InfoTrac 1-800-535-5053
E-MAIL: marc@marc1.com WEBSITE: www.marc1.com

RECOMMENDED USE: Industrial cleaner.

PREPARED BY: MARC

SECTION 2: HAZARDS IDENTIFICATION

CLASSIFICATION: Classification of this mixture in accordance with paragraph (d) of §1910.1200.

Skin Corrosion/Irritation Category 1B. Serious Eye Damage/Eye Irritation Category 1
Acute Oral Toxicity Category 4. Respiratory irritation SETOT Category 3.

SIGNAL WORD AND PRECAUTIONARY STATEMENTS: DANGER: Harmful if swallowed, in contact with skin or if inhaled. Causes severe skin burns and serious eye damage. May cause respiratory irritation.

PRECAUTIONARY STATEMENTS: Do not breathe mist or vapors. Wash hands, face and any skin contacted thoroughly after handling. Do not eat or drink when using this product. Wear protective gloves, protective clothing, eye protection and face protection. Use only in a well-ventilated area.

POTENTIAL HEALTH EFFECTS: See Section 11 for more information.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Specific percentages may be claimed as a trade secret.

INGREDIENT	CAS NO.	WT. %
Sodium Metasilicate	6834-92-0	2-5%
2-Butoxyethanol	111-76-2	5-12%

SECTION 4: FIRST AID MEASURES

SYMPTOMS: Causes irritation or burning sensation. Causes severe skin burns and serious eye damage. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

EYES: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN: Remove contaminated clothing and wash before reuse. Wash contaminated area with soap and water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. **DO NOT INDUCE VOMITING** unless instructed to do so by poison center or physician. Do not give anything by mouth to a person who is unconscious or convulsing. If vomiting occurs, keep head below hips to reduce risk of aspiration. Probable mucosal damage may contraindicate the use of gastric lavage.

INHALATION: Move person to fresh air and monitor. If respiratory irritation or dizziness occurs, seek immediate medical assistance.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Probable mucosal damage may contraindicate the use of gastric lavage. Treat exposed patients symptomatically.

MEDICAL CONDITIONS AGGRAVATED: No data is available that addresses medical conditions aggravated by exposure to this product.

SECTION 5: FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Not applicable. Product is not a fire hazard.

UNSUITABLE EXTINGUISHING MEDIA: High pressure water jet.

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear appropriate protective equipment, including self-contained breathing apparatus and impervious clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: None known.

SECTION 6: ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES: Depending on the extent of release, consider the need for emergency responders with adequate personal protective equipment for cleanup, need for evacuation or restriction to access of spill area.
LARGE SPILLS: Contain spill with inert material (sand, clay). Transfer material to labeled containers for recovery or proper disposal. After removal, flush area with water.
SMALL SPILLS: May be wiped up and rinsed with water.

ENVIRONMENTAL PRECAUTIONS:
WATER SPILL: Avoid discharges into open waterways.
LAND SPILL: Avoid discharge to soil.
AIR SPILL: NA = Not Applicable.

PROTECTIVE EQUIPMENT: Use personal protective devices as stated in Section 8.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANUP: Same as EMERGENCY PROCEDURES. Dispose of in compliance with all federal, state and local laws and regulations.

SECTION 7: HANDLING AND STORAGE

GENERAL HANDLING: Read label before use. Wash hands, face and any skin contact thoroughly after handling. Do not eat, drink or smoke when using this product. If unsure about safe use, contact your supervisor. Use on a well-ventilated area. See Section 8 for personal protection.

OTHER PRECAUTIONS: **KEEP OUT OF REACH OF CHILDREN!! CAREFULLY READ ENTIRE LABEL BEFORE USE!**

STORAGE: Do not contaminate water, food or feed by storage and disposal. Store locked up in tightly closed original container in a cool (10° – 30° C), dry, well-ventilated area. Store in area inaccessible to children.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT	CAS NO.	TLV
2-Butoxyethanol	111-76-2	20 ppm
Sodium Metasilicate	6834-92-0	3mg/m³

ENGINEERING CONTROLS/VENTILATION: Proper ventilation in accordance with good industrial hygiene should be provided.

RESPIRATORY PROTECTION: Respiratory protection is not necessary under normal conditions of use. If necessary to prevent exposure above occupational limits, use an approved cartridge style respirator.

EYES AND FACE PROTECTION: Chemical resistant goggles and face protection.

SKIN PROTECTION/PROTECTIVE GLOVES: Use water impervious gloves (latex or neoprene rubber). No breakthrough time has been established.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Protective clothing (long sleeves, pants), eyewash, safety shower are always advisable when working with chemicals.

WORK HYGIENIC PRACTICES: Wash hands thoroughly after cleanup, before eating, drinking, smoking or using toilet facilities. Always practice good housekeeping and hygienic measures.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE-	
PHYSICAL STATE:	Liquid
COLOR:	Blue
ODOR:	Licorice
ODOR THRESHOLD:	No data available.
pH:	12 – 13.0
MELTING POINT:	N/A
FREEZING POINT:	30°F
BOILING POINT:	212°F
FLASH POINT/METHOD USED:	None
EVAPORATION RATE:	Similar to water.
FLAMMABILITY (solid, gas):	Not Applicable.
FLAMMABILITY LIMITS:	No data available.
VAPOR PRESSURE (mmHg):	No data available
VAPOR DENSITY (AIR = 1):	No data available
RELATIVE DENSITY:	1.05
SPECIFIC GRAVITY (H2O = 1):	1.05
SOLUBILITY IN WATER:	Complete.
VISCOSITY:	Thin

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: No specific reactivity test data is available. Under normal conditions of storage and use, hazardous reactions are not expected.

STABILITY: This product is stable at ambient temperatures and pressures.

CONDITIONS TO AVOID: N/A

INCOMPATIBILITY (MATERIAL TO AVOID): Strong acids, oxidizers.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None known.

HAZARDOUS POLYMERIZATION: No **CONDITIONS TO AVOID (POLYMERIZATION):** NA

SECTION 11: TOXICOLOGICAL INFORMATION

2-Butoxyethanol: Oral LD-50 – Rat + 1,300 mg/kg.
Oral LD-50 – Guinea Pig = 1,400 mg/kg
Dermal LD – 50 Rat > 2,000 mg/kg
Dermal LD – 50 Guinea Pig > 2,000 mg/kg
Inhalation Vapors LC50 – Rat – 3 hours > 4.9 mg/l
Inhalation Vapors LC50 – Guinea Pig - 1 hour > 3.4 mg/l
Skin corrosion/irritation – Rabbit = irritating to skin.
Serious eye damage/eye irritation – Rabbit = irritating to the eyes.
Respiratory or skin sensitization – Guinea pig = did not cause sensitization.

Sodium Metasilicate: LD50 1,280 mg/kg (rat); 24,000 mg/kg (mouse).

EYES EFFECTS: Serious eye damage. Eye irritation.

SKIN EFFECTS: Severe skin burns. Irritation.

INGESTION: May be harmful if swallowed. Probable mucosal damage.

INHALATION: Do not breathe mist/vapors/spray. May cause respiratory irritation and or dizziness.

CARCINOGENS: Ingredients are not listed on the NTP Report on Carcinogens, IARC Monographs or by OSHA.

OTHER DATA: No other toxicological information is available for this mixture.

SECTION 12: ECOLOGICAL INFORMATION

This material has not been tested for acute environmental effects.

PERSISTENCE AND DEGRADABILITY: Material is not persistent. All organic components in this product are readily biodegradable.

BIO-ACCUMULATIVE POTENTIAL: No evidence to suggest bio-accumulation will occur.

MOBILITY: Accidental spillage may lead to penetration of soil and groundwater. However, due to degradability, no evidence suggests this would cause adverse ecological effects. Material will raise pH of affected area.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Do not contaminate water, food or feed by disposal. If these wastes cannot be disposed of by use according to label directions, contact your State Pesticide or Environmental Control Agency, or the hazardous waste representative at the nearest EPA Regional Office for guidance. Rinse container promptly after emptying. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. If container is one gallon or less, wrap empty container in plastic bag and discard in trash.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (for ground/non-bulk containers)

CONTAINER SIZES(S): Drums, Pails, Gallons
PROPER SHIPPING NAME: CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (CONTAINS SODIUM METASILICATE).
HAZARD CLASS: 8
ID NUMBER: UN3266
PACKING GROUP: PGII
LABEL STATEMENT: CORROSIVE

CONTAINER SIZES(S): Quarts: Compound, Cleaning Liquid, Limited Quantity.

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

INVENTORY STATUS: All components are listed on TSCA (US), EINECS/ELINCS (EU), DSL (Canada), AICS (Australia), EMCS (Japan).

OSHA Hazard Communication Standard: This product is a "Hazardous Chemical".

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (EPCRA) Sections 311 and 312:

Immediate (Acute) Health Hazard:	Yes	**Delayed (Chronic) Health Hazard:**	No
Fire Hazard:	No	**Reactive Hazard:**	No
Sudden Release of Pressure Hazard:	No		

SECTION 16: OTHER INFORMATION

HMIS/NFPA Ratings:

Health =	2
Flammability =	0
Reactivity =	0
Other =	-
Protection =	-

REVISION DATE: 11/19/18

DISCLAIMER: While the information contained herein is believed to be correct, no warranties are made with respect thereto, and all liability from reliance thereon is disclaimed.

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product code : 1909HOT

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Cleansing product

1.3. Supplier

KARCHER NORTH AMERICA
6398 N Karcher Way
Aurora, 80019
United States
T 303-738-2400
info@karcherna.com

1.4. Emergency telephone number

Emergency number : 800-535-5053
For Chemical Emergency Call INFOTRAC 24hr/day 7days/week
Within USA and Canada: 1-800-535-5053
Outside USA and Canada: 011-1-352-323-3500
(collect calls accepted)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 1	H314	Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger
Hazard statements (GHS US) : H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
Precautionary statements (GHS US) : P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearsm and face thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a poison center/doctor
P363 - Wash contaminated clothing before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local regulations

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
SODIUM METASILICATE	CAS-No.: 6834-92-0	5 – 10
BUTHOXYETHANOL	CAS-No.: 111-76-2	1 – 5
C9-C11 ALCOHOLS, ETHOXYLATED	CAS-No.: 68439-46-3	1 – 5
ALKYL (C10-C16) BENZENESULFONIC ACID	CAS-No.: 68584-22-5	1.8 – 2
SODIUM XYLENE SULFONATE	CAS-No.: 1300-72-7	1 – 5

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Call a physician immediately.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.
First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : Burns.
Symptoms/effects after eye contact : Serious damage to eyes.
Symptoms/effects after ingestion : Burns.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Fire hazard : Not flammable.
Explosion hazard : No direct explosion hazard.
Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not handle until all safety precautions have been read and understood.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Wear personal protective equipment.
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.
Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

BREAKTHROUGH!
No additional information available

C9-C11 ALCOHOLS, ETHOXYLATED (68439-46-3)
No additional information available

ALKYL (C10-C16) BENZENESULFONIC ACID (68584-22-5)
No additional information available

SODIUM XYLENE SULFONATE (1300-72-7)
No additional information available

BUTHOXYETHANOL (111-76-2)	
USA - ACGIH - Occupational Exposure Limits	
Local name	2-Butoxyethanol (EGBE)
ACGIH OEL TWA [ppm]	20 ppm
Remark (ACGIH)	TLV® Basis: Eye & URT irr. Notations: A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2019
USA - OSHA - Occupational Exposure Limits	
Local name	2-Butoxyethanol
OSHA PEL (TWA) [1]	240 mg/m³
OSHA PEL (TWA) [2]	50 ppm
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

SODIUM METASILICATE (6834-92-0)
No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Appearance	:	Liquid.
Color	:	red
Odor	:	strong
Odor threshold	:	No data available
pH	:	13.3
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Not applicable.
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Solubility	:	No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

VOC CONTENT:

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

C9-C11 ALCOHOLS, ETHOXYLATED (68439-46-3)	
LD50 oral rat	> 1000 mg/kg (Rat, Oral)
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 inhalation rat (mg/l)	> 1.6 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
ATE US (oral)	500 mg/kg body weight

ALKYL (C10-C16) BENZENESULFONIC ACID (68584-22-5)	
LD50 dermal rabbit	> 5000 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 inhalation rat (mg/l)	> 1.9 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

SODIUM XYLENE SULFONATE (1300-72-7)	
LD50 oral rat	> 7000 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 dermal rabbit	> 2000 mg/kg body weight (Equivalent or similar to OECD 402, Rabbit, Read-across, Dermal, 14 day(s))

BUTHOXYETHANOL (111-76-2)	
LD50 oral rat	1746 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral, 14 day(s))
LC50 inhalation rat (mg/l)	> 4.26 mg/l (4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	1414 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

SODIUM METASILICATE (6834-92-0)	
LD50 oral rat	1152 – 1349 mg/kg body weight (Rat, Male / female, Experimental value, Oral, 7 day(s))
LD50 dermal rat	> 5000 mg/kg body weight (EPA OPPTS 870.1200: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))

SODIUM METASILICATE (6834-92-0)	
LC50 inhalation rat (mg/l)	> 2.06 mg/l (EPA OPPTS 870.1300: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (vapours), 14 day(s))
ATE US (oral)	1152 mg/kg body weight

Skin corrosion/irritation : Causes severe skin burns.
pH: 13.3

Serious eye damage/irritation : Causes serious eye damage.
pH: 13.3

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

BUTHOXYETHANOL (111-76-2)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

BUTHOXYETHANOL (111-76-2)	
STOT-single exposure	May cause respiratory irritation.

SODIUM METASILICATE (6834-92-0)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : Not classified

C9-C11 ALCOHOLS, ETHOXYLATED (68439-46-3)	
NOAEL (oral,rat,90 days)	≥ 500 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

ALKYL (C10-C16) BENZENESULFONIC ACID (68584-22-5)	
NOAEL (oral,rat,90 days)	500 mg/kg body weight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
NOAEL (dermal,rat/rabbit,90 days)	> 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

BUTHOXYETHANOL (111-76-2)	
NOAEL (dermal,rat/rabbit,90 days)	> 150 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)

SODIUM METASILICATE (6834-92-0)	
NOAEL (oral,rat,90 days)	227 – 237 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Symptoms/effects after skin contact : Burns.

Symptoms/effects after eye contact : Serious damage to eyes.

Symptoms/effects after ingestion : Burns.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Before neutralisation, the product may represent a danger to aquatic organisms.

C9-C11 ALCOHOLS, ETHOXYLATED (68439-46-3)	
LC50 - Fish [1]	5 – 7 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Daphnia [1]	2.5 mg/l Test organisms (species): Daphnia magna

SODIUM XYLENE SULFONATE (1300-72-7)	
LC50 - Fish [1]	> 1000 mg/l (EPA OTS 797.1400, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value)
EC50 - Daphnia [1]	> 1000 mg/l (EPA OTS 797.1300, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)

BUTHOXYETHANOL (111-76-2)	
LC50 - Fish [1]	1474 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Lethal)
EC50 - Daphnia [1]	1550 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 algae	1840 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)
NOEC (chronic)	100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	> 100 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) Duration: '21 d'

SODIUM METASILICATE (6834-92-0)	
LC50 - Fish [1]	210 mg/l (ISO 7346-1, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value)
EC50 - Daphnia [1]	1700 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

C9-C11 ALCOHOLS, ETHOXYLATED (68439-46-3)	
Persistence and degradability	Biodegradability in water: no data available.

SODIUM XYLENE SULFONATE (1300-72-7)	
Persistence and degradability	Readily biodegradable in water.

BUTHOXYETHANOL (111-76-2)	
Persistence and degradability	Readily biodegradable in water.

SODIUM METASILICATE (6834-92-0)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

C9-C11 ALCOHOLS, ETHOXYLATED (68439-46-3)	
Bioaccumulative potential	No bioaccumulation data available.

SODIUM XYLENE SULFONATE (1300-72-7)	
Partition coefficient n-octanol/water (Log Pow)	-3.12 (Experimental value, EU Method A.8: Partition Coefficient, 20 °C)

SODIUM XYLENE SULFONATE (1300-72-7)	
Bioaccumulative potential	Not bioaccumulative.

BUTHOXYETHANOL (111-76-2)	
Partition coefficient n-octanol/water (Log Pow)	0.81 (Experimental value, BASF test, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

SODIUM METASILICATE (6834-92-0)	
Bioaccumulative potential	Bioaccumulation: not applicable.

12.4. Mobility in soil

SODIUM XYLENE SULFONATE (1300-72-7)	
Surface tension	71 mN/m (20 °C, 90 %, EU Method A.5: Surface tension)
Ecology - soil	No (test)data on mobility of the substance available.

BUTHOXYETHANOL (111-76-2)	
Surface tension	65.03 mN/m (20 °C, 2 g/l)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.451 – 0.882 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.

SODIUM METASILICATE (6834-92-0)	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

14.1. UN number

DOT NA No : UN1760

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Corrosive liquids, n.o.s. (SODIUM METASILICATE), 8, III

14.3. Transport hazard class(es)

DOT
Transport hazard class(es) (DOT) : 8
Hazard labels (DOT) : 8

14.4. Packing group

Packing group (DOT) : III

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN1760

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

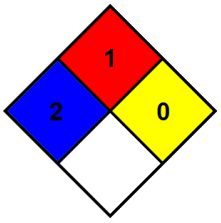
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases	
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical	:	0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	:	B - Safety glasses, Gloves

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

1. Identification

Product identifier: MAC'S 8100 GLASS CLEANER

Other means of identification
SDS number: RE1000028763

Recommended restrictions
Product use: Cleaner
Restrictions on use: Not known.

Manufacturer/Importer/Distributor Information

Manufacturer

Company Name:	NAPA BALKAMP
Address:	1601 Whitaker Rd INDIANAPOLIS,IN 46168
Telephone:	317-837-2800
Fax:	

Emergency telephone number: 1-866-836-8855

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable aerosol	Category 1

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement: Extremely flammable aerosol.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use.

Storage: Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Ethanol, 2-butoxy-	111-76-2	1 - <5%
2-Propanol	67-63-0	1 - <5%
Propane	74-98-6	1 - <5%
Butane	106-97-8	1 - <5%
Morpholine	110-91-8	0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

Inhalation: Move to fresh air.

Skin Contact: Wash skin thoroughly with soap and water. If skin irritation occurs: Get medical advice/attention.

Eye contact: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

5. Fire-fighting measures

General Fire Hazards: Use water spray to keep fire-exposed containers cool. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Vapors may travel considerable distance to a source of ignition and flash back.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind.

Methods and material for containment and cleaning up: Stop the flow of material, if this is without risk. Absorb with sand or other inert absorbent.

Notification Procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. Handling and storage

Precautions for safe handling: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use.

Conditions for safe storage, including any incompatibilities: Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Aerosol Level 1

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values		Source
Ethanol, 2-butoxy-	TWA	20 ppm		US. ACGIH Threshold Limit Values (2008)
	TWA	25 ppm	120 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	REL	5 ppm	24 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	50 ppm	240 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
2-Propanol	STEL	500 ppm	1,225 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	200 ppm		US. ACGIH Threshold Limit Values (2008)
	PEL	400 ppm	980 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	400 ppm	980 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	REL	400 ppm	980 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL	400 ppm		US. ACGIH Threshold Limit Values (2008)
	STEL	500 ppm	1,225 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Propane	REL	1,000 ppm	1,800 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	1,000 ppm	1,800 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	1,000 ppm	1,800 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Butane	REL	800 ppm	1,900 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL	1,000 ppm		US. ACGIH Threshold Limit Values (03 2018)
	TWA	800 ppm	1,900 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
Morpholine	REL	20 ppm	70 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL	30 ppm	105 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	20 ppm		US. ACGIH Threshold Limit Values (2008)
	TWA	20 ppm	70 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	30 ppm	105 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	PEL	20 ppm	70 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Ethanol, 2-methoxy-	TWA	0.1 ppm		US. ACGIH Threshold Limit Values (2008)
	REL	0.1 ppm	0.3 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)

	TWA	25 ppm	80 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	PEL	25 ppm	80 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
1,2-Ethanediamine	TWA	10 ppm		US. ACGIH Threshold Limit Values (2008)
	PEL	10 ppm	25 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	10 ppm	25 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	REL	10 ppm	25 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Morpholine, 4-ethyl-	REL	5 ppm	23 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	5 ppm	23 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	PEL	20 ppm	94 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	5 ppm		US. ACGIH Threshold Limit Values (2008)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Ethanol, 2-butoxy- (Butoxyacetic acid (BAA), with hydrolysis: Sampling time: End of shift.)	200 mg/g (Creatinine in urine)	ACGIH BEL (03 2013)
2-Propanol (acetone: Sampling time: End of shift at end of work week.)	40 mg/l (Urine)	ACGIH BEL (03 2013)
Ethanol, 2-methoxy- (2-Methoxyacetic acid: Sampling time: End of shift at end of work week.)	1 mg/g (Creatinine in urine)	ACGIH BEL (03 2013)

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

General information: Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection: Wear goggles/face shield.

Skin Protection
Hand Protection: No data available.

Other: No data available.

Respiratory Protection: In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

Hygiene measures: When using do not smoke. Observe good industrial hygiene practices.

9. Physical and chemical properties

Appearance

Physical state: liquid
Form: Spray Aerosol
Color: No data available.
Odor: No data available.
Odor threshold: No data available.
pH: No data available.
Melting point/freezing point: No data available.
Initial boiling point and boiling range: No data available.
Flash Point: -104.44 °C
Evaporation rate: No data available.
Flammability (solid, gas): No data available.
Upper/lower limit on flammability or explosive limits
Flammability limit - upper (%): No data available.

Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	4,826.3301 - 6,205.2816 hPa (20 °C) 1,068.6785 - 1,206.5725 hPa (50 °C)
Vapor density:	No data available.
Density:	No data available.
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Avoid heat or contamination.
Incompatible Materials:	No data available.
Hazardous Decomposition Products:	No data available.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Ingestion:	No data available.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Ingestion:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix: 60,310.88 mg/kg

Dermal
Product: ATEmix: 21,175.09 mg/kg

Inhalation
Product: ATEmix: 690.85 mg/l
ATEmix : 172.71 mg/l

Repeated dose toxicity
Product: No data available.

Specified substance(s):

Ethanol, 2-butoxy-	NOAEL (Rabbit(Female, Male), Dermal, 90 d): > 150 mg/kg Dermal Experimental result, Key study NOAEL (Rat(Female), Oral, 90 d): < 82 mg/kg Oral Experimental result, Key study NOAEL (Rat(Female), Inhalation, 2 yr): < 31 ppm(m) Inhalation Experimental result, Key study
2-Propanol	NOAEL (Rat, Inhalation, >= 104 Weeks): 5,000 ppm(m) Inhalation Experimental result, Key study
Propane	NOAEL (Rat(Female, Male), Inhalation, >= 28 d): 4,000 ppm(m) Inhalation Experimental result, Key study LOAEL (Rat(Female, Male), Inhalation, >= 28 d): 12,000 ppm(m) Inhalation Experimental result, Key study
Butane	LOAEL (Rat(Female, Male), Inhalation, >= 28 d): 12,000 ppm(m) Inhalation Experimental result, Key study NOAEL (Rat(Female, Male), Inhalation, >= 28 d): 4,000 ppm(m) Inhalation Experimental result, Key study
Morpholine	NOAEL (Rat(Female, Male), Inhalation): 36 ppm(m) Inhalation Experimental result, Key study LOAEL (Rat(Female), Oral, 56 d): 500 mg/kg Oral Experimental result, Key study

Skin Corrosion/Irritation
Product: No data available.

Specified substance(s):

Ethanol, 2-butoxy-	in vivo (Rabbit): Irritating Experimental result, Key study
2-Propanol	in vivo (Rabbit): Not Classified Experimental result, Key study
Morpholine	in vivo (Rabbit): Corrosive Experimental result, Key study

Serious Eye Damage/Eye Irritation
Product: No data available.
Specified substance(s):

Ethanol, 2-butoxy-	Rabbit, 24 - 72 hrs: Irritating
2-Propanol	Rabbit, 1 d: Category 2: Causes serious eye irritation

Respiratory or Skin Sensitization
Product: No data available.

Specified substance(s):

Ethanol, 2-butoxy-	Skin sensitization:, in vivo (Guinea pig): Non sensitising
2-Propanol	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Morpholine	Skin sensitization:, in vivo (Guinea pig): Non sensitising

Carcinogenicity
Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

Aspiration Hazard
Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Specified substance(s):

Ethanol, 2-butoxy-	LC 50 (Oncorhynchus mykiss, 96 h): 1,474 mg/l Experimental result, Key study
2-Propanol	LC 50 (Pimephales promelas, 96 h): 9,640 mg/l Experimental result, Key study
Propane	LC 50 (Various, 96 h): 147.54 mg/l QSAR QSAR, Key study
Butane	LC 50 (Various, 96 h): 147.54 mg/l QSAR QSAR, Key study
Morpholine	LC 50 (Oncorhynchus mykiss, 96 h): 180 mg/l Experimental result, Key study

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Ethanol, 2-butoxy-	EC 50 (Daphnia magna, 48 h): 1,550 mg/l Experimental result, Key study
2-Propanol	LC 50 (Daphnia magna, 24 h): > 10,000 mg/l Experimental result, Key study
Butane	LC 50 (Daphnia sp., 48 h): 69.43 mg/l QSAR QSAR, Key study
Morpholine	EC 50 (Daphnia magna, 48 h): 45 mg/l Experimental result, Key study

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Ethanol, 2-butoxy-	NOAEL (Danio rerio): > 100 mg/l Experimental result, Key study

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Ethanol, 2-butoxy-	EC 50 (Daphnia magna): 297 mg/l Experimental result, Key study EC 10 (Daphnia magna): 134 mg/l Experimental result, Key study
Morpholine	EC 50 (Daphnia magna): 12 mg/l Experimental result, Key study NOAEL (Daphnia magna): 5 mg/l Experimental result, Key study

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s):

Ethanol, 2-butoxy-	90.4 % Detected in water. Experimental result, Key study
2-Propanol	53 % (5 d) Detected in water. Experimental result, Key study
Propane	100 % (385.5 h) Detected in water. Experimental result, Key study 50 % (3.19 d) Detected in water. QSAR, Weight of Evidence study
Butane	100 % (385.5 h) Detected in water. Experimental result, Key study
Morpholine	> 90 % (24 h) Sediment Experimental result, Key study 80 - 94 % (24 h) Sediment Experimental result, Key study

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):

Morpholine	Cyprinus carpio, Bioconcentration Factor (BCF): < 2.8 Aquatic sediment Experimental result, Key study

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Ethanol, 2-butoxy-	No data available.
2-Propanol	No data available.
Propane	No data available.
Butane	No data available.
Morpholine	No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal instructions: Wash before disposal. Dispose to controlled facilities.

Contaminated Packaging: No data available.

14. Transport information

DOT

UN Number:	UN 1950
UN Proper Shipping Name:	Aerosols, flammable
Transport Hazard Class(es)	
Class:	2.1
Label(s):	–
Packing Group:	II
Marine Pollutant:	No
Environmental Hazards:	No
Marine Pollutant	No
Special precautions for user:	Not regulated.

IMDG

UN Number:	UN 1950
UN Proper Shipping Name:	Aerosols, flammable
Transport Hazard Class(es)	
Class:	2
Label(s):	–
EmS No.:	
Packing Group:	–
Environmental Hazards:	No
Marine Pollutant	No
Special precautions for user:	Not regulated.

IATA

UN Number:	UN 1950
Proper Shipping Name:	Aerosols, flammable
Transport Hazard Class(es):	
Class:	2.1
Label(s):	–
Packing Group:	–
Environmental Hazards:	No
Marine Pollutant	No
Special precautions for user:	Not regulated.

15. Regulatory information

US Federal Regulations

Restrictions on use: Not known.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity	Reportable quantity
2-Propanol	lbs. 100
Propane	lbs. 100
Butane	lbs. 100
Morpholine	lbs. 100
1,2-Ethanediamine	lbs. 5000
Morpholine, 4-ethyl-	lbs. 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Fire Hazard
Flammable aerosol

SARA 302 Extremely Hazardous Substance

Chemical Identity	Reportable quantity	Threshold Planning Quantity
1,2-Ethanediamine	lbs. 5000	lbs. 10000

SARA 304 Emergency Release Notification

Chemical Identity	Reportable quantity
Ethanol, 2-butoxy-	
2-Propanol	lbs. 100
Propane	lbs. 100
Butane	lbs. 100
Morpholine	lbs. 100
Ethanol, 2-methoxy-	
1,2-Ethanediamine	lbs. 5000
Morpholine, 4-ethyl-	lbs. 100

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
1,2-Ethanediamine	lbs
Ethanol, 2-butoxy-	10000 lbs
2-Propanol	10000 lbs
Propane	10000 lbs
Butane	10000 lbs
Morpholine	10000 lbs
Ethanol, 2-methoxy-	10000 lbs
Morpholine, 4-ethyl-	10000 lbs

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Ethanol, 2-butoxy-	N230 lbs	N230 lbs.
2-Propanol	lbs	lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

US State Regulations

US. California Proposition 65

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Ethanol, 2-methoxy-	Developmental toxin. 03 2008
Ethanol, 2-methoxy-	Male reproductive toxin. 03 2008

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Ethanol, 2-butoxy-
2-Propanol
Propane
Butane

US. Massachusetts RTK - Substance List

Chemical Identity
1,2-Ethanediamine

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Ethanol, 2-butoxy-
2-Propanol
Propane
Butane

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	Not in compliance with the inventory.
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.
Mexico INSQ:	Not in compliance with the inventory.
Ontario Inventory:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory

16.Other information, including date of preparation or last revision

Issue Date:	10/22/2019
Revision Information:	No data available.
Version #:	1.0
Further Information:	No data available.
Disclaimer:	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

SAFETY DATA SHEET

LAWSON Products

Section 1. Identification

GHS product identifier : P91020 (Contax), 51865 (Wired), 53858 (Powr on)

Product type : Aerosol.

Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

Supplier's details : Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631

1-866-529-7664 www.lawsonproducts.com

Emergency telephone number (with hours of operation) : 1-888-426-4851
24/7

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE AEROSOLS - Category 1
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
CARCINOGENICITY - Category 2
GASES UNDER PRESSURE - Compressed gas

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 3%

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Extremely flammable aerosol.
Causes serious eye damage.
Suspected of causing cancer.
Contains gas under pressure; may explode if heated.

Precautionary statements

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Pressurized container: Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear eye or face protection. Wash hands thoroughly after handling. FOR INDUSTRIAL USE ONLY

Response : IF exposed or concerned: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage : Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Section 2. Hazards identification

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification :

CAS number/other identifiers

CAS number : Not applicable.

Ingredient name	%	CAS number
Propyl alcohol	1 - 5	71-23-8
1,2-epoxybutane	0.1 - 1	106-88-7
1-bromopropane	65 - 75	106-94-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Section 4. First aid measures

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : May cause skin irritation.

Ingestion : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst. Bursting aerosol containers may be propelled from a fire at high speed.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide carbon
monoxide halogenated
compounds carbonyl
halides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Propyl alcohol	**ACGIH TLV (United States, 4/2014).** TWA: 100 ppm 8 hours. **NIOSH REL (United States, 10/2013).** **Absorbed through skin.** STEL: 625 mg/m³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 500 mg/m³ 10 hours. TWA: 200 ppm 10 hours. **OSHA PEL (United States, 2/2013).** TWA: 500 mg/m³ 8 hours. TWA: 200 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** STEL: 625 mg/m³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 500 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
1,2-epoxybutane	**AIHA WEEL (United States, 10/2011).** TWA: 2 ppm 8 hours.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Aerosol.]

Color : Colorless.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : 70°C (158°F)

Flash point : None.

Evaporation rate : >1 (butyl acetate = 1)

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Lower: 3.8%
Upper: 9.5%

Vapor pressure : 14.8 kPa (110.8 mm Hg) [room temperature]

Vapor density : Not available.

Relative density : 1.35

Solubility : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : 460°C (860°F)

Decomposition temperature : Not available.

Viscosity : Not available.

Aerosol product

Type of aerosol : Spray

Heat of combustion : 1.546 kJ/g

Ignition distance : 0 cm

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Reactive or incompatible with the following materials: acids

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Propyl alcohol	LD50 Dermal	Rabbit	5040 mg/kg	-
	LD50 Oral	Rat	1870 mg/kg	-
1,2-epoxybutane	LC50 Inhalation Vapor	Rat	6300 mg/m³	4 hours
	LD50 Oral	Rat	500 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Propyl alcohol	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Mild irritant	Human	-	47 hours 100 Percent	-
	Skin - Mild irritant	Human	-	24 hours 100 Percent	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
1,2-epoxybutane	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
1,2-epoxybutane	-	2B	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Propyl alcohol	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Section 11. Toxicological information

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : May cause skin irritation.

Ingestion : May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	5142.9 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Propyl alcohol	Acute EC50 4480000 µg/l Fresh water Acute LC50 1000000 µg/l Fresh water Acute LC50 2950000 µg/l Fresh water Acute LC50 3800000 µg/l Marine water	Algae - Selenastrum sp. Crustaceans - Gammarus pulex Daphnia - Daphnia pulex Fish - Alburnus alburnus	96 hours 48 hours 48 hours 96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Propyl alcohol 1,2-epoxybutane	0.2 0.68	- -	low low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	-	-	-	1950	1950	1950
UN proper shipping name	Consumer commodity ORM-D	Consumer commodity ORM-D	Consumer commodity ORM-D	AEROSOLS, - flammable	AEROSOLS (flammable) 2.1	AEROSOLS, flammable
Transport hazard class(es)	ORM-D	ORM-D	ORM-D	2.1		2.1
Packing group	-	-	-			
				-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.

Section 14. Transport information

Additional information	**Reportable quantity** 18181.8 lbs / 8254.5 kg [1615.3 gal / 6114.5 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	-	-	**Tunnel code** (E)	- -

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

All components are listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Propyl alcohol 1,2-epoxybutane	1 - 5 0.1 - 1	Yes. Yes.	No. No.	No. No.	Yes. Yes.	No. Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	1,2-epoxybutane	106-88-7	0.1 - 1
Supplier notification	1,2-epoxybutane	106-88-7	0.1 - 1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: N-PROPYL BROMIDE; CARBON DIOXIDE; PROPYL ALCOHOL

New York : The following components are listed: 1,2-Epoxybutane

New Jersey : The following components are listed: 1-BROMOPROPANE; PROPANE, 1-BROMO-; CARBON DIOXIDE; CARBONIC ACID GAS; PROPYL ALCOHOL; 1-PROPANOL; 1, 2-BUTYLENE OXIDE; 1,2-EPOXYBUTANE

Pennsylvania : The following components are listed: PROPANE, 1-BROMO-; CARBON DIOXIDE; 1-PROPANOL; OXIRANE, ETHYL-

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
1-bromopropane	No.	Yes.	No.	No.

International regulations Chemical Weapon Convention List

Schedules I, II & III Chemicals Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia : All components are listed or exempted.

Canada : Not determined.

China : All components are listed or exempted.

Europe : All components are listed or exempted.

Japan : All components are listed or exempted.

Malaysia : Not determined.

Section 15. Regulatory information

New Zealand : All components are listed or exempted.

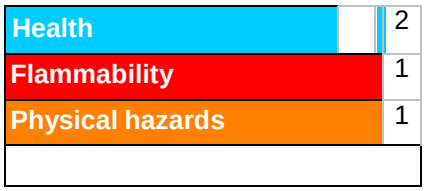
Philippines : All components are listed or exempted.

Republic of Korea : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 2/18/2015.

Date of issue/Date of revision : 2/18/2015.

Date of previous issue : 8/24/2016.

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Prepared by: Regulatory Affairs department

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **NO. 2 DIESEL FUEL**
Product Description: Hydrocarbons and Additives
Product Code: 123455-22, 123455-29, 152017-00
Intended Use: Diesel engine fuel, Heating Oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Flammable liquid: Category 3.
Acute inhalation toxicant: Category 4. Skin irritation: Category 2. Carcinogen: Category 2. Specific target organ toxicant (repeated exposure): Category 2. Aspiration toxicant: Category 1.

LABEL:
Pictogram:

Signal Word: Danger

Hazard Statements:

H226: Flammable liquid and vapor. H304: May be fatal if swallowed and enters airways. H315: Causes skin irritation. H332: Harmful if inhaled. H351: Suspected of causing cancer. H373: May cause damage to organs through prolonged or repeated exposure. Bone marrow, Liver, Thymus

Precautionary Statements:
P101: If medical advice is needed, have product container or label at hand. P102: Keep out of reach of children. P103: Read label before use.P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. P233: Keep container tightly closed. P240: Ground / bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating, and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe mist / vapours. P264: Wash skin thoroughly after handling. P271: Use only outdoors or in a well-ventilated area. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection.P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P308 + P313: IF exposed or concerned: Get medical advice/ attention. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P331: Do NOT induce vomiting. P332 + P313: If skin irritation occurs: Get medical advice/ attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect spillage.P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up.P501: Dispose of contents and container in accordance with local regulations.

Contains: DIESEL OIL..C9-20

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

Material can accumulate static charges which may cause an ignition. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

HEALTH HAZARDS

May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Under conditions of poor personal hygiene and prolonged repeated contact, some polycyclic aromatic compounds (PACs) have been suspected as a cause of skin cancer in humans. May be irritating to the eyes, nose, throat, and lungs.

ENVIRONMENTAL HAZARDS

Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:	Health:	2	Flammability:	2	Reactivity:	0
HMIS Hazard ID:	Health:	2*	Flammability:	2	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
DIESEL OIL..C9-20	68334-30-5	80 - > 99%	H226, H304, H332, H351, H315, H373, H401, H411

Hazardous Constituent(s) Contained in Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
ETHYL BENZENE	100-41-4	0.1 - 1%	H225, H304, H332, H373, H401, H412
NAPHTHALENE	91-20-3	0.1 - 1%	H228(2), H302, H351, H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: Composition may contain up to 0.5% performance additives and / or dyes.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Contains hydrocarbon solvent/petroleum hydrocarbons; skin contact may aggravate an existing dermatitis.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Flammable. Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >38°C (100°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.6 UEL: 7.0
Autoignition Temperature: >200°C (392°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H2S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact

with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Water Spill: Stop leak if you can do it without risk. Eliminate sources of ignition. Warn other shipping. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid all personal contact. Do not siphon by mouth. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) during safety critical tasks, such as bulk fuel loading or unloading operations, or in storage areas where vapors may be present, unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100x10E-12 Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge. Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
DIESEL OIL..C9-20	Stable Aerosol.	TWA	5 mg/m3		Skin	ExxonMobil
DIESEL OIL..C9-20	Vapor.	TWA	200 mg/m3		Skin	ExxonMobil
DIESEL OIL..C9-20 [total hydrocarb, vapor&aerosol]	Inhalable fraction and vapor	TWA	100 mg/m3		Skin	ACGIH
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		TWA	20 ppm		N/A	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Biological limits

Substance	Specimen	Sampling Time	Limit	Determinant	Source
ETHYL BENZENE	Creatinine in urine	End of shift	0.15 g/g	Sum of mandelic acid and phenylglyoxylic acid	ACGIH BELs (BEIs)
NAPHTHALENE	No Biological Specimen provided	End of shift	Not Assigned	1-Naphthol, with hydrolysis + 2-Naphthol, with hydrolysis	ACGIH BELs (BEIs)

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use

with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Half-face filter respirator

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

Eye Protection: If contact with material is likely, chemical goggles are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Clear (May Be Dyed)
Odor: Petroleum/Solvent
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.81 - 0.87
Density (at 15 ºC): 810 kg/m³ (6.76 lbs/gal, 0.81 kg/dm³) - 876 kg/m³ (7.31 lbs/gal, 0.88 kg/dm³)
Flammability (Solid, Gas): N/A

Flash Point [Method]: >38°C (100°F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.6 UEL: 7.0
Autoignition Temperature: >200°C (392°F)
Boiling Point / Range: 145°C (293°F) - 370°C (698°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: 0.067 kPa (0.5 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 1.7 cSt (1.7 mm2/sec) at 40 °C - 4.1 cSt (4.1 mm2/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: < -6°C (21°F)

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Halogens, Strong Acids, Strong Bases, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: (Rat) 4 hour(s) LC50 4100 mg/m3 (Vapor and aerosol)	Moderately toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
Ingestion	
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
Skin	
Acute Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 434
Skin Corrosion/Irritation (Rabbit): Data	Irritating to the skin. Based on test data for structurally similar

available.	materials. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: Data available.	Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475
Carcinogenicity: Data available.	Caused cancer in laboratory animals, but the relevance to humans is uncertain. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451
Reproductive Toxicity: Data available.	Not expected to be a reproductive toxicant. Test(s) equivalent or similar to OECD Guideline 414
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: Data available.	Concentrated, prolonged or deliberate exposure may cause organ damage. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 413

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
ETHYL BENZENE	Inhalation Lethality: 4 hour(s) LC50 17.8 mg/l (Vapor) (Rat); Oral Lethality: LD50 3.5 g/kg (Rat)
NAPHTHALENE	Inhalation Lethality: 4 hour(s) LC50 > 0.4 mg/l (Max attainable vapor conc.) (Rat); Oral Lethality: LD50 533 mg/kg (Mouse)

OTHER INFORMATION

For the product itself:

Target Organs Repeated Exposure: Bone marrow, Liver, Thymus

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Diesel fuel: Caused cancer in animal tests. Caused mutations in vitro. Repeated dermal exposures to high concentrations in test animals resulted in reduced litter size and litter weight, and increased fetal resorptions at maternally toxic doses. Dermal exposure to high concentrations resulted in severe skin irritation with weight loss and some mortality. Inhalation exposure to high concentrations resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and reduction in lung function.

Diesel exhaust fumes: Carcinogenic in animal tests. Inhalation exposures to exhaust for 2 years in test animals resulted in lung tumors and lymphoma. Extract of particulate produced skin tumors in test animals. Caused mutations

in vitro.

Contains:
NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.
ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

High molecular wt. component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL50 1 - 1000 mg/l: data for similar materials
Aquatic - Acute Toxicity	96 hour(s)	Fish	LL50 1 - 100 mg/l: data for similar materials
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	EL50 1 - 100 mg/l: data for similar materials
Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOELR 1 - 10 mg/l: data for similar materials

Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Water	Ready Biodegradability	28 day(s)	Percent Degraded < 60 : similar material

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: DIESEL FUEL
Hazard Class & Division: COMBUSTIBLE LIQUID
ID Number: NA1993
Packing Group: III
Marine Pollutant: Yes
ERG Number: 128
Label(s): NONE

Transport Document Name: NA1993, DIESEL FUEL, COMBUSTIBLE LIQUID, PG III, MARINE POLLUTANT

Footnote: The flash point of this material is greater than 100 F. Regulatory classification of this material varies. DOT: Flammable liquid or combustible liquid. OSHA: Combustible liquid. IATA/IMO: Flammable liquid. This material is not regulated under 49 CFR in a container of 119 gallon capacity or less when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

LAND (TDG)

Proper Shipping Name: GAS OIL
Hazard Class & Division: 3
UN Number: 1202
Packing Group: III
Special Provisions: 88, 150

SEA (IMDG)

Proper Shipping Name: GAS OIL
Hazard Class & Division: 3
EMS Number: F-E, S-E
UN Number: 1202
Packing Group: III
Marine Pollutant: Yes
Label(s): 3
Transport Document Name: UN1202, GAS OIL, 3, PG III, (>38°C c.c.), MARINE POLLUTANT

AIR (IATA)

Proper Shipping Name: GAS OIL
Hazard Class & Division: 3
UN Number: 1202
Packing Group: III
Label(s) / Mark(s): 3
Transport Document Name: UN1202, GAS OIL, 3, PG III

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, IECSC, KECI, PICCS, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: Acute Toxicity (any route of exposure), Aspiration Hazard, Carcinogenicity, Flammable (gases, aerosols, liquids, or solids), Skin Corrosion or Irritation, Specific Target Organ toxicity (single or repeated exposure)

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ETHYL BENZENE	100-41-4	0.1 - 1%
NAPHTHALENE	91-20-3	0.1 - 1%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DIESEL OIL..C9-20	68334-30-5	1, 18
ETHYL BENZENE	100-41-4	1, 4, 10, 17, 19
NAPHTHALENE	91-20-3	1, 4, 10, 17, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2
H226: Flammable liquid and vapor; Flammable Liquid, Cat 3
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H332: Harmful if inhaled; Acute Tox Inh, Cat 4
H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 12: information was modified.
Section 14: Special Provisions information was added.
THIS MSDS COVERS THE FOLLOWING MATERIALS: DIESEL EFFICIENT | DIESEL NO. 2 | ESSO DIESEL FUEL | EXXON DIESEL FUEL | EXXON SYNERGY DIESEL EFFICIENT | LOW SULFUR DIESEL | MARINE DIESEL FUEL | MOBIL DIESEL EFFICIENT | MOBIL DIESEL FUEL | MOBIL SYNERGY DIESEL EFFICIENT | ULTRA LOW SULFUR DIESEL | WINTERIZED DIESEL FUEL

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SAFETY DATA SHEET

1. Identification

Product identifier **Diesel Fuels**

Other means of identification

Synonyms Diesel Fuel All Grades (X,D,F) * Cenex Roadmaster XL/ Ruby Fieldmaster (X,D,F) B0-B20 * Dyed Diesel * #2 ULSD B0-B20 *Cenex Wintermaster* Cenex Roadmaster XL/Ruby Fieldmaster Seasonally Enhanced* Cenex Roadmaster XL/Ruby Fieldmaster #1* * #1 Diesel * Ultra Low Sulfur Diesel Fuel * Petroleum Distillate *

Recommended use Fuel.

Recommended restrictions Uses other than the recommended use.

Manufacturer/Importer/Supplier/Distributor information

Company name CHS Inc.

Address P.O. Box 64089
Mail Station 525
St. Paul, MN 55164-0089
United States of America

Telephone numbers Transportation Emergency (CHEMTREC):
1-800-424-9300
Technical Information:
1-651-355-8443
SDS Information:
1-651-355-8445

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 2 (Bone marrow, Liver, Thymus)
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Flammable liquid and vapor. Harmful if inhaled. Causes skin irritation. Suspected of causing cancer. May cause damage to organs (Bone marrow, Liver, Thymus) through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist/vapors. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. In case of fire: Use appropriate media to extinguish. Collect spillage.
Storage	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Fuels, diesel	68476-34-6	80 - 100
Fatty acid Methyl Ester (Fame)	68990-52-3	0 - 20
Ethylbenzene	100-41-4	0 - 0.3
Naphthalene	91-20-3	0 - 0.25

Composition comments Any concentration shown as a range is to protect confidentiality or is due to batch variation. All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Components not listed are either non-hazardous or are below reportable limits.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. Call a poison center or doctor/physician if you feel unwell.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary edema and pneumonitis. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. Jaundice. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Use appropriate containment to avoid environmental contamination. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS. The product is insoluble in water.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment to avoid environmental contamination.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist/vapors. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Do not store above the following temperature: 113°C (235.4°F). Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3
		100 ppm
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3
		10 ppm

US. ACGIH Threshold Limit Values (TLV)

Components	Type	Value	Form
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm	
Fuels, diesel (CAS 68476-34-6)	TWA	100 mg/m3	Inhalable fraction and vapor.
Naphthalene (CAS 91-20-3)	TWA	10 ppm	

NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	IDLH	0.8 %
		800 ppm
Naphthalene (CAS 91-20-3)	IDLH	0.9 %
		250 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3
		15 ppm
	TWA	50 mg/m3
		10 ppm

Biological limit values

ACGIH Biological Exposure Indices (BEI)

Components	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	150 mg/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

Naphthalene (CAS 91-20-3) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Fuels, diesel (CAS 68476-34-6) Danger of cutaneous absorption
Naphthalene (CAS 91-20-3) Danger of cutaneous absorption

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear chemical splash goggles, face shield, or safety glasses with side shields as appropriate for risk of exposure.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Nitrile gloves are recommended. 4-8h break through time The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. Long sleeved clothing. Use of impervious boots is recommended.

Respiratory protection If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with organic vapor cartridge and full facepiece. Wear a NIOSH-approved (or equivalent) respirator as needed. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations	Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Clear yellow. Red
Odor	Characteristic. Hydrocarbon.
Odor threshold	Not available.
pH	Not applicable (insoluble in water).
Melting point/freezing point	Not available.
Initial boiling point and boiling range	315 - 649.99 °F (157.22 - 343.33 °C)
Flash point	140 °F (60 °C) Pensky-Martens Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	> 3 (Air = 1)
Relative density	0.85
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not applicable, product is a mixture.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.

Ingestion Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics Aspiration may cause pulmonary edema and pneumonitis. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure. Direct contact with eyes may cause temporary irritation. Skin irritation. May cause redness and pain. Jaundice. Prolonged exposure may cause chronic effects.

Information on toxicological effects

Acute toxicity Harmful if inhaled.

Components	Species	Test Results
Ethylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	15400 mg/kg
Inhalation		
LC50	Rat	17.4 mg/l, 4 hours
Oral		
LD50	Rat	3500 - 4700 mg/kg
Fuels, diesel (CAS 68476-34-6)		
Acute		
Inhalation		
LC50	Rat	4.1 mg/l, 4 hours
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rat	> 2500 mg/kg
Inhalation		
Vapor		
LC50	Rat	> 0.4 mg/l, 4 Hours
Oral		
LD50	Mouse	553 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.
Fuels, diesel (CAS 68476-34-6)	3 Not classifiable as to carcinogenicity to humans.
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.

NTP Report on Carcinogens

Naphthalene (CAS 91-20-3)	Known To Be Human Carcinogen. Reasonably Anticipated to be a Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure May cause damage to organs (Bone marrow, Liver, Thymus) through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	1.81 - 2.38 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4.2 mg/l, 96 hours
Chronic			
Crustacea	EC50	Ceriodaphnia dubia	3.6 mg/l, 7 days
Fuels, diesel (CAS 68476-34-6)			
Aquatic			
Acute			
Crustacea	EL50	Daphnia magna	68 mg/l, 48 hours
Fish	LL50	Oncorhynchus mykiss	65 mg/l, 96 hours
Naphthalene (CAS 91-20-3)			
Aquatic			
Algae	EC50	Diatom (Skeletonema costatum)	0.4 mg/l, 72 Hours
Acute			
Crustacea	EC50	Daphnia magna	2.16 mg/l, 48 hours
Fish	LC50	Pimephales promelas	6.08 mg/l, 96 hours
Chronic			
Crustacea	NOEC	Water flea (Daphnia pulex)	0.59 mg/l, 125 days
Fish	NOEC	Coho salmon,silver salmon (Oncorhynchus kisutch)	0.37 mg/l, 40 days
Terrestrial			
Bacteria	IC50	Nitrosomonas sp.	29 mg/l, 24 Hours

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Ethylbenzene (CAS 100-41-4)	3.15
Naphthalene (CAS 91-20-3)	3.3

Mobility in soil The product is insoluble in water.

Other adverse effects Oil spills are generally hazardous to the environment. The product contains volatile organic compounds which have a photochemical ozone creation potential. This product contains one or more substances identified as hazardous air pollutants (HAPs) per the US Federal Clean Air Act (see section 15).

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1202
UN proper shipping name	Diesel Fuel
Transport hazard class(es)	
Class	3
Subsidiary hazard	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	144, B1, IB3, T2, TP1
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA

UN number	UN1202
UN proper shipping name	Diesel Fuel
Transport hazard class(es)	
Class	3
Subsidiary hazard	-
Packing group	III
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1202
UN proper shipping name	GAS OIL or DIESEL FUEL or HEATING OIL, LIGHT
Transport hazard class(es)	
Class	3
Subsidiary hazard	-
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) All components of the mixture on the TSCA 8(b) inventory are designated “active”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories	Flammable (gases, aerosols, liquids, or solids) Acute toxicity (any route of exposure) Skin corrosion or irritation Carcinogenicity Specific target organ toxicity (single or repeated exposure) Aspiration hazard

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Ethylbenzene	100-41-4	≤ 0.3
Naphthalene	91-20-3	< 0.25

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Ethylbenzene (CAS 100-41-4)
Naphthalene (CAS 91-20-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Contains component(s) regulated under the Safe Drinking Water Act.

US state regulations

US. Massachusetts RTK - Substance List

Ethylbenzene (CAS 100-41-4)
Naphthalene (CAS 91-20-3)

US. New Jersey Worker and Community Right-to-Know Act

Ethylbenzene (CAS 100-41-4)
Fuels, diesel (CAS 68476-34-6)
Naphthalene (CAS 91-20-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Ethylbenzene (CAS 100-41-4)
Fuels, diesel (CAS 68476-34-6)
Naphthalene (CAS 91-20-3)

US. Rhode Island RTK

Ethylbenzene (CAS 100-41-4)
Naphthalene (CAS 91-20-3)

California Proposition 65

WARNING: This product can expose you to chemicals including Ethylbenzene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Ethylbenzene (CAS 100-41-4)	Listed: June 11, 2004
Naphthalene (CAS 91-20-3)	Listed: April 19, 2002

16. Other information, including date of preparation or last revision

Issue date	22-August-2024
Revision date	-
Version #	01
HMIS® ratings	Health: 3* Flammability: 2 Physical hazard: 0
NFPA ratings	

Disclaimer

Notice to reader:
THE INFORMATION CONTAINED IN THIS SDS RELATES ONLY TO THE SPECIFIC MATERIAL IDENTIFIED. IT DOES NOT COVER USE OF THAT MATERIAL IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY PARTICULAR PROCESS. IN COMPLIANCE WITH 29 C.F.R. 1910.1200(g), CHS HAS PREPARED THIS SDS IN SEGMENTS, WITH THE INTENT THAT THOSE SEGMENTS BE READ TOGETHER AS A WHOLE WITHOUT TEXTUAL OMISSIONS OR ALTERATIONS. CHS BELIEVES THE INFORMATION CONTAINED HEREIN TO BE ACCURATE, BUT MAKES NO REPRESENTATION, GUARANTEE, OR WARRANTY, EXPRESS OR IMPLIED, ABOUT THE ACCURACY, RELIABILITY, OR COMPLETENESS OF THE INFORMATION OR ABOUT THE FITNESS OF CONTENTS HEREIN FOR EITHER GENERAL OR PARTICULAR PURPOSES. PERSONS REVIEWING THIS SDS SHOULD MAKE THEIR OWN DETERMINATION AS TO THE MATERIAL'S SUITABILITY AND COMPLETENESS FOR USE IN THEIR PARTICULAR APPLICATIONS.

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Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200), Health Canada HPR (SOR/2015-17), and Mexico NOM-018-STPS-2015

SECTION 1: Identification

Product Identifier: **Super-D EC® Diesel Engine Oil**

Other means of identification: Kendall® Super-D EC Diesel Engine Oil SAE 10W-30, CK-4
Kendall® Super-D EC Diesel Engine Oil SAE 15W-40, CK-4

Code: **LBKN830033**

Issue date: 07-Feb-2023

Relevant identified uses: Heavy Duty Diesel Engine Oil

Uses advised against: All others

24 Hour Emergency Phone Number: CHEMTREC Global +1 703 527 3887
CHEMTREC United States 1-800-424-9300
CHEMTREC Mexico 01-800-681-9531

Manufacturer/Supplier: Phillips 66 Lubricants
A Division of Phillips 66 Company
P.O. Box 421959
Houston, Texas 77242-1959

SDS Information: URL: www.phillips66.com/SDS
Phone: 800-762-0942
Email: SDS@P66.com

Customer Service: U.S.: 800-368-7128 or International: 1-832-765-2500

Technical Information: 1-877-445-9198

SECTION 2: Hazard identification

Classified Hazards

No classified hazards

Hazards Not Otherwise Classified (HNOC)

PHNOC: None known

HHNOC: None known

Label elements

No classified hazards

SECTION 3: Composition/information on ingredients

Substance	CASRN	Concentration[1]
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	<80

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into

fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Prolonged or repeated contact may dry skin and cause irritation. Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea.

Notes to Physician: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

SECTION 5: Firefighting measures

NFPA 704: National Fire Protection Association

Health: 0 **Flammability:** 1 **Instability:** 0

0 = minimal hazard
1 = slight hazard
2 = moderate hazard
3 = severe hazard
4 = extreme hazard

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with

inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Spills will produce very slippery surfaces. Used motor oils have been shown to cause skin cancer in mice after repeated application to the skin without washing. Brief or intermittent skin contact with used motor oil is not expected to cause harm if the oil is thoroughly removed by washing with soap and water. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

Substance	ACGIH	OSHA	Mexico	Phillips 66
Distillates, petroleum, hydrotreated heavy paraffinic	TWA-8hr: 5 mg/m^3 STEL: 10 mg/m^3 as Oil Mist, if Generated	---	---	---

State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Biological occupational exposure limits

None.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

Skin/Hand Protection: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Suggested protective materials: Nitrile rubber

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Color:	Amber, Transparent
Physical State:	Liquid
Odor:	Petroleum
Odor threshold:	No data
pH:	Not applicable
Melting / freezing point:	No data
Initial boiling point and boiling range:	No data
Flash point:	428 °F / 220 °C; (ASTM D93)
Method:	Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
Evaporation Rate (nBuAc=1):	No data
Flammability (solid, gas):	Not applicable
Upper Explosive Limits (vol % in air):	No data
Lower Explosive Limits (vol % in air):	No data
Vapor pressure:	<1 mm Hg
Vapor density:	>1 (air = 1)
Relative density:	0.87 - 0.88 @ 60ºF (15.6ºC) (water = 1)
Solubility:	Negligible
Partition coefficient n-octanol /water (log Kow):	No data
Autoignition temperature:	No data
Decomposition temperature:	No data
Viscosity:	12.0 - 15.3 cSt @ 100°C; 82 - 119 cSt @ 40°C
Molecular weight:	No data

Other information

Particle characteristics	No data
Pour point:	-27 °F / -33 °C
Bulk density	7.25 - 7.32 lbs/gal

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of Hazardous Reactions: Hazardous reactions not anticipated.

Conditions to Avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Incompatible Materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous Decomposition Products: Not anticipated under normal conditions of use. During use in engines, contamination of oil with low levels of hazardous fuel combustion by-products (e.g. polycyclic aromatic hydrocarbons) may occur.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute			

Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Aspiration Hazard: Not expected to be an aspiration hazard.

Skin Corrosion/Irritation: Causes mild skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Causes mild eye irritation.

Skin Sensitization: No information available on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification).

Respiratory Sensitization: No information available.

Specific target organ toxicity - Single exposure: No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Specific target organ toxicity - Repeated exposure: No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Carcinogenicity: No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification).

Germ Cell Mutagenicity: No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).

Reproductive Toxicity: No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

Information on Toxicological Effects of Components

Distillates, petroleum, hydrotreated heavy paraffinic

Additional Information (Carcinogenicity): This oil has been highly refined by a variety of processes to reduce aromatics and improve performance characteristics. It meets the IP-346 criteria of less than 3 percent PAH's and is not considered a carcinogen by the International Agency for Research on Cancer.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

UN Number: Not regulated
UN proper shipping name: None
Transport hazard class(es): None
Packing Group: None
Environmental Hazard(s): This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant
Special precautions for user: If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds)
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CERCLA/SARA - Section 313 and 40 CFR 372
This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Substance	Concentration[1]	de minimis
Zinc Compound(s)	1.0 - 1.5%	1.0%

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

EPA (CERCLA) Reportable Quantity (in pounds)
This material does not contain any chemicals with CERCLA Reportable Quantities.

California Proposition 65
This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

International Inventories
TSCA (United States): All ingredients are on the inventory or exempt from listing.
All components are either on the DSL, or are exempt from DSL listing requirements.

SECTION 16: Other information

Issue date	Previous Issue Date:	SDS Number	Status:

07-Feb-2023	26-Jan-2018	LBKN830033	FINAL

Reason for Revision:
Periodic review and update
Manufacturer Address

Mexican NOM-018-STPS-2015:
The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; HPR = Hazardous Products Regulations; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:
The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

POWER SERVICE PRODUCTS, INC.
SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

PRODUCT NAME: DIESEL FUEL SUPPLEMENT +CETANE BOOST

Unless otherwise noted, all sections of this SDS apply to each of the following products and part numbers.

PART NUMBERS:

1:400 Treatment Ratio	1100, 1016-09, 1025-08, 1025-12, 1080-06
1:1,000 Treatment Ratio	1000, 1128-04, 1060-01
1:1,500 Treatment Ratio	1001, 1050-02, 1055-01, 1260-01

COMPANY IDENTIFICATION:
Power Service Products, Inc.
P.O. Box 1089
Weatherford, TX 76086
Email: psp@powerservice.com
Phone: 800-643-9089 or 817-599-9486
Fax: 817-599-4893

Emergency Phone Number: Within USA 1-800-424-9300. Outside USA 001-703-527-3887 (Call Collect).

RECOMMENDED USES: Diesel fuel additive

SECTION 2 – HAZARD(S) IDENTIFICATION

CLASSIFICATION UNDER 29 CFR 1910.1200(d)

(NC=product does not meet classification criteria)

	1:400 Treatment Ratio	**1:1000 Treatment Ratio**	**1:1500 Treatment Ratio**
Health Hazard Criteria	**Category**	**Category**	**Category**
Acute Toxicity, Oral:	NC	NC	NC
Acute Toxicity, Dermal:	NC	NC	NC
Acute Toxicity, Inhalation, Vapors:	3	3	3
Skin Corrosion/Irritation:	2	2	2
Serious Eye Damage/Eye Irritation:	2	2	2
Respiratory Sensitization:	NC	NC	NC
Skin Sensitization:	NC	NC	NC

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Health Hazard Criteria	**Category**	**Category**	**Category**
Germ Cell Mutagenicity:	NC	NC	NC
Carcinogenicity:	2	2	2
Reproductive Toxicity:	NC	NC	NC
Specific Target Organ Toxicity, Single Exposure:	3	3	3
Specific Target Organ Toxicity, Repeated or Prolonged Exposure:	NC	NC	NC
Aspiration Hazard:	1	1	1

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Physical Properties Criteria	**Category**	**Category**	**Category**
Explosives:	NC	NC	NC
Flammable Gases:	NC	NC	NC
Flammable Aerosols:	NC	NC	NC
Oxidizing Gases:	NC	NC	NC
Gases Under Pressure:	NC	NC	NC
Flammable Liquids:	3	3	3
Flammable Solids:	NC	NC	NC
Self-Reactive Chemicals:	NC	NC	NC
Pyrophoric Liquids:	NC	NC	NC
Pyrophoric Solids:	NC	NC	NC
Self-Heating Chemicals:	NC	NC	NC
Chemicals Which, in Contact with Water, Emit Flammable Gases:	NC	NC	NC
Oxidizing Liquids:	NC	NC	NC
Oxidizing Solids:	NC	NC	NC
Organic Peroxides:	NC	NC	NC
Corrosive to Metals:	NC	NC	NC

LABEL SIGNAL WORD, HAZARD STATEMENTS, SYMBOLS AND PRECAUTIONARY STATEMENTS UNDER 29 CFR 1910.1200(f):

Please see the Note regarding product labeling in Section 16.

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Signal Word	**Danger**	**Danger**	**Danger**

Hazard Statement(s): Flammable liquid and vapor. Toxic if inhaled. May be fatal if swallowed and enters airways. Causes skin and serious eye irritation. May cause respiratory irritation and drowsiness or dizziness.

Symbols: The following symbols are for all treatment ratios.

Precautionary Statement(s): Keep away from sparks and open flames. No smoking. Keep container tightly closed. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Wear protective gloves and eye protection. Store locked up and in cool, well ventilated place. KEEP OUT OF REACH OF CHILDREN.

Hazards Not Otherwise Classified: None

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

The specific chemical identity and exact concentration percentage has been withheld as a Trade Secret. Specific chemical information will be made available to health professionals in accordance with 29 CFR 1910.1200.

INGREDIENTS CLASSIFIED AS HEALTH HAZARDS

TREATMENT RATIO 1:400			
Chemical Name	**Common Name/Synonyms**	**CAS Number**	**Concentration (%)**
Petroleum Distillates	Trade secret	Trade secret	25 - 85
Hydroxy alkoxylate	Trade secret	Trade secret	5 - 15
Alkyl Nitrates	Trade secret	Trade secret	2 – 8
Aromatic hydrocarbons	Trade secret	Trade secret	0.5 - 2
Naphthalene	Not available	91-20-3	0.05 – 0.2

TREATMENT RATIO 1:1000			
Chemical Name	**Common Name/Synonyms**	**CAS Number**	**Concentration (%)**
Petroleum Distillates	Trade secret	Trade secret	35 - 85
Alkyl Nitrates	Trade secret	Trade secret	5 - 15
Aromatic Hydrocarbons	Trade secret	Trade secret	1 - 5
Hexan-1-ol, 2-ethyl	Trade secret	Trade secret	1 - 5
Naphthalene	Not available	91-20-3	0.1 – 0.5

TREATMENT RATIO 1:1500

Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Petroleum Distillates	Trade secret	Trade secret	25 - 75
Alkyl Nitrates	Trade secret	Trade secret	8 - 22
Aromatic Hydrocarbons	Trade secret	Trade secret	1 - 8
Hexan-1-ol, 2-ethyl	Trade secret	Trade secret	1 – 5
Naphthalene	Not available	91-20-3	0.1 – 0.5

SECTION 4 - FIRST AID MEASURES

As a precaution, exposure to liquids, vapors, mists and fumes should be minimized.

EYE CONTACT: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice.

SKIN CONTACT: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs get medical advice/attention.

INHALATION: Remove person to fresh air and keep comfortable for breathing. Call a doctor.

INGESTION: If swallowed, IMMEDIATELY call a doctor. Do NOT induce vomiting.

SECTION 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.

SPECIFIC HAZARDS: Vapors are heavier than air and may travel along the ground to a distant ignition source and flash back. See Section 10 for Stability and Reactivity. **NOTE:** EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPORS THAT CAN CAUSE FLASH FIRES OR EXPLOSIONS. CONTAINERS ARE SINGLE-TRIP CONTAINERS AND SHOULD NOT BE USED FOR ANY REASON AFTER BEING EMPTIED. DO NOT USE CUTTING TORCH EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

PROTECTIVE EQUIPMENT AND PRECAUTIONS: Use standard protective equipment including self-contained breathing apparatus (SCBA).

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas. Eliminate all sources of ignition in the vicinity of the spill or released vapor. See Section 2 for Hazards Identification.

See Section 4 for First Aid Measures. See Section 5 for Fire Fighting Information. See Section 8 for Personal Protective Equipment.

SPILL CONTAINMENT AND CLEAN-UP: Eliminate potential sources of ignition. Stop leak if it can be done without risk. Dike and contain spill. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. A vapor suppressing foam may be used to reduce vapors. Local, state and federal laws and/or regulations may apply to releases and disposal of this material, as well as those materials and items employed in the clean-up releases. The user/responder will need to determine which local, state and federal laws and/or regulations are applicable. The National Response Center can be reached at 1-800-424-8802.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Avoid contact with eyes and skin. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Keep away from ignition sources such as heat, sparks, and flames. No smoking.

CONDITIONS FOR SAFE STORAGE: DO NOT USE OR STORE near heat, sparks, or flame. USE AND STORE ONLY IN A WELL-VENTILATED AREA. Handle containers with care. Keep container tightly closed when not in use. Store locked up.

STORAGE TEMPERATURE:

Treatment Ratio	Part Numbers:	Storage Temperature:
1:400 Treatment Ratio	1100, 1016-06, 1016-09, 1025-06, 1025-08, 1025-09, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 11080-06	-20°F to 104°F (-29°C to 40°C)
1:1,000 Treatment Ratio	1000, 1128-04, 1060-01	0°F to 104°F (-18°C to 40°C)
1:1,500 Treatment Ratio	1001, 1050-02, 1055-01, 1260-01	10°F to 104°F (-12°C to 40°C)

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN COMBUSTIBLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

		OSHA	ACGIH	NIOSH				
	CAS #	PEL	TLV	STEL	REL	STEL	IDLH	Note
Ethylbenzene	100-41-4	100 ppm	20 ppm	not est.	100 ppm	125 ppm	800 ppm (LEL)	n/a

	CAS #	OSHA PEL	ACGIH TLV	NIOSH STEL	NIOSH REL	NIOSH STEL	NIOSH IDLH	Note
Naphthalene	91-20-3	10 ppm	10 ppm	not est.	10 ppm	15 ppm	250 ppm	skin
Petroleum Distillates	n/a	500 ppm	not est.	not est.	not est.	not est.	not est.	n/a
Cumene	98-82-8	50 ppm	50 ppm	not est.	50 ppm	not est.	900 ppm (LEL)	Skin
Toluene	108-88-3	100 ppm	20 ppm	not est.	100 ppm	150 ppm	500 ppm	Skin
Hydroxy Alkoxylate	Proprietary	50 ppm	20 ppm	not est.	5 ppm	not est.	not est.	skin

ENGINEERING CONTROLS: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Local exhaust ventilation is recommended to control exposure.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eyes and Face: Eye protection such as safety glasses or chemical goggles is recommended if contact is likely.

Skin: Protective chemical/oil resistant gloves are recommended. Wear additional protective clothing as appropriate.

Respiratory: Wear a NIOSH/MSHA approved respirator as necessary.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Practice good housekeeping.

NOTE: These precautions are for room temperature handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Appearance	Liquid, brown	Liquid, brown	Liquid, brown
Odor	Aromatic solvent	Aromatic solvent	Aromatic solvent
Odor Threshold	Not available	Not available	Not available
pH	Not applicable	Not applicable	Not applicable
Melting point/Freezing point	Not available	Not available	Not available
Initial Boiling Point and Boiling Range	221.5°F (105.3°C)	262.4°F (128.0°C)	261.7°F (127.6°C)
Flash Point	101°F (38.3°C)	110°F (43.3°C)	107°F (41.7°C)
Evaporation Rate	Not available	Not available	Not available
Flammability	Not available	Not available	Not available
Upper / lower Flammability or Explosive Limits	Not available	Not available	Not available
Vapor Pressure	Not available	Not available	Not available

	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Vapor Density	Not available	Not available	Not available
Relative Density/Specific Gravity	0.9238	0.9281	0.9317
Solubility	Not available	Not available	Not available
Partition Coefficient; n-octanol / water	Not available	Not available	Not available
Auto-ignition Temperature	Not available	Not available	Not available
Decomposition temperature	Not available	Not available	Not available
Viscosity	Not available	Not available	Not available
Pour Point	-55°F (-48°C)	-30°F (-34°C)	-15°F (-26°C)

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: see Incompatible Materials below

CHEMICAL STABILITY: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

POSSIBILITY OF HAZARDOUS REACTION: Hazardous polymerization will not occur.

CONDITIONS TO AVOID: Flames, high energy ignition sources, and elevated temperatures.

INCOMPATIBLE MATERIALS: May react with strong oxidizing agents, such as; chlorates, nitrates, peroxides, nitrogen oxides, sulfur oxides, etc.; alkalis; nitric acid; sulfuric acid; aluminum; brass; copper; reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, products of incomplete combustion.

SECTION 11 - TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE

	INGESTION	INHALATION	SKIN CONTACT	EYE CONTACT	SKIN ABSORPTION
1:400 Treatment Ratio		**X**	**X**	**X**	**X**
1:1000 Treatment Ratio		**X**	**X**	**X**	**X**
1:1500 Treatment Ratio		**X**	**X**	**X**	**X**

SYMPTOMS RELATED TO PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS: Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause respiratory irritation. Breathing this material at elevated concentrations causes central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion or disorientation. At

extreme exposures, central nervous system effects may include respiratory depression, tremors, or convulsions, loss of consciousness, coma or death.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE: Repeated skin exposure to a component of this product may cause irritation, even a burn; may cause a more severe response on covered skin, such as under clothing or gloves. Inhalation exposure to a component of this product has caused fetotoxicity in the presence of maternal toxicity in animals.

NUMERICAL MEASURES OF TOXICITY
Note: the information provided below are estimates; testing of the product is not available.

Treatment Ratio	Acute Oral Toxicity (ATE_{mix} estimate)	Acute Dermal Toxicity (ATE_{mix} estimate)	Acute Inhalation (ATE_{mix} estimate)
1:400 Treatment Ratio	Does not meet criteria	Does not meet criteria	7.12 (vapors)
1:1,000 Treatment Ratio	Does not meet criteria	Does not meet criteria	8.53 (vapors)
1:1,500 Treatment Ratio	Does not meet criteria	Does not meet criteria	7.68 (vapors)

SENSITIZATION: No information available.

MUTAGENICITY: No information available.

CARCINOGENICITY LISTINGS – the following chemicals are listed as indicated:

Chemical	**List**
Cumene	IARC, NTP
Ethylbenzene	IARC
Naphthalene	IARC, NTP

REPODUCTIVE TOXICITY: No information available.

TERATOGENICITY/EMBRYOTOXICITY: Hydroxy Alkoxylate has caused fetotoxicity with maternal toxicity. This product contains a component of a complex mixture (Xylenes (1330-20-7)) that has been shown to cause teratogenicity and/or embryotoxicity.

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Respiratory tract irritation, drowsiness/dizziness.

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): No information available

ASPIRATION HAZARD: Aspiration hazard identified.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY: This material is expected to be toxic to aquatic organisms.

PERSISTENCE AND DEGRADABILITY: No information available.

BIOACCUMULATIVE POTENTIAL: No information available.

MOBILITY IN SOIL: No information available.

OTHER ADVERSE EFFECTS: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

RCRA Information: Disposal of unused product may be subject to RCRA hazardous waste regulations (40 CFR Part 261). Disposal of the used product may also be regulated as hazardous waste due to resulting mixture characteristics, mixture components or product use. Such changes to the product may result in different and/or additional hazardous waste codes. Potential RCRA waste code based on the product as shipped: D001 IGNITABILITY

State or local laws may impose additional regulatory requirements regarding disposal. *Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.*

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN COMBUSTIBLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA. Dispose or recycle empty containers appropriately per local, state and federal regulations.

SECTION 14 - TRANSPORTATION INFORMATION

The following part numbers are not regulated by DOT:

1:400 Treatment Ratio	1016-06, 1016-09, 1025-06, 1025-08, 1025-09, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 11080-06
1:1,000 Treatment Ratio	1128-04
1:1,500 Treatment Ratio	1050-02, 1055-01

The following part numbers are regulated for transportation as follows:

1100	DOT (Domestic Ground): NA 1993 Combustible liquid, n.o.s. (Petroleum Distillates) MP (2-ethylhexyl nitrate)
	IMDG (Ocean Transport): Not offered
1000, 1001	DOT (Domestic Ground): NA 1993 Combustible liquid, n.o.s. (Petroleum Distillates) MP (2-ethylhexyl nitrate) RQ (Xylene, Napthalene)
	IMDG (Ocean Transport): Not offered
1016-09, 1025-12, 1080-06	DOT (Domestic Ground): Not Regulated
	IMDG (Ocean Transport): UN 1993 FLAMMABLE LIQUID, N.O.S. (Petroleum Distillates), 3, III (38.3°C c.c.), LTD QTY
1055-01, 1050-02	DOT (Domestic Ground): Not Regulated
	IMDG (Ocean Transport): UN 1993 FLAMMABLE LIQUID, N.O.S. (Petroleum Distillates), 3, III (41.7°C c.c.), MP (2-ethylhexyl nitrate)
1060-01	DOT (Domestic Ground): NA 1993 Combustible liquid, n.o.s. (Petroleum Distillates) MP (2-ethylhexyl nitrate), Comb liq, NA 1993, III
	IMDG (Ocean Transport): Not offered
1128-04	DOT (Domestic Ground): Not Regulated
	IMDG (Ocean Transport): UN 1993 FLAMMABLE LIQUID, N.O.S. (Petroleum Distillates), 3, III (43.3°C c.c.), LTD QTY
1260-01	DOT (Domestic Ground): NA 1993 Combustible liquid, n.o.s. (Petroleum Distillates) MP (2-ethylhexyl nitrate)
	IMDG (Ocean Transport): UN 1993 FLAMMABLE LIQUID, N.O.S. (Petroleum Distillates), 3, III (41.7°C c.c.), MP (2-ethylhexyl nitrate)

All Part Numbers not recommended for transport by air.

SECTION 15 - REGULATORY INFORMATION

§14(a) Consumer Product Safety Act General Certificate of Conformity

Power Service Products, Inc. certifies that this product meets the statutory and regulatory requirements of the US Consumer Products Safety Act, the Federal Hazardous Substances Act, and the Poison Prevention Packaging Act of 1970, as applicable. The Power Service products are manufactured in the United States in Weatherford, Texas, unless otherwise indicated on the product label. The product manufacture lot code is stamped on the product container. This Certification is based upon a reasonable testing program conducted by Power Service Products, Inc. which includes a quality control program incorporating, as necessary, confirmation of compliance by component suppliers. Third-party testing is not required to certify compliance. Further details may be obtained by contacting the Power Service Products, Inc. EHS Manager at 1-800-643-9089.

Contents of this SDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS:
All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

EPA SARA TITLE III CHEMICAL LISTINGS:

Section 302 Extremely Hazardous Substances: None

Sections 311/ 312 Hazard Class:
Acute Health Effects: Yes Sudden Release of Pressure Hazard: No
Chronic Health Effects: Yes Reactivity Hazard: No
Fire Hazard: Yes

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) RATING:
HEALTH: **2**
FIRE: **2**
REACTIVITY: **0**

Section 313:
Specific chemical information is being withheld as a Trade Secret. The following chemicals subject to the reporting requirements of EPCRA Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372) may be present in this product at a concentration that does not exceed the specified upper weight percentage.

Treatment Ratio	CAS Number	Chemical Name	Max %
1:400 Treatment Ratio	100-41-4	Ethylbenzene	1.5
	Not available	Glycol Ether Category	8.0
	91-20-3	Naphthalene	0.2
1:1000 Treatment Ratio	100-41-4	Ethylbenzene	0.2
	Not available	Glycol Ether Category	0.4
	91-20-3	Naphthalene	0.3
1:1,500 Treatment Ratio	100-41-4	Ethylbenzene	0.2
	Not available	Glycol Ether Category	0.6
	91-20-3	Naphthalene	0.5

State or local laws may impose additional regulatory requirements for components of this material. It is the responsibility solely of the Employer to maintain compliance with State and Local reporting.

This product contains a chemical known to the state of California to cause cancer and/or birth defects or other reproductive harm: ethylbenzene, toluene, cumene, naphthalene.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION / REVISION: August 20, 2020

NOTE regarding product labeling: The OSHA Hazard Communication Standard applies to hazardous chemicals known to be present in the workplace. However, the labeling and Safety Data Sheet requirements do not apply to consumer products when they are used in the workplace for the purposes intended by the manufacturer and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the intended purpose. Power Service Products intends for product packaged in 1 gallon or smaller containers to be used by consumers and has labeled those containers as required under the Consumer Product Safety Commission regulations. Power Service Products intends for product packaged in containers larger than 1 gallon to be used in the workplace and has labeled those products as required by the OSHA Hazard Communication Standard. The Consumer Product Safety Commission and OSHA Hazard Communication Standard labeling requirements are different and variations between the consumer and industrial labels may occur. It is the employer's responsibility to purchase the appropriate product for use in the workplace.

The information contained herein is offered in good faith and is believed to be accurate based on the data available to us as of the date of SDS preparation. The information in this document applies to this specific product as supplied. It may not be appropriate for this product if the product is used in combination with other materials. The information in this document is not intended to constitute product performance information. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product. No statement shall be construed as an endorsement of any product or process. The recommended industrial hygiene and safe handling procedures are believed to be valid in the context of the intended use as described in product labeling. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. You are urged to obtain material safety data sheets for all products you buy, process, use or distribute, and are encouraged to advise those who may come in contact with such products of the information

contained therein. Regulatory requirements are subject to change and may differ between locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. No warranty or guarantee is expressed or implied with respect to this product, the accuracy and sufficiency of the data or recommendations herein, or the results to be obtained from the use of this product. IN NO EVENT SHALL POWER SERVICE PRODUCTS, INC. BE LIABLE FOR ANY LOSS, CLAIM, DAMAGE OR LIABILITY OF ANY KIND, WHICH MAY ARISE FROM OR IN CONNECTION WITH THE INFORMATION CONTAINED IN THIS DOCUMENT OR FROM THE USE, HANDLING OR STORAGE OF THE PRODUCT BY THE BUYER/USER, WHETHER DIRECT, INDIRECT, OR CONSEQUENTIAL, OR FOR ANY CLAIM BY ANY THIRD PARTY, BEYOND THE PURCHASE PRICE OR REPLACEMENT OF THE PRODUCT IN CONNECTION WITH WHICH SUCH LOSS, CLAIM, DAMAGE OR LIABILITY AROSE.

THE FOREGOING LIMITATIONS APPLY REGARDLESS OF THE CAUSES OR CIRCUMSTANCES GIVING RISE TO SUCH LOSS, CLAIM, DAMAGE OR LIABILITY, EVEN IF SUCH LOSS, CLAIM, DAMAGE, OR LIABILITY IS BASED ON NEGLIGENCE OR OTHER TORTS OR BREACH OF CONTRACT.

DRUMMOND™
A LAWSON BRAND

Safety Data Sheet

Issue date 18-May-2018 **Revision date** 27-Feb-2025 **Revision Number** 4

1. IDENTIFICATION

Product identification

Product identifier	Drummond™ Quickpeel Gel Heavy-Duty Citrus Solvent
Other means of identification	DA7501
Recommended use	Cleaner
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Drummond™, A Lawson Brand
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and Mexico (NOM-018-STPS-2015) GHS Regulations.

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Flammable aerosols	Category 1

Symbol

Signal word DANGER

Hazard statements
H222 - Extremely flammable aerosol
H229 - Pressurized container: May burst if heated
H280 - Contains gas under pressure; may explode if heated

H302 - Harmful if swallowed
H315 - Causes skin irritation
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness

Precautionary statements

General

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use
P261 - Avoid breathing dust, fume, gas, mist, vapors, spray
P264 - Wash hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves and eye/face protection

Response

Eyes

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Skin

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical attention
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Inhalation

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P312 - Call a POISON CENTER or doctor if you feel unwell

Ingestion

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth

Storage

P403 - Store in a well-ventilated place
P233 - Keep container tightly closed
P405 - Store locked up
P410 - Protect from sunlight
P412 - Do not expose to temperatures exceeding 50 °C/122 °F

Disposal

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)

None known.

Physical Hazards Not Otherwise Classified (PHNOC)

None known.

Unknown acute toxicity

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition Mixture.

Chemical name	Syns/Common Name	CAS-No	Weight %
D-Limonene	D-Limonene	5989-27-5	30-60
Propane	Propane	74-98-6	10-30
n-Butyl alcohol	n-Butyl alcohol	71-36-3	10-30
Orange Oil	Orange Oil	8008-57-9	0.1-1
Myrcene	Myrcene	123-35-3	0.001-0.01

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation Remove to fresh air. Provide oxygen or artificial respiration if necessary. If not breathing, give artificial respiration. Seek medical attention.

Ingestion Not a likely route of exposure.

Skin contact Wipe off with a towel. Wash area thoroughly with soap and water. Seek medical attention if irritation persists.

Eye contact Flush with plenty of water for at least 15 minutes. Seek medical attention.

Most important symptoms (acute) Repeated exposure may cause skin dryness or cracking. May cause drowsiness or dizziness.

Most important symptoms (over-exposure) Not available.

Indication of any immediate medical attention and special treatment needed None known.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Foam. Alcohol resistant foam. Carbon dioxide (CO2). Dry chemical. Water fog.

Unsuitable extinguishing media Water spray may be ineffective.

Specific hazards Closed containers may explode (due to the build-up of pressure) when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention. Liquid content of container will support combustion. During emergency conditions, overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention. Hazardous Thermal Decomposition Products:. Carbon dioxide. Carbon monoxide. Toxic fumes.

Special protective equipment and precautions for fire-fighters Water may be used to cool closed containers to prevent pressure build-up and/or explosion when exposed to extreme heat. Tightly fitting safety goggles. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and Avoid breathing vapor or mist. Ventilate the area. Remove all sources of ignition.

emergency procedures

Methods and materials for containment and cleaning up

Clean up with absorbent material and place in closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Do not puncture or incinerate cans. Do not stick pin, nail, or any other sharp object into opening on top of can. Do not spray in eyes. Do not take internally. See product label for additional information.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, and well-ventilated place. Do not store above 120 degrees F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA	Mexico OEL-TWAs (VLE-PPTs)	Mexico OEL- BEIs (IBE)
D-Limonene	-					
Propane	1000 ppm TWA 1800 mg/m³ TWA	1000 ppm PEL; 1800 mg/m³ PEL		1000 ppm TWA 1800 mg/m³ TWA 1000 ppm TWA 1800 mg/m³ TWA	1000ppmTWA	
n-Butyl alcohol	100 ppm TWA 300 mg/m³ TWA	50 ppm PEL; 150 mg/m³ PEL	20 ppm TWA		20ppmTWA	
Orange Oil	-					
Myrcene	-					

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Use process enclosures, local exhaust ventilation, or other controls to keep air containment concentration below current applicable OSHA permissible exposure limit or ACGIH TLV limit, and volatiles below lower explosive limit. A safety shower and eye wash station should be available for emergency use.

Individual protection measures, such as personal protective equipment

Eye protection

None necessary under normal use conditions. Use of safety glasses with splash guards or full face shield should be used if indicated.

Skin and body protection

None under normal use conditions. Use solvent-resistant gloves for prolonged or repeated contact. Solvent resistant apron is recommended.

Respiratory protection

None under normal use. Avoid breathing vapors. In restricted areas, use approved chemical/mechanical filters designed to remove a combination of particles and vapors. In confined areas, use an approved air line respirator or hood. Self-contained breathing apparatus is required for vapor concentrations above PEL/TLV limits.

Hygiene measures

General industrial hygiene practice. When using, do not eat, drink or smoke. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
D-Limonene	-	-	-	-	-	-	-	-	-	-
Propane	1000 ppm TWA 1640 mg/m³ TWA	1000 ppm TWA	-	1000 ppm TWA	-	-	-	-	1000 ppm TWAEV 1640 mg/m³ TWAEV	1000 ppm TWA 1000 ppm TWA 1000 ppm TWA
n-Butyl alcohol	20 ppm TWA 60 mg/m³ TWA	15 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWAEV	20 ppm TWA
Orange Oil	-	-	-	-	-	-	-	-	-	-
Myrcene	-	-	-	-	-	-	-	-	-	-

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Aerosol

Odor Not available

Odor threshold Not available

pH Not available

Melting point/range °C Not available

Melting point/range °F Not available

Boiling point/range °C Not available

Boiling point/range °F Not available

Flash point °C / °F Not available

Evaporation rate Not available

Flammability (Solid, Gas) Not available

Lower explosion limit Not available

Upper explosion limit Not available

Vapor pressure Not available

Vapor density Not available

Relative density Not available

Solubility Not available

Partition coefficient (n-octanol/water) Not available

Autoignition temperature °C Not available

Autoignition temperature °F Not available

Decomposition temperature °C Not available

Decomposition temperature °F Not available

Viscosity Not available

10. STABILITY AND REACTIVITY

Reactivity The product is stable and not reactive under normal conditions of use, storage and transport.

Chemical stability Stable under recommended storage conditions.

Possibility of hazardous reactions None known.

Conditions to avoid Keep away from open flames, hot surfaces, and sources of ignition. Do not puncture, incinerate or expose to temperatures above 120 degrees F. Dropping of containers may cause bursting.

Incompatible materials Not available.

Hazardous decomposition products During combustion carbon monoxide and/or carbon dioxide may be formed.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Not available.

Symptoms Not available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure Not available.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
D-Limonene	-	= 5200 mg/kg Rat = 4400 mg/kg Rat = 5300 mg/kg Rat >5 g/kg Rabbit	4400 mg/kg (Rat)
Propane	658 mg/L (Rat) 4h	-	-
n-Butyl alcohol	>17.76 mg/L Rat	= 700 mg/kg Rat 3402 mg/kg Rabbit	700 mg/kg Rat = 3402 mg/kg Rabbit
Orange Oil	-	= 4400 mg/kg Rat >5000 mg/kg Rabbit	4400 mg/kg Rat > 5000 mg/kg Rabbit
Myrcene	-	> 5 g/kg Rat >5 g/kg Rabbit	>5 g/kg Rat > 5 g/kg Rabbit

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP	Mexico
D-Limonene	-	Group 3	-	-	
Propane	-	-	-	-	
n-Butyl alcohol	-	-	-	-	
Orange Oil	-	-	-	-	
Myrcene	-	Group 2B	Present	-	

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
D-Limonene	-	-	-	-	-	-
Propane	-	-	-	-	-	-
n-Butyl alcohol	-	-	-	-	-	-
Orange Oil	-	-	-	-	-	-
Myrcene	-	IARC 2B	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
D-Limonene	-	0.619 - 0.796mg/L Pimephales promelas 96h = 35mg/L Oncorhynchus mykiss 96h
Propane	-	-
n-Butyl alcohol	>500mg/L Desmodesmus subspicatus 96h >500mg/L Desmodesmus subspicatus 72h	1730 - 1910mg/L Pimephales promelas 96h = 1740mg/L Pimephales promelas 96h 100000 - 500000µg/L Lepomis macrochirus 96h = 1910000µg/L Pimephales promelas 96h
Orange Oil	-	-
Myrcene	-	-

Persistence and degradability Not available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
D-Limonene 5989-27-5	5989-27-5	4.38 at 37 °C [OECD Guideline 117] (at pH 7.2, ECHA_API)	-
Propane 74-98-6	74-98-6	2.3 <=2.8	-
n-Butyl alcohol 71-36-3	71-36-3	1 at 25 °C (at pH 7, ECHA_API)	0.64 dimensionless species: freshwater fish
Orange Oil 8008-57-9	8008-57-9	-	-

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Myrcene 123-35-3	123-35-3	4.82 at 30 °C [Directive 84/449/EEC, A.8] (at pH 6.5, ECHA_API)	-

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations.

Contaminated packaging Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT
- **ID-No** UN1950
- **Proper shipping name** Aerosols
- **Hazard Class(es)** 2.1
- **Special Provisions** LTD QTY

TDG
- **ID-No** UN1950
- **Proper shipping name** Aerosols
- **Hazard Class(es)** 2.1
- **Special Provisions** LTD QTY

IATA
- **ID-No** UN1950
- **Proper shipping name** Aerosols, flammable
- **Hazard Class(es)** 2.1
- **Special Provisions** LTD QTY

IMDG/IMO
- **ID-No** UN1950
- **Proper shipping name** Aerosols, flammable
- **Hazard Class(es)** 2.1
- **Marine pollutant** Yes
- **Special Provisions** LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
D-Limonene	5989-27-5	X	X	X X
Propane	74-98-6	-	-	-
n-Butyl alcohol	71-36-3	-	-	-
Orange Oil	8008-57-9	-	-	-
Myrcene	123-35-3	-	-	-

Special Precautions Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of

transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
D-Limonene	5989-27-5	-	X	-
Propane	74-98-6	X	X	X
n-Butyl alcohol	71-36-3	X	X	X
Orange Oil	8008-57-9	-	-	-
Myrcene	123-35-3	-	-	-

California Prop. 65

Chemical name	CAS-No	California Prop. 65
D-Limonene	5989-27-5	-
Propane	74-98-6	-
n-Butyl alcohol	71-36-3	-
Orange Oil	8008-57-9	-
Myrcene	123-35-3	Carcinogen

California Proposition 65 WARNING: This product contains a chemical(s) known to the state of California to cause cancer

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
D-Limonene	5989-27-5	-	-
Propane	74-98-6	-	-
n-Butyl alcohol	71-36-3	5000 lb 2270 kg	1.0 %
Orange Oil	8008-57-9	-	-
Myrcene	123-35-3	-	-

Chemical Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL	Mexico - INSQ
D-Limonene	X	-	X	-	Present
Propane	X	-	X	-	Present
n-Butyl alcohol	X	-	X	-	Present
Orange Oil	X	-	X	-	Present

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL	Mexico - INSQ
Myrcene	X	-	X	-	Present

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available

HMIS

Health	Not available
Flammability	Not available
Physical hazards	Not available

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

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Revision date 27-Feb-2025

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
BEI – IBE (Biological Exposure Indices for occupationally exposed personnel to chemicals)
Biological Exposure Indices)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
INSQ (National Inventory of Chemical Substances)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)
VLE-PPT (Time-weighted average exposure limit value)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

2002 SUPER DIESEL ADDITIVE 300ml

Liqui Moly GmbH

Chemwatch Hazard Alert Code: **2**

Chemwatch: **47-8465**
Version No: **9.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **01/11/2019**
Print Date: **14/12/2021**
S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	2002 SUPER DIESEL ADDITIVE 300ml
Chemical Name	Not Applicable
Synonyms	Item No. 2002
Chemical formula	Not Applicable
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Additive to lubricating agents.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**Liqui Moly GmbH**
Address	Jerg-Wieland-Strasse 4 Ulm D-89081 Germany
Telephone	+49 731 1420 0
Fax	+49 731 1420 82
Website	http://www.liqui-moly.com/
Email	Not Available

Emergency phone number

Association / Organisation	**INFOTRAC**
Emergency telephone numbers	+1800 535 5053 (US, Canada & Mexico)
Other emergency telephone numbers	+1 352 323 3500 (International)

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

ChemWatch Hazard Ratings

	Min	Max
Flammability	1	
Toxicity	0	
Body Contact	1	
Reactivity	2	
Chronic	0	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

NFPA 704 diamond

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Aspiration Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 3, Flammable Liquids Category 4

Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H304	May be fatal if swallowed and enters airways.

H412	Harmful to aquatic life with long lasting effects.
H227	Combustible liquid.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves and protective clothing.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
64742-48-9.	>60	alkanes, C11-13-iso-
27247-96-7	10-30	2-ethylhexyl nitrate

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with eyes: ▸ Wash out immediately with water. ▸ If irritation continues, seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay.
Ingestion	▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus. ▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice. ▸ Avoid giving milk or oils. ▸ Avoid giving alcohol.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.
For petroleum distillates

- In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption - decontamination (induced emesis or lavage) is controversial and should be considered on the merits of each individual case; of course the usual precautions of an endotracheal tube should be considered prior to lavage, to prevent aspiration.
- Individuals intoxicated by petroleum distillates should be hospitalized immediately, with acute and continuing attention to neurologic and cardiopulmonary function.

Continued...

- Positive pressure ventilation may be necessary.
- Acute central nervous system signs and symptoms may result from large ingestions of aspiration-induced hypoxia.
- After the initial episode,individuals should be followed for changes in blood variables and the delayed appearance of pulmonary oedema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated.
- Gastrointestinal symptoms are usually minor and pathological changes of the liver and kidneys are reported to be uncommon in acute intoxications.
- Chlorinated and non-chlorinated hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur.Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

BP America Product Safety & Toxicology Department

SECTION 5 Fire-fighting measures

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

Fire Incompatibility	‣ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Special protective equipment and precautions for fire-fighters

Fire Fighting	‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear full body protective clothing with breathing apparatus. ‣ Prevent, by any means available, spillage from entering drains or water course. ‣ Use water delivered as a fine spray to control fire and cool adjacent area. ‣ Avoid spraying water onto liquid pools. ‣ **DO NOT** approach containers suspected to be hot. ‣ Cool fire exposed containers with water spray from a protected location. ‣ If safe to do so, remove containers from path of fire.
Fire/Explosion Hazard	‣ Combustible. ‣ Slight fire hazard when exposed to heat or flame. ‣ Heating may cause expansion or decomposition leading to violent rupture of containers. ‣ On combustion, may emit toxic fumes of carbon monoxide (CO). ‣ May emit acrid smoke. ‣ Mists containing combustible materials may be explosive. Combustion products include: carbon dioxide (CO_2) nitrogen oxides (NOx) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	‣ Remove all ignition sources. ‣ Clean up all spills immediately. ‣ Avoid breathing vapours and contact with skin and eyes. ‣ Control personal contact with the substance, by using protective equipment. ‣ Contain and absorb spill with sand, earth, inert material or vermiculite. ‣ Wipe up. ‣ Place in a suitable, labelled container for waste disposal.
Major Spills	Moderate hazard. ‣ Clear area of personnel and move upwind. ‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear breathing apparatus plus protective gloves. ‣ Prevent, by any means available, spillage from entering drains or water course. ‣ No smoking, naked lights or ignition sources. ‣ Increase ventilation. ‣ Stop leak if safe to do so. ‣ Contain spill with sand, earth or vermiculite. ‣ Collect recoverable product into labelled containers for recycling. ‣ Absorb remaining product with sand, earth or vermiculite. ‣ Collect solid residues and seal in labelled drums for disposal. ‣ Wash area and prevent runoff into drains. ‣ If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	The conductivity of this material may make it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid. ‣ Containers, even those that have been emptied, may contain explosive vapours. ‣ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ‣ Electrostatic discharge may be generated during pumping - this may result in fire. ‣ Ensure electrical continuity by bonding and grounding (earthing) all equipment. ‣ Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec). ‣ Avoid splash filling. ‣ Do NOT use compressed air for filling discharging or handling operations. ‣ Avoid all personal contact, including inhalation. ‣ Wear protective clothing when risk of exposure occurs. ‣ Use in a well-ventilated area. ‣ Prevent concentration in hollows and sumps. ‣ **DO NOT** enter confined spaces until atmosphere has been checked. ‣ Avoid smoking, naked lights or ignition sources. ‣ Avoid contact with incompatible materials. ‣ When handling, **DO NOT** eat, drink or smoke. ‣ Keep containers securely sealed when not in use. ‣ Avoid physical damage to containers. ‣ Always wash hands with soap and water after handling. ‣ Work clothes should be laundered separately. ‣ Use good occupational work practice. ‣ Observe manufacturer's storage and handling recommendations contained within this SDS. ‣ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
Other information	‣ Store in original containers. ‣ Keep containers securely sealed. ‣ No smoking, naked lights or ignition sources. ‣ Store in a cool, dry, well-ventilated area. ‣ Store away from incompatible materials and foodstuff containers. ‣ Protect containers against physical damage and check regularly for leaks. ‣ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	‣ Metal can or drum ‣ Packaging as recommended by manufacturer. ‣ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	‣ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous ‣ Avoid storage with reducing agents.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	alkanes, C11-13-iso-	Oil mist, mineral	5 mg/m3	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	alkanes, C11-13-iso-	Mineral oil, excluding metal working fluids - Pure, highly and severely refined (Inhalable particulate matter)	5 mg/m3	Not Available	Not Available	A4

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
alkanes, C11-13-iso-	350 mg/m3	1,800 mg/m3	40,000 mg/m3

Ingredient	Original IDLH	Revised IDLH
alkanes, C11-13-iso-	2,500 mg/m3	Not Available
2-ethylhexyl nitrate	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Continued...

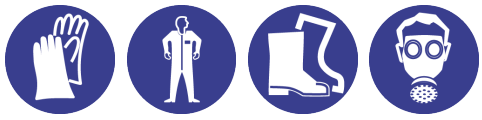
Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Personal protection



Eye and face protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

Skin protection

See Hand protection below

Hands/feet protection

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.
Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity
Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
· Contaminated gloves should be replaced.
As defined in ASTM F-739-96 in any application, gloves are rated as:
· Excellent when breakthrough time > 480 min
· Good when breakthrough time > 20 min
· Fair when breakthrough time < 20 min
· Poor when glove material degrades
For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.
It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.
Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:
· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

- Polyethylene gloves
- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

Body protection

See Other protection below

Continued...

Other protection	▸ Overalls. ▸ P.V.C apron. ▸ Barrier cream. ▸ Skin cleansing cream. ▸ Eye wash unit.

Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS	-	A-PAPR-AUS / Class 1
up to 50 x ES	-	A-AUS / Class 1	-
up to 100 x ES	-	A-2	A-PAPR-2 ^

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear light brown colour liquid with characteristic odour; not miscible with water.

Physical state	Liquid	**Relative density (Water = 1)**	0.842
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	<7
Initial boiling point and boiling range (°C)	145	**Molecular weight (g/mol)**	Not Applicable
Flash point (°C)	63	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Combustible.	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	6	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	0.7	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and

Continued...

	may be fatal. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.
Ingestion	Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Ingestion of petroleum hydrocarbons can irritate the pharynx, oesophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.
Skin Contact	Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Open cuts, abraded or irritated skin should not be exposed to this material The material may accentuate any pre-existing dermatitis condition Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin.

2002 SUPER DIESEL ADDITIVE 300ml	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
alkanes, C11-13-iso-	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >1900 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
	Inhalation(Rat) LC50; >4.42 mg/L4h[1]	Skin: adverse effect observed (irritating)[1]
	Oral (Rat) LD50; >4500 mg/kg[1]	
2-ethylhexyl nitrate	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >4820 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
	Inhalation(Rat) LC50; >1.104 mg/L4h[2]	Skin: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50; >2000 mg/kg[2]	
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

ALKANES, C11-13-ISO-	for C10-12-isoparaffins: The safety of isoparaffins as used in cosmetic products was reviewed by the Cosmetic Ingredient Review (CIR) Expert Panel. These ingredients function mostly as solvents and also function as emollients in the 0001% to 90% concentration range. The CIR Expert Panel has reviewed relevant animal and clinical data and concluded that these ingredients are safe in the present practices of use and concentration The CIR Expert Panel noted that most of the available data related to oral or inhalation exposure to isoparaffins, but the dermal and ocular exposure data that were available, suggested mild ocular irritation, mild-to-severe irritation, no sensitization or photosensitization, and no phototoxicity. No significant toxicity was identified in oral or inhalation exposure studies of the following end points: genotoxicity, reproductive and developmental toxicity, or carcinogenicity.Nephrotoxicity, however, was a concern. The Expert Panel noted the involvement of a2u-globulin in the mechanism for isoparaffin-induced nephrotoxicity/renal tubule cell proliferation in male rats of various strains in oral and inhalation exposure studies. Humans lack this protein and, thus, the Panel agreed that findings associated with the a2u-globulin protein in male rats were not relevant to humans.This view was consistent with the US EPA position that it was not possible for the agency to derive an oral RfD for chronic oral exposure or a reference concentration for chronic inhalation exposure to isooctane because the available studies were limited, in that they were designed to only investigate the endpoints specific to a2u-globulin-associated nephropathy. The EPA also concluded that there was inadequate evidence to assess the carcinogenic potential of isooctane, based on the absence of human epidemiological studies and chronic bioassays on this compound. However, the CIR Expert Panel noted that no significant tumor incidence was found following life-time dermal application of petrolatum (15% in isooctane) to mice and also found no evidence of any concern regarding carcinogenic potential from exposure to isoparaffins as used in cosmetics. The potential adverse effects of inhaled aerosols depend on the specific chemical species, the concentration and the duration of the exposure and their site of deposition within the respiratory system. In practice, aerosols should have at least 99% of their particle diameters in the 10 to 110 mm range and the mean particle diameter in a typical aerosol spray has been reported as ~38 mm. Particles with an aerodynamic diameter of <10 mm are respirable. After reviewing the positive acute and subchronic inhalation toxicity data the Expert Panel determined that isoparaffins can be used safely in hair sprays, because the product particle size is not respirable. International Journal of Toxicology 31 (Supplement 3) 269S-295S 2012 Animal studies indicate that normal, branched and cyclic paraffins are absorbed from the gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins. The major classes of hydrocarbons are well absorbed into the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with fats in the diet. Some hydrocarbons may appear unchanged as in the lipoprotein particles in the gut lymph, but most hydrocarbons partly separate from fats and undergo metabolism in the gut cell. The gut cell may play a major role in determining the proportion of hydrocarbon that becomes available to be deposited unchanged in peripheral tissues such as in the body fat stores or the liver.
2-ETHYLHEXYL NITRATE	Chemical with the aliphatic nitro group (-C-NO2) have been added to a list of DNA-reactive subgroups recognised by the National Toxicological Program (NTP, U.S. Dept Health and Human Services) for possible carcinogenic activity.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✗	**Reproductivity**	✗
Serious Eye Damage/Irritation	✗	**STOT - Single Exposure**	✗
Respiratory or Skin sensitisation	✗	**STOT - Repeated Exposure**	✗
Mutagenicity	✗	**Aspiration Hazard**	✓

Continued...

Legend: *– Data either not available or does not fill the criteria for classification*
– Data available to make classification

SECTION 12 Ecological information

Toxicity

2002 SUPER DIESEL ADDITIVE 300ml	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	Not Available	Not Available	Not Available	Not Available	Not Available

alkanes, C11-13-iso-	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	EC50(ECx)	96h	Algae or other aquatic plants	64mg/l	2
	EC50	96h	Algae or other aquatic plants	64mg/l	2

2-ethylhexyl nitrate	**Endpoint**	**Test Duration (hr)**	**Species**	**Value**	**Source**
	LC50	96h	Fish	2mg/l	2
	EC50	72h	Algae or other aquatic plants	1.57mg/l	2
	EC50	48h	Crustacea	>12.6mg/l	2
	EC10(ECx)	72h	Algae or other aquatic plants	0.76mg/l	2

Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
DO NOT discharge into sewer or waterways.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
alkanes, C11-13-iso-	Not Available
2-ethylhexyl nitrate	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
alkanes, C11-13-iso-	Not Available
2-ethylhexyl nitrate	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

alkanes, C11-13-iso- is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
US ACGIH Threshold Limit Values (TLV)
US ACGIH Threshold Limit Values (TLV) - Carcinogens
US DOE Temporary Emergency Exposure Limits (TEELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances

2-ethylhexyl nitrate is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	Yes
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	No
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	Yes
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

State Regulations

US. California Proposition 65

None Reported

Continued...

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (alkanes, C11-13-iso-; 2-ethylhexyl nitrate)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (alkanes, C11-13-iso-)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (2-ethylhexyl nitrate)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Revision Date	01/11/2019
Initial Date	12/02/2015

SDS Version Summary

Version	Date of Update	Sections Updated
8.1	26/04/2019	Acute Health (eye), Acute Health (skin), Acute Health (swallowed), Advice to Doctor, Chronic Health, Classification, Environmental, First Aid (eye), First Aid (inhaled), First Aid (skin), Handling Procedure, Ingredients, Physical Properties
9.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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POWER SERVICE PRODUCTS, INC.
SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

PRODUCT NAME: DIESEL 9•1•1

Unless otherwise noted, all sections of this SDS apply to each of the following products and part numbers.

PART NUMBERS:

8016-09, 8025-08, 8025-12, 8080-06, 8050-02, 8055-01, 8260-01

COMPANY IDENTIFICATION:

Power Service Products, Inc.
P.O. Box 1089
Weatherford, TX 76086
Email: psp@powerservice.com
Phone: 800/643-9089 or 817-599-9486
Fax: 817-599-4893

Emergency Phone Number: Within USA 1-800-424-9300. Outside USA 001-703-527-3887 (Call Collect).

RECOMMENDED USES: Diesel fuel additive

SECTION 2 - HAZARD(S) IDENTIFICATION

CLASSIFICATION UNDER 29 CFR 1910.1200(d)

(NC=product does not meet classification criteria)

Part Numbers:	**8016-09, 8025-08, 8025-12, 8050-02, 8055-01, 8260-01**	**8080-06**
Health Hazard Criteria	**Category**	**Category**
Acute Toxicity, Oral:	NC	NC
Acute Toxicity, Dermal:	NC	NC
Acute Toxicity, Inhalation, Vapors:	4	4
Skin Corrosion/Irritation:	2	NC
Serious Eye Damage/Eye Irritation:	2	1
Respiratory Sensitization:	NC	NC

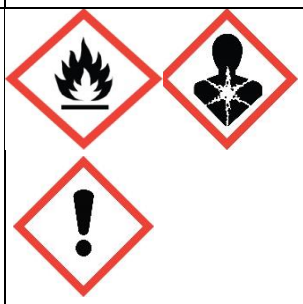
Part Numbers:	**8016-09, 8025-08, 8025-12, 8050-02, 8055-01, 8260-01**	**8080-06**
Health Hazard Criteria	**Category**	**Category**
Skin Sensitization:	NC	NC
Germ Cell Mutagenicity:	NC	NC
Carcinogenicity:	NC	NC
Reproductive Toxicity:	NC	NC
Specific Target Organ Toxicity, Single Exposure:	3	3
Specific Target Organ Toxicity, Repeated or Prolonged Exposure:	NC	NC
Aspiration Hazard:	1	1

Part Numbers:	**8016-09, 8025-08, 8025-12, 8050-02, 8055-01, 8260-01**	**8080-06**
Physical Properties Criteria	**Category**	**Category**
Explosives:	NC	NC
Flammable Gases:	NC	NC
Flammable Aerosols:	NC	NC
Oxidizing Gases:	NC	NC
Gases Under Pressure:	NC	NC
Flammable Liquids:	2	3
Flammable Solids:	NC	NC
Self-Reactive Chemicals:	NC	NC
Pyrophoric Liquids:	NC	NC
Pyrophoric Solids:	NC	NC
Self-Heating Chemicals:	NC	NC
Chemicals Which, in Contact with Water, Emit Flammable Gases:	NC	NC
Oxidizing Liquids:	NC	NC
Oxidizing Solids:	NC	NC
Organic Peroxides:	NC	NC
Corrosive to Metals:	NC	NC

LABEL SIGNAL WORD, HAZARD STATEMENTS, SYMBOLS AND PRECAUTIONARY STATEMENTS UNDER 29 CFR 1910.1200(f):

Please see the Note regarding product labeling in Section 16.

Signal Word(s): Danger

Part Number	Hazard and Precautionary Statement(s)	Symbols
8016-09, 8025-08, 8025-12, 8050-02, 8055-01, 8260-01	Highly flammable liquid and vapor. May be fatal if swallowed and enters airways. Harmful if inhaled. Causes skin and serious eye irritation and may cause respiratory irritation and drowsiness or dizziness. Keep away from sparks and open flames. No smoking. Keep container tightly closed. Use only non-sparking tools. Ground/Bond container and receiving equipment. Use explosion-proof pumps when pumping. Take precautionary measures against static discharge. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves and eye protection. Store locked up and in cool, well ventilated place. KEEP OUT OF REACH OF CHILDREN.	
8080-06	Flammable liquid and vapor. Causes serious eye damage. May be fatal if swallowed and enters airways. Harmful if inhaled. Causes skin irritation and may cause respiratory irritation and drowsiness or dizziness. Keep away from sparks and open flames. No smoking. Keep container tightly closed. Use only non-sparking tools. Ground/Bond container and receiving equipment. Use explosion-proof pumps when pumping. Take precautionary measures against static discharge. Avoid breathing vapors. Use only outdoors or in a well-ventilated area. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves and eye protection. Store locked up and in cool, well ventilated place. KEEP OUT OF REACH OF CHILDREN.	

Hazards Not Otherwise Classified: None

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

The specific chemical identity and exact concentration percentage has been withheld as a Trade Secret. Specific chemical information will be made available to health professionals in accordance with 29 CFR 1910.1200.

INGREDIENTS CLASSIFIED AS HEALTH HAZARDS

Chemical Name	Common Name/Synonyms	CAS Number	Concentration (%)
Aliphatic hydroxy hydrocarbons	Trade secret	Trade secret	40 - 90
Petroleum Distillates	Trade secret	Trade secret	10 - 60

SECTION 4 - FIRST AID MEASURES

As a precaution, exposure to liquids, vapors, mists and fumes should be minimized.

8016-09, 8025-08, 8025-12, 8050-02, 8055-01, 8260-01	**EYE CONTACT:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice. **SKIN CONTACT:** Immediately take off contaminated clothing and wash it before reuse. Wash contaminated areas with plenty of water. If skin irritation occurs get medical advice/attention. **INHALATION:** Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell. **INGESTION:** If swallowed, IMMEDIATELY call a doctor. Do NOT induce vomiting.
8080-06	**EYE CONTACT:** Immediately call a doctor. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. **SKIN CONTACT:** Wash contaminated areas with plenty of water. If skin irritation occurs get medical advice/attention. **INHALATION:** Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell. **INGESTION:** If swallowed, IMMEDIATELY call a doctor. Do NOT induce vomiting.

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.

SPECIFIC HAZARDS: Vapors are heavier than air and may travel along the ground to a distant ignition source and flash back. See Section 10 for Stability and Reactivity. **NOTE:** EMPTY CONTAINERS CONTAIN COMBUSTIBLE VAPORS THAT CAN CAUSE FLASH FIRES OR EXPLOSIONS. CONTAINERS ARE SINGLE-TRIP CONTAINERS AND SHOULD NOT BE USED FOR ANY REASON AFTER BEING EMPTIED. DO NOT USE CUTTING TORCH EQUIPMENT OR ANY OTHER FLAME OR OTHER SOURCES OF IGNITION ON ANY EMPTY CONTAINER.

PROTECTIVE EQUIPMENT AND PRECAUTIONS: Use standard protective equipment including self-contained breathing apparatus (SCBA).

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES: Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas. Eliminate all sources of ignition in the vicinity of the spill or released vapor. See Section 2 for Hazards Identification. See Section 4 for First Aid Measures. See Section 5 for Fire Fighting Information. See Section 8 for Personal Protective Equipment.

SPILL CONTAINMENT AND CLEAN-UP: Eliminate potential sources of ignition. Stop leak if it can be done without risk. Dike and contain spill. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly. A vapor suppressing foam may be used to reduce vapors. Local, state and federal laws and/or regulations may apply to releases and disposal of this material, as well as those materials and items employed in the clean-up releases. The user/responder will need to determine which local, state and federal laws and/or regulations are applicable. The National Response Center can be reached at 1-800-424-8802.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Avoid contact with eyes and skin. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Keep away from ignition sources such as heat, sparks, and flames. No smoking.

CONDITIONS FOR SAFE STORAGE: DO NOT USE OR STORE near heat, sparks, or flame. USE AND STORE ONLY IN A WELL-VENTILATED AREA. Handle containers with care. Keep container closed when not in use. Store locked up.

STORAGE TEMPERATURE: -40°F to 100°F (-40°C to 38°C)

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN FLAMMABLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE GUIDELINES:

		OSHA	ACGIH		NIOSH			
	CAS #	PEL	TLV	STEL	REL	STEL	IDLH	Note
Ethylbenzene	100-41-4	100 ppm	20 ppm	not est.	100 ppm	125 ppm	800 ppm (LEL)	n/a
Cumene	98-82-8	50 ppm	50 ppm	not est	50 ppm	not est.	900 ppm (LEL)	Skin
Petroleum Distillates	n/a	500 ppm	not est.	not est	not est	not est	not est	n/a

ENGINEERING CONTROLS: The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Local exhaust ventilation is recommended to control exposure.

PERSONAL PROTECTIVE EQUIPMENT (PPE):

Eyes and Face: Eye protection such as safety glasses or chemical goggles is recommended if contact is likely.

Skin: If prolonged or repeated skin contact is likely, chemical/oil resistant clothing and gloves are recommended. Wear additional protective clothing as appropriate.

Respiratory: Wear a NIOSH/MSHA approved respirator as necessary.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Practice good housekeeping.

NOTE: These precautions are for room temperature handling.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Part Numbers:	**8016-09, 8025-08, 8025-12, 8050-02, 8055-01, 8260-01**	**8080-06**
Appearance	Liquid, straw yellow	Liquid, straw yellow
Odor	Strong solvent	Strong solvent
Odor Threshold	Not available	Not available
pH	Not applicable	Not applicable
Melting point/Freezing point	Not available	Not available
Initial Boiling Point and Boiling Range	127.9 °F (53.3°C)	205.2°F (96.2°C)
Flash Point	66°F (TCC) 18.9°C	74°F (TCC) 23.3°C
Evaporation Rate	Not available	Not available
Flammability	Not available	Not available
Upper / lower Flammability or Explosive Limits	Not available	Not available
Vapor Pressure	Not available	Not available
Vapor Density	Not available	Not available
Relative Density/Specific Gravity (at 60°F)	0.84	0.85
Solubility	Not available	Not available
Partition Coefficient; n-octanol / water	Not available	Not available
Auto-ignition Temperature	Not available	Not available
Decomposition temperature	Not available	Not available
Viscosity	1.588 cSt	Not available
Pour Point	<-98°F (-72.2°C)	<-98°F (-72.2°C)

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: see Incompatible Materials below

CHEMICAL STABILITY: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

CONDITIONS TO AVOID: Flames, high energy ignition sources, and elevated temperatures.

INCOMPATIBLE MATERIALS: May react with oxygen, oxidizing agents, such as; chlorates, nitrates, peroxides, etc., amines, caustics, alkanolamines halogens, chlorine.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, products of incomplete combustion.

HAZARDOUS POLYMERIZATION:
Hazardous polymerization will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

LIKELY ROUTES OF EXPOSURE

INGESTION	INHALATION	SKIN CONTACT	EYE CONTACT	SKIN ABSORPTION
	X	X	X	X

SYMPTOMS RELATED TO PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS: Breathing of high vapor concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness. The vapor or fumes from this material may cause respiratory irritation. Breathing this material at elevated concentrations causes central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors, or convulsions, loss of consciousness, coma or death.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE: Repeated skin exposure to a component of this product may cause irritation, even a burn; may cause a more severe response on covered skin, such as under clothing or gloves. Inhalation exposure to a component of this product has caused fetotoxicity in the presence of maternal toxicity in animals.

NUMERICAL MEASURES OF TOXICITY
Note: the information provided below are estimates; testing of the product is not available.

Acute Oral Toxicity (ATE_{mix} estimate)	Acute Dermal Toxicity (ATE_{mix} estimate)	Acute Inhalation (ATE_{mix} estimate)
Does not meet criteria	Does not meet criteria	15.0-19.0

SENSITIZATION: No information available.

MUTAGENICITY: No information available.

CARCINOGENICITY LISTINGS – the following chemicals are listed as indicated:

Chemical	List
Cumene	IARC, NTP
Ethylbenzene	IARC

REPODUCTIVE TOXICITY: No information available.

TERATOGENICITY/EMBRYOTOXICITY: This product contains a component of a complex mixture (Xylenes (1330-20-7)) that has been shown to cause teratogenicity and/or embryotoxicity.

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): Respiratory tract irritation.

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): No information available

ASPIRATION HAZARD: Aspiration hazard identified.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICITY:
This material is expected to be toxic to aquatic organisms.

PERSISTENCE AND DEGRADABILITY: No information available.

BIOACCUMULATIVE POTENTIAL: No information available.

MOBILITY IN SOIL: No information available.

OTHER ADVERSE EFFECTS: No information available.

SECTION 13 - DISPOSAL CONSIDERATIONS

RCRA Information: Disposal of unused product may be subject to RCRA hazardous waste regulations (40 CFR Part 261). Disposal of the used product may also be regulated as hazardous waste due to resulting mixture characteristics, mixture components or product use. Such changes to the product may result in different and/or additional hazardous waste codes. Potential RCRA waste code based on the product as shipped: D001 IGNITABILITY.

State or local laws may impose additional regulatory requirements regarding disposal. *Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator.*

EMPTY CONTAINER WARNING: EMPTY CONTAINERS MAY CONTAIN FLAMMABLE VAPORS AND CAN BE DANGEROUS. SEE SECTION 5 FOR FIRE AND EXPLOSION HAZARD DATA.

SECTION 14 - TRANSPORTATION INFORMATION

The following part numbers are regulated for transportation as follows:

8016-09, 8025-08, 8025-12	**DOT (Domestic Ground):** Consumer Commodity ORM-D
	IMDG (Ocean Transport): UN 1993 FLAMMABLE LIQUID, N.O.S. (Aliphatic Hydroxy Hydrocarbons & Petroleum Distillates), 3, III (18.9°C cc), LTD QTY
8080-06	**DOT (Domestic Ground):** Consumer Commodity ORM-D
	IMDG (Ocean Transport): UN 1993 FLAMMABLE LIQUID, N.O.S. (Aliphatic Hydroxy Hydrocarbons & Petroleum Distillates), 3, III (23.3°C cc), LTD QTY

8050-02, 8055-01, 8260-01	**DOT (Domestic Ground):** Flammable liquids, n.o.s. (Aliphatic Hydroxy Hydrocarbons & Petroleum Distillates), 3, UN1993, III
	IMDG (Ocean Transport): UN 1993 FLAMMABLE LIQUID, N.O.S. (Aliphatic Hydroxy Hydrocarbons & Petroleum Distillates), 3, III (18.9°C cc)

All Part Numbers Forbidden for Transport by Air.

SECTION 15 - REGULATORY INFORMATION

§14(a) Consumer Product Safety Act General Certificate of Conformity

Power Service Products, Inc. certifies that this product meets the statutory and regulatory requirements of the US Consumer Products Safety Act, the Federal Hazardous Substances Act, and the Poison Prevention Packaging Act of 1970, as applicable. The Power Service products are manufactured in the United States in Weatherford, Texas, unless otherwise indicated on the product label. The product manufacture lot code is stamped on the product container. This Certification is based upon a reasonable testing program conducted by Power Service Products, Inc. which includes a quality control program incorporating, as necessary, confirmation of compliance by component suppliers. Third-party testing is not required to certify compliance. Further details may be obtained by contacting the Power Service Products, Inc. EHS Manager at 1-800-643-9089.

Contents of this SDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200

TSCA STATUS:
All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

EPA SARA TITLE III CHEMICAL LISTINGS:

Section 302 Extremely Hazardous Substances: None

Sections 311/ 312 Hazard Class:
Acute Health Effects: Yes Sudden Release of Pressure Hazard: No
Chronic Health Effects: Yes Reactivity Hazard: No

Fire Hazard: Yes

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) RATING:
HEALTH: **2**
FIRE: **3**
REACTIVITY: **0**

Section 313:
Specific chemical information is being withheld as a Trade Secret. The following chemicals subject to the reporting requirements of EPCRA Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372) may be present in this product at a concentration that does not exceed the specified upper weight percentage.

CAS Number	Chemical Name	Max %
100-41-4	Ethylbenzene	10.0

State or local laws may impose additional regulatory requirements for components of this material. It is the responsibility solely of the Employer to maintain compliance with State and Local reporting.

CA Proposition 65

⚠ **WARNING:** Cancer and Reproductive Harm – www.P65Warnings.ca.gov.

SECTION 16 – OTHER INFORMATION

DATE OF PREPARATION / REVISION: August 19, 2020

NOTE regarding product labeling: The OSHA Hazard Communication Standard applies to hazardous chemicals known to be present in the workplace. However, the labeling and Safety Data Sheet requirements do not apply to consumer products when they are used in the workplace for the purposes intended by the manufacturer and the use results in a duration and frequency of exposure which is not greater than the range of exposures that could reasonably be experienced by consumers when used for the intended purpose. Power Service Products intends for product packaged in 1 gallon or smaller containers to be used by consumers and has labeled those containers as required under the Consumer Product Safety Commission regulations. Power Service Products intends for product packaged in containers larger than 1 gallon to be used in the workplace and has labeled those products as required by the OSHA Hazard Communication Standard. The Consumer Product Safety Commission and OSHA Hazard Communication Standard labeling requirements are different and variations between the consumer and industrial labels may occur. It is the employer's responsibility to purchase the appropriate product for use in the workplace.

The information contained herein is offered in good faith and is believed to be accurate based on the data available to us as of the date of SDS preparation. The information in this document applies to this specific product as supplied. It may not be appropriate for this product if the product is used in combination with other materials. The information in this document is not intended to

constitute product performance information. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product. No statement shall be construed as an endorsement of any product or process. The recommended industrial hygiene and safe handling procedures are believed to be valid in the context of the intended use as described in product labeling. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. You are urged to obtain material safety data sheets for all products you buy, process, use or distribute, and are encouraged to advise those who may come in contact with such products of the information contained therein. Regulatory requirements are subject to change and may differ between locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. No warranty or guarantee is expressed or implied with respect to this product, the accuracy and sufficiency of the data or recommendations herein, or the results to be obtained from the use of this product. IN NO EVENT SHALL POWER SERVICE PRODUCTS, INC. BE LIABLE FOR ANY LOSS, CLAIM, DAMAGE OR LIABILITY OF ANY KIND, WHICH MAY ARISE FROM OR IN CONNECTION WITH THE INFORMATION CONTAINED IN THIS DOCUMENT OR FROM THE USE, HANDLING OR STORAGE OF THE PRODUCT BY THE BUYER/USER, WHETHER DIRECT, INDIRECT, OR CONSEQUENTIAL, OR FOR ANY CLAIM BY ANY THIRD PARTY, BEYOND THE PURCHASE PRICE OR REPLACEMENT OF THE PRODUCT IN CONNECTION WITH WHICH SUCH LOSS, CLAIM, DAMAGE OR LIABILITY AROSE.

THE FOREGOING LIMITATIONS APPLY REGARDLESS OF THE CAUSES OR CIRCUMSTANCES GIVING RISE TO SUCH LOSS, CLAIM, DAMAGE OR LIABILITY, EVEN IF SUCH LOSS, CLAIM, DAMAGE, OR LIABILITY IS BASED ON NEGLIGENCE OR OTHER TORTS OR BREACH OF CONTRACT.

SAFETY DATA SHEET

Product: MARC 126 CITRUS TYPHOON

Form R04132

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER AND NAME: **MARC 126 CITRUS TYPHOON**

SDS DATE: 01/04/2019

SUPPLIER: Mid-American Research Chemical Corp. **ADDRESS: P. O. Box 927 Columbus, NE 68602-0927**
PHONE: 402-564-7104 FAX: 403-563-1290
EMERGENCY PHONE: InfoTrac 1-800-535-5053
E-MAIL: marc@marc1.com WEBSITE: www.marc1.com

RECOMMENDED USE: Cleaning compound

PREPARED BY: MARC

SECTION 2: HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable aerosol category 1; skin corrosion/irritation category 2; sensitization- skin category 1.
SIGNAL WORD AND HAZARD AND PRECAUTIONARY STATEMENTS: DANGER. Extremely flammable aerosol. Causes skin irritation. May cause an allergic skin reaction. Keep away from heat, sparks, open flames and hot surfaces. - no smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid breathing mist or vapor. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off and wash contaminated clothing before reuse. Storage: Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations. Hazardous to the aquatic environment – acute and long-term.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Specific percentages and ingredients may be claimed as a trade secret.

INGREDIENT	CAS NO.	% by WT.
d-Limonene	5989-27-5	60 -80
Alcohols, C9-11, ethoxylated	68439-46-3	2.5-10
Carbon Dioxide	124-38-9	2.5-10
Other ingredients below reportable levels	N/A	10- 20

SECTION 4: FIRST AID MEASURES

EYES: Rinse with water. Get medical attention if irritation develops and persists.
SKIN: Remove contaminated clothing immediately and wash skin with soap and water. Remove contaminated clothing. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.
INGESTION: Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs
INHALATION: Move to fresh air. Call a physician if symptoms develop or persist.
NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: May cause dermatitis. Aspiration may cause pulmonary edema and pneumonitis. Rash and skin irritation may develop. May cause redness and pain. May cause an allergic skin reaction. Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed. General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Alcohol resistant foam. Water fog. Dry chemical powder. Carbon dioxide (CO_2). Do not use water jet as an extinguisher, as this will spread the fire.

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Move containers from fire area if you can do so without risk. Containers

should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Contents under pressure. Pressurized container may explode when exposed to heat or flame. Extremely flammable aerosol.

HAZARDOUS DECOMPOSITION PRODUCTS: Not determined

SECTION 6: ACCIDENTAL RELEASE MEASURES

PROTECTIVE EQUIPMENT: Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Avoid breathing mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
METHODS AND MATERIALS FOR CONTAINMENT AND CLEANUP: Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Use water spray to reduce vapors or divert vapor cloud drift. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Use only in
well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

OTHER PRECAUTIONS: Level 3 Aerosol.

STORAGE: Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store away from incompatible materials (see Section
10 of the SDS).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT	CAS NO.	CARCINOGEN:	EXPOSURE LIMITS:
Carbon Dioxide	124-38-9	No	9,000 mg/m^3 PEL

ENGINEERING CONTROLS: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

VENTILATION: Local exhaust

RESPIRATORY PROTECTION: If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

EYE PROTECTION: Face shield is recommended. Wear safety glasses with side shields (or goggles).

SKIN PROTECTION/PROTECTIVE GLOVES: Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

WORK HYGIENIC PRACTICES: When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE-
PHYSICAL STATE: liquid, aerosol
COLOR: clear, colorless
ODOR: citrus
ODOR THRESHOLD: N/A
pH: N/A
MELTING/FREEZING POINT: N/A
BOILING POINT: N/A
FLASH POINT/METHOD USED: 181.1 °F (82.8 °C) estimated
EVAPORATION RATE: N/A
FLAMMABILITY (solid, gas): N/A
FLAMMABILITY LIMITS: N/A
VAPOR PRESSURE (mmHg): 90 psig @70F
VAPOR DENSITY (AIR = 1): N/A
SPECIFIC GRAVITY (H2O = 1): 0.697 g/cm^3
SOLUBILITY IN WATER: N/A

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: The product is stable and non-reactive under normal conditions of use, storage and transport.
STABILITY: Yes

CONDITIONS TO AVOID: Avoid temperatures exceeding the flash point. Contact with incompatible materials.

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: No hazardous decomposition products are known.
HAZARDOUS POLYMERIZATION: No **CONDITIONS TO AVOID (POLYMERIZATION):** NA

SECTION 11: TOXICOLOGICAL INFORMATION

EYES: Direct contact with eyes may cause temporary irritation.
SKIN: Causes skin irritation. May cause an allergic skin reaction.
INGESTION: Prolonged inhalation may be harmful.
INHALATION: Prolonged inhalation may be harmful.
ACUTE HEALTH HAZARDS: May be fatal if swallowed and enters airways. May cause an allergic skin reaction.
CHRONIC HEALTH HAZARDS: Prolonged inhalation may be harmful.
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
CARCINOGENICITY: N/A
TOXICITY TO ANIMALS: N/A
TOXICITY TO ANIMALS: N/D

Alcohols, C9-11, ethoxylated (CAS 68439-46-3)

Acute		
Dermal		Test Results
LD50	Rabbit	2000 mg/kg, 24 Hours
	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
Aerosol		
LC50	Rat	> 1600 mg/m3, 4 Hours
Vapor		
LC50	Rat	> 100 mg/m3, 6 Hours
Aerosol		
LC50	Rat	> 1.6 mg/l, 4 Hours
Oral		
LD50	Rat	3488 mg/kg

d-Limonene (CAS 5989-27-5)

Acute		
Oral		
LD50	Rat	> 2000 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

Alcohols, C9-11 (CAS #68439-46-3):

Aquatic Crustacea	EC50	Water flea (Daphnia magna)	2.9-8.5 mg/l, 48 hours	
Fish	LC50	Fathead minnow (Pimephales promelas)		6-12 mg/l, 96 hours

d-Limonene (CAS #5989-27-5):

Aquatic Crustacea	EC50	Water flea (Daphnia magna)	69.6 mg/l, 48 hours	
Fish	LC50	Fathead minnow (Pimephales promelas)		0.619-0.796 mg/l, 96 hours

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (for ground/non-bulk containers)

CONTAINER SIZES(S): Aerosol can
PROPER SHIPPING NAME: CLEANING COMPOUND
HAZARD CLASS: N/A
ID NUMBER: N/A
PACKING GROUP: N/A
LABEL STATEMENT: LTD QTY

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: This product is a "Hazardous Chemical" as defined by the OSHA Hazard

Communication Standard, 29 CFR 1910.1200.

TSCA (TOXIC SUBSTANCE CONTROL ACT): All components are on the U.S. EPA TSCA Inventory List.

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): N/A

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): N/A

311/312 HAZARD CATEGORIES: N/A

313 REPORTABLE INGREDIENTS: N/A

SECTION 16: OTHER INFORMATION

HMIS/NFPA Ratings:

Health =	**2**
Flammability =	**4**
Reactivity =	**0**
Other =	**-**
Protection =	**X**

REVISION DATE: 01/04/2019

N/A = Not Applicable, N/D = Not Determined, N/E = Not Established

DISCLAIMER: While the information contained herein is believed to be correct, no warranties are made with respect thereto, and all liability from reliance thereon is disclaimed.

SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product:	**FIBRE EXPANSION JOINT**	**Part Number:**	**1103360**
Manufacturer:	**W. R. MEADOWS, INC.**	**Address:**	300 Industrial Drive Hampshire, Illinois 60140
Telephone:	(847) 214-2100	In case of emergency, dial (800) 424-9300 (CHEMTREC)	
Revision Date:	8/16/2024		
Product Use:	Expansion Joint in Concrete Construction		

SECTION 2: HAZARDS IDENTIFICATION/EXPOSURE LIMITS

HMIS	
|Health|	|1|
|Flammability|	|1|
|Reactivity|	|0|
|Personal Protection|	| |

Product is classified as non-hazardous per OSHA 1910.1200. Fiber Expansion Joint is defined by OSHA as an "article." A manufactured item that is formed to a specific shape or design during manufacture that does not release or result in exposure to a hazardous chemical under normal use conditions.

SECTION 3: HAZARDOUS COMPONENTS

Chemical Name:	CAS Number	% by Weight	SARA 313	Vapor Pressure (mm Hg@20°C)	LEL (@24°C)
1. Petroleum Asphalt	8052-42-4	35-40	No	N/A	N/A

N/A = Not Applicable

Under the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1966 (SARA) and 40 CFR Part 372, chemicals listed on the 313 List (40 CFR Part 373.65) are identified under the heading "SARA 313."

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush eyes with water to remove fibers

SKIN CONTACT: Flush with water to remove fibers. Wash affected areas with soap and water if available

INHALATION: Not expected to be an exposure route. If a dust exposure occurs, remove victim from exposure source and treat symptomatically.

INGESTION: Not expected to be an exposure source.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND CHRONIC: See Section Eleven for Symptoms/Effects.

SECTION 5: FIRE AND EXPLOSIVES HAZARDS

FLASHPOINT: Not applicable.

EXTINGUISHING MEDIA: Water fog, foam, dry chemical.

CHEMICAL/COMBUSTION HAZARDS: Stacked material will retain heat and has the potential to reignite.

PRECAUTIONS/PERSONAL PROTECTIVE EQUIPMENT: Avoid smoke inhalation. Use appropriate respiratory protection.

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Not applicable. Product is a solid.

SECTION 7: HANDLING AND STORAGE

SAFE HANDLING PROCEDURES: Avoid direct contact.

SAFE STORAGE: None.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

	OSHA				ACGIH			
Chemical Name:	PEL	PEL/CEILING	PEL/STEL	SKIN	TLV	TLV/CEILING	TLV/STEL	SKIN
1. Petroleum Asphalt	5 mg/m^3*	N/E	N/E	No	0.5 mg/m^3*	N/E	N/E	N/E

N/E = Not Established **: Asphalt Fumes*

ENGINEERING CONTROLS: None required under normal use conditions.

PERSONAL PROTECTIVE EQUIPMENT: Safety glasses, chemical-resistant gloves.

SAFETY DATA SHEET

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: N/A	**VAPOR DENSITY:** N/A	**% VOLATILE BY VOLUME:** N/A
EVAPORATION RATE: N/A	**pH LEVEL:** N/A	**% VOLATILE BY WEIGHT:** N/A
WEIGHT PER GALLON: N/A	**PRODUCT APPEARANCE:** Black Board	**VOC CONTENT:** N/A
ODOR: None	**ODOR THRESHOLD:** N/D	**MELTING/FREEZING POINT:** N/D
FLASH POINT: See Section 5	**FLAMMABILITY:** N/D	**UEL/LEL:** N/D
VAPOR PRESSURE: N/D	**RELATIVE DENSITY:** N/D	**SOLUBILITY:** N/D
PARTITION COEFFICENT: N/D	**AUTOIGNITION TEMPERATURE:** N/D	**DECOMPOSITION TEMPERATURE:** N/D
VISCOSITY: N/D		*N/D: Not Determined*

SECTION 10: STABILITY/REACTIVITY

STABILITY: Stable. **HAZARDOUS POLYMERIZATION:** Will not occur.

CONDITIONS AND MATERIALS TO AVOID: None recognized.

HAZARDOUS DECOMPOSITION PRODUCTS: None recognized.

SECTION 11: TOXICOLOGICAL INFORMATION

EYE CONTACT: Direct contact may cause mild irritation.

SKIN CONTACT: Direct contact may cause slight skin irritation.

INHALATION: Not anticipated to be an exposure route.

INGESTION: Not anticipated to be an exposure route.

SIGNS AND SYMPTOMS: Symptoms of eye irritation include tearing, reddening, and swelling. Symptoms of skin irritation include redness and swelling. Gastrointestinal irritation symptoms include nausea, vomiting, and abdominal discomfort.

AGGRAVATED MEDICAL CONDITIONS: None recognized.

OTHER HEALTH EFFECTS: Wood dust is listed by the IARC as a human carcinogen (Group 1)

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: N/E **DEGRADABILITY:** N/E **BIOACCUMULATIVE POTENTIAL:** N/E

SOIL MOBILITY: N/E **OTHER ADVERSE EFFECTS:** None Recognized *N/E: Not Established*

SECTION 13: WASTE DISPOSAL INFORMATION

WASTE DISPOSAL INFORMATION: Product is classified as a non-hazardous waste.

SECTION 14: TRANSPORTATION INFORMATION

HAZARDOUS/NON-HAZARDOUS MATERIAL: Not regulated by DOT.

UN NUMBER: None **HAZARD CLASS:** N/A **PACKING GROUP:** N/A

UN PROPER SHIPPING NAME: N/A

ENVIRONMENTAL HAZARDS: None recognized.

BULK TRANSPORTATION INFORMATION: None.

SPECIAL PRECAUTIONS: None. *N/A: Not Applicable*

SECTION 15: REGULATORY INFORMATION

OTHER REGULATORY CONSIDERATIONS: None recognized.

SECTION 16: OTHER INFORMATION

PREPARATION DATE: 8/16/2024

PREPARED BY: Dave Carey

The information contained herein is based on the data available to us and is believed to be correct. However, we make no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. We assume no responsibility for injury from the use of this product described herein.

Lube-Tech Endurance Synthetic Blend 5W-30

Safety Data Sheet 31202

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 09/19/2022 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : Lube-Tech Endurance Synthetic Blend 5W-30

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Supplier
Lubrication Technologies, Inc
900 Mendelssohn Ave N
Golden Valley, MN 55427 - USA
T 763-545-0707
www.lubetech.com

1.4. Emergency telephone number

Emergency number : 1-800-424-9300 (CHEMTREC)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	CAS-No.: 64742-65-0	5 – 10	Asp. Tox. 1, H304
SEVERELY HYDROTREATED HEAVY PARAFFINIC	CAS-No.: 64742-54-7	1 – 5	Asp. Tox. 1, H304
REACTION PRODUCTS OF BENZENESULFONIC ACID, MONO C20-24 (EVEN)-SEC-ALKYL DERIVS. PARA-, CALCIUM SALTS	CAS-No.: CONFIDENTIAL	0.1 – 1	Skin Sens. 1, H317

TRIS(BRANCHED-ALKYL) BORATE	CAS-No.: CONFIDENTIAL	0.1 – 1	Skin Sens. 1, H317 Aquatic Acute 2, H401

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after eye contact : Rinse eyes with water as a precaution.

First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Lube-Tech Endurance Synthetic Blend 5W-30

No additional information available

REACTION PRODUCTS OF BENZENESULFONIC ACID, MONO C20-24 (EVEN)-SEC-ALKYL DERIVS. PARA-, CALCIUM SALTS (CONFIDENTIAL)

No additional information available

SEVERELY HYDROTREATED HEAVY PARAFFINIC (64742-54-7)

No additional information available

SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE (64742-65-0)

No additional information available

TRIS(BRANCHED-ALKYL) BORATE (CONFIDENTIAL)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Protective gloves

Eye protection:
Safety glasses

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	amber
Odor	:	characteristic
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	Not applicable
Freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	> 200 °C
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability	:	Not applicable.
Vapor pressure	:	< 0.013 kPa @ 20°C
Relative vapor density at 20 °C	:	No data available
Relative density	:	0.858
Solubility	:	No data available
Partition coefficient n-octanol/water (Log Pow)	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	64.5 mm²/s @ 40°C
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified
Skin corrosion/irritation	:	Not classified
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitization	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
STOT-single exposure	:	Not classified
STOT-repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Viscosity, kinematic	:	64.5 mm²/s @ 40°C

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

Department of Transportation (DOT)

Not regulated

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

SEVERELY HYDROTREATED HEAVY PARAFFINIC (64742-54-7)
Listed on the Canadian DSL (Domestic Substances List)

SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE (64742-65-0)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations
No additional information available

National regulations

REACTION PRODUCTS OF BENZENESULFONIC ACID, MONO C20-24 (EVEN)-SEC-ALKYL DERIVS. PARA-, CALCIUM SALTS (CONFIDENTIAL)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

SEVERELY HYDROTREATED HEAVY PARAFFINIC (64742-54-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE (64742-65-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

No additional information available

SECTION 16: Other information

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases	
H304	May be fatal if swallowed and enters airways
H317	May cause an allergic skin reaction

H401	Toxic to aquatic life

SDS US (GHS HazCom 2012) Correction section 15

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL DELVAC 1 ESP 5W-40
Product Description: Synthetic Base Stocks and Additives
Product Code: 201520101017, 444612-00, 97AT91
Intended Use: Engine oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77253 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary

from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
ALKYL PHENOL	125643-61-0	1 - < 5%	H413
BENZENAMINE, AR-NONYL-N-(NONYL PHENYL)-	36878-20-3	1 - < 5%	H413
C14-16-18 ALKYL PHENOL	CONFIDENTIAL	0.1 - < 1%	H317
CALCIUM HYDROXIDE	1305-62-0	0.1 - < 1%	H315, H318, H335
DISTILLATES, HEAVY, C18-50 - BRANCHED, CYCLIC AND LINEAR	848301-69-9	40 - < 50%	H304
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	64742-65-0	1 - < 5%	H304
ZINC ALKYL DITHIOPHOSPHATE	113706-15-3	1 - < 2.5%	H303, H315, H318, H401, H411

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >215°C (419°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid contact with used product. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
CALCIUM HYDROXIDE	Respirable fraction.	TWA	5 mg/m3		N/A	OSHA Z1
CALCIUM HYDROXIDE	Total dust.	TWA	15 mg/m3		N/A	OSHA Z1
CALCIUM HYDROXIDE		TWA	5 mg/m3		N/A	ACGIH
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

Control measures to consider:
No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:
No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:
No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber

Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.857
Flammability (Solid, Gas): N/A
Flash Point [Method]: >215°C (419°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 81.1 cSt (81.1 mm2/sec) at 40 °C | 13.6 cSt (13.6 mm2/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -30°C (-22°F)

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.

Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.
Diesel engine oils: Not carcinogenic in animals tests. Used and unused diesel engine oils did not produce any carcinogenic effects in chronic mouse skin painting studies.
Oils that are used in gasoline engines may become hazardous and display the following properties: Carcinogenic in animal tests. Caused mutations in vitro. Possible allergen and photoallergen. Contains polycyclic aromatic compounds (PAC) from combustion products of gasoline and/or thermal degradation products.

Contains:
Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, KECI, PICCS, TCSI, TSCA

Special Cases:

Inventory	Status
IECSC	Restrictions Apply

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ZINC ALKYL DITHIOPHOSPHATE	113706-15-3	1 - < 2.5%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ZINC ALKYL DITHIOPHOSPHATE	113706-15-3	13, 15, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK

4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H303: May be harmful if swallowed; Acute Tox Oral, Cat 5
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H335: May cause respiratory irritation; Target Organ Single, Resp Irr
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Section 08: Exposure Limits Table information was modified.
Section 11: Other Health Effects information was modified.
Section 15: National Chemical Inventory Listing information was modified.
Section 15: Special Cases Table information was modified.
Section 16: HCode Key information was modified.

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Prepared according to Global Harmonized System (GHS) standards

SECTION 1 CHEMICAL PRODUCT IDENTIFICATION

Lubrication Technologies, Inc.
900 Mendelssohn Avenue North
Golden Valley, MN 55427-4309
Tel: 763-545-0707

Product Trade Name: **Lube Tech Endurance Extra Premium HD 15w40**

CAS Number:	Mixture
Synonyms/Other:	NA
Part Number(s):	NA
Recommended Use:	Diesel Engine Oil
Restrictions on Use:	Not determined
Created Date:	1/25/2017
Preparation/Revision Date:	1/25/2017
Emergency Phone Number:	1-800-424-9300 (CHEMTREC)
SDS CODE:	14164

SECTION 2 HAZARD IDENTIFICATION

Appearance:	Light to brown
Odor:	Petroleum odor
Classification:	This material is not considered to be hazardous according to the Globally Harmonized System of Classification and Labelling Chemicals (GHS).
Target Organs:	Not applicable.
Pictogram(s):	None required.
Signal Word:	None required.
Hazard Statement:	Not required.
Other Hazards:	Not determined.
Prevention:	None required.
Response:	None required.
Storage Procedures:	None required.
Disposal:	None required.
Other:	See section 11 for complete health hazard information.

SECTION 3 COMPOSITION OF INGREDIENTS

Components: No Hazardous Substance(s) or Complex Substance(s) required for disclosure

SECTION 4 FIRST AID MEASURES

Eye Contact:	If irritation occurs, cautiously rinse eyes with lukewarm, gently flowing water for 5 minutes, while holding the eyelids open. If eye irritation persists: Get medical advice/attention.
Skin Contact:	Call a doctor if you feel unwell.
Inhalation:	Get medical advice or attention if you feel unwell or are concerned.

Ingestion: If you feel unwell or concerned: Get medical advice/attention. Rinse mouth. Do NOT induce vomiting. If vomiting occurs naturally, lie on your side, in the recovery position.

Other: No additional information

SECTION 5 FIRE FIGHTING MEASURES

Flash Point: 215°C by Cleveland Open Cup Tester.
Flammable limits: Not determined.
Extinguishing media: Use dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire.

Special firefighting procedures: DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

Unusual fire & explosion hazards: Dense smoke may be generated while burning. Toxic fumes, gases or vapors may evolve on burning. High temperatures may create heavy flammable vapors that may settle along ground level and low spots to create an invisible fire hazard.

Byproducts of combustion: Fires involving this product may release oxides of carbon, phosphorus, nitrogen and sulfur; reactive hydrocarbons and irritating vapors.

Autoignition temperature: Not determined.
Explosion data: Not determined. Care should always be exercised in dust/mist areas.
Other: Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill control procedures (land): Immediately turn off or isolate any source of ignition (pilot lights, electrical equipment, flames, heaters, etc.). Evacuate area and ventilate. Personnel wearing proper protective equipment should contain spill immediately with inert materials (sand, earth, chemical spill pads of cotton) by forming dikes. Dikes should be placed to contain spill in a manner that will prevent material from entering sewers and waterways. Large spill, once contained, may be picked up using explosion proof, non-sparking vacuum pumps, shovels, or buckets, and disposed of in suitable containers for disposal. If a large spill occurs notify appropriate authorities. In case of road spill or accident contact Chem-Trec (800-424-9300).

Spill control procedures (water): Try to contain large spills with floating booms to prevent spill from spreading. Remove from surface by skimming or with suitable adsorbents. If a large spill occurs notify appropriate authorities (normally the National Response Center or Coast Guard at 800-424-8802).

Waste disposal method: Do not empty into drains. All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded may be a regulated waste. Refer to state and local regulations. Department of Transportation (DOT) regulations may apply for transporting this material when spilled. See Section 14.

Other: CAUTION - If spilled material is cleaned up using a regulated solvent, the resulting waste mixture will be regulated.

SECTION 7 HANDLING AND STORAGE

Handling procedures: Keep containers closed when not in use. Do not transfer to unmarked containers. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld, or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.
Handling temperatures should not exceed 60°C (140°F) to minimize danger of burns. Open containers carefully in a well ventilated area or use appropriate respiratory protection. Wash thoroughly after handling.

Storage procedures: Store containers away from heat, sparks, open flame, or oxidizing materials. Extended storage at excessive temperatures may produce odorous and toxic fumes from product decomposition.

Additional information: No additional information.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product:

	OSHA TWA	OSHA STEL	ACGIH TWA
Contains highly refined petroleum oil	*5 mg/m³ (PEL)	*10 mg/m³	*5 mg/m³ (TLV)

* Exposure limits not defined. Limits used are for, "oil mist".

TWA – Time Weighted Average is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.
STEL – Short Term Exposure Limit is the employee's 15-minute time weighted average exposure which shall not be exceeded at any time during a work day unless another time limit is specified.

All base oils, including additive carriers, contain <3.0% DMSO extractable material.

Personal protection: Applicable mainly to persons in repeated contact situations such as packaging of product, service/maintenance, and cleanup/spill control personnel.

Respiratory protection: None required if ventilation is adequate. Otherwise a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. Where misting may occur, wear an MSHA/NIOSH approved (or equivalent) half-mask form dust/mist air purifying respirator.

Eye protection: Eye protection is strongly recommended. Wear safety glasses with side shields or vented/splash proof goggles (ANSI Z87.1 or approved equivalent).

Hand protection: Impervious, chemically resistant gloves such as neoprene or nitrile rubber to avoid skin sensitization and absorption.

Other protection: Use of an apron and overboots of chemically impervious materials such as neoprene or nitrile rubber is recommended based on level of activity and exposure. If handling hot material use insulated protective equipment. Launder soiled clothes. Properly dispose of contaminated leather articles and other materials which cannot be decontaminated.

Local control measures: Use adequate ventilation when working with material in an enclosed area. Mechanical methods such as fume hoods or area fans may be used to reduce localized vapor/mist areas. If vapor or mist is generated when the material handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure. Eyewash stations and showers should be available in areas where this material is used and stored.

Other: Consumption of food and drink should be avoided in work areas where product is present. Always wash hands and face with soap and water before eating, drinking or smoking.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light to brown
Odor:	Petroleum odor
Odor threshold:	Not determined.
pH:	Not applicable.
Melting/Freezing point:	Not determined.
Initial boiling point:	Not determined.
Boiling range:	Not determined.
Flash point:	215°C.
Evaporation rate:	Not determined.
Flammability:	Not determined.
Upper flammable limit:	Not determined.
Lower flammable limit:	Not determined.
Vapor pressure:	Not determined.
Vapor density:	Not determined.
Relative density:	Not determined.
Solubility:	Negligible in water, miscible in most petroleum solvents.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	Not determined.
Other	Not applicable.

SECTION 10 STABILITY AND REACTIVITY

Reactivity	
Chemical stability:	Material is chemically stable at room temperatures and pressure.
Hazardous polymerization:	Will not occur.
Conditions to avoid:	Avoid high temperatures and product contamination.
Incompatibility with other materials:	Avoid contact with acids and strong oxidizing materials.
Decomposition products:	Smoke, carbon monoxide, carbon dioxide, and other aldehydes of incomplete combustion. Oxides of carbon, nitrogen, and sulfur; reactive hydrocarbons and irritating vapors.
Other:	Not applicable.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity (LD50) *See note at the bottom of the section

Oral:	>5000 mg/kg
Dermal:	>5000 mg/kg
Inhalation:	>20.0 mg/l
Skin irritation:	Non-irritant
Eye irritation:	Non-irritant
Dermal sensitization:	Not expected to have a sensitizing effect.
Respiratory sensitization:	Not expected to have a sensitizing effect.
Aspiration Hazard:	Not applicable

Chronic Toxicity

Mutagenicity:	Not suspected of causing genetic defects
Carcinogenicity:	Not suspected of causing cancer.
Reproductive toxicity:	Not expected to have adverse effects on reproduction.
STOT-single exposure:	Not expected to have adverse effects.
STOT-repeated exposure:	Not expected to have long term adverse effects.
Other:	*All data in this section is based off calculations from Part 3 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 12 ECOLOGICAL INFORMATION

Environmental toxicity	
Fish:	> 100 mg/l.
Invertebrates:	> 100 mg/l.
Aquatic plants:	> 100 mg/l.
Microorganism:	> 100 mg/l.
Persistence/Degradability:	This product is not expected to be readily biodegradable.
Bioaccumulation:	Not determined.
Mobility in soil:	Not determined.
Other:	All classifications are based on calculations in Part 4 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste disposal:	This product unadulterated by other materials can be classified as a non-hazardous waste. Depending on use, used product may be regulated. Dispose of in a licensed facility. Do not discharge product in to sewer system. Dispose of containers by crushing or puncturing, so as to prevent unauthorized use of used containers. Waste management should be in full compliance with federal, state, and local laws.
Other	The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14 TRANSPORT INFORMATION

Land Transport (DOT):	Not regulated for land transport.
Proper Shipping Name:	Not applicable.
Land Transport (TDG):	Not regulated for land transport.
Proper Shipping Name:	Not applicable.
Sea Transport (IMDG):	Not regulated for sea transport.
Proper Shipping Name:	Not applicable.
Air Transport (IATA):	Not regulated for air transport.
Proper Shipping Name:	Not applicable.
Other:	Not applicable.

SECTION 15 REGULATORY INFORMATION

Federal Regulation

Clean water act/oil: Under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Control Act of 1990, this material is considered an oil. Any spill or discharges that produce a visible sheen or film on surface of water, or in waterways, ditches, or sewers leading to surface water must be reported. Contact the National Response Center at 800-424-8802.

TSCA: All components of this material are listed in the U.S. TSCA Inventory.

Other TSCA: Not applicable.

SARA title III: Section 302/304 extremely hazardous substances:

None.

Section 311, 312 hazard categorization:

Acute (immediate health effects):	NO
Chronic (delayed health effects):	NO
Fire (hazard):	NO
Reactivity (hazard):	NO
Pressure (sudden release hazard):	NO

Section 313 toxic chemicals:

No components present are at or greater than the de minimis (minimum reportable) concentration requirements for reporting.

CERCLA: For stationary/moving sources – reportable quantity (due to): Not hazardous due to the petroleum exclusion.

State Regulations

Right-to-know Not determined.

Other: A release of this product, as supplied, is exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). However, releases may be reportable to the Nation Response Center under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5) - see head of Section 15. Failure to report may result in substantial civil and criminal penalties.

Recommend contacting the local authorities in the event of any type of spill to determine local reporting requirements and also to aid in the cleanup.

SECTION 16 OTHER INFORMATION

	NFPA 704	NPCA-HMIS	KEY
HEALTH:	1	1	0 = Minimal
FIRE:	1	1	1 = Slight
REACTIVITY:	0	0	2 = Moderate
SPECIFIC HAZARD:	None	N/A	3 = Serious
PROTECTION INDEX:	N/A	B	4 = Severe

Version: I

INFORMATION PROVIDED IN THIS SDS IS CONSIDERED ACCURATE AND RELIABLE BASED ON INFORMATION ISSUED FROM INTERNAL AND OUTSIDE SOURCES TO THE BEST OF THE AUTHORS' KNOWLEDGE. HOWEVER, THE AUTHOR'S MAKE NO REPRESENTATIONS, GUARANTEES OR WARRANTIES, EXPRESSED OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR THE PARTICULAR PURPOSE, REGARDING THE ACCURACY OF SUCH INFORMATION OR THE RESULT TO BE OBTAINED FROM THE USE THEREOF, OR AS TO THE SUFFICIENCY OF THE INFORMATION HEREIN PRESENTED. THE AUTHORS ASSUME NO RESPONSIBILITY FOR INJURY TO RECIPIENT OR TO THIRD PERSONS OR FOR ANY DAMAGE TO ANY PROPERTY AND RECIPIENT ASSUMES ALL SUCH RISKS.

Revisions / Comments:	None.
Internal use only:	V15

Safety Data Sheet

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Products: **Right-Joint Fibre Expansion Joint**
Manufacturer **: RIGHT POINTE COMPANY**
Address : 234 Harvestore Drive
: P.O. BOX 467
: DeKalb, IL 60115
Telephone : 888-755-5700
Fax : 815-754-5702

In case of emergency, dial (800) 424-9300 (CHEMTREC)

SECTION 2 - HAZARDOUS IDENTIFICATION/EXPOSURE LIMITS

HMIS
| Health | |1|
| Flammability | |0|
| Reactivity | |0|
| Personal Protection | | |

Product is classified as non-hazardous per OSHA 1910-1200. Fibre Expansion Joint is defined by OSHA as an "article." A manufactured item that is formed to a specific shape or design during manufacture that does not release or result in exposure to a hazardous chemical under normal use conditions.

SECTION 3 - HAZARDS COMPONENTS

Chemical Name:	CAS Number	% by Weight	SARA 313	Vapor Pressure (mm Hg@20 °C)	LEL @ 24 °C
Petroleum Asphalt	8052-42-4	35-40	No	N/A	N/A

Under the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1966 (SARA) and 40 CFR part 372, chemicals listed on the 313 List (40 CFR Part 373.65) are Identified under the heading "SARA 313." *N/A = Not Applicable*

SECTION 4 - EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Flush eyes with water to remove fibers.
Skin Contact: Flush with water to remove fibers. Wash affected areas with soap and water if available.
Inhalation: Not anticipated to be an exposure route. If a dust exposure occurs, remove victim from exposure source and treat symptomatically.
Ingestion: Not anticipated to be an exposure route.

SECTION 5 - FIRE AND EXPLOSION HAZARDS

Flash Point: >400 °F
Extinguishing Media: Water fog, foam, dry chemical.
Chemical/Combustion Hazards: Stacked material will retain heat and has the potential to reignite.
Precautions/Personal Protective Equipment: Avoid smoke inhalation. Use appropriate respiratory protection.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spill Or Leak Procedures: Not applicable. Product is solid.

SECTION 7 - HANDLING AND STORAGE

Safe Handling Procedures: Avoid direct contact.
Safe Storage: None.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

	OSHA				ACGIH			
Chemical Name:	PEL	PEL/Ceiling	PEL/STEL	Skin	TLV	TLV/Ceiling	TLV/STEL	Skin
Petroleum Asphalt	5 mg/m³*	N/E	N/E	No	0.5 mg/m³*	N/E	N/E	N/E

Engineering Controls: None required under normal use conditions.
Personal Protective Equipment: Safety glasses, chemical-resistant gloves. *N/E = Not Established* **: Asphalt Fumes*

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: N/A	**Vapor Density:** N/A	% **Volatile By Volume:** N/E
Evaporation Rate: N/A	**Ph Level:** N/A	% **Volatile By Weight:** N/A
Weight Per Gallon: N/A	**Product Appearance:** Black Board	**Voc Content:** N/A

SECTION 10 - STABILITY/REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur.
Conditions and Materials to Avoid: None recognized.
Hazardous Decomposition Products: None recognized.

SECTION 11 - TOXICOLOGICAL INFORMATION

Eye Contact: Direct contact may cause mild irritation.
Skin Contact: Direct contact may cause slight skin irritation.
Inhalation: Not anticipated to be an exposure route.
Ingestion: Not anticipated to be an exposure route.
Signs and Symptoms: Symptoms of eye irritation include tearing, reddening, and swelling. Symptoms of skin irritation include redness and swelling. Gastrointestinal irritation symptoms include nausea, vomiting, and abdominal discomfort.
Aggravated Medical Conditions: None recognized.
Other Health Effects: Wood dust is listed by the IARC as a human carcinogen (Group 1)

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: N/E **Degradability:** N/E **Bioaccumulative Potential:** N/E
Soil Mobility: N/E **Other Adverse Effects:** N/E

SECTION 13 - WASTE DISPOSAL INFORMATION

Waste Disposal Information: Product is classified as a non-hazardous waste.

SECTION 14 - TRANSPORATION INFROMATION

Hazardous/Non Hazardous: Not regulated by DOT.
UN Number: None. **Hazard Class:** N/A **Packing Group:** N/A
Un Proper Shipping Name: N/A
Environmental Hazards: None recognized.
Bulk Transportation Information: None
Special Precautions: None

SECTION 15 - REGULATORY INFORMATION

Other Regulatory Considerations: None recognized.

SECTION 16 - OTHER INFORMATION

PREPARATION DATE: 3-01-2015

Right Pointe Company believes this information is accurate but not all-inclusive in all circumstances. It is the responsibility of the user to determine suitability of the material for their purposes. No warranty, expressed or implied, is given.

Honeywell

SAFETY DATA SHEET

1. Identification

Product identifier **Eyesaline Eyewash or Sterile Eyesaline**

Other means of identification

Product code 32-000440-0000, 32-000451-0000, 32-000457-0000, 32-000497-0043, 32-000498-0043, 32-000452-0000, 32-000494-0043, 32-000445-0000, 32-000454-0000-H5, 32-000454-0000, 32-000454-0036, 32-000460-0000-H5, 32-000460-0000, 32-000460-0036, 32-000460-0052, 32-000465-0000, 32-000465-0052, 32-000455-0000-H5, 32-000455-0000, 32-000455-0036, 32-000461-0000, 32-000461-0036, 32-000461-0052, 32-000462-0000-H5, 32-000462-0000, 32-000462-0036, 32-000462-0052, 32-000456-0000, 32-000449-0043, 32-000446-0043

Recommended use Emergency eyewash.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name: Honeywell Safety Products USA, Inc

Address: 825 East Highway 151
Platteville, WI 53818 USA

Telephone: 800 873 5242

Contact Person hsptechsupport@honeywell.com

E-mail: msds@chemtrec.com

Emergency telephone number: +1-703-741-5500 for USA/Canada

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous to health according to OSHA 29 CFR 1910.1200.

4. First-aid measures

Inhalation If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Skin contact Wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

Eye contact Remove contact lenses. Get medical attention promptly if symptoms occur after flushing.

Ingestion Seek medical advice.

Most important symptoms/effects, acute and delayed	No specific symptoms noted.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media	No restrictions known.
Specific hazards arising from the chemical	None.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	None.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For industrial use, wear appropriate personal protective equipment (See Section 8).
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Treat discharge into drains, water courses or onto the ground according to applicable regulations.

7. Handling and storage

Precautions for safe handling	Observe good industrial hygiene practices. Avoid inhalation of vapors and contact with skin and eyes.
Conditions for safe storage, including any incompatibilities	Keep at temperature not exceeding 43°C / 110°F. Do not allow material to freeze. Keep container closed. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.
Appropriate engineering controls	Not normally needed.

Individual protection measures, such as personal protective equipment

Eye/face protection	None under normal conditions.
Skin protection	
Hand protection	Chemical resistant gloves are recommended.
Other	None under normal working conditions.
Respiratory protection	Not normally needed.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Colorless liquid.
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	No discernable odor.
Odor threshold	Not available.
pH	6.9 - 7.4
Melting point/freezing point	Not available.
Initial boiling point and boiling range	200 °F (93.3 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapor pressure	760 mm Hg
Vapor density	Not available.
Relative density	1
Solubility(ies)	
Solubility (water)	Completely soluble in water.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Contact with incompatible materials. Freezing. Elevated temperatures.
Incompatible materials	None.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
Skin contact	Prolonged or repeated contact may dry skin and cause irritation.
Eye contact	May cause temporary eye irritation.
Ingestion	No harmful effects expected in amounts likely to be ingested by accident.
Symptoms related to the physical, chemical and toxicological characteristics	No specific symptoms noted.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.

Respiratory or skin sensitization

Respiratory sensitization	Not classified.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	Not classified.
Carcinogenicity	Not classified.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not classified.
Chronic effects	Not classified.
Further information	No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data available.
Bioaccumulative potential	The product is not expected to bioaccumulate.
Mobility in soil	The product is completely soluble in water. Expected to be mobile in soil.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations. Do not allow runoff to sewer, waterway or ground.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company. Waste codes should be assigned by the user based on the application for which the product was used.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) All components of the mixture on the TSCA 8(b) inventory are designated “active”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 02-July-2015

Revision date 21-October-2019

Version # 03

Further information The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

NFPA ratings

References

EPA: Acquire database
ACGIH
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
ESIS (European chemical Substances Information System)

Disclaimer This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.

Safety Data Sheet

Section 1: Identification

Product Identifier

Alcohol

Product Name

Trade Name: SPLASH PX-99 Isopropyl Alcohol

PN (Part number): 018427

Relevant identified uses of the substance or mixture and uses advised against

-Material for industrial applications

-Industrial and professional use

-Consumer end use

Details of the supplier of the safety data sheet

Manufacturer

SPLASH Products

51 E. Maryland Ave.

St. Paul, MN 55117

Phone: (651) 489-8211

Emergency telephone number

1-800-535-5053

Section 2: Hazard(s) Identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

Flammable Liquid, Category 2

Serious eye damage/Eye irritation, Irritant Category 2A

Specific Target Organ Toxicity (STOT) following single exposure (Narcotic effects), Category 3

GHS label elements

Hazard pictograms

Signal word-DANGER

Isopropyl Alcohol

Hazard statements

Highly flammable liquid and vapor

May displace oxygen and cause rapid suffocation.

Causes serious eye irritation

May cause drowsiness and dizziness

Precautionary statements

Prevention

Do not breathe mist.

Wear protective gloves/protective clothing/eye protection/face protection.

Take off contaminated clothing and wash before use

Store away from heat and ignition sources

Keep away from oxidizing materials and strong acids

Response

IF SWALLOWED: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

IF ON SKIN (or hair): Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

IF IN EYES: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 30 minutes. Cold water may be used. Get medical attention immediately.

IF EXPOSED or CONCERNED:

Immediately call a POISON CENTER or a doctor/physician.

Storage

Store locked up. Store in a well-ventilated place. Keep cool.

Disposal

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified

Product is stable.

Section 3: Composition/Information on Ingredients

Substance/mixture:Substance

Chemical name: Isopropyl Alcohol

Other means of identification: propan-2-ol; 2-Propanol; isopropanol; isopropyl alcohol

CAS number/other identifiers

Ingredient name	%	CAS number
propan-2-ol	100	67-63-0

Section 4: First Aid Measurements

Description of necessary first aid measures

Eye contact: Causes serious eye irritation.

Inhalation: Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.

Skin contact: No known significant effects or critical hazards.

Ingestion: Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact

Can cause irritation to eyes, redness, watering, pain.

Inhalation

Nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo unconsciousness

Skin contact

No specific data.

Ingestion

No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled..

Specific treatments

N/A

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation

See toxicological information (Section 11)

Section 5: Fire Fighting Measures

Extinguishing media

Suitable extinguishing media

SMALL FIRE: Use DRY chemical powder, CO_2 or appropriate foam.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Unsuitable extinguishing media

None known

Specific hazards arising from the chemical

Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard..

Hazardous thermal decomposition products/Products of combustion

Products of combustion are carbon oxides (CO, CO_2).

Special protective actions for fire fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources.

No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Environmental precautions

Methods and materials for containment and cleaning up:

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including: the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area.

Section 7: Handling and Storage

Precautions for safe handling

Protective measures, advice on general occupational hygiene and conditions for safe storage, including any incompatibilities:

Keep away from heat, sparks, open flames, hot surfaces.

– No smoking.

Keep container tightly closed. Ground or bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting, etc. equipment. Use only non-sparking tools. Take precautionary measures against static discharge. No not breathe dust, fumes, gas, mist, vapors or spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves, clothing, and eye and face protection. Keep container tightly closed in a cool, well-ventilated place. Keep away from oxidizing materials and strong acids.

Store in a well-ventilated area. Keep cool. Keep in an area suitable for flammable liquids.

Section 8: Exposure Controls/Personal Protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits			
Isopropyl Alcohol	ACGIH		OSHA	
	(TWA)	(STEL)	(TWA)	(STEL)
	200 ppm	400 ppm	400 ppm; 980 mg/m^3	500 ppm; 1225 mg/m3

Appropriate engineering controls and Environmental exposure controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Use chemical safety goggles.

Skin protection

Hand protection and Body protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Respirator Type(s) (NIOSH Approved): If the exposure limit is exceeded and engineering controls are not feasible, a half face piece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full face piece particulate respirator (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, Glycerin, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in Oxygen-deficient atmospheres.

Section 9: Physical and Chemical Properties

Appearance

Physical state: Colorless liquid

Odor: Alcohol

Odor threshold: No data available

pH: No data available

Specific Gravity: 0.79

Melting point: -90^{o}C

Boiling point: 83^{o}C

Flash point: 11^{o}C

Evaporation rate (BuAc=1): 1.7

Flammability (solid, gas): Yes

Lower and upper explosive (flammable) limits: LEL 2%, UEL 12%

Vapor pressure: 4.4 kPa at20^{o}C

Vapor density (Air=1): 2.1

Solubility: Soluble in water

Partition coefficient: n-octanol/water: 0.05

Auto-ignition temperature: 456°C

Decomposition temperature: Not Established

Viscosity: Not available

VOC%: 100

Section 10: Stability and Reactivity

Reactivity

Stable under recommended storage conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Will not occur.

Conditions to avoid

Temperatures above the flash point and avoid excessive heat, open flame or other sources of ignition.

Incompatible materials

Strong acids

Moisure

Hazardous decomposition products

Will not occur.

Section 11: Toxicological Information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Results
propan-2-ol	Acute toxicity, oral (male rat)	LD50 = 5,000 mg/kg
	Acute toxicity, dermal	LD50 = 12,800 mg/kg
	Acute toxicity, inhalation (rat)	LC50 = 45,248 ppm/1 Hr.

Summary Comments:

Sensitization

Product/ingredient name	Test	Results	Basis
propan-2-ol		Not available	

Summary Comments:

Carcinogenicity

Product/ingredient name	Test	Results	Basis
propan-2-ol		Not available	

Summary Comments:

Specific target organ toxicity (single exposure)

Product/ingredient name	Test	Results	Basis
propan-2-ol	Not applicable	Narcotic effects	

Summary Comments:

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Test	Results	Basis
propan-2-ol		Not available	

Summary Comments:

Liver damage when RfD oral ingestion is exceeded daily.

Aspiration hazard

Product/ingredient name	Test	Results	Basis
propan-2-ol		Not available	

Summary Comments:

Information on the likely routes of exposure

Not available

Potential acute health effects

Eye contact: Irritating to the eyes.

Inhalation: Acute exposure of humans to isopropyl alcohol by inhalation or ingestion may result in visual disturbances, such as blurred or dimness of vision, leading to blindness. Neurological damage, specifically permanent motor dysfunction, may also result.

Skin contact: No known significant effects or critical hazards.

Ingestion: Can cause central nervous system (CNS) depression. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Eye irritation or pain, watering, redness

Inhalation: Nausea or vomiting, headache, drowsiness/fatigue, dizziness/vertigo, unconsciousness.

Skin contact: No specific data

Ingestion: No specific data.

Potential chronic health effects (Isopropyl Alcohol)

Carcinogenicity: No known carcinogens.

Mutagenicity: No data available.

Teratogenicity: No data available.

Developmental effects: No data available.

Fertility effects: No data available.

Numerical measures of toxicity

Acute toxicity estimates

Section 12: Ecological Information

Toxicity

Acute Fish toxicity: (propan-2-ol)

LC50 - Rasbora heteromorpha - 42,00 mg/l - 96 h

Acute toxicity for crustaceans: (propan-2-ol)

EC50 - Crangon crangon - 14,000 mg/l - 48 h

Acute toxicity for algae: (propan-2-ol)

No data available.

Acute bacterial toxicity: (propan-2-ol)

No data available.

Ecotoxicology Assessment: (propan-2-ol)

Material is expected to be slightly toxic to aquatic life.

Persistence and degradability

Biodegradability: (propan-2-ol)

Not available

Stability in water: (propan-2-ol)

Not available

Photodegradation: (propan-2-ol)

No data available

Volatility (Henry's Law constant): (propan-2-ol)

Partition coefficient n-octanol/water (log K_{ow}) = 0.05

Bioaccumulative potential

Bioaccumulation: (propan-2-ol)

Low

Bioconcentration factor (BCF): Not available

Mobility in soil: (propan-2-ol)

Distribution among environmental compartments:

Not available

Other adverse effects:

No known significant effects or critical hazards.

Section 13: Disposal Considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues.

Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14: Transport Information

UN Number: N/A

DOT Proper Shipping Name: Limited Quantity, Consumer Commodity, ORM-D

Exemptions: Per 49CFR 175.130 (PG II, inner packaging package not over 1.0L)

Transport hazard Class(es): N/A

Packing Group: N/A

Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)

Transport Hazard Class(es): N/A

Maritime Transport IMDG/GGVSea

Transport Hazard Class(es): N/A

Marine Pollutant: No

Air Transport ICAO-TI and IATA-DGR

Transport Hazard Class(es): N/A

Section 15: Regulatory Information

Chemical Inventory Status-Part 1

Ingredient (CAS#)	TSCA	EC	Japan	Australia
Isopropanol (67-63-0)	Yes	Yes	Yes	Yes

Chemical Inventory Status-Part 2

Ingredient (CAS#)	Korea	Canada	Canada	Philippines
		DSL	NDSL	
Isopropanol	Yes	Yes	No	Yes

(67-63-0)				

Federal, State & International Regulations-Part 1

	SARA 302		SARA 313	
Ingredient (CAS#)	RQ	TPQ	List Chemical	Category
Isopropanol (67-63-0)	No	No	Yes	No

Federal, State & International Regulations-Part 2

	RCRA		TSCA
Ingredient (CAS#)	CERCLA	261.33	8(d)
Isopropanol (67-63-0)	No	No	No

Chemical Weapons Convention: No

TSCA 12b: Yes

CDTA: Yes

SARA 311/312:

Acute: Yes, Chronic: Yes, Fire: Yes, Pressure: No, Reactivity: No

Mixture/Liquid

Australian Hazchem Code: 2[S]E

Poison Schedule: S5

Section 16: Other Information

History

Date of issue: 11/15/16

Version: 2a

Revised Sections(s): Changed proper shipping name.

Prepared by: Andrew Gioino, SPLASH PRODUCTS

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of the suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBILUBE HD 85W-140**
Product Description: Base Oil and Additives
Product Code: 201520503550, 510198-00, 970166
Intended Use: Gear oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
LONG-CHAIN ALKENYL AMINE	112-90-3	0.1 - < 0.25%	H302, H304, H335, H314(1B), H373, H400(M factor 10), H410(M factor 10)
OLEFIN SULFIDE	68937-96-2	1 - < 5%	H227, H317, H402, H412
PHOSPHORIC ACID ESTERS, AMINE SALT	CONFIDENTIAL	0.1 - < 1%	H227, H302, H317, H318, H401, H411

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications,

handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Dark Brown
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.905
Flammability (Solid, Gas): N/A

Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 373 cSt (373 mm2/sec) at 40 °C | 28 cSt (28 mm2/sec) at 100°C [ASTM D 445]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -15°C (5°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.

Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract. Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H227: Combustible liquid; Flammable Liquid, Cat 4
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H314(1B): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1B
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H335: May cause respiratory irritation; Target Organ Single, Resp Irr
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H402: Harmful to aquatic life; Acute Env Tox, Cat 3
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Section 01: Company Mailing Address information was modified.
Section 01: Product Code information was modified.
Section 09: Relative Density information was modified.
Section 09: Vapor Pressure information was added.
Section 11: Other Health Effects information was modified.
Section 12: information was modified.
Section 15: List Citations Table information was modified.
Section 15: National Chemical Inventory Listing information was modified.
Section 15: SARA (311/312) REPORTABLE GHS HAZARD CLASSES information was added.
Section 15: SARA (311/312) REPORTABLE HAZARD CATEGORIES information was deleted.
Section 16: HCode Key information was modified.

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DGN: 2005540XUS (1024560)

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SAFETY DATA SHEET

MOBILGREASE XHP 222 SPECIAL

ExxonMobil

Section 1. Identification

Product name : MOBILGREASE XHP 222 SPECIAL

Product description : base oil and additives

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : grease

Uses advised against : This product is not recommended for any industrial, professional or consumer use other than the identified uses above.

Supplier : EXXON MOBIL CORPORATION
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24-Hour emergency telephone number : 1-800-424-9300 / +1 703-741-5970 / +1-703-527-3887 (CHEMTREC)

Product Technical Information : 800-662-4525

SDS Internet Address : www.sds.exxonmobil.com

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

Hazards not otherwise classified : None known.

Note : This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	% by weight	Identifiers
zinc dialkyl dithiophosphate	<2	CAS: 68457-79-4
benzenamine, n-phenyl-, reaction products with 2,4,4-trimethylpentene	≤3	CAS: 68411-46-1
naphthenic acids, zinc salts	<1	CAS: 12001-85-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : Local necrosis as evidenced by delayed onset of pain and tissue damage a few hours after injection.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous combustion products : Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, sulfur oxides

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Section 5. Fire-fighting measures

Special protective actions for fire-fighters : Use standard firefighting procedures and consider the hazards of other involved materials. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Assure an extended cooling down period to prevent re-ignition. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Confine the spill immediately with booms. Skim from surface. Warn other shipping. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Static Accumulator : This material is not a static accumulator.

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Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
solvent dewaxed residual oil (petroleum)	**NIOSH REL (United States, 10/2020) [OIL MIST MINERAL]** TWA 10 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist. **OSHA PEL (United States, 5/2018) [Oil mist, mineral]** TWA 8 hours: 5 mg/m³. **ACGIH TLV (United States, 1/2024) [Mineral Oil, pure, highly and severely refined]** TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
solvent dewaxed heavy paraffinic distillate	**NIOSH REL (United States, 10/2020) [OIL MIST MINERAL]** TWA 10 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist. **OSHA PEL (United States, 5/2018) [Oil mist, mineral]** TWA 8 hours: 5 mg/m³. **ACGIH TLV (United States, 1/2024) [Mineral Oil, pure, highly and severely refined]** TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
severely hydrotreated heavy paraffinic distillate	**NIOSH REL (United States, 10/2020) [OIL MIST MINERAL]** TWA 10 hours: 5 mg/m³. Form: Mist. STEL 15 minutes: 10 mg/m³. Form: Mist. **OSHA PEL (United States, 5/2018) [Oil mist, mineral]** TWA 8 hours: 5 mg/m³. **ACGIH TLV (United States, 1/2024) [Mineral Oil, pure, highly and severely refined]** TWA 8 hours: 5 mg/m³. Form: Inhalable fraction.
zinc dialkyl dithiophosphate	None.
benzenamine, n-phenyl-, reaction products with 2,4,4-trimethylpentene	None.
naphthenic acids, zinc salts	None.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties and safety characteristics

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid. [Semi-fluid]

Color : Dark Gray

Odor : Characteristic

Odor threshold : Not available.

pH : Not applicable.

Melting point/freezing point : >260°C (>500°F)

Boiling point or initial boiling point and boiling range : >315.56°C (>600°F) [Estimated]

Flash point : Open cup: >204.44°C (>400°F) [EST. FOR OIL, ASTM D-92 (COC)]

Evaporation rate : Not available.

Flammability : Ignitable

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure : <0.1 mm Hg [20 °C] [Estimated]

Relative vapor density : Not available.

Relative density : 0.914

Solubility in water : Negligible

Partition coefficient: n-octanol/water : >3.5 [Estimated]

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : 220 cSt [40 °C] [ASTM D 445]

Particle characteristics

Median particle size : Not applicable.

DMSO Extract (mineral oil only), IP-346 : <3 % by weight

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Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : High energy sources of ignition. Excessive heat.

Incompatible materials : Strong oxidizers

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary

Inhalation : Minimally Toxic. No end point data for material. Based on assessment of the components.

Dermal : Minimally Toxic. No end point data for material. Based on assessment of the components.

Oral : Minimally Toxic. No end point data for material. Based on assessment of the components.

Irritation/Corrosion

Conclusion/Summary

Skin : Negligible irritation to skin at ambient temperatures. No end point data for material. Based on assessment of the components.

Eyes : May cause mild, short-lasting discomfort to eyes. No end point data for material. Based on assessment of the components.

Respiratory : Negligible hazard at ambient/normal handling temperatures. No end point data for material.

Respiratory or skin sensitization

Conclusion/Summary

Skin : Not expected to be a skin sensitizer. No end point data for material. Based on assessment of the components.

Respiratory : Not expected to be a respiratory sensitizer. No end point data for material.

Mutagenicity

Conclusion/Summary : Not expected to be a germ cell mutagen. No end point data for material. Based on assessment of the components.

Carcinogenicity

Conclusion/Summary : Not expected to cause cancer. No end point data for material. Based on assessment of the components.

Reproductive toxicity

Conclusion/Summary : Not expected to be a reproductive toxicant. No end point data for material. Based on assessment of the components.

Specific target organ toxicity (single exposure)

Conclusion/Summary : Not expected to cause organ damage from a single exposure. No end point data for material.

Specific target organ toxicity (repeated exposure)

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Product/ingredient name	Category	Target organs
MOBILGREASE XHP 222 SPECIAL	Not applicable.	-

Section 11. Toxicological information

Conclusion/Summary : Not expected to cause organ damage from prolonged or repeated exposure. No end point data for material. Based on assessment of the components.

Aspiration hazard

Conclusion/Summary : Not expected to be an aspiration hazard. Based on physico-chemical properties of the material. Data available.

Other information

Contains : Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

Section 12. Ecological information

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

Toxicity

Conclusion/Summary

Acute toxicity : Not expected to be harmful to aquatic organisms.

Chronic toxicity : Not expected to demonstrate chronic toxicity to aquatic organisms.

Persistence and degradability

Biodegradability : Base oil component -- Expected to be inherently biodegradable

Bioaccumulative potential

Conclusion/Summary : Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

Mobility in soil

Mobility : Base oil component -- Expected to partition to sediment and wastewater solids. Low solubility and floats and is expected to migrate from water to the land.

Other ecological information

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Label(s) / Marks				
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 4(a) proposed test rules**: alkyl phosphonate; 1h-benzotriazole, methyl-

TSCA 8(a) PAIR: bis(2-ethylhexyl) hydrogen phosphate; 2-ethylhexyl dihydrogen phosphate; diphenylamine; naphthalene

TSCA 8(a) CDR Exempt/Partial exemption: At least one component is not listed.

Clean Water Act (CWA) 307: zinc dialkyl dithiophosphate; naphthenic acids, zinc salts; zinc neodecanoate; naphthalene; phenol

Clean Water Act (CWA) 311: phosphoric acid; naphthalene; maleic anhydride; phenol; propylene oxide

TSCA 12(b) - Chemical export notification

Not applicable.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Section 15. Regulatory information

Name	%	EHS	SARA 302 TPQ (lbs)	SARA 302 TPQ (gallons)	SARA 304 RQ (lbs)	SARA 304 RQ (gallons)
phenol	<0.1	Yes.	500 / 10000	-	1000	-
propylene oxide	<0.1	Yes.	10000	1444.3	100	14.4
ethylene oxide	<0.1	Yes.	1000	-	10	-

SARA 304 RQ : 11484032085 lbs / 5213750566.6 kg [1506922522.7 gal / 5704322282.9 L]

SARA 311/312

Classification : Not applicable.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	zinc dialkyl dithiophosphate	68457-79-4	<2
Supplier notification	zinc dialkyl dithiophosphate	68457-79-4	<2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: OIL MIST, MINERAL; OIL MIST, MINERAL; OIL MIST, MINERAL

New York : None of the components are listed.

New Jersey : The following components are listed: ZINC compounds; MINERAL OIL (UNTREATED and MILDLY TREATED)

Pennsylvania : The following components are listed: ZINC COMPOUNDS

Illinois : None of the components are listed.

Inventory list

Australia inventory (AIIC) : All components are listed or exempted.

Canada inventory (DSL-NDSL) : All components are listed or exempted.

China inventory (IECSC) : All components are listed or exempted.

Japan inventory (CSCL) : All components are listed or exempted.

Japan inventory (Industrial Safety and Health Act) : All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIoC) : All components are listed or exempted.

Philippines inventory (PICCS) : All components are listed or exempted.

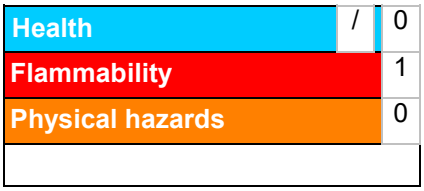
Korea inventory (KECI) : All components are listed or exempted.

Taiwan Chemical Substances Inventory (TCSI) : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are active or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



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Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Procedure used to derive the classification

Not classified.

New Jersey Right to Know Disclosure

Name	CAS #
grease	
zinc dialkyl dithiophosphate	68457-79-4
hydrotreated middle distillate (petroleum)	64742-46-7

History

Date of issue/Date of revision : 16 August 2024

Date of previous issue : 16 July 2024

Version : 1.02

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

Product code : 2015A0202531_1166196

Notice to reader

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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBILGREASE HTS**
Product Description: Base Oil and Additives
Product Code: 2015A0202080, 642314-00, 971554
Intended Use: Grease

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
ASPHALT (PETROLEUM)	8052-42-4	10 - < 20%	None
LONG-CHAIN ALKENYL AMINE	112-90-3	< 0.1%	H302, H304, H335, H314(1B), H373, H400(M factor 10), H410(M factor 10)
ZINC DIALKYL DITHIOPHOSPHATE	68457-79-4	1 - < 2.5%	H315, H318, H401, H411

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION
Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

SKIN CONTACT
Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT
Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION
First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING
Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces

and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >204°C (400°F) [EST. FOR OIL, ASTM D-92 (COC)]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Scrape up spilled material with shovels into a suitable container for recycle or disposal.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
ASPHALT (PETROLEUM) [benzene solubles]	Fume, inhalable	TWA	0.5 mg/m3		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Semi-fluid
Color: Black
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 1
Flammability (Solid, Gas): N/A
Flash Point [Method]: >204°C (400°F) [EST. FOR OIL, ASTM D-92 (COC)]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F) [Estimated]
Decomposition Temperature: N/D
Vapor Density (Air = 1): N/D
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C [Estimated]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5 [Estimated]
Solubility in Water: Negligible
Viscosity: 680 cSt (680 mm2/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/D

DMSO Extract (mineral oil only), IP-346: < 3 %wt

NOTE: Most physical properties above are for the oil component in the material.

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.

Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

Contains:
Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY
Material -- Not expected to be harmful to aquatic organisms.

MOBILITY
Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY
Biodegradation:
Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL
Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS
Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AIIC, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: None.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ZINC DIALKYL DITHIOPHOSPHATE	68457-79-4	1 - < 2.5%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ASPHALT (PETROLEUM)	8052-42-4	1, 13, 16, 17, 18
HYDROTREATED HEAVY NAPHTHENIC DISTILLATE	64742-52-5	13, 17, 18
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	19
ZINC DIALKYL DITHIOPHOSPHATE	68457-79-4	13, 15, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H314(1B): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1B
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H335: May cause respiratory irritation; Target Organ Single, Resp Irr
H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Section 08: Exposure Limits Table information was modified.
Section 09: Viscosity information was modified.
Section 15: National Chemical Inventory Listing information was modified.
Section 16: HCode Key information was modified.

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Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0 PPEC: A

DGN: 2009943XUS (1010635)

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Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200), Health Canada HPR (SOR/2015-17), and Mexico NOM-018-STPS-2015

SECTION 1: Identification

Product Identifier: **Megaplex® XD3**

Other means of identification: Phillips 66® Megaplex® XD3 #1
Phillips 66® Megaplex® XD3 #2

Code: **831605**

Issue date: 18-Dec-2024

Relevant identified uses: Lubricating Grease

Uses advised against: All others

24 Hour Emergency Phone Number: CHEMTREC Global +1 703 527 3887
CHEMTREC United States 1-800-424-9300
CHEMTREC Mexico 01-800-681-9531

Manufacturer/Supplier: Phillips 66 Lubricants
A Division of Phillips 66 Company
P.O. Box 421959
Houston, Texas 77242-1959

SDS Information: URL: www.phillips66.com/SDS
Phone: 800-762-0942
Email: SDS@P66.com

Customer Service: U.S.: 800-368-7128 or International: 1-832-765-2500

Technical Information: 1-877-445-9198

SECTION 2: Hazard identification

Classified Hazards

No classified hazards

Label Elements

No classified hazards

Hazards Not Otherwise Classified (HNOC)

PHNOC: None known

HHNOC: None known

SECTION 3: Composition/information on ingredients

Substance	CASRN	Concentration[1]
Residual oils, petroleum, solvent-dewaxed	64742-62-7	65-100
Distillates, petroleum, hydrotreated heavy naphthenic	64742-52-5	0-10
Antimony Diamyldithiocarbamate	15890-25-2	1-5
Molybdenum (IV) sulfide	1317-33-5	0-3

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician. (see Note to Physician)

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Prolonged or repeated contact may dry skin and cause irritation.

Notes to Physician: When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to the hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

SECTION 5: Firefighting measures

NFPA 704: National Fire Protection Association

Health: 0 **Flammability:** 1 **Instability:** 0

0 = minimal hazard
1 = slight hazard
2 = moderate hazard
3 = severe hazard
4 = extreme hazard

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8).

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

Spills will produce very slippery surfaces. Do not wear contaminated clothing or shoes. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

Substance	ACGIH	OSHA	Mexico	Phillips 66
Residual oils, petroleum, solvent-dewaxed	TWA-8hr: 5 mg/m³ Inhalable particulate matter	---	---	---
Distillates, petroleum, hydrotreated heavy naphthenic	TWA-8hr: 5 mg/m³ Inhalable particulate matter	---	---	---
Antimony Diamyldithiocarbamate	TWA-8hr: 0.5 mg/m³	TWA-8hr: 0.5 mg/m³	TWA-8hr: 0.5 mg/m³ Sb	---

			(VLE-PPT)	
Molybdenum (IV) sulfide	TWA-8hr: 10 mg/m³ inhalable particulate matter TWA-8hr: 3 mg/m³ respirable particulate matter	TWA-8hr: 15 mg/m³ total dust	TWA-8hr: 10 mg/m³ Mo inhalable fraction (VLE-PPT) TWA-8hr: 3 mg/m³ Mo respirable fraction (VLE-PPT)	---

State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information. --- = None.

Biological occupational exposure limits

None.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.

Skin/Hand Protection: The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Suggested protective materials: Nitrile rubber.

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Color:	black
Physical State:	Semi-Solid
Odor:	Petroleum
Odor threshold:	No data
pH:	Not applicable
Melting / freezing point:	No data
Initial boiling point and boiling range:	No data
Flash point:	> 302 °F / > 150 °C
Method:	Cleveland Open Cup (COC), ASTM D92
Evaporation Rate (nBuAc=1):	<1
Flammability (solid, gas):	Not applicable
Upper Explosive Limits (vol % in air):	No data
Lower Explosive Limits (vol % in air):	No data
Vapor pressure:	<0.01 mm Hg
Vapor density:	>1 (air = 1)
Relative density:	0.9594 @ 60ºF (15.6ºC) (water = 1)
Solubility:	Insoluble
Partition coefficient n-octanol /water (log Kow):	No data
Autoignition temperature:	No data

Decomposition temperature:	No data
Viscosity:	No data
Molecular weight:	No data

Other information

Particle characteristics	No data
Pour point:	No data
Bulk density:	7.84 lbs/gal

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of Hazardous Reactions: Hazardous reactions not anticipated.

Conditions to Avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Incompatible Materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous Decomposition Products: Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Aspiration Hazard: Not expected to be an aspiration hazard.

Skin Corrosion/Irritation: Causes mild skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Not expected to be irritating.

Skin Sensitization: No information available on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification).

Respiratory Sensitization: No information available.

Specific target organ toxicity - Single exposure: No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Specific target organ toxicity - Repeated exposure: No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Carcinogenicity: No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification).

Germ Cell Mutagenicity: No information available on the mixture, however none of the components have been classified for

germ cell mutagenicity (or are below the concentration threshold for classification).

Reproductive Toxicity: No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

Information on Toxicological Effects of Components

Lubricant Base Oil (Petroleum)

Additional Information (Carcinogenicity): The petroleum base oils contained in this product have been highly refined by a variety of processes including severe hydrocracking/hydroprocessing to reduce aromatics and improve performance characteristics. All of the oils meet the IP-346 criteria of less than 3 percent PAH's and are not considered carcinogens by NTP, IARC, or OSHA.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

UN Number: Not regulated
UN proper shipping name: None
Transport hazard class(es): None
Packing Group: None
Environmental Hazard(s): This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant
Special precautions for user: If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds)
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CERCLA/SARA - Section 313 and 40 CFR 372
This material contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Substance	Concentration[1]	de minimis
Antimony Diamyldithiocarbamate	1-5	1.0%
Zinc Compound(s)	<2.5	1.0%
Lead	<0.0001	--

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

EPA (CERCLA) Reportable Quantity (in pounds)
This material does not contain any chemicals with CERCLA Reportable Quantities.

California Proposition 65

WARNING: This product can expose you to chemicals including Molybdenum trioxide (CASRN 1313-27-5), which is known to the State of California to cause cancer, and Lithium carbonate (CASRN 554-13-2), which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

International Inventories
TSCA (United States): All ingredients are on the inventory or exempt from listing.
All components are either on the DSL, or are exempt from DSL listing requirements.

SECTION 16: Other information

Issue date	Previous Issue Date:	SDS Number	Status:
18-Dec-2024	20-Mar-2024	831605	FINAL

Reason for Revision:
Composition/information on ingredients
Occupational Exposure Limits
Personal Protective Equipment
Toxicological Information
Regulatory information

Mexican NOM-018-STPS-2015:
The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; HPR = Hazardous Products Regulations; IARC = International Agency for Research on Cancer;

INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada); A1 - Known Human Carcinogen; A2 - Suspected Human Carcinogen; A3 - Animal Carcinogen; A4 - Not Classifiable as a Human Carcinogen

Disclaimer of Expressed and implied Warranties:
The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

SAFETY DATA SHEET

Lucas Red "N" Tacky NLGI # 2 grease

Section 1. Identification

GHS product identifier : Lucas Red "N" Tacky NLGI # 2 grease

Other means of identification : Not available.

Product number : 10005, 10027, 10028, 10029, 10574

Relevant identified uses of the substance or mixture and uses advised against

Engine oil.

Supplier's details :

Lucas Oil Products, Inc
302 North Sheridan Street
Corona, California 92880-2067
Toll Free: (800) 342-2512
Tel: (951) 270-0154
Fax: (951) 270-1902
Website: www.LucasOil.com

Emergency telephone number (with hours of operation) :

(951) 493-1149
(951) 847-5949
Markn@lucasoil.com

7:00A.M. to 5:00P.M. Monday thru Friday

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Causes serious eye damage.
Harmful to aquatic life with long lasting effects.

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Wear eye or face protection. Avoid release to the environment. Wash hands thoroughly after handling.

Section 2. Hazards identification

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Product code : Not available.

Ingredient name	%	CAS number
Zinc Alkyldithiophosphate	1 - 5	68649-42-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.

Skin contact : No known significant effects or critical hazards.

Ingestion : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : No specific data.

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : No special precaution is required.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid. [Grease.]

Color : Red.

Odor : Mild. Petroleum oil.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not available.

Boiling point : Not available.

Section 9. Physical and chemical properties

Flash point : Not available.

Burning time : Not available.

Burning rate : Not available.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 0.9

Solubility : Negligible at 25°C

Solubility in water : 0 g/l

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Kinematic (100°C (212°F)): 0.19 cm^2/s (19 cSt)

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Excessive heat.

Incompatible materials : Reactive or incompatible with the following materials: strong oxidizers.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

There is no data available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Zinc Alkyldithiophosphate	Eyes - Irritant	Rabbit	-	-	-

Sensitization

Skin : There is no data available.

Respiratory : There is no data available.

Section 11. Toxicological information

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.

Skin contact : No known significant effects or critical hazards.

Ingestion : May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Section 11. Toxicological information

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Zinc Alkyldithiophosphate	Acute EC50 1 to 5 mg/L Acute EC50 1 to 1.5 mg/L Chronic LC50 1 to 5 mg/L	Algae Crustaceans Fish	96 hours 48 hours 96 hours

Persistence and degradability

There is no data available.

Bioaccumulative potential

There is no data available.

Mobility in soil

Soil/water partition coefficient (K_{OC}) : There is no data available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: Zinc Alkyldithiophosphate

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: Zinc Alkyldithiophosphate

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

Section 15. Regulatory information

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Zinc Alkyldithiophosphate	1 - 5	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Zinc Alkyldithiophosphate	68649-42-3	1 - 5
Supplier notification	Zinc Alkyldithiophosphate	68649-42-3	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : The following components are listed: Distillates (petroleum), hydrotreated heavy naphthenic; Distillates (petroleum), solvent-dewaxed heavy paraffinic; Zinc Alkyldithiophosphate

Pennsylvania : The following components are listed: Zinc Alkyldithiophosphate

California Prop. 65

No products were found.

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: Not determined.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health : 2 * **Flammability :** 0 **Physical hazards :** 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 2 **Flammability :** 0 **Instability :** 0

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue mm/dd/yyyy : 02/15/2014

Version : 1

Revised Section(s) : Not applicable.

Prepared by : KMK Regulatory Services Inc.

Key to abbreviations :
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety Data Sheet

Issue date 03-Jan-2019 **Revision date** 03-Jan-2019 **Revision Number** 1

1. IDENTIFICATION

Product identification

Product identifier	Heat Shrink
Other means of identification	56854
Recommended use	Electrical insulation tubing
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

2. HAZARD(S) IDENTIFICATION

Hazard Classification While this material is not classified as hazardous under OSHA regulations, this SDS contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

Symbol Not applicable

Signal word Not applicable

Hazard statements Not applicable

Precautionary statements

Response	Not applicable
Storage	Not applicable
Disposal	Not applicable

Hazard(s) Not Otherwise Classified (HNOC) Not applicable.

Physical Hazards Not Otherwise Classified (PHNOC)	Not applicable.
Unknown acute toxicity	Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition

This product is classified as an "article" according to Title 29 of the Code of Federal Regulations, OSHA Part 1910.1200. "Article means a manufactured item other than a fluid or particle, which is formed to a specific shape or design during manufacture which has end use function dependent in whole or in part upon its shape or design during end use, and which under normal conditions of use does not release more than very small quantities or trace amounts of a hazardous chemical, and does not pose a physical hazard or health risk to employees.".

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation	If fumes from reactions are inhaled, move to fresh air immediately. Seek medical attention.
Ingestion	Drink 1 or 2 glasses of water. Seek medical attention.
Skin contact	Wash with plenty of soap and water. Seek medical attention if irritation occurs.
Eye contact	Flush with plenty of warm water for at least 15 minutes.
Most important symptoms (acute)	Not available.
Most important symptoms (over-exposure)	Not available.
Indication of any immediate medical attention and special treatment needed	Not available.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	In case of fire: Use dry chemical, foam or water fog for extinction.
Unsuitable extinguishing media	Not applicable.
Specific hazards	Not applicable.
Special protective equipment for fire-fighters	In the event of fire, wear self contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	The use of gloves and safety glasses is consistent with good manufacturing and hygienic practice. Do not breathe fumes produced during overheating or burning.

Methods and materials for containment and cleaning up	Solid objects may be picked up and placed in a container. Make sure the solid objects are at room temperature before handling.

7. HANDLING AND STORAGE

Precautions for safe handling	To avoid thermal decomposition, do not overheat. Avoid breathing dusts and fumes from burning materials.
Conditions for safe storage, including any incompatibilities	Keep in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters	Not applicable
Appropriate engineering controls	Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Use of local ventilation may be required where overheating is expected.
Individual protection measures, such as personal protective equipment	
Eye protection	Wear safety glasses.
Skin and body protection	Protective gloves.
Respiratory protection	Ensure adequate ventilation, especially in confined areas.
Hygiene measures	Wash hands after handling the product.
Canadian Province Occupational Exposure Limits	Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Solid
Color	Various
Odor threshold	Not applicable
pH	Not applicable
Melting point/range °C	Not available
Melting point/range °F	Not available
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C / °F	Not applicable
Evaporation rate	Not applicable
Flammability (Solid, Gas)	Not applicable

Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	1.2
Solubility	Insoluble in water
Partition coefficient (n-octanol/water)	Not applicable
Autoignition temperature °C	Product is not self-igniting
Autoignition temperature °F	Product is not self-igniting
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not applicable

10. STABILITY AND REACTIVITY

Reactivity	Not applicable.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Possible decomposition if exposed to elevated temperatures.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	Oxides of carbon. Nitrogen oxides (NOx). Acetic acid. Acid aldehydes. Vinyl acetate. Trace quantities of organic arsenic compounds. Ammonia. Halogenated compounds. Hydrocarbons. During combustion asphyxiants may be formed.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Not applicable.
Symptoms	No information available.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	No known significant effects or critical hazards.
Numerical measures of toxicity	Not available
ATEmix (dermal)	Not available

ATEmix (oral)	Not available
ATEmix (inhalation-gas)	Not available
ATEmix (inhalation-vapor)	Not available
ATEmix (inhalation-dust/mist)	Not available
Carcinogenicity	Not available
Canadian Province carcinogenicity limits	Not available

12. ECOLOGICAL INFORMATION

Ecotoxicity	Not available
Persistence and degradability	Not available.
Bioaccumulation	Not available
Mobility in soil	Not available.
Other adverse effects	Not available

13. DISPOSAL CONSIDERATIONS

Disposal information	Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations.
Contaminated packaging	Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT
Proper shipping name Not regulated

TDG
Proper shipping name Not regulated

IATA
Proper shipping name Not regulated

IMDG/IMO
Proper shipping name Not regulated

Marine Pollutants

Special Precautions Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know Not Listed

regulations

California Prop. 65 Not Listed

U.S. Federal Regulations

US EPA SARA 313 This product contains no listed chemicals subject to reporting

US EPA SARA 311/312 hazardous categorization Not applicable

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available
Specific hazard	Not available

HMIS

Health	Not available
Flammability	Not available
Physical hazards	Not available

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 03-Jan-2019

Revision date 03-Jan-2019

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200), Health Canada HPR (SOR/2015-17), and Mexico NOM-018-STPS-2015

SECTION 1: Identification

Product Identifier	**Hyken® Glacial Blu Hydraulic Oil**
Other means of identification	Kendall Hyken® Glacial Blu Hydraulic Oil
Code	**LBKN726570**
Relevant identified uses	Hydraulic Fluid
Uses advised against	All others
24 Hour Emergency Phone Number	CHEMTREC 1-800-424-9300 CHEMTREC México 01-800-681-9531

Manufacturer/Supplier
Phillips 66 Lubricants
P.O. Box 4428
Houston, TX 77210

SDS Information
URL: www.Phillips66.com
Phone: 800-762-0942
Email: SDS@P66.com

Customer Service
U.S.: 800-368-7128 or International: 1-832-765-2500
Technical Information
1-877-445-9198

SECTION 2: Hazard identification

Classified Hazards

H304 -- Aspiration Hazard -- Category 1

Hazards Not Otherwise Classified (HNOC)

PHNOC: None known

HHNOC: None known

Label Elements

DANGER

May be fatal if swallowed and enters airways

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician; Do NOT induce vomiting; Dispose of contents/container to an approved waste disposal plant

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration[1]
C14-20 Aliphatics (<=2% aromatic)	64742-46-7	40 - 50
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	>40

Hazardous Constituent(s) Contained Within Above Complex Substance(s)

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention. If product is injected into or

under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician. (see Note to Physician)

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Most important symptoms and effects, both acute and delayed: While significant vapor concentrations are not likely, high concentrations can cause minor respiratory irritation, headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Ingestion can cause irritation of the digestive tract, nausea, diarrhea, and vomiting. Prolonged or repeated contact may dry skin and cause irritation

Notes to Physician: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities. When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to the hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

SECTION 5: Firefighting measures

NFPA 704 Hazard Class

Health: 0 **Flammability:** 1 **Instability:** 0

0 (Minimal)
1 (Slight)
2 (Moderate)
3 (Serious)
4 (Severe)

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and

7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Spills will produce very slippery surfaces. High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Chemical Name	ACGIH	OSHA	Mexico	Phillips 66
C14-20 Aliphatics (<=2% aromatic)	---	---	---	TWA: 200 mg/m^3 Skin
Distillates, petroleum, hydrotreated heavy paraffinic	TWA: 5mg/m^3 STEL: 10 mg/m^3 as Oil Mist, if Generated	---	---	---

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.

Skin/Hand Protection: The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals. Suggested protective materials: Nitrile

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying

respirator equipped with organic vapor cartridges/canisters with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance: Blue, Transparent
Physical Form: Liquid
Odor: Petroleum
Odor Threshold: No data
pH: Not applicable
Vapor Density (air=1): >1
Upper Explosive Limits (vol % in air): No data
Lower Explosive Limits (vol % in air): No data
Evaporation Rate (nBuAc=1): <1
Particle Size: Not applicable
Percent Volatile: No data
Flammability (solid, gas): Not applicable

Flash Point: 230 °F / > 110 °C
Test Method: Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
Initial Boiling Point/Range: No data
Vapor Pressure: No data
Partition Coefficient (n-octanol/water) (Kow): No data
Melting/Freezing Point: -59.8 °F / < -51 °C
Auto-ignition Temperature: No data
Decomposition Temperature: No data
Specific Gravity (water=1): 0.87 @ 60ºF (15.6ºC)
Bulk Density: 7.2 lbs/gal
Viscosity: 4.5 cSt @ 100°C; 15 cSt @ 40°C
Solubility in Water: Negligible

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Incompatible materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products: Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Aspiration Hazard: May be fatal if swallowed and enters airways

Skin Corrosion/Irritation: Not expected to be irritating. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Not expected to be irritating.

Skin Sensitization: No information available on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification).

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity (Repeated Exposure): Not expected to cause organ effects from repeated exposure.

Carcinogenicity: No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification).

Germ Cell Mutagenicity: No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).

Reproductive Toxicity: No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

Information on Toxicological Effects of Components

C14-20 Aliphatics (<=2% aromatic)

Reproductive Toxicity: Hydrodesulfurized kerosene applied to the skin of female rats at 494, 330, or 165 mg/kg daily for 7 consecutive weeks (premating, mating, and gestation), or for 8 consecutive weeks in males did not result in systemic, reproductive, or developmental toxicity.

Distillates, petroleum, hydrotreated heavy paraffinic

Carcinogenicity: This oil has been highly refined by a variety of processes to reduce aromatics and improve performance characteristics. It meets the IP-346 criteria of less than 3 percent PAH's and is not considered a carcinogen by the International Agency for Research on Cancer.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

U.S. Department of Transportation (DOT)
UN Number: Not regulated
UN proper shipping name: None
Transport hazard class(es): None
Packing Group: None
Environmental Hazards: This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant
Special precautions for user: If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds)
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)
US EPA has published a final rule aligning hazardous chemical reporting under sections 311 and 312 of the Emergency Planning and Community Right-to-Know Act (EPCRA) with OSHA HCS. See Section 2 for hazard classifications under EPCRA.

CERCLA/SARA - Section 313 and 40 CFR 372
This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

EPA (CERCLA) Reportable Quantity (in pounds)
This material does not contain any chemicals with CERCLA Reportable Quantities.

California Proposition 65
This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

International Inventories
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
All components are either on the DSL, or are exempt from DSL listing requirements.

SECTION 16: Other information

Issue Date:	Previous Issue Date:	SDS Number	Status:
05-Jul-2017	22-Jun-2016	LBKN726570	FINAL

Revised Sections or Basis for Revision:
Format change

Legend (pursuant to NOM-018-STPS-2015):
The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Precautionary Statements:
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting
P501 - Dispose of contents/ container to an approved waste disposal plant

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; HPR = Hazardous Products Regulations; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:
The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL DTE 25**
Product Description: Base Oil and Additives
Product Code: 201560102020, 602631-00, 970826
Intended Use: Hydraulic fluid

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary

from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
2,6-DI-TERT-BUTYL-P-CRESOL	128-37-0	0.1 - < 1%	H400(M factor 1), H410(M factor 1)
CALCIUM SULFONATE	57855-77-3	0.1 - < 1%	H315, H319(2A), H317
PHOSPHORODITHIOIC ACID, MIXED 0,0-BIS(2-ETHYL HEXYL AND ISO-BU) ESTERS, ZINC SALTS.	68442-22-8	0.1 - < 1%	H303, H315, H318, H401, H411

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material;

however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
2,6-DI-TERT-BUTYL-P-CRESOL	Inhalable fraction and vapor	TWA	2 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Brown
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.876
Flammability (Solid, Gas): N/A
Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 46 cSt (46 mm2/sec) at 40 °C | 6.7 cSt (6.7 mm2/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -18°C (0°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	

Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
2,6-DI-TERT-BUTYL-P-CRESOL	Oral Lethality: LD50 0.89 g/kg (Rat)

OTHER INFORMATION

For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

OTHER ECOLOGICAL INFORMATION

VOC: 0 G/L [ASTM E1868-10]

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE

SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
PHOSPHORODITHIOIC ACID, MIXED 0,0-BIS(2-ETHYL HEXYL AND ISO-BU) ESTERS, ZINC SALTS.	68442-22-8	15

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK

4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H303: May be harmful if swallowed; Acute Tox Oral, Cat 5
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Section 01: Company Contact Methods information was modified.
Section 01: Company Mailing Address information was modified.
Section 05: Hazardous Combustion Products information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 07: Handling and Storage - Storage Phrases information was modified.
Section 11: Other Health Effects Header information was modified.
Section 11: Other Health Effects information was added.
Section 14: Marine Pollutant information was modified.
Section 15: List Citations Table information was modified.
Section 15: SARA (311/312) REPORTABLE GHS HAZARD CLASSES information was added.
Section 15: SARA (311/312) REPORTABLE HAZARD CATEGORIES information was deleted.
Section 16: HCode Key information was modified.

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MHC: 0B, 0B, 0, 0, 0, 0 PPEC: A

DGN: 2007796XUS (1012764)

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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBILTRANS HD 10W**
Product Description: Base Oil and Additives
Product Code: 201520506010, 521120-00, 973296
Intended Use: Manual transmission fluid

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
BENZENE, POLYPROPENE DERIVS., SULFONATED, CALCIUM SALTS	75975-85-8	0.1 - < 1%	H317
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	64742-65-0	60 - < 70%	H304
ZINC ALKARYLDITHIOPHOSPHATE	11059-65-7	1 - < 5%	H402, H412

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in

enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Inhalable fraction.	TWA	5 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.888
Flammability (Solid, Gas): N/A
Flash Point [Method]: >200°C (392°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: [N/D at 40 °C] | 6.3 cSt (6.3 mm2/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -30°C (-22°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:
Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL
Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS
Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION
RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics:
TCLP (BENZENE)

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with

OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AIIC, DSL, ENCS, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: None.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ZINC ALKARYLDITHIOPHOSPHATE	11059-65-7	1 - < 5%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM	64742-55-8	17, 18
ZINC ALKARYLDITHIOPHOSPHATE	11059-65-7	13, 15, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
H402: Harmful to aquatic life; Acute Env Tox, Cat 3
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.

Section 08: Exposure Limits Table information was modified.
Section 11 Substance Toxicology table information was deleted.
Section 11: Chronic Tox - Component information was modified.
Section 12: Section 12 Footnote for GHS information was deleted.
Section 13: RCRA TCLP information was added.
Section 13: Regulatory Disposal Information information was modified.
Section 15: List Citations Table information was modified.
Section 16: HCode Key information was modified.

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Prepared according to Global Harmonized System (GHS) standards

SECTION 1 CHEMICAL PRODUCT IDENTIFICATION

Lubrication Technologies, Inc.
900 Mendelssohn Avenue North
Golden Valley, MN 55427-4309
Tel: 763-545-0707

Product Trade Name: **LTI AWR Hydraulic Oil ISO 46**

CAS Number:	Mixture
Synonyms/Other:	NA
Part Number(s):	NA
Recommended Use:	Hydraulic Fluid
Restrictions on Use:	Not determined
Created Date:	7/13/2016
Preparation/Revision Date:	1/25/2017
Emergency Phone Number:	1-800-424-9300 (CHEMTREC)
SDS CODE:	14000

SECTION 2 HAZARD IDENTIFICATION

Appearance:	Colorless to yellow
Odor:	Petroleum odor
Classification:	This material is not considered to be hazardous according to the Globally Harmonized System of Classification and Labelling Chemicals (GHS).
Target Organs:	Not applicable.
Pictogram(s):	None required.
Signal Word:	None required.
Hazard Statement:	Not required.
Other Hazards:	Not determined.
Prevention:	None required.
Response:	None required.
Storage Procedures:	None required.
Disposal:	None required.
Other:	See section 11 for complete health hazard information.

SECTION 3 COMPOSITION OF INGREDIENTS

Components: No Hazardous Substance(s) or Complex Substance(s) required for disclosure

SECTION 4 FIRST AID MEASURES

Eye Contact:	If irritation occurs, cautiously rinse eyes with lukewarm, gently flowing water for 5 minutes, while holding the eyelids open. If eye irritation persists: Get medical advice/attention.
Skin Contact:	Call a doctor if you feel unwell.
Inhalation:	Get medical advice or attention if you feel unwell or are concerned.
Ingestion:	If you feel unwell or concerned: Get medical advice/attention. Rinse mouth. Do NOT induce vomiting. If vomiting occurs naturally, lie on your side, in the recovery position.

Other: No additional information

SECTION 5 FIRE FIGHTING MEASURES

Flash Point: 170°C by Cleveland Open Cup Tester.
Flammable limits: Not determined.
Extinguishing media: Use dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire.

Special firefighting procedures: DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

Unusual fire & explosion hazards: Dense smoke may be generated while burning. Toxic fumes, gases or vapors may evolve on burning. High temperatures may create heavy flammable vapors that may settle along ground level and low spots to create an invisible fire hazard.

Byproducts of combustion: Fires involving this product may release oxides of carbon, phosphorus, nitrogen and sulfur; reactive hydrocarbons and irritating vapors.

Autoignition temperature: Not determined.
Explosion data: Not determined. Care should always be exercised in dust/mist areas.
Other: Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill control procedures (land): Immediately turn off or isolate any source of ignition (pilot lights, electrical equipment, flames, heaters, etc.). Evacuate area and ventilate. Personnel wearing proper protective equipment should contain spill immediately with inert materials (sand, earth, chemical spill pads of cotton) by forming dikes. Dikes should be placed to contain spill in a manner that will prevent material from entering sewers and waterways. Large spill, once contained, may be picked up using explosion proof, non-sparking vacuum pumps, shovels, or buckets, and disposed of in suitable containers for disposal. If a large spill occurs notify appropriate authorities. In case of road spill or accident contact Chem-Trec (800-424-9300).

Spill control procedures (water): Try to contain large spills with floating booms to prevent spill from spreading. Remove from surface by skimming or with suitable adsorbents. If a large spill occurs notify appropriate authorities (normally the National Response Center or Coast Guard at 800-424-8802).

Waste disposal method: Do not empty into drains. All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded may be a regulated waste. Refer to state and local regulations. Department of Transportation (DOT) regulations may apply for transporting this material when spilled. See Section 14.

Other: CAUTION - If spilled material is cleaned up using a regulated solvent, the resulting waste mixture will be regulated.

SECTION 7 HANDLING AND STORAGE

Handling procedures: Keep containers closed when not in use. Do not transfer to unmarked containers. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld, or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.
Handling temperatures should not exceed 60°C (140°F) to minimize danger of burns. Open containers carefully in a well ventilated area or use appropriate respiratory protection. Wash thoroughly after handling.

Storage procedures: Store containers away from heat, sparks, open flame, or oxidizing materials. Extended storage at excessive temperatures may produce odorous and toxic fumes from product decomposition.

Additional information: No additional information.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product:

	OSHA TWA	OSHA STEL	ACGIH TWA
Contains highly refined petroleum oil	*5 mg/m³ (PEL)	*10 mg/m³	*5 mg/m³ (TLV)

* Exposure limits not defined. Limits used are for, "oil mist".

TWA – Time Weighted Average is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.
STEL – Short Term Exposure Limit is the employee's 15-minute time weighted average exposure which shall not be exceeded at any time during a work day unless another time limit is specified.

All base oils, including additive carriers, contain <3.0% DMSO extractable material.

Personal protection: Applicable mainly to persons in repeated contact situations such as packaging of product, service/maintenance, and cleanup/spill control personnel.

Respiratory protection: None required if ventilation is adequate. Otherwise a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. Where misting may occur, wear an MSHA/NIOSH approved (or equivalent) half-mask form dust/mist air purifying respirator.

Eye protection: Eye protection is strongly recommended. Wear safety glasses with side shields or vented/splash proof goggles (ANSI Z87.1 or approved equivalent).

Hand protection: Impervious, chemically resistant gloves such as neoprene or nitrile rubber to avoid skin sensitization and absorption.

Other protection: Use of an apron and overboots of chemically impervious materials such as neoprene or nitrile rubber is recommended based on level of activity and exposure. If handling hot material use insulated protective equipment. Launder soiled clothes. Properly dispose of contaminated leather articles and other materials which cannot be decontaminated.

Local control measures: Use adequate ventilation when working with material in an enclosed area. Mechanical methods such as fume hoods or area fans may be used to reduce localized vapor/mist areas. If vapor or mist is generated when the material handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure. Eyewash stations and showers should be available in areas where this material is used and stored.

Other: Consumption of food and drink should be avoided in work areas where product is present. Always wash hands and face with soap and water before eating, drinking or smoking.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless to yellow
Odor:	Petroleum odor
Odor threshold:	Not determined.
pH:	Not applicable.
Melting/Freezing point:	Not determined.
Initial boiling point:	Not determined.
Boiling range:	Not determined.
Flash point:	170°C.
Evaporation rate:	Not determined.
Flammability:	Not determined.
Upper flammable limit:	Not determined.
Lower flammable limit:	Not determined.
Vapor pressure:	Not determined.
Vapor density:	Not determined.
Relative density:	Not determined.
Solubility:	Negligible in water, miscible in most petroleum solvents.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	28.8 cSt at 40°C.
Other	Not applicable.

SECTION 10 STABILITY AND REACTIVITY

Reactivity	
Chemical stability:	Material is chemically stable at room temperatures and pressure.
Hazardous polymerization:	Will not occur.
Conditions to avoid:	Avoid high temperatures and product contamination.
Incompatibility with other materials:	Avoid contact with acids and strong oxidizing materials.
Decomposition products:	Smoke, carbon monoxide, carbon dioxide, and other aldehydes of incomplete combustion. Oxides of carbon, nitrogen, and sulfur; reactive hydrocarbons and irritating vapors.
Other:	Not applicable.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity (LD50) *See note at the bottom of the section

Oral:	>5000 mg/kg
Dermal:	>5000 mg/kg
Inhalation:	>20.0 mg/l
Skin irritation:	Non-irritant
Eye irritation:	Non-irritant
Dermal sensitization:	Not expected to have a sensitizing effect.
Respiratory sensitization:	Not expected to have a sensitizing effect.
Aspiration Hazard:	Not applicable
Chronic Toxicity	
Mutagenicity:	Not suspected of causing genetic defects
Carcinogenicity:	Not suspected of causing cancer.

Reproductive toxicity:	Not expected to have adverse effects on reproduction.
STOT-single exposure:	Not expected to have adverse effects.
STOT-repeated exposure:	Not expected to have long term adverse effects.
Other:	*All data in this section is based off calculations from Part 3 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 12 ECOLOGICAL INFORMATION

Environmental toxicity

Fish:	> 100 mg/l.
Invertebrates:	> 100 mg/l.
Aquatic plants:	> 100 mg/l.
Microorganism:	> 100 mg/l.
Persistence/Degradability:	This product is not expected to be readily biodegradable.
Bioaccumulation:	Not determined.
Mobility in soil:	Not determined.
Other:	All classifications are based on calculations in Part 4 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste disposal:	This product unadulterated by other materials can be classified as a non-hazardous waste. Depending on use, used product may be regulated. Dispose of in a licensed facility. Do not discharge product in to sewer system. Dispose of containers by crushing or puncturing, so as to prevent unauthorized use of used containers. Waste management should be in full compliance with federal, state, and local laws.
Other	The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14 TRANSPORT INFORMATION

Land Transport (DOT):	Not regulated for land transport.
Proper Shipping Name:	Not applicable.
Land Transport (TDG):	Not regulated for land transport.
Proper Shipping Name:	Not applicable.
Sea Transport (IMDG):	Not regulated for sea transport.
Proper Shipping Name:	Not applicable.
Air Transport (IATA):	Not regulated for air transport.
Proper Shipping Name:	Not applicable.
Other:	Not applicable.

SECTION 15 REGULATORY INFORMATION

Federal Regulation

Clean water act/oil: Under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Control Act of 1990, this material is considered an oil. Any spill or discharges that produce a visible sheen or film on surface of water, or in waterways, ditches, or sewers leading to surface water must be reported. Contact the National Response Center at 800-424-8802.

TSCA: All components of this material are listed in the U.S. TSCA Inventory.

Other TSCA: Not applicable.

SARA title III: Section 302/304 extremely hazardous substances:

None.

Section 311, 312 hazard categorization:

Acute (immediate health effects):	NO
Chronic (delayed health effects):	NO
Fire (hazard):	NO
Reactivity (hazard):	NO
Pressure (sudden release hazard):	NO

Section 313 toxic chemicals:

No components present are at or greater than the de minimis (minimum reportable) concentration requirements for reporting.

CERCLA: For stationary/moving sources – reportable quantity (due to): Not hazardous due to the petroleum exclusion.

State Regulations

Right-to-know Not determined.

Other: A release of this product, as supplied, is exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). However, releases may be reportable to the Nation Response Center under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5) - see head of Section 15. Failure to report may result in substantial civil and criminal penalties.

Recommend contacting the local authorities in the event of any type of spill to determine local reporting requirements and also to aid in the cleanup.

SECTION 16 OTHER INFORMATION

	NFPA 704	NPCA-HMIS	KEY
HEALTH:	1	1	0 = Minimal
FIRE:	1	1	1 = Slight
REACTIVITY:	0	0	2 = Moderate
SPECIFIC HAZARD:	None	N/A	3 = Serious
PROTECTION INDEX:	N/A	B	4 = Severe

Version: I

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Revisions / Comments:	None.
Internal use only:	V15 - PM

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBILTHERM 603**
Product Description: Severely Treated Base Oils
Product Code: 201560802010, 680512-00, 970170
Intended Use: Heat transfer

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Aspiration toxicant: Category 1.

LABEL:
Pictogram:

Signal Word: Danger

Hazard Statements:
H304: May be fatal if swallowed and enters airways.

Precautionary Statements:
P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P331: Do NOT induce vomiting.P405: Store locked up.P501: Dispose of contents and container in accordance with local regulations.

Contains: SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS
No significant hazards.

HEALTH HAZARDS
Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS
No significant hazards.

NFPA Hazard ID:	Health:	1	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	1	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a complex substance.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	64742-65-0	0 - 100%	H304

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION
Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT
Wash contact areas with soap and water.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >194°C (381°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible

or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3		N/A	OSHA Z1
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Inhalable fraction.	TWA	5 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:
No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:
No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:
No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:
No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.835
Flammability (Solid, Gas): N/A
Flash Point [Method]: >194°C (381°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 18.5 cSt (18.5 mm2/sec) at 40 °C | 4.1 cSt (4.1 mm2/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: < -3°C (27°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: (Rat) 4 hour(s) LC50 > 5000 mg/m3 (Aerosol)	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401
Skin	
Acute Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402
Skin Corrosion/Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: Data available.	Not expected to be a skin sensitizer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
Aspiration: Data available.	May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: Data available.	Not expected to be a germ cell mutagen. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 473 474 476
Carcinogenicity: Data available.	Not expected to cause cancer. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451 453
Reproductive Toxicity: Data available.	Not expected to be a reproductive toxicant. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 414 421
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: Data available.	Not expected to cause organ damage from prolonged or repeated exposure. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 408 410 411 412 453

OTHER INFORMATION

For the product itself:

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Material -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

Material -- Low potential to migrate through soil.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Material -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	48 hour(s)	Daphnia magna	EL0 1000 - 10000 mg/l: data for similar materials
Aquatic - Acute Toxicity	96 hour(s)	Pimephales promelas	LL0 100 mg/l: data for similar materials
Aquatic - Acute Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	EL0 100 mg/l: data for similar materials
Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 10 - 1000 mg/l: data for similar materials

Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOELR 100 mg/l: data for similar materials

Persistence, Degradability and Bioaccumulation Potential

Media	Test Type	Duration	Test Results
Water	Ready Biodegradability	28 day(s)	Percent Degraded < 60 : similar material

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: Aspiration Hazard

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Section 01: Company Mailing Address information was modified.

Section 02: GHS Contains for LABEL_GHS codes information was modified.
Section 08: Exposure Limits Table information was modified.
Section 12: information was modified.
Section 15: SARA (311/312) REPORTABLE GHS HAZARD CLASSES information was added.
Section 15: SARA (311/312) REPORTABLE HAZARD CATEGORIES information was deleted.

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MHC: 2A, 0B, 0, 0, 0, 0 PPEC: A

DGN: 2011262XUS (542494)

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Safety Data Sheet

Issue Date: 15-Jan-2019 **Revision Date:** 15-Jan-2019 **Version 1**

1. IDENTIFICATION

Product identifier

Product Name BROTEX -- Orange Peels Plus

Other means of identification

SDS # BRO003

Recommended use of the chemical and restrictions on use

Recommended Use Hand cleanser.

Details of the supplier of the safety data sheet

Supplier Address
BRO-TEX, INC.
800 Hampden Ave.
St. Paul, MN 55114

Emergency telephone number

Company Phone Number 262-235-4224
Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Physical State Liquid

Classification

Serious eye damage/eye irritation	Category 2
Skin sensitization	Category 1

Signal Word
Warning

Hazard statements
Causes serious eye irritation
May cause an allergic skin reaction

Precautionary Statements - Prevention
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing must not be allowed out of the workplace

Precautionary Statements - Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
If skin irritation or rash occurs: Get medical advice/attention

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Other hazards
Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%
d-Limonene	5989-27-5	<5
Sodium Alkane Sulfonate	5324-84-5	<5
Sodium dioctyl sulfosuccinate	577-11-7	<5
Alcohol Ethoxylate	68439-46-3	0.1-1

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If eye irritation persists: Get medical advice/attention.

Skin Contact If skin irritation occurs, rinse affected area with water. If skin irritation or rash occurs: Get medical advice/attention.

Inhalation Remove to fresh air.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms Direct contact with eyes may cause temporary irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Non-flammable solution.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment as required.

Environmental precautions

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling Avoid breathing vapors or mists. Contaminated work clothing must not be allowed out of the workplace.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible Materials None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Controls Apply technical measures to comply with the occupational exposure limits.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Refer to 29 CFR 1910.133 for eye and face protection regulations.

Skin and Body Protection No protective equipment is needed under normal use conditions.

Respiratory Protection Refer to 29 CFR 1910.134 for respiratory protection requirements.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid		
Appearance	Not determined	**Odor**	Not determined
Color	Not determined	**Odor Threshold**	Not determined

Property	**Values**	**Remarks • Method**
pH	Not determined	
Melting point / freezing point	Not determined	
Boiling point / boiling range	Not determined	
Flash point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	n/a-liquid	
Flammability Limit in Air		
Upper flammability or explosive limits	Not determined	
Lower flammability or explosive limits	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Relative Density	Not determined	
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Autoignition temperature	Not determined	

Decomposition temperature	Not determined
Kinematic viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Conditions to Avoid
Keep out of reach of children.

Incompatible materials
None known based on information supplied.

Hazardous decomposition products
None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye Contact Causes serious eye irritation.

Skin Contact May cause an allergic skin reaction.

Inhalation Avoid breathing vapors or mists.

Ingestion Do not taste or swallow.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
d-Limonene 5989-27-5	= 5200 mg/kg (Rat) = 4400 mg/kg (Rat)	> 5 g/kg (Rabbit)	-
Sodium dioctyl sulfosuccinate 577-11-7	= 3080 mg/kg (Rat) = 1900 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	-
Alcohol Ethoxylate 68439-46-3	= 1378 mg/kg (Rat) = 1400 mg/kg (Rat)	> 2 g/kg (Rabbit)	-

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause an allergic skin reaction.

Carcinogenicity Group 3 - Not Classifiable as to Carcinogenicity in Humans.

Chemical name	ACGIH	IARC	NTP	OSHA
d-Limonene 5989-27-5		Group 3		X

Legend

IARC (International Agency for Research on Cancer)
Group 3 IARC components are "not classifiable as human carcinogens"
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

Oral LD50	34,868.00 mg/kg
Dermal LD50	70,175.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Component Information

Chemical name	Algae/aquatic plants	Fish	Crustacea
d-Limonene 5989-27-5		35: 96 h Oncorhynchus mykiss mg/L LC50 0.619 - 0.796: 96 h Pimephales promelas mg/L LC50 flow-through	
Sodium dioctyl sulfosuccinate 577-11-7		37: 96 h Lepomis macrochirus mg/L LC50 static 20 - 40: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 24: 96 h Oncorhynchus mykiss mg/L LC50 static	36: 48 h Daphnia magna mg/L EC50

Persistence/Degradability

Not determined.

Bioaccumulation

There is no data for this product.

Mobility

Not determined

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

Chemical name	California Hazardous Waste Status
d-Limonene 5989-27-5	Toxic

14. TRANSPORT INFORMATION

Note This material is a marine pollutant when shipped in packages greater than 119 gallons per DOT requirements. Please refer to IMDG information listed below for proper shipping information. Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT Not regulated

IATA Not regulated

IMDG

UN number	UN3082
Proper Shipping Name	Environmentally hazardous substances, liquid, n.o.s. (Dipentene)
Transport hazard class(es)	9
Packing Group	III
Marine Pollutant	Not regulated when carried in single or combination packaging containing a net quantity of 5L or less for liquids or 5 KG or less for solids

15. REGULATORY INFORMATION

International Inventories

Chemical name	TSCA	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Water	X	X	X	X	X	X	X	X
d-Limonene	X	X	X	X	X	X	X	X
Sodium Alkane Sulfonate	X	X	X	X	X	X	X	X
Sodium dioctyl sulfosuccinate	X	X	X	X	X	X	X	X
Alcohol Ethoxylate	X	X			X	X	X	X

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

AICS *- Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

US State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations
This product does not contain any substances regulated under applicable state right-to-know regulations

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	Not determined	Not determined	Not determined	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical hazards**	**Personal Protection**
	1	0	0	Not determined

Issue Date: 10-Apr-2014
Revision Date: 27-Sep-2018
Revision Note: Updated formula

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

Bromochlorodifluoromethane (R12B1)

Airgas
an Air Liquide company

Section 1. Identification

GHS product identifier : Bromochlorodifluoromethane (R12B1)

Chemical name : bromochlorodifluoromethane

Other means of identification : Methane, bromochlorodifluoro-; Halon 1211; halon-1211; R12B1; CHLORODIFLUOROBROMOMETHANE; halon-1211; R 12 B 1; Freon 12 B 1; Difluorochlorobromomethane; Monobromodifluoromonochloromethane; Chlorobromodifluoromethane; R12-B1

Product type : Gas.

Product use : Synthetic/Analytical chemistry.

Synonym : Methane, bromochlorodifluoro-; Halon 1211; halon-1211; R12B1; CHLORODIFLUOROBROMOMETHANE; halon-1211; R 12 B 1; Freon 12 B 1; Difluorochlorobromomethane; Monobromodifluoromonochloromethane; Chlorobromodifluoromethane; R12-B1

SDS # : 001166

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Liquefied gas
HAZARDOUS TO THE OZONE LAYER - Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
Harms public health and the environment by destroying ozone in the upper atmosphere.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position.

Prevention : Not applicable.

Response : Not applicable.

Storage : Protect from sunlight. Store in a well-ventilated place.

Disposal : Refer to manufacturer or supplier for information on recovery or recycling.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : bromochlorodifluoromethane

Other means of identification : Methane, bromochlorodifluoro-; Halon 1211; halon-1211; R12B1; CHLORODIFLUOROBROMOMETHANE; halon-1211; R 12 B 1; Freon 12 B 1; Difluorochlorobromomethane; Monobromodifluoromonochloromethane; Chlorobromodifluoromethane; R12-B1

Product code : 001166

CAS number/other identifiers

CAS number : 353-59-3

Ingredient name	%	CAS number
Bromochlorodifluoromethane	100	353-59-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
carbonyl halides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Avoid release to the environment. Refer to special instructions/safety data sheet. Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Bromochlorodifluoromethane	None.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Section 8. Exposure controls/personal protection

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Compressed gas.]

Color : Colorless.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not available.

Melting point : -159.5°C (-255.1°F)

Boiling point : -3.7°C (25.3°F)

Critical temperature : 153.75°C (308.8°F)

Flash point : Not available.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : (air=1): 5.7

Specific Volume (ft^3/lb) : 14.97

Gas Density (lb/ft^3) : 0.668

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : 2.1

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not applicable.

Flow time (ISO 2431) : Not available.

Molecular weight : 165.37 g/mole

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Section 10. Stability and reactivity

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Section 11. Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Bromochlorodifluoromethane	Chronic LC50 Inhalation Vapor	Rat	62600 ppm	1 hours

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Bromochlorodifluoromethane	2.1	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1974	UN1974	UN1974	UN1974	UN1974
UN proper shipping name	CHLORODIFLUOROBROMOMETHANE OR REFRIGERANT GAS R 12B1	CHLORODIFLUOROBROMOMETHANE; OR REFRIGERANT GAS R 12B1	CHLORODIFLUOROBROMOMETHANE OR REFRIGERANT GAS R 12B1	CHLORODIFLUOROBROMOMETHANE (REFRIGERANT GAS R 12B1)	CHLORODIFLUOROBROMOMETHANE
Transport hazard class(es)	2.2	2.2	2.2	2.2	2.2
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity** Yes.
Quantity limitation Passenger aircraft/rail: 75 kg. Cargo aircraft: 150 kg.
Special provisions T50

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).
Explosive Limit and Limited Quantity Index 0.125
Passenger Carrying Road or Rail Index 75

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 75 kg. Cargo Aircraft Only: 150 kg.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	bromochlorodifluoromethane	353-59-3	100
Supplier notification	bromochlorodifluoromethane	353-59-3	100

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : This material is not listed.

New York : This material is listed.

New Jersey : This material is listed.

Pennsylvania : This material is not listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Ingredient name	Status
halon 1211	Annex A, Group II

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : This material is listed or exempted.

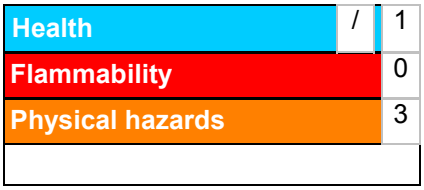
Canada : This material is listed or exempted.

Section 15. Regulatory information

China	:	This material is listed or exempted.
Europe	:	This material is listed or exempted.
Japan	:	**Japan inventory (ENCS)**: This material is listed or exempted. **Japan inventory (ISHL)**: Not determined.
Malaysia	:	Not determined.
New Zealand	:	Not determined.
Philippines	:	This material is listed or exempted.
Republic of Korea	:	This material is listed or exempted.
Taiwan	:	This material is listed or exempted.
Thailand	:	Not determined.
Turkey	:	Not determined.
United States	:	This material is listed or exempted.
Viet Nam	:	Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
GASES UNDER PRESSURE - Liquefied gas HAZARDOUS TO THE OZONE LAYER - Category 1	Expert judgment On basis of test data

History

Date of printing	:	5/24/2018
Date of issue/Date of revision	:	5/24/2018
Date of previous issue	:	No previous validation

Section 16. Other information

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Other special considerations : WARNING: Contains (Bromochlorodifluoromethane (R12B1)), a substance which harms the public health and environment by destroying ozone in the upper atmosphere.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

ULINE ALL PURPOSE FOAMING SOAP

SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

Product Name	:	ULINE ALL PURPOSE FOAMING SOAP
Product Code	:	S18230, S19492, S18233
Recommended use	:	General purpose hand cleaner
Product dilution information	:	Product is sold ready to use.
Company	:	ULINE 12575 Uline Drive Pleasant Prairie, WI 53158
Chemtrec Phone	:	1-800-424-9300
Emergency Phone	:	1-800-958-5463
Issuing date	:	3/2/2020

SECTION 2 – HAZARD(S) IDENTIFICATION

GHS Classification : Category 2B
Eye irritation

GHS Label Element :
Hazards pictograms

Signal Word : Warning

Hazard Statements : **Response:**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Other Hazards : None known.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	Concentration (%)	CAS No.
AMMONIUM LAURYL SULFATE	0 - 5	68585-34-2
AMMONIUM LAURETH SULFATE	0 - 5	67762-19-0
PEG-80 GLYCERYL COCOATE	0 - 5	68201-46-7
DISODIUM COCOAMPHODIACETATE	0 - 5	68650-39-5
PROPYLENE GLYCOL	0 - 5	57-55-6

SECTION 4 – FIRST AID MEASURES

In case of eye contact	:	Flush eyes under eyelids with plenty of cool water for at least 15 minutes. If irritation persists, seek medical/advice attention.
In case of skin contact	:	If irritation persists, wash with water.
If ingested	:	Contact a physician or Poison Control Center immediately. Do not induce vomiting never give anything by mouth to an unconscious person.
If inhaled	:	Get medical attention if symptoms occur.
Protection of first-aiders	:	No special precautions are necessary.
Notes to physicians	:	Treat symptomatically.

SECTION 5 – FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	None known.
Specific hazards during firefighting	:	No flammable or combustible.
Hazardous combustions products	:	Carbon oxides
Special protective equipment for fire-fighters	:	Use personal protective equipment.
Specific extinguishing methods	:	Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal precautions	:	No special measures required.
Environmental precautions	:	Avoid contact of large amounts of spilled material runoff with soil and surface waterways.
Methods of cleaning up	:	Absorb with inert material. Use a water rinse for final clean-up.

SECTION 7 – HANDLING AND STORAGE

Handling	:	Wash hands after handling.
Storage	:	Keep out of reach of children. Keep container tightly closed. Store between 32 to 122 degrees F.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Ingredients with workplace control parameters.

Ingredients	CAS-No.	Form of exposure	Permissible Concentration	Basis
PROPYLENE GLYCOL	57-55-6	TWA	10 mg/m3	WEEL

Engineering measures	:	Good general ventilation should be sufficient to control workers exposure to airborne contamination.

Personal protection

Eyes	:	Eye protection should be used when splashing may occur.
Hands	:	No protective equipment is needed under normal use.
Skin	:	No protective equipment is needed under normal use.
Respiratory	:	No protective equipment is needed under normal use.

Consult local authorities for acceptable exposure limits.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Water thin medium green liquid
Odor: Jasmine fragrance
Odor Threshold: No data available
ph: 6.5 typical
Melting point/freezing point: N/A
Initial boiling and boiling range: N/A
Flash point: N/A
Evaporation rate: <1
Flammability (solid, gas): No data available

Upper/lower flammability limits: N/A
Vapor pressure: N/A
Vapor density: N/A
Relative density: No data available.
Solubility (ies): No data available.
Partition coefficient: n-octanol/water: No data available.
Auto ignition temperature: N/A
Decomposition temperature: No data available.
Viscosity: N/A

SECTION 10 – STABILITY AND REACTIVITY

Stability	:	The product is stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction is known under conditions of normal use.
Conditions to avoid	:	None known.
Incompatible materials	:	None known.
Hazardous decomposition products	:	Carbon oxides

SECTION 11 – TOXICOLOGICAL INFORMATION

Information on likely routines of exposure	:	Inhalation, eye contact, skin contact.

Potential Health Effects

Eyes	:	Cause of irritation.
Skin	:	Health injuries are not known or expected under normal use.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Health injuries are not known or expected under normal use.
Chronic exposure	:	Health injuries are not known or expected under normal use.

Experience with Human Exposure

Eye contact	:	Redness, irritation.
Skin contact	:	No symptoms known or expected.
Ingestion	:	No symptoms known or expected.
Inhalation	:	No symptoms known or expected.

Toxicity

Acute oral toxicity	:	Acute toxicity estimate: >5,000 mg/kg
Acute inhalation toxicity	:	No data available
Acute dermal toxicity	:	Acute toxicity estimate: >5,000 mg/kg
Skin corrosion/irritation	:	No data available
Serious eye damage/eye irritation	:	Mild eye irritation.
Respiratory or skin sensitization	:	No data available.

Carcinogenicity

IARC	:	No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC.
OSHA	:	No ingredient of this product presents at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	:	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 12 – ECOLOGICAL INFORMATION

Ecological Tests	:	Data is not available.
Environmental Impact	:	The product ingredients are expected to be safe for the environment at the concentrations predicted under normal use and accidental spill scenarios. Packaging components are compatible with the conventional solid waste management practices.

SECTION 13 – DISPOSAL CONSIDERATIONS

Disposal methods	:	The product should not be allowed to enter drains, water courses or the soil. When possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not reuse empty containers.

SECTION 14 – TRANSPORT INFORMATION

Certain shipping modes or package sizes may have exceptions from the transport regulations. The classification provided may not reflect those exceptions and may not apply to all shipping modes or package sizes. The shipper / consignor / sender are responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Shipment	Identification Number	Proper Shipping Name	Hazardous Classification	Packaging Group
US DOT	Not dangerous goods	N/A	N/A	None
IATA (Air)	Not dangerous goods	N/A	N/A	None
IMDG (Vessel)	Not dangerous goods	N/A	N/A	None

SECTION 15 – REGULATORY INFORMATION

U.S. Federal regulations

TSCA 8(b) Inventory : All components are listed or exempted.

SARA 302/304/311/312 Extremely Hazardous Substances : No listed substance.

SARA 302/304 Emergency Planning and Notification : No listed substance.

SECTION 16 - OTHER INFORMATION

NFPA 704:

HMIS III:

HEALTH	**1**
FLAMMABILITY	**0**
PHYSICAL HAZARDS	**0**

Issuing date	:	3/2/2020
Version	:	2.0
Prepared by	:	Regulatory Compliance

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in conjunction with any other materials or in any process, unless specified in the text.

THE HANSON GROUP, LLC
GOOD PEOPLE, GREAT SCIENCE

SAFETY DATA SHEET

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	POLYARMOR® HAND SANITIZER
Other means of identification	:	Not applicable
Recommended use	:	Hand Sanitizer
Restrictions on use	:	This is a personal care or cosmetic product that is safe for consumers and other users under normal and reasonably foreseeable use.
Product dilution information	:	Product is sold ready to use.
Company	:	The Hanson Group, LLC 3044 Adriatic Court Peachtree Corners, GA 30071 1-770-495-9554
Emergency telephone	:	Use only in the event of an emergency: CHEMTREC at 1-800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids	:	Category 3
Eye irritation	:	Category 2A

GHS Label element

Hazard pictograms :

Signal Word : Warning

Hazard Statements : Flammable liquid and vapor.
Causes serious eye irritation.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:
Store in a well-ventilated place. Keep cool.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards : None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/mixture : Mixture

Chemical Name	CAS-No.	Concentration (%)
Denatured ethanol	64-17-5	> 70%

SECTION 4. FIRST AID MEASURES

In case of eye contact	:	Rinse with water.
In case of skin contact	:	Rinse with water.
If swallowed	:	Rinse mouth. Get medical attention if symptoms occur.
If inhaled	:	Get medical attention if symptoms occur.
Protection of first-aiders	:	No special precautions are necessary for first aid responders.
Notes to physician	:	Treat symptomatically.

See toxicological information (Section 11)

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Fire Hazard Keep away from heat and sources of ignition. Flash back possible over considerable distance. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Hazardous combustion products	:	Carbon oxides
Special protective equipment for fire-fighters	:	Use personal protective equipment.
Specific extinguishing methods	:	Use water spray to cool unopened containers. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Remove all sources of ignition. Ensure clean-up is conducted by trained personnel only. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Do not allow contact with soil, surface or ground water.
Methods and materials for containment and cleaning up	:	Eliminate all ignition sources if safe to do so. Stop leak if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Flush away traces with water. For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from fire, sparks and heated surfaces.

Conditions for safe storage : Keep away from heat and sources of ignition. Keep in a cool, well-ventilated place. Keep away from oxidizing agents. Keep out of reach of children. Keep container tightly closed. Store in suitable labeled containers.

Storage temperature : 0 °C to 35 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Form of exposure	Permissible concentration	Basis
ethanol	64-17-5	TWA	1,000 ppm	ACGIH
		TWA	1,000 ppm 1,900 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,900 mg/m3	OSHA Z1

Engineering measures : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Personal protective equipment

Eye protection : No special protective equipment required.

Hand protection : No special protective equipment required.

Skin protection : No special protective equipment required.

Respiratory protection : No personal respiratory protective equipment normally required.

Hygiene measures : No specific measures identified.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : clear

Odor : alcoholic

pH : 6.3 - 8.5, 100 %

Flash point : 23 °C closed cup

Odor Threshold : no data available

Melting point/freezing point : no data available

Initial boiling point and boiling range : no data available

Evaporation rate	:	no data available
Flammability (solid, gas)	:	no data available
Upper explosion limit	:	no data available
Lower explosion limit	:	no data available
Vapor pressure	:	no data available
Relative vapor density	:	no data available
Relative density	:	0.869 - 0.873
Water solubility	:	no data available
Solubility in other solvents	:	no data available
Partition coefficient: n-octanol/water	:	no data available
Autoignition temperature	:	no data available
Thermal decomposition	:	no data available
Viscosity, kinematic	:	no data available
Explosive properties	:	no data available
Oxidizing properties	:	no data available
Molecular weight	:	no data available
VOC	:	no data available

SECTION 10. STABILITY AND REACTIVITY

Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	None known.
Hazardous decomposition products	:	Carbon oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	:	Inhalation, Eye contact, Skin contact

Potential Health Effects

Eyes	:	Causes serious eye irritation.
Skin	:	Health injuries are not known or expected under normal use.
Ingestion	:	Health injuries are not known or expected under normal use.
Inhalation	:	Health injuries are not known or expected under normal use.
Chronic Exposure	:	Health injuries are not known or expected under normal use.

Experience with human exposure

Eye contact	:	Redness, Pain, Irritation
Skin contact	:	No symptoms known or expected.
Ingestion	:	No symptoms known or expected.
Inhalation	:	No symptoms known or expected.

Toxicity

Acute oral toxicity	:	Acute toxicity estimate : > 5,000 mg/kg
Acute inhalation toxicity	:	no data available
Acute dermal toxicity	:	no data available
Skin corrosion/irritation	:	no data available
Serious eye damage/eye irritation	:	no data available
Respiratory or skin sensitization	:	no data available
Carcinogenicity		
IARC		No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA		No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP		No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
Reproductive effects	:	no data available
Germ cell mutagenicity	:	no data available
Teratogenicity	:	no data available
STOT-single exposure	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.
STOT-repeated exposure	:	no data available
Aspiration toxicity	:	no data available

Ingredients

Acute inhalation toxicity	:	ethanol 4 h LC50 rat: 117 mg/l

Ingredients

Acute dermal toxicity	:	ethanol LD50 rabbit: 15,800 mg/kg

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental Effects	:	Harmful to aquatic life.

Product

Toxicity to fish	:	no data available
Toxicity to daphnia and other aquatic invertebrates	:	no data available
Toxicity to algae	:	no data available

Ingredients

Toxicity to fish	:	ethanol 96 h LC50 Fish: 11,000 mg/l

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

no data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods	:	The product should not be allowed to enter drains, water courses or the soil. Where possible recycling is preferred to disposal or incineration. If recycling is not practicable, dispose of in compliance with local regulations. Dispose of wastes in an approved waste disposal facility.
Disposal considerations	:	Dispose of as unused product. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
RCRA - Resource Conservation and Recovery Authorization Act Hazardous waste	:	D001 (Ignitable)

SECTION 14. TRANSPORT INFORMATION

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

Land transport (DOT)

UN number	:	1987
Proper Shipping Name	:	Alcohols, n.o.s.
Class	:	3
Packing group	:	III
Environmentally hazardous	:	no

Sea transport (IMDG/IMO)

UN number	:	1987
Proper Shipping Name	:	Alcohols, n.o.s.

Class	:	3
Packing group	:	III
Marine pollutant	:	no

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

The ingredients of this product are reported in the following inventories:

1907/2006 (EU) :
not determined

Switzerland. New notified substances and declared preparations :
not determined

United States TSCA Inventory :
On TSCA Inventory

Canadian Domestic Substances List (DSL) :
This product contains one or several components that are not on the Canadian DSL nor NDSL.

Australia Inventory of Chemical Substances (AICS) :
not determined

New Zealand. Inventory of Chemical Substances :
not determined

Japan. ENCS - Existing and New Chemical Substances Inventory :
not determined

Japan. ISHL - Inventory of Chemical Substances (METI) :
not determined

Korea. Korean Existing Chemicals Inventory (KECI) :
not determined

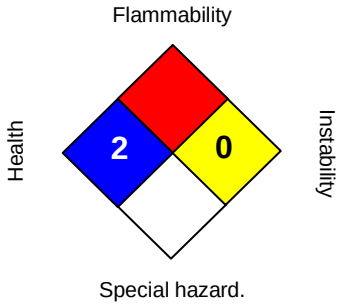
Philippines Inventory of Chemicals and Chemical Substances (PICCS) :

not determined

China. Inventory of Existing Chemical Substances in China (IECSC) :
not determined

SECTION 16. OTHER INFORMATION

NFPA:



HMIS III:

HEALTH	2
FLAMMABILITY	3
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Issuing date : 3/23/2020
Version : 1.1

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER AND NAME: **MARC 246 CHERRY BLAST HAND CLEANER**

SDS DATE: 02/11/2019

SUPPLIER: Mid-American Research Chemical Corp. **ADDRESS:** P. O. Box 927 Columbus, NE 68602-0927
PHONE: 402-564-7104 **FAX:** 402-563-1290
EMERGENCY PHONE: InfoTrac 1-800-535-5053
E-MAIL: marc@marc1.com **WEBSITE:** www.marc1.com

RECOMMENDED USE: Hand cleaner.

PREPARED BY: MARC

SECTION 2: HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified..

GENERAL PRECAUTIONARY STATEMENTS- Caution: If in eyes, get medical attention. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT	CAS NO.	WT. %
Water	7732-18-5	46% - 60%
Nonyl Phenol Ethoxylate	127087-87-0	7% - 17%
Isoparaffinic Petroleum Distillate	64742-47-8	6% - 14%
Pumice	1332-09-8	5% - 13%
Mineral Oil, Slab Oil	8042-47-5	4% - 10%
Propylene Glycol	57-55-6	3% - 7%

The exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: FIRST AID MEASURES

EYES: If irritation occurs, cautiously rinse eyes with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, get medical advice/attention.

SKIN: Take off immediately all contaminated clothing, shoes, and leather goods (e.g., watchbands, belts). Gently blot or brush away excess product. Wash with plenty of lukewarm, gently flowing water for a duration of 5 minutes. If you feel unwell, Call a Poison Center/doctor.

INGESTION: If swallowed, immediately rinse mouth with water. **DO NOT INDUCE VOMITING** unless directed by medical authority. If you feel unwell/if concerned get medical attention.

INHALATION: N/A.

SECTION 5: FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA: Will not burn. Use extinguishing media suitable for surrounding fire.

UNSUITABLE EXTINGUISHING MEDIA: None.

SPECIAL FIRE FIGHTING PROCEDURES: Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Dispose of fire debris and contaminated extinguishing water in accordance with regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ENVIRONMENTAL PRECAUTIONS: Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

SECTION 7: HANDLING AND STORAGE

General: Do not get in eyes or on clothing.

.

Storage: Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight and incompatibilities.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Chemical Name	OSHA TWA (ppm)	OSHA TWA (mg/m3)	OSHA STEL (ppm)	OSHA STEL (mg/m3)	OSHA Tables (Z1, Z2, Z3)	OSHA Carcinogen	OSHA Skin designation	NIOSH TWA (ppm)	NIOSH TWA (mg/m3)	NIOSH STEL (ppm)	NIOSH STEL (mg/m3)	NIOSH Carcinogen
ISOPARAFFINIC PETROLEUM DISTILLATE	500	2000			1							

Chemical Name	ACGIH TWA (ppm)	ACGIH TWA (mg/m3)	ACGIH STEL (ppm)	ACGIH STEL (mg/m3)
ISOPARAFFINIC PETROLEUM DISTILLATE				

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Thick Liquid
COLOR:	Red
ODOR:	Cherry
pH:	6.5
MELTING POINT:	N/A
FREEZING POINT:	N/A
DENSITY:	8.54 pounds per gallon
VOC ACTUAL:	none
VOC REGULATORY:	none
HIGH BOILING POINT:	N/A
LOW BOILING POINT:	N/A
FLASH POINT:	N/A
FLASH POINT SYMBOL:	N/A
EVAPORATION RATE:	N/A
FLAMMABILITY LIMITS:	Will not burn.
UPPER EXPLOSION LEVEL:	N/A
LOWER EXPLOSION LEVEL:	N/A
VAPOR PRESSURE (mmHg):	N/A
VAPOR DENSITY (AIR = 1):	N/A
SPECIFIC GRAVITY (H2O = 1):	N/A
SOLUBILITY IN WATER:	Emulsion
PARTITION COEFFICIENT, n-OCTANOL/WATER:	N/A
AUTO-IGNITION TEMPERATURE:	N/A
DECOMPOSITION TEMPERATURE:	N/A
VISCOSITY:	N/A
VOC COMPOSITE PARTIAL PRESSURE:	N/A

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID: Keep from freezing.
INCOMPATIBILITY (MATERIAL TO AVOID): None known.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None known.
HAZARDOUS POLYMERIZATION: Will not occur. **CONDITIONS TO AVOID (POLYMERIZATION):** Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

SKIN CORROSION/IRRITATION: No data available.
SERIOUS EYE DAMAGE/IRRITATION: An eye irritant which may cause irritation, redness, or tearing.
CARCINOGENICITY: No data available.
GERM CELL MUTAGENICITY: No data available.
REPRODUCTIVE TOXICITY: No data available.
RESPIRATORY OR SKIN SENSITIZATION: No data available.
SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE: No data available.
SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE: No data available.
ASPIRATION HAZARD: No data available.
ACUTE TOXICITY: No data available.

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY: No data available.
PERSISTENCE AND DEGRADABILITY: Expected to be inherently biodegradable. The volatile constituents will oxidize rapidly by photochemical reactions in air..
BIOACCUMULATIVE POTENTIAL: Isoparaffinic petroleum distillate contains constituents with the potential to bio accumulate.
MOBILITY IN SOIL: No data available.
OTHER ADVERSE EFFECTS: No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Under RCRA, it is the responsibility of the user of the product, to determine at the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (for ground/non-bulk containers)

CONTAINER SIZES(S): All
PROPER SHIPPING NAME: Compound, cleaning liquid.
HAZARD CLASS: N/A
ID NUMBER: N/A
PACKING GROUP: N/A
LABEL STATEMENT: N/A

SECTION 15: REGULATORY INFORMATION

CAS	CHEMICAL NAME	% BY WEIGHT	REGULATION LIST
7732-18-5	Water	46% - 60%	TSCA
57-55-6	Propylene Glycol	3% - 7%	SARA 312. TSCA
8042-47-5	Mineral oil, Slab Oil	4% - 10%	SARA 312, TSCA
127087-87-0	Nonyl Phenol Ethoxylate	7% - 17%	SARA 312, TSCA
6742-47-7	Isoparaffinic Petroleum Distillate	6% - 14%	SARA 312, VOC, TSCA, OSHA
1332-09-8	Pumice	5% - 13%	SARA 312, TSCA

SECTION 16: OTHER INFORMATION

HMIS/NFPA Ratings: Health = 0, Flammability = 0, Reactivity = 0, Other = -, Protection = None.

REVISION DATE: 02/12/2019

N/A = Not Applicable, **N/D =** Not Determined, **N/E =** Not Established

DISCLAIMER: While the information contained herein is believed to be correct, no warranties are made with respect thereto, and all liability from reliance thereon is disclaimed.

Safety Data Sheet

Issue date 21-May-2018 **Revision date** 07-Nov-2022 **Revision Number** 2

1. IDENTIFICATION

Product identification

Product identifier	Lawson Tef Gel Penetrating Gel Lubricant with PTFE
Other means of identification	97673
Recommended use	Lubricant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin corrosion/irritation	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Compressed gas

Symbol

Signal word DANGER

Hazard statements
H222 - Extremely flammable aerosol
H280 - Contains gas under pressure; may explode if heated

H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H335 - May cause respiratory irritation
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements

General

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing and eye/face protection

Response

General

P321 - Specific treatment (see supplemental first aid instructions on this label)
P308 + P313 - IF exposed or concerned: Get medical advice/attention

Eyes

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Skin

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Inhalation

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell

Ingestion

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting

Fire

P370 + P378 - In case of fire: Use carbon dioxide to extinguish

Spill

P391 - Collect spillage

Storage

P405 - Store locked up
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Hazard(s) Not Otherwise Classified (HNOC)

None known.

Physical Hazards Not Otherwise Classified (PHNOC)

None known.

Unknown acute toxicity

0%.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition CAS# 110-54-3, Hexane maybe substituted for CAS# 64742-49-0, commercial hexanes.

Chemical name	CAS-No	Weight %
Hexane	110-54-3	60-70
Propane	68476-86-8	10-20
Polymeric Viscosity Modifier	MIXTURE	10-20
Paraffinic Mineral Oil	8042-47-5	1-10

The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation Move to fresh air. Artificial respiration and/or oxygen may be necessary. If not breathing, give artificial respiration. If breathing has stopped, contact emergency medical services immediately.

Ingestion Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation persists, call a physician.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult a physician. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Most important symptoms (acute) Skin irritation. Causes serious eye damage. May cause drowsiness or dizziness. Harmful or fatal if swallowed and enters the airways.

Most important symptoms (over-exposure) Skin irritation. Causes serious eye damage. May cause drowsiness or dizziness. Harmful or fatal if swallowed and enters the airways.

Indication of any immediate medical attention and special treatment needed Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media Not available.

Specific hazards Sensitivity to static discharge. Decomposition by contact with water may generate vapours which can be ignited by heat or open flame.

Special protective equipment for fire-fighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and Avoid contact with eyes. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Take precautionary measures against static discharge. Eliminate all

emergency procedures

ignition sources (no smoking, flares, sparks or flames in immediate area). Contents under pressure. Do not puncture or incinerate cans. Stop leak if possible without personal risk. No special environmental precautions required. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system.

Methods and materials for containment and cleaning up

Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin, nail, or any other sharp object into opening on top of can.

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a cool, well-ventilated place. No known incompatibilities.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Hexane	500 ppm TWA 1800 mg/m³ TWA	50 ppm PEL; 180 mg/m³ PEL 500 ppm PEL (except n-Hexane); 1800 mg/m³ PEL (except n-Hexane)	50 ppm TWA Skin	50 ppm TWA 180 mg/m³ TWA
Propane	-			
Polymeric Viscosity Modifier	-			
Paraffinic Mineral Oil	-			

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

Individual protection measures, such as personal protective equipment

Eye protection

Safety glasses with side-shields.

Skin and body protection

Chemical resistant apron. Protective gloves.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, a NIOSH/MSHA approved respirator is recommended. Positive-pressure supplied air respirators may be required for high airborne contaminant concentration. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Avoid contact with skin, eyes and clothing.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Hexane	50 ppm TWA 176 mg/m³ TWA	20 ppm TWA	50 ppm TWA	50 ppm TWA 176 mg/m³ TWA	50 ppm TWA	50 ppm TWA	50 ppm TWA	50 ppm TWA	50 ppm TWAEV 176 mg/m³ TWAEV	50 ppm TWA

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Propane	-	-	-	-	-	-	-	-	-	-
Polymeric Viscosity Modifier	-	-	-	-	-	-	-	-	-	-
Paraffinic Mineral Oil	-	-	-	-	-	-	-	-	-	-

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Aerosol
Color	Amber, Slightly hazy
Odor	light vanilla
Odor threshold	Not available
pH	Not available
Melting point/range °C	Not available
Melting point/range °F	Not available
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C	-97
Flash point °F	-143
Flash point method used	Not available
Evaporation rate	Not available
Flammability (Solid, Gas)	Not available
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	0.720
Solubility	Practically insoluble
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available

Viscosity Not available

10. STABILITY AND REACTIVITY

Reactivity Not available.

Chemical stability Stable under recommended storage conditions.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid Avoid extreme temperatures. Avoid direct sunlight.

Incompatible materials None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Dermal. Inhalation. Ingestion. Eyes.

Symptoms Vapors may irritate the throat and respiratory system. Vapors may cause drowsiness and dizziness. May cause irritation of respiratory tract. Causes eye and skin irritation. Avoid breathing vapors or mists. Avoid contact with eyes. Avoid contact with skin. Repeated exposure may cause skin dryness or cracking. Prolonged skin contact may defat the skin and produce dermatitis. Harmful if swallowed. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal. Symptoms of overexposure may be headache, tiredness, nausea, and vomiting.

Delayed and immediate effects as well as chronic effects from short and long-term exposure Product is or contains a chemical which is a known or suspected reproductive hazard. May cause respiratory irritation. May cause drowsiness and dizziness. May be fatal if swallowed and enters airways. Target Organ Effects:. Central nervous system damage. Eyes. Peripheral Nervous System (PNS). Respiratory system. Skin.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Hexane	48000 ppm (Rat) 4 h	3000 mg/kg (Rabbit)	15000 mg/kg (Rat)
Propane	-	-	-
Polymeric Viscosity Modifier	-	-	-
Paraffinic Mineral Oil	-	> 5000 mg/kg Rat	>5000 mg/kg Rat

ATEmix (dermal) 7482 mg/kg

ATEmix (oral) 3401 mg/kg

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Hexane	-	-	-	-
Propane	-	-	-	-
Polymeric Viscosity Modifier	-	-	-	-
Paraffinic Mineral Oil	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Hexane	-	-	-	-	-	-
Propane	-	-	-	-	-	-
Polymeric Viscosity Modifier	-	-	-	-	-	-
Paraffinic Mineral Oil	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Hexane	-	2.1 - 2.98mg/L Pimephales promelas 96h
Propane	-	-
Polymeric Viscosity Modifier	-	-
Paraffinic Mineral Oil	-	> 10000mg/L Lepomis macrochirus 96h

Persistence and degradability Not available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Hexane 110-54-3	110-54-3	4 at 20 °C (at pH 7, ECHA_API) 3.44 at 25 °C (at pH 7, ECHA_API); 3.93 at 20 °C (at pH 7, ECHA_API)	-
Propane 68476-86-8	68476-86-8	<=2.8	-
Polymeric Viscosity Modifier MIXTURE	MIXTURE	-	-
Paraffinic Mineral Oil 8042-47-5	8042-47-5	>6	-

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information This material as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated packaging Do not reuse containers.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Special Provisions	LTD QTY

TDG

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Special Provisions	LTD QTY

IATA

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Special Provisions	LTD QTY

IMDG/IMO

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
EmS No	2-13
Special Provisions	LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Hexane	110-54-3	X	X	X X
Propane	68476-86-8	-	-	-
Polymeric Viscosity Modifier	MIXTURE	-	-	-
Paraffinic Mineral Oil	8042-47-5	-	-	-

Special Precautions Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Hexane	110-54-3	X	X	X
Propane	68476-86-8	-	-	-
Polymeric Viscosity Modifier	MIXTURE	-	-	-
Paraffinic Mineral Oil	8042-47-5	-	-	-

California Prop. 65 Not Listed

Chemical name	CAS-No	California Prop. 65
Hexane	110-54-3	Male Reproductive
Propane	68476-86-8	-
Polymeric Viscosity Modifier	MIXTURE	-
Paraffinic Mineral Oil	8042-47-5	-

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Hexane	110-54-3	5000 lb 2270 kg	1.0 %
Propane	68476-86-8	-	-
Polymeric Viscosity Modifier	MIXTURE	-	-
Paraffinic Mineral Oil	8042-47-5	-	-

US EPA SARA 311/312 hazardous categorization
Acute Health Hazard
Chronic Health Hazard
Sudden Release of Pressure Hazard
Fire Hazard

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Hexane	X	X	X	-
Propane	X	-	X	-
Polymeric Viscosity Modifier	-	-	-	-
Paraffinic Mineral Oil	X	-	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health 2
Flammability 4

Instability	0

HMIS

Health	2 *
Flammability	4
Physical hazards	1
Personal protection	B

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by	Regulatory Affairs
Issue date	21-May-2018
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Revision note	

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

Safety Data Sheet

Issue date 25-Jul-2018 **Revision date** 25-Jul-2018 **Revision Number** 1

1. IDENTIFICATION

Product identification

Product identifier	Lawson Heavy Duty Chain Lubricant
Other means of identification	1412524
Recommended use	Lubricant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Liquefied Gas
Hazardous to the aquatic environment	Category 1
Hazardous to the aquatic environment, long-term hazard	Category 1

Symbol

Signal word DANGER

Hazard statements
H280 - Contains gas under pressure; may explode if heated
H222 - Extremely flammable aerosol
H304 - May be fatal if swallowed and enters airways

Precautionary statements

General
P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use

Response

Ingestion
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting

Storage
P405 - Store locked up
P410 - Protect from sunlight
P403 - Store in a well-ventilated place
P412 - Do not expose to temperatures exceeding 50 °C/122 °F

Disposal
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)
None known.

Physical Hazards Not Otherwise Classified (PHNOC)
None known.

Unknown acute toxicity
None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition
Mixture.

Chemical name	CAS-No	Weight %
Chlorinated Paraffin	63449-39-8	20-40
Propane	74-98-6	2.5-10
N-Butane	106-97-8	2.5-10
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	2.5-10
Octane	111-65-9	0.1-1
N-Heptane	142-82-5	0.1-1
Toluene	108-88-3	<1
Ethyl benzene	100-41-4	<1
Benzene	71-43-2	<1

Chemical Additions Other components below reportable levels. 20-40 %
*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation
Move to fresh air. If symptoms persist, call a physician.

Ingestion
Not likely, due to the form of the product. Call a physician or Poison Control Center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, the head should be

kept low so that vomit does not enter the lungs.

Skin contact No adverse affects expected.

Eye contact No specific treatment is necessary since this material is not likely to be hazardous by eye contact.

Most important symptoms (acute) Aspiration may cause pulmonary edema and pneumonitis.

Most important symptoms (over-exposure) Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

Indication of any immediate medical attention and special treatment needed Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Dry Chemical, Carbon Dioxide, Foam or Water Fog.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards Contents under pressure. Heating will cause pressure rise with risk of bursting and subsequent explosion. During fire, gases hazardous to health may be formed.

Special protective equipment for fire-fighters Firefighters must use standard protective equipment including flame retardent coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Wear suitable protective equipment. Stop leak if you can without risk. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do it without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn out. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do it without risk. In the event of fire and/or explosion do not breathe fumes. Extremely Flammable Aerosol. Contents under pressure. Pressurized container may explode when exposed to heat or flame.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Keep unnecessary people away, isolate hazard area and deny entry. Keep out of low areas. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during cleanup. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8.

Methods and materials for containment and cleaning up Refer to attached SDS and/or instructions for use. Stop leak if you can without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep combustibles (wood, paper, oil, etc) away from spilled material. Prevent entry into waterways, sewers, basements, and confined areas. Cover with plastic sheet to prevent spreading. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Following product recovery, flush area with water. Small Spill:. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS. Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

7. HANDLING AND STORAGE

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, drill, grind, or weld near containers. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. All equipment used when handling the product must be grounded. Do not reuse containers. Use only in a well ventilated area. Wear appropriate personal protective equipment. Wash hands and face thoroughly after handling. Avoid release to the environment. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Store locked up. Contents under pressure. Protect from sunlight. Do not expose to temperatures exceeding 122 °F (50 °C). Do not puncture, incinerate, or crush. Keep away from heat, sparks, flame and other sources of ignition (i.e. pilot lights, electric motors and static electricity). This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Store with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Check containers periodically for general condition and leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Chlorinated Paraffin	-			
Propane	1000 ppm TWA 1800 mg/m³ TWA	1000 ppm PEL; 1800 mg/m³ PEL		1000 ppm TWA 1800 mg/m³ TWA 1000 ppm TWA 1800 mg/m³ TWA
N-Butane	-	800 ppm PEL; 1900 mg/m³ PEL		800 ppm TWA 1900 mg/m³ TWA 1000 ppm TWA 1800 mg/m³ TWA
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	Not listed			
Octane	500 ppm TWA 2350 mg/m³ TWA	300 ppm PEL; 1450 mg/m³ PEL	300 ppm TWA	75 ppm TWA 350 mg/m³ TWA
N-Heptane	500 ppm TWA 2000 mg/m³ TWA	400 ppm PEL; 1600 mg/m³ PEL	400 ppm TWA	85 ppm TWA 350 mg/m³ TWA
Toluene	200 ppm TWA	10 ppm PEL; 37 mg/m³ PEL	20 ppm TWA	100 ppm TWA 375 mg/m³ TWA
Ethyl benzene	TWA: 100 ppm TWA: 435 mg/m³	5 ppm PEL; 22 mg/m³ PEL	20 ppm TWA	100 ppm TWA 435 mg/m³ TWA
Benzene	10 ppm TWA 1 ppm TWA	1 ppm PEL	0.5 ppm TWA Skin	0.1 ppm TWA

Appropriate engineering controls

Good ventilation should be sufficient to control worker exposure to airborne contaminants. As a rule, at least 10 air changes per hour are recommended at the workplace. Ventilation rates should be matched to conditions. Use process enclosures, local exhaust ventilation, or other controls to keep air containment concentration below current applicable OSHA permissible exposure limit or ACGIH TLV limit, and volatiles below lower explosive limit. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye protection

Face shield is recommended. Wear safety glasses with side shields or goggles.

Skin and body protection

Wear appropriate chemical resistant gloves. Nitrile gloves are recommended. Wear appropriate thermal protective clothing when necessary.

Respiratory protection If permissible levels are exceeded use NIOSH mechanical filter/organic vapor cartridge or an air-supplied respirator.

Hygiene measures Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Washing hands, face, neck and arms thoroughly before eating or smoking is recommended. Routinely wash work clothing and protective equipment to remove contaminants.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Chlorinated Paraffin	-	-	-	-	-	-	-	-	-	-
Propane	1000 ppm TWA 1640 mg/m³ TWA	1000 ppm TWA	-	1000 ppm TWA 1640 mg/m³ TWA	-	-	-	-	1000 ppm TWAEV 1800 mg/m³ TWAEV 1000 ppm TWAEV 1640 mg/m³ TWAEV	1000 ppm TWA 1000 ppm TWA 1000 ppm TWA
N-Butane	1000 ppm TWA 1640 mg/m³ TWA	1000 ppm TWA	-	800 ppm TWA 1900 mg/m³ TWA 1000 ppm TWA 1640 mg/m³ TWA	-	-	-	-	800 ppm TWAEV 1900 mg/m³ TWAEV 1000 ppm TWAEV 1640 mg/m³ TWAEV	1000 ppm TWA 1000 ppm TWA 1000 ppm TWA 1000 ppm TWA
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	-	-	-	-	-	-	-	-	-	-
Octane	300 ppm TWA 1400 mg/m³ TWA	300 ppm TWA	300 ppm TWA	300 ppm TWA 1400 mg/m³ TWA	300 ppm TWA 300 ppm TWA	300 ppm TWA	300 ppm TWA	300 ppm TWA 300 ppm TWA	300 ppm TWAEV	300 ppm TWA 300 ppm TWA
N-Heptane	400 ppm TWA 1640 mg/m³ TWA	400 ppm TWA	400 ppm TWA	400 ppm TWA 1640 mg/m³ TWA	400 ppm TWA 400 ppm TWA	400 ppm TWA	400 ppm TWA	400 ppm TWA 400 ppm TWA	400 ppm TWAEV	400 ppm TWA
Toluene	50 ppm TWA 188 mg/m³ TWA	20 ppm TWA	20 ppm TWA	50 ppm TWA 188 mg/m³ TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	50 ppm TWAEV 188 mg/m³ TWAEV	50 ppm TWA
Ethyl benzene	100 ppm TWA 434 mg/m³ TWA	20 ppm TWA	20 ppm TWA	100 ppm TWA 434 mg/m³ TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWAEV	100 ppm TWA
Benzene	0.5 ppm TWA 1.6 mg/m³ TWA	0.5 ppm TWA	0.5 ppm TWA	0.5 ppm TWA 1.6 mg/m³ TWA	0.5 ppm TWA	0.5 ppm TWA	0.5 ppm TWA 0.5 ppm TWA	0.5 ppm TWA	1 ppm TWAEV 3 mg/m³ TWAEV	-

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Liquid Aerosol containing a liquefied gas

Odor Not available

Odor threshold Not available

pH Not available

Melting point/range °C Not available

Melting point/range °F	Not available
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C	-104.4
Flash point °F	-156
Flash point method used	estimated based on propellant
Evaporation rate	Not available
Flammability (Solid, Gas)	Not available
Lower explosion limit	0.9 %
Upper explosion limit	7.4 %
Vapor pressure	55 PSI @ 70 F
Vapor density	Not available
Relative density	0.905
Solubility	Not available
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	269.69 °C
Autoignition temperature °F	517.45 °F
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	The product is stable and not reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Avoid temperatures exceeding the flash point. Avoid contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Nitrates. Chlorine. Fluorine.
Hazardous decomposition products	None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eyes. Ingestion.

Symptoms

Direct contact with the eyes may cause temporary irritation. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia. Aspiration may cause pulmonary edema and pneumonitis.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Prolonged skin contact may cause skin irritation. Direct contact with eyes may cause temporary irritation. May be fatal if swallowed and enters airways.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Chlorinated Paraffin	-	> 21500 µL/kg Rat	>21500 µL/kg Rat
Propane	658 mg/L (Rat) 4h	-	-
N-Butane	658 g/m³ Rat	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	no data available	> 5000 mg/kg Rat >2000 mg/kg Rabbit	>5000 mg/kg Rat > 2000 mg/kg Rabbit
Octane	>24.88 mg/L Rat	= 16.8 mg/kg Rat	16.8 mg/kg Rat
N-Heptane	>73.5 mg/L Rat	= 5000 mg/kg Mouse 3000 mg/kg Rabbit	5000 mg/kg Mouse = 3000 mg/kg Rabbit
Toluene	12.5 mg/L Rat	= 2600 mg/kg Rat 12000 mg/kg Rabbit	2600 mg/kg Rat = 12000 mg/kg Rabbit
Ethyl benzene	= 17.2 mg/L (Rat) 4 h	15354 mg/kg (Rabbit)	= 3500 mg/kg (Rat)
Benzene	= 44.66 mg/L (Rat) 4 h	= 1800 mg/kg Rat = 810 mg/kg Rat >8200 mg/kg Rabbit	1800 mg/kg (Rat)

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Chlorinated Paraffin	-	Group 2B	Present	-
Propane	-	-	-	-
N-Butane	-	-	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	-	-	-	-
Octane	-	-	-	-
N-Heptane	-	-	-	-
Toluene	A4	Group 3	-	-
Ethyl benzene	A3	Group 2B	X	-
Benzene	A1	Group 1	X	Known

Canadian Province

carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Chlorinated Paraffin	-	-	-	-	-	-
Propane	-	-	-	-	-	-
N-Butane	-	-	-	-	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	-	-	-	-	-	-
Octane	-	-	-	-	-	-
N-Heptane	-	-	-	-	-	-
Toluene	-	-	ACGIH A4	ACGIH A4	ACGIH A4	-
Ethyl benzene	-	IARC 2B	ACGIH A3	-	ACGIH A3	C3 Carcinogen
Benzene	A1 - Confirmed Human Carcinogen	IARC 1 ACGIH A1	ACGIH A1	ACGIH A1	ACGIH A1	C1 carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicity Toxic to aquatic life with long lasting effects

Chemical name	Algae/aquatic plants	Fish LC50
Chlorinated Paraffin	-	94.5 - 271mg/L Oncorhynchus mykiss 96h > 0.0109mg/L Oncorhynchus mykiss 96h > 0.1mg/L Lepomis macrochirus 96h > 100mg/L Pimephales promelas 96h > 300mg/L Lepomis macrochirus 96h
Propane	-	-
N-Butane	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	-	= 2.2mg/L Lepomis macrochirus 96h = 2.4mg/L Oncorhynchus mykiss 96h = 45mg/L Pimephales promelas 96h
Octane	-	-
N-Heptane	-	= 375.0mg/L Cichlid fish 96h
Toluene	=12.5mg/L Pseudokirchneriella subcapitata 72h >433mg/L Pseudokirchneriella subcapitata 96h	11.0 - 15.0mg/L Lepomis macrochirus 96h 14.1 - 17.16mg/L Oncorhynchus mykiss 96h 15.22 - 19.05mg/L Pimephales promelas 96h 5.89 - 7.81mg/L Oncorhynchus mykiss 96h 50.87 - 70.34mg/L Poecilia reticulata 96h = 12.6mg/L Pimephales promelas 96h = 28.2mg/L Poecilia reticulata 96h = 5.8mg/L Oncorhynchus mykiss 96h = 54mg/L Oryzias latipes 96h
Ethyl benzene	=4.6mg/L Pseudokirchneriella subcapitata 72h >438mg/L Pseudokirchneriella subcapitata 96h 2.6 - 11.3mg/L Pseudokirchneriella subcapitata 72h 1.7 - 7.6mg/L Pseudokirchneriella subcapitata 96h =11mg/L Pseudokirchneriella subcapitata 72h	11.0 - 18.0mg/L Oncorhynchus mykiss 96h 7.55 - 11mg/L Pimephales promelas 96h 9.1 - 15.6mg/L Pimephales promelas 96h = 32mg/L Lepomis macrochirus 96h = 4.2mg/L Oncorhynchus mykiss 96h = 9.6mg/L Poecilia reticulata 96h
Benzene	=29mg/L Pseudokirchneriella subcapitata 72h	10.7 - 14.7mg/L Pimephales promelas 96h 22330 - 41160µg/L Pimephales promelas 96h 70000 - 142000µg/L Lepomis macrochirus 96h = 22.49mg/L Lepomis macrochirus 96h = 28.6mg/L Poecilia reticulata 96h = 5.3mg/L Oncorhynchus mykiss 96h

Persistence and degradability Not available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Chlorinated Paraffin 63449-39-8	63449-39-8	>=5.88 - <=6.82 at 18.7 °C [OECD Guideline 123] (at pH 6, ECHA_API)	-
Propane 74-98-6	74-98-6	2.3 <=2.8	-
N-Butane 106-97-8	106-97-8	2.31 at 20 °C (at pH 7, ECHA_API) <=2.8	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable) 64742-47-8	64742-47-8	-	61 - 159 dimensionless species: fish
Octane 111-65-9	111-65-9	5.18	-
N-Heptane 142-82-5	142-82-5	4.66	-
Toluene 108-88-3	108-88-3	2.73 at 20 °C (at pH 7, ECHA_API) 3.44 at 25 °C (at pH 7, ECHA_API); 3.93 at 20 °C (at pH 7, ECHA_API)	-
Ethyl benzene 100-41-4	100-41-4	3.6 at 20 °C [Directive 84/449/EEC, A.8] (at pH 7.84, ECHA_API)	15 dimensionless species: fish
Benzene 71-43-2	71-43-2	2.13 (ECHA_API)	3.5 - 4.4 dimensionless species: fish

Mobility in soil Not available.

Other adverse effects No adverse affects expected

13. DISPOSAL CONSIDERATIONS

Disposal information Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Contents under pressure. Do not puncture, incinerate, or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose in accordance with local, state and federal regulations. Dispose of in accordance with federal, state and local regulations.

Contaminated packaging Empty containers or liners may retain some product residues. This material and its containers must be disposed of in a safe way. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken for local recycling, recovery or waste disposal. Do not reuse containers.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No UN1950
Proper shipping name Aerosols, flammable
Hazard Class(es) 2.1
Marine pollutant Yes.
Special Provisions LTD QTY

TDG

ID-No UN1950
Proper shipping name Aerosols, flammable
Hazard Class(es) 2.1
Marine pollutant Yes.
Special Provisions LTD QTY

IATA

ID-No UN1950
Proper shipping name Aerosols, flammable
Hazard Class(es) 2.1
Special Provisions LTD QTY

IMDG/IMO

ID-No UN1950
Proper shipping name Aerosols
Hazard Class(es) 2.1
EmS No F-D, S-U
Marine pollutant Yes
Special Provisions LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Chlorinated Paraffin	63449-39-8	-	-	-
Propane	74-98-6	-	-	-
N-Butane	106-97-8	-	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	-	-	-
Octane	111-65-9	X	X	X
N-Heptane	142-82-5	X	X	X
Toluene	108-88-3	-	-	-
Ethyl benzene	100-41-4	-	-	-
Benzene	71-43-2	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Chlorinated Paraffin	63449-39-8	X	-	-
Propane	74-98-6	X	X	X
N-Butane	106-97-8	X	X	X
Petroleum distillates, hydrotreated light (<3%	64742-47-8	-	-	-

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
DMSO extractable)				
Octane	111-65-9	X	X	X
N-Heptane	142-82-5	X	X	X
Toluene	108-88-3	X	X	X
Ethyl benzene	100-41-4	X	X	X
Benzene	71-43-2	X	X	X

California Prop. 65

WARNING: This product contains a chemical(s) known to the state of California to cause cancer, birth defects or other reproductive harm

Chemical name	CAS-No	California Prop. 65
Chlorinated Paraffin	63449-39-8	-
Propane	74-98-6	-
N-Butane	106-97-8	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	-
Octane	111-65-9	-
N-Heptane	142-82-5	-
Toluene	108-88-3	Developmental
Ethyl benzene	100-41-4	Carcinogen
Benzene	71-43-2	Carcinogen Developmental Male Reproductive

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Chlorinated Paraffin	63449-39-8	-	-
Propane	74-98-6	-	-
N-Butane	106-97-8	-	-
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	64742-47-8	-	-
Octane	111-65-9	-	-
N-Heptane	142-82-5	-	-
Toluene	108-88-3	1000 lb 454 kg 1 lb 0.454 kg	1.0 %
Ethyl benzene	100-41-4	1000 lb 454 kg	0.1 %
Benzene	71-43-2	10 lb 4.54 kg	0.1 %

US EPA SARA 311/312 hazardous categorization

Acute Health Hazard
Fire Hazard
Sudden Release of Pressure Hazard

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Chlorinated Paraffin	X	X	X	-
Propane	X	-	X	-
N-Butane	X	-	X	X
Petroleum distillates, hydrotreated light (<3% DMSO extractable)	X	-	X	-
Octane	X	-	X	-
N-Heptane	X	X	X	-
Toluene	X	-	X	-
Ethyl benzene	X	-	X	-
Benzene	X	-	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available

HMIS

Health	Not available
Flammability	Not available
Physical hazards	Not available

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 25-Jul-2018

Revision date 25-Jul-2018

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

DRUMMOND™
A LAWSON BRAND

Safety Data Sheet

Issue date 12-Jul-2018 **Revision date** 07-Nov-2022 **Revision Number** 2

1. IDENTIFICATION

Product identification

Product identifier	Drummond™ Duty Master Open Gear Lubricant
Other means of identification	DA6250
Recommended use	Lubricant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Drummond™, A Lawson Brand
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Compressed gas

Symbol

Signal word DANGER

Hazard statements

H222 - Extremely flammable aerosol
H280 - Contains gas under pressure; may explode if heated
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H351 - Suspected of causing cancer
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements

General

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing and eye/face protection

Response

General

P321 - For Specific treatment see section 4 of this sds
P308 + P313 - IF exposed or concerned: Get medical advice/attention

Eyes

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician

Skin

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P363 - Wash contaminated clothing before reuse
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

Inhalation

P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell
P340 - Remove victim to fresh air and keep at rest in a position comfortable for breathing

Ingestion

P331 - Do NOT induce vomiting
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Fire

Not available

Spill

Not available

Storage

P405 - Store locked up
P410 - Protect from sunlight
P412 - Do not expose to temperatures exceeding 50 °C/122 °F
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Hazard(s) Not Otherwise Classified (HNOC)

None.

Physical Hazards Not

Not available.

Otherwise Classified (PHNOC)

Unknown acute toxicity .01219%.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition Mixture.

Chemical name	CAS-No	Weight %
Asphalt	8052-42-4	50-60
Hexane	110-54-3	20-30
Propane	68476-86-8	10-20
Heavy Naphthenic Petroleum Oil	64742-52-5	1-10
Molybdenum sulfide	1317-33-5	.1

The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST-AID MEASURES

Necessary first-aid measures

General Information Avoid contact with eyes, skin, and clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. Seek medical attention. If breathing has stopped, contact emergency medical services immediately.

Ingestion Seek medical attention immediately. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Risk of product entering the lungs on vomiting after ingestion.

Skin contact Wash off immediately with soap and plenty of water. Seek medical attention if irritation persists.

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical attention immediately.

Most important symptoms (acute) May cause skin irritation. May cause drowsiness or dizziness. Difficulty breathing.

Most important symptoms (over-exposure) Not available.

Indication of any immediate medical attention and special treatment needed Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Water fog. Dry chemical. Carbon dioxide (CO2). Cool containers / tanks with water spray.

Unsuitable extinguishing media Do not use a solid water stream as it may scatter and spread fire.

Specific hazards Extremely Flammable Aerosol. Container may burst in fire. Keep product and empty container away from heat and sources of ignition. Sensitivity to static discharge.

Special protective equipment for fire-fighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Use shielding to protect fire-fighters from bursting containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use with adequate ventilation to keep exposure levels below the OELS. Report spills as required by local and federal regulations.

Methods and materials for containment and cleaning up Prevent further leakage or spillage if safe to do so. Contain liquid and collect with an inert, non-combustible material.

7. HANDLING AND STORAGE

Precautions for safe handling Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin, nail, or any other sharp object into opening on top of can. Avoid skin contact. Use only with adequate ventilation. Keep container away from heat, flames, and all other sources of ignition. Keep away from all sources of electricity such as electric motors and batteries. Do not spray on hot surfaces.

Conditions for safe storage, including any incompatibilities Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. See section 10 for incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Asphalt	-	5 mg/m³ PEL (fume)	0.5 mg/m³ TWA	
Hexane	500 ppm TWA 1800 mg/m³ TWA	50 ppm PEL; 180 mg/m³ PEL 500 ppm PEL (except n-Hexane); 1800 mg/m³ PEL (except n-Hexane)	50 ppm TWA Skin	50 ppm TWA 180 mg/m³ TWA
Propane	-			
Heavy Naphthenic Petroleum Oil	5 mg/m³ TWA	5 mg/m³ PEL (particulate)	5 mg/m³ TWA	5 mg/m³ TWA
Molybdenum sulfide	15 mg/m³ TWA	10 mg/m³ PEL (total dust, as Mo)	10 mg/m³ TWA 3 mg/m³ TWA	

Appropriate engineering controls Adequate ventilation should be provided to keep exposure levels below current acceptable exposure limits. A safety shower and eye wash station should be available for emergency use.

Individual protection measures, such as personal protective equipment

Eye protection Safety glasses with side-shields.

Skin and body protection Protective gloves. Chemical resistant apron.

Respiratory protection If exposure limits are exceeded or irritation is experienced, a NIOSH/MSHA approved respirator is recommended. Positive-pressure supplied air respirators may be required for high airborne contaminant concentration. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures Wash hands before eating or using the washroom. Handle in accordance with good

industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Asphalt	5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	5 mg/m³ TWAEV	0.5 mg/m³ TWA 0.2 mg/m³ TWA
Hexane	50 ppm TWA 176 mg/m³ TWA	20 ppm TWA	50 ppm TWA	50 ppm TWA 176 mg/m³ TWA	50 ppm TWA	50 ppm TWA	50 ppm TWA	50 ppm TWA	50 ppm TWAEV 176 mg/m³ TWAEV	50 ppm TWA
Propane	-	-	-	-	-	-	-	-	-	-
Heavy Naphthenic Petroleum Oil	5 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWAEV	5 mg/m³ TWA
Molybdenum sulfide	10 mg/m³ TWA 3 mg/m³ TWA	3 mg/m³ TWA 10 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	10 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	10 mg/m³ TWAEV 3 mg/m³ TWAEV	10 mg/m³ TWA 3 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Aerosol

Color Opaque, Dark brown

Odor Solvent

Odor threshold No information available

pH No data available

Melting point/range °C No data available

Melting point/range °F No data available

Boiling point/range °C No data available

Boiling point/range °F No data available

Flash point °C -96.4

Flash point °F -141

Flash point method used based on propellant

Evaporation rate No data available

Flammability (Solid, Gas) No information available

Lower explosion limit No data available

Upper explosion limit No data available

Vapor pressure No data available

Vapor density No data available

Relative density	0.775
Solubility	Practically insoluble
Partition coefficient (n-octanol/water)	No data available
Autoignition temperature °C	No data available
Autoignition temperature °F	No data available
Decomposition temperature °C	No data available
Decomposition temperature °F	No data available
Viscosity	No data available

10. STABILITY AND REACTIVITY

Reactivity	Not available.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	None under normal conditions of use.
Conditions to avoid	Avoid extreme temperatures. Avoid direct sunlight.
Incompatible materials	Strong acids. Strong oxidizing agents.
Hazardous decomposition products	carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Dermal. Inhalation. Ingestion. Eyes.

Symptoms

Exposure to high vapor concentrations may cause nervous system effects such as headache, nausea, and dizziness. irritating to the eyes. Irritating to skin. Prolonged skin contact may defat the skin and produce dermatitis. Not acutely toxic. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Symptoms of overexposure may be headache, tiredness, nausea, and vomiting. Irritating to skin. Irritating to eyes. May cause drowsiness and dizziness. Prolonged skin contact may defat the skin and produce dermatitis. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal. Causes damage to organs through prolonged or repeated exposure. Suspected of damaging fertility or the unborn child. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. Chronic hydrocarbon abuse has been associated with irregular heart rhythms and potential cardiac arrest. May be fatal if swallowed and enters airways.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Asphalt	>94.4 mg/m^3 Rat	> 5000 mg/kg Rat >2000 mg/kg Rabbit	>5000 mg/kg Rat > 2000 mg/kg Rabbit
Hexane	48000 ppm (Rat) 4 h	3000 mg/kg (Rabbit)	15000 mg/kg (Rat)

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Propane	-	-	-
Heavy Naphthenic Petroleum Oil	2062 ppm Rat	> 5000 mg/kg Rat > 24 g/kg Rat >5000 mg/kg Rabbit	>5000 mg/kg Rat >24 g/kg Rat > 5000 mg/kg Rabbit
Molybdenum sulfide	>2820 mg/m³ Rat	-	-

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Asphalt	A4	Group 2B	Present	-
Hexane	-	-	-	-
Propane	-	-	-	-
Heavy Naphthenic Petroleum Oil	A4 A2	Group 1	Present	Known carcinogen
Molybdenum sulfide	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Asphalt	-	IARC 2A IARC 2B	ACGIH A4	ACGIH A4	ACGIH A4	-
Hexane	-	-	-	-	-	-
Propane	-	-	-	-	-	-
Heavy Naphthenic Petroleum Oil	-	IARC 1	ACGIH A2 ACGIH A4	-	ACGIH A2 ACGIH A4	-
Molybdenum sulfide	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity Toxic to aquatic life with long lasting effects

Chemical name	Algae/aquatic plants	Fish LC50
Asphalt	-	-
Hexane	-	2.1 - 2.98mg/L Pimephales promelas 96h
Propane	-	-
Heavy Naphthenic Petroleum Oil	-	> 5000mg/L Oncorhynchus mykiss 96h
Molybdenum sulfide	-	-

Persistence and degradability No data available.

Bioaccumulation No information available

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Asphalt 8052-42-4	8052-42-4	>6	no bioaccumulation expected
Hexane 110-54-3	110-54-3	4 at 20 °C (at pH 7, ECHA_API) 3.44 at 25 °C (at pH 7, ECHA_API); 3.93 at 20 °C (at pH 7, ECHA_API)	-
Propane 68476-86-8	68476-86-8	<=2.8	-
Heavy Naphthenic Petroleum Oil 64742-52-5	64742-52-5	-	-
Molybdenum sulfide 1317-33-5	1317-33-5	-	-

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations.

Contaminated packaging Do not reuse containers. Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Subsidiary Risk	
Packing group	
Special Provisions	LTD QTY

TDG

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Packing group	
Special Provisions	LTD QTY

IATA

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Packing group	
Special Provisions	LTD QTY

IMDG/IMO

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Packing group	
EmS No	F-D, S-U
Special Provisions	LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Asphalt	8052-42-4	-	-	-
Hexane	110-54-3	X	X	X X
Propane	68476-86-8	-	-	-
Heavy Naphthenic Petroleum Oil	64742-52-5	-	-	-
Molybdenum sulfide	1317-33-5	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations See information below

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Asphalt	8052-42-4	X	X	X
Hexane	110-54-3	X	X	X
Propane	68476-86-8	-	-	-
Heavy Naphthenic Petroleum Oil	64742-52-5	X	X	X
Molybdenum sulfide	1317-33-5	X	-	-

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Asphalt	8052-42-4	-
Hexane	110-54-3	Male Reproductive
Propane	68476-86-8	-
Heavy Naphthenic Petroleum Oil	64742-52-5	-
Molybdenum sulfide	1317-33-5	-

U.S. Federal Regulations

US EPA SARA 313 See information below

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Asphalt	8052-42-4	-	0.1 %
Hexane	110-54-3	5000 lb 2270 kg	1.0 %
Propane	68476-86-8	-	-
Heavy Naphthenic Petroleum Oil	64742-52-5	-	-
Molybdenum sulfide	1317-33-5	-	-

US EPA SARA 311/312 hazardous categorization

Acute Health Hazard
Chronic Health Hazard
Sudden Release of Pressure Hazard
Fire Hazard

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Asphalt	X	-	X	-
Hexane	X	X	X	-
Propane	X	-	X	-
Heavy Naphthenic Petroleum Oil	X	-	X	-
Molybdenum sulfide	X	-	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	2
Flammability	4
Instability	0

HMIS

Health	2
Flammability	4
Physical hazards	1
Personal protection	B

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 12-Jul-2018

Revision date 07-Nov-2022

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

SAFETY DATA SHEET

No. 100/105/107/110/115

Section 1. Identification

GHS product identifier : No. 100/105/107/110/115

Other means of identification : Not available.

Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Petroleum lubricating grease

Area of application : Industrial applications.

Supplier/Manufacturer : LUBRIPLATE® Lubricants Co.
129 Lockwood St.
Newark, NJ 07105
Telephone no.: 1-973-589-9150

e-mail address of person responsible for this SDS : SDS@lubriplate.com

Emergency telephone number (with hours of operation) : CHEM-TEL 1-800-255-3924 (24 hour)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN SENSITIZATION - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 28.1%

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : May cause an allergic skin reaction.

Precautionary statements

Prevention : Wear protective gloves. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace.

Response : IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Storage : Not applicable.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : Defatting to the skin.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

CAS number/other identifiers

CAS number : Not applicable.

Product code : Not available.

Ingredient name	Other names	%	CAS number
Distillates (petroleum), hydrotreated heavy naphthenic	Distillates (petroleum), hydrotreated heavy naphthenic	60-100	64742-52-5
zinc oxide	zinc oxide	5-10	1314-13-2
zinc bis(dibutyldithiocarbamate)	zinc bis (dibutyldithiocarbamate)	0.1-1	136-23-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Section 4. First aid measures

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides
sulfur oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy naphthenic	**ACGIH TLV (United States, 4/2014).** TWA: 5 mg/m³ 8 hours. Form: Inhalable fraction **NIOSH REL (United States, 10/2013).** TWA: 5 mg/m³ 10 hours. Form: Mist STEL: 10 mg/m³ 15 minutes. Form: Mist **OSHA PEL (United States, 2/2013).** TWA: 5 mg/m³ 8 hours.
zinc oxide	**NIOSH REL (United States, 10/2013).** CEIL: 15 mg/m³ Form: Dust TWA: 5 mg/m³ 10 hours. Form: Dust and fumes STEL: 10 mg/m³ 15 minutes. Form: Fume **OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. Form: Fume STEL: 10 mg/m³ 15 minutes. Form: Fume

Section 8. Exposure controls/personal protection

	TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 2/2013).** TWA: 5 mg/m³ 8 hours. Form: Fume TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **ACGIH TLV (United States, 4/2014).** TWA: 2 mg/m³ 8 hours. Form: Respirable fraction STEL: 10 mg/m³ 15 minutes. Form: Respirable fraction

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Solid. [grease]

Color : Off-white.

Odor : Mineral oil.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : >288°C (>550.4°F)

Flash point : Open cup: 182°C (359.6°F) [Cleveland.]

Evaporation rate : <0.01 (butyl acetate = 1)

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Lower: 0.9%
Upper: 7%

Vapor pressure : Not available.

Vapor density : Not available.

Relative density : 0.89 to 0.93 [Water = 1]

Solubility : Insoluble in the following materials: cold water and hot water.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Kinematic (40°C (104°F)): 0.58 cm^2/s (58 cSt)

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : Keep away from heat, sparks and flame. Keep away from all sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.
Chlorine

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Distillates (petroleum), hydrotreated heavy naphthenic	LD50 Oral	Rat	>5000 mg/kg	-
zinc bis (dibutyldithiocarbamate)	LD50 Oral	Rat	>5000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Distillates (petroleum), hydrotreated heavy naphthenic	Skin - Severe irritant	Rabbit	-	500 milligrams	-
zinc oxide	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
zinc bis (dibutyldithiocarbamate)	Eyes - Mild irritant	Rabbit	-	39 milligrams	-
	Skin - Mild irritant	Rabbit	-	0.5 Grams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Conclusion/Summary : The mineral oils in the product contain < 3% DMSO extract (IP 346).

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
zinc bis(dibutyldithiocarbamate)	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Name	Result
Distillates (petroleum), hydrotreated heavy naphthenic	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Section 11. Toxicological information

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
zinc oxide	Acute EC50 0.042 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute LC50 98 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1.1 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 0.017 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours

Section 12. Ecological information

zinc bis (dibutyldithiocarbamate)	Acute EC50 0.74 mg/l Acute LC50 520 mg/l	Daphnia - Daphnia magna Fish - Oncorhynchus mykiss	48 hours 96 hours

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
zinc oxide	-	60960	high

Mobility in soil

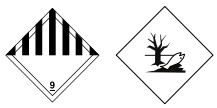
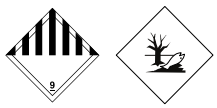
Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	UN3077	UN3077
UN proper shipping name	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (zinc oxide). Marine pollutant (zinc oxide)	Environmentally hazardous substance, solid, n.o.s. (zinc oxide)
Transport hazard class(es)	-	9 	9 
Packing group	-	III	III
Environmental hazards	No.	Yes.	Yes.

Section 14. Transport information

Additional information	-	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-A, S-F **Special provisions** 274, 335, 966, 967	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Passenger and Cargo Aircraft** Quantity limitation: 400 kg Packaging instructions: 956 **Cargo Aircraft Only**Quantity limitation: 400 kg Packaging instructions: 956 **Limited Quantities - Passenger Aircraft**Quantity limitation: 30 kg Packaging instructions: Y956 **Special provisions** A97, A158, A179

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
Clean Water Act (CWA) 307: zinc oxide; zinc bis(dibutyldithiocarbamate)
Clean Water Act (CWA) 311: sodium hydroxide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Distillates (petroleum), hydrotreated heavy naphthenic	60-100	No.	No.	No.	Yes.	No.
zinc oxide	5-10	No.	No.	No.	Yes.	No.
zinc bis(dibutyldithiocarbamate)	0.1-1	Yes.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	zinc oxide	1314-13-2	5-10
Supplier notification	zinc oxide	1314-13-2	5-10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: ZINC OXIDE FUME

New York : None of the components are listed.

New Jersey : The following components are listed: MINERAL OIL (HIGHLY REFINED); OIL MIST, MINERAL; ZINC OXIDE

Pennsylvania : The following components are listed: ZINC OXIDE (ZNO)

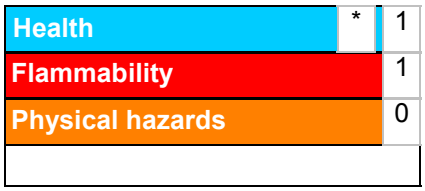
California Prop. 65

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
crystalline silica non-respirable	Yes.	No.	No.	No.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Section 16. Other information

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision	:	01/22/2015
Date of previous issue	:	No previous validation
Version	:	1
Prepared by	:	IHS
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	:	HCS (U.S.A.)- Hazard Communication Standard International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Safety Data Sheet

Issue date 11-Jul-2018 **Revision date** 20-Apr-2023 **Revision Number** 4

1. IDENTIFICATION

Product identification

Product identifier	Lawson Lubri-Temp Multipurpose Anti Seize
Other means of identification	19921
Recommended use	Lubricant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

Methylene Chloride notification No Information Available

2. HAZARD(S) IDENTIFICATION

Hazard Classification

While this material is not classified as hazardous under OSHA, GHS or WHMIS 2015 regulations, this SDS contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

Symbol

Signal word Not applicable

Hazard statements Not applicable

Precautionary statements

General

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention Not applicable

Response

General P321 - For Specific treatment see section 4 of this sds

Skin Not applicable

Storage Not applicable

Disposal P501 -Dispose of contents and container in accordance with local, regional, and federal regulations.

Hazard(s) Not Otherwise Classified (HNOC) None known.

Physical Hazards Not Otherwise Classified (PHNOC) None known.

Unknown acute toxicity 0%.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition Mixture.

Chemical name	CAS-No	Weight %
Graphite	7782-42-5	1-10
Aluminum	7429-90-5	1-10
Lead	7439-92-1	0.1-1

*chemical name, CAS number and/or exact concentration have been withheld as a trade secret.

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Avoid breathing oil mist. If breathing is difficult, give oxygen. If not breathing, administer artificial respiration by trained personnel. Immediate medical attention is required.

Ingestion Rinse mouth with water. Do not induce vomiting without medical advice. Seek medical attention if irritation persists.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. If skin irritation or rash occurs, get medical advice/attention.

Eye contact Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.

Most important symptoms (acute) Skin irritation. Direct contact with the eyes may cause temporary irritation. eye pain, redness, and watering. Inhalation may cause respiratory tract and mucous membrane irritation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Most important symptoms (over-exposure) None known.

Indication of any immediate medical attention and There is no specific treatment regimen. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

special treatment needed

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical. Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media

Water stream may spread fire.

Specific hazards

Heated vapors may be ignited by flames or sparks. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined.

Special protective equipment for fire-fighters

Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Water may be used to cool closed containers to prevent pressure build-up and/or explosion when exposed to extreme heat.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protection recommended in Section 8.

Methods and materials for containment and cleaning up

Wipe up with absorbent material (e.g. cloth, fleece). Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations. Do not reuse containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Store and use away from heat, sparks, open flame or any other ignition source. Keep container tightly closed and sealed until ready for use.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, and well-ventilated place. Keep container closed when not in use. Keep out of reach of children. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Graphite	15 mg/m³ TWA 5 mg/m³ TWA	2.5 mg/m³ PEL (natural, respirable dust); 10 mg/m³ PEL (synthetic total dust); 5 mg/m³ PEL (synthetic respirable fraction)	2 mg/m³ TWA	2.5 mg/m³ TWA
Aluminum	15 mg/m³ TWA 5 mg/m³ TWA	10 mg/m³ PEL (total dust); 5 mg/m³ PEL (respirable fraction) 5 mg/m³ PEL	1 mg/m³ TWA	10 mg/m³ TWA 5 mg/m³ TWA 5 mg/m³ TWA 5 mg/m³ TWA
Lead	: 50 µg/m³ TWA : 50 µg/m³ TWA (as Pb)	0.05 mg/m³ PEL (dust and fume)	0.05 mg/m³ TWA	0.050 mg/m³ TWA

Appropriate engineering controls

Ensure adequate ventilation. A safety shower and eye wash station should be available for emergency use.

Individual protection measures, such as personal protective equipment

Eye protection	Wear safety glasses.
Skin and body protection	Wear appropriate chemical resistant gloves. For prolonged or repeated skin contact, use a chemically resistant glove such as nitrile or neoprene. Wash hands with soap and water after removing gloves. Dry hands thoroughly before re-applying gloves.
Respiratory protection	None necessary under normal conditions.
Hygiene measures	Wash hands with soap and water before eating, drinking, smoking, or using toilet facilities.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Graphite	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWAEV	2 mg/m³ TWA
Aluminum	10 mg/m³ TWA 5 mg/m³ TWA	1.0 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWA 5 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWAEV 5 mg/m³ TWAEV 5 mg/m³ TWAEV	10 mg/m³ TWA 5 mg/m³ TWA
Lead	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWA 0.05 mg/m³ TWA	0.05 mg/m³ TWA	0.05 mg/m³ TWAEV	0.05 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Paste
Color	Light grey
Odor	Bland odor
Odor threshold	Not available
pH	Not applicable
Melting point/range °C	Not available
Melting point/range °F	Not available
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C / °F	Not available
Evaporation rate	<1
Flammability (Solid, Gas)	This product is not flammable
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	0.93

Solubility	0%
Partition coefficient (n-octanol/water)	Not applicable
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	None known.
Chemical stability	Stable.
Possibility of hazardous reactions	None known.
Conditions to avoid	Avoid heat, sparks, and other sources of ignition.
Incompatible materials	None known.
Hazardous decomposition products	None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Dermal. Ingestion. Eyes.
Symptoms	Repeated or prolonged exposure may cause irritation to eyes and skin. eye pain, redness, and watering. Ingestion may cause gastrointestinal irritation. If swallowed, nausea, vomiting, and diarrhea may result. Breathing of mist may cause irritation to the respiratory tract and headache. Causes eye and skin irritation.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	None known.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Graphite	>2000 mg/m³ Rat	> 10000 mg/kg Rat	>10000 mg/kg Rat
Aluminum	>0.888 mg/L Rat	-	-
Lead	-	-	-

ATEmix (dermal)	Not available
ATEmix (oral)	Not available
ATEmix (inhalation-gas)	Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Graphite	-	-	-	-
Aluminum	A4	-	-	-
Lead	A3	Group 2A	X	Reasonably Anticipated

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Graphite	-	-	-	-	-	-
Aluminum	-	-	ACGIH A4	-	ACGIH A4	-
Lead	-	IARC 2B	ACGIH A3	ACGIH A3	ACGIH A3	C3 Carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Graphite	-	> 100mg/L Danio rerio 96h
Aluminum	-	-
Lead	-	= 0.44mg/L Cyprinus carpio 96h = 1.17mg/L Oncorhynchus mykiss 96h = 1.32mg/L Oncorhynchus mykiss 96h

Persistence and degradability Not readily biodegradable.

Bioaccumulation Bioaccumulative potential

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Graphite 7782-42-5	7782-42-5	-	-
Aluminum 7429-90-5	7429-90-5	-	-
Lead 7439-92-1	7439-92-1	-	-

Mobility in soil This product is not mobile in the soil.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of in accordance with federal, state and local regulations.

Contaminated packaging Dispose in accordance with local, state and federal regulations. Please recycle empty container whenever possible. Do not reuse containers.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT
- **ID-No** Not Regulated
- **Subsidiary Risk**
- **Packing group**

TDG
- **ID-No** Not Regulated
- **Packing group**

IATA
- **ID-No** Not Regulated
- **Subsidiary Risk**
- **Packing group**

IMDG/IMO
- **ID-No** Not Regulated
- **Packing group**

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Graphite	7782-42-5	-	-	-
Aluminum	7429-90-5	-	-	-
Lead	7439-92-1	-	-	-

Special Precautions Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Graphite	7782-42-5	X	X	X
Aluminum	7429-90-5	X	X	X
Lead	7439-92-1	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Graphite	7782-42-5	-
Aluminum	7429-90-5	-
Lead	7439-92-1	Carcinogen Developmental Female Reproductive Male Reproductive

California Proposition 65 WARNING: This product contains a chemical(s) known to the state of California to cause cancer, birth defects or other reproductive harm

U.S. Federal Regulations

RCRA - D Series Wastes Waste likely considered hazardous under RCRA, however, product should be fully characterized prior to disposal (40CFR 261).

Methylene Chloride notification No Information Available

US EPA SARA 313 This product contains no listed chemicals subject to reporting

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Graphite	7782-42-5	-	-
Aluminum	7429-90-5	-	1.0 %
Lead	7439-92-1	10 lb 4.54 kg	0.1 %

US EPA SARA 311/312 hazardous categorization Not applicable

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Graphite	X	-	X	-
Aluminum	X	-	X	-
Lead	X	X	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health 1
Flammability 1
Instability 0
Specific hazard None

HMIS

Health 1
Flammability 1
Physical hazards 0

Personal protection	A

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by	Regulatory Affairs
Issue date	11-Jul-2018
Revision date	20-Apr-2023
Revision note	

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

Safety Data Sheet

Issue date 02-Aug-2018 **Revision date** 07-Nov-2022 **Revision Number** 3

1. IDENTIFICATION

Product identification

Product identifier	Lawson Kwikut Metal Cutting Lubricant
Other means of identification	82288
Recommended use	Lubricant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin corrosion/irritation	Category 2
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Compressed gas

Symbol

Signal word DANGER

Hazard statements
H222 - Extremely flammable aerosol
H280 - Contains gas under pressure; may explode if heated

H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H373 - May cause damage to organs through prolonged or repeated exposure
H361 - Suspected of damaging fertility or the unborn child

Precautionary statements

General

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing and eye/face protection
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251 - Pressurized container: Do not pierce or burn, even after use
P211 - Do not spray on an open flame or other ignition source
P271 - Use only outdoors or in a well-ventilated area
P260 - Do not breathe dusts or mists
P264 - Wash hands thoroughly after handling

Response

General

P314 - Get medical advice/attention if you feel unwell.
P308 + P313 - IF exposed or concerned: Get medical advice/attention

Skin

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P362 - Take off contaminated clothing and wash before reuse
P332 + P313 - If skin irritation occurs: Get medical advice/attention

Inhalation

P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell

Ingestion

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting

Storage

P405 - Store locked up
P410 - Protect from sunlight
P412 - Do not expose to temperatures exceeding 50 °C/122 °F
P403 - Store in a well-ventilated place

Disposal

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)

None known.

Physical Hazards Not Otherwise Classified (PHNOC)

None known.

Unknown acute toxicity

Unknown Toxicity: 50% Inhalation, 50% Dermal, 70% Oral.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition

Mixture.

Chemical name	CAS-No	Weight %
Heptane	426260-76-6	40
Heptanes	142-82-5	18
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	13.8
Heavy Paraffinic Oil	64742-65-0	13.5
Propane	74-98-6	10
Toluene	108-88-3	2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or environment and hence require reporting in this section

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Ingestion

Get medical attention immediately. Call a POISON CENTER or doctor. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Eye contact

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Most important symptoms (acute)

Causes serious eye irritation. Can cause Central Nervous System depression. May cause lasting adverse effects on aquatic organisms. Causes skin irritation. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Most important symptoms (over-exposure)

Adverse symptoms may include the following:. eye pain, redness, and watering. Respiratory tract irritation. Coughing. Nausea or vomiting. Headache. Drowsiness/fatigue. Dizziness/vertigo. Unconsciousness. Skin irritation. Redness. Reduced fetal weight. Increased fetal deaths. Skeletal malformations.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. No action shall be taken involving any personal risk or without suitable training. If it is suspected that vapors or fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. See section 11 for toxicological information.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media	None known.
Specific hazards	Extremely Flammable Aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may cause fire or explosion hazard. Fire water contained with this material must be contained and prevented from being discharged to any waterway, sewer, or drain. Hazardous Thermal Decomposition Products:. Carbon dioxide. Carbon monoxide.
Special protective equipment for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if you can do it without risk. Use water spray to keep fire-exposed containers cool. Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering the area. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in the hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information for 'non-emergency personnel'. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods and materials for containment and cleaning up	Small Spill: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor. Large Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry in sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Use spark-proof tools and explosion proof equipment. See section 1 for emergency contact information and section 13 for disposal information.

7. HANDLING AND STORAGE

Precautions for safe handling	Put on appropriate personal protective equipment (see section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid contact during pregnancy/while nursing. Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Do not take internally. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking, and smoking.

Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store away from direct sunlight in dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all sources of ignition. Use appropriate containment to avoid environmental contamination. See section 10 for incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Heptane	-			
Heptanes	500 ppm TWA 2000 mg/m³ TWA	400 ppm PEL; 1600 mg/m³ PEL	400 ppm TWA	85 ppm TWA 350 mg/m³ TWA
Petroleum distillates, hydrotreated heavy naphthenic	5 mg/m³ TWA	5 mg/m³ PEL (particulate)	5 mg/m³ TWA	5 mg/m³ TWA
Heavy Paraffinic Oil	5 mg/m³ TWA	5 mg/m³ PEL (particulate)	5 mg/m³ TWA	5 mg/m³ TWA
Propane	1000 ppm TWA 1800 mg/m³ TWA	1000 ppm PEL; 1800 mg/m³ PEL		1000 ppm TWA 1800 mg/m³ TWA 1000 ppm TWA 1800 mg/m³ TWA
Toluene	200 ppm TWA	10 ppm PEL; 37 mg/m³ PEL	20 ppm TWA	100 ppm TWA 375 mg/m³ TWA

Appropriate engineering controls

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures, such as personal protective equipment

Eye protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin and body protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use the the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use a properly fitted, air-purifying (Organic vapor) or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection

must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Heptane	-	-	-	-	-	-	-	-	-	-
Heptanes	400 ppm TWA 1640 mg/m³ TWA	400 ppm TWA	400 ppm TWA	400 ppm TWA 1640 mg/m³ TWA	400 ppm TWA 400 ppm TWA	400 ppm TWA	400 ppm TWA	400 ppm TWA 400 ppm TWA	400 ppm TWAEV	400 ppm TWA
Petroleum distillates, hydrotreated heavy naphthenic	5 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWAEV	5 mg/m³ TWA
Heavy Paraffinic Oil	5 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWAEV	5 mg/m³ TWA
Propane	1000 ppm TWA 1640 mg/m³ TWA	1000 ppm TWA	-	1000 ppm TWA 1640 mg/m³ TWA	-	-	-	-	1000 ppm TWAEV 1800 mg/m³ TWAEV 1000 ppm TWAEV 1640 mg/m³ TWAEV	1000 ppm TWA 1000 ppm TWA 1000 ppm TWA
Toluene	50 ppm TWA 188 mg/m³ TWA	20 ppm TWA	20 ppm TWA	50 ppm TWA 188 mg/m³ TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	20 ppm TWA	50 ppm TWAEV 188 mg/m³ TWAEV	50 ppm TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Liquid

Odor Not available

Odor threshold Not available

pH Not available

Melting point/range °C Not available

Melting point/range °F Not available

Boiling point/range °C Not available

Boiling point/range °F Not available

Flash point °C -29

Flash point °F -20.2

Flash point method used Pensky-Martens C.C.

Evaporation rate 2 (Butyl Acetate = 1)

Flammability (Solid, Gas)	Not available
Lower explosion limit	1.0 %
Upper explosion limit	9.5 %
Vapor pressure	13.5 kPa (101.325mm Hg) [at 20°C]
Vapor density	1.55(Air=1)
Relative density	0.71
Solubility	Not available
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Kinematic (room temperature): <0.07 cm²/s (<7 cSt) Kinematic (40°C (104°F)): <0.07cm²/s (<7 cSt)

10. STABILITY AND REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	Stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid heat, sparks, and other sources of ignition.
Incompatible materials	No specific data.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Dermal. Inhalation. Ingestion. Eyes.
Symptoms	Causes serious eye irritation. Can cause Central Nervous System depression. May cause dizziness and drowsiness. May cause respiratory irritation. Causes skin irritation. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach. Adverse symptoms may include the following:. eye pain, redness, and watering. May cause irritation of respiratory tract. Coughing. Nausea. Vomiting. Headache. Drowsiness. Dizziness/vertigo. Unconsciousness. Fatigue. Skin irritation. Redness. Reduced fetal weight. Increased fetal deaths. Skeletal malformations.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	May cause damage to organs through prolonged or repeated exposure. Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Heptane	-	-	-
Heptanes	>73.5 mg/L Rat	= 5000 mg/kg Mouse 3000 mg/kg Rabbit	5000 mg/kg Mouse = 3000 mg/kg Rabbit
Petroleum distillates, hydrotreated heavy naphthenic	2062 ppm Rat	> 5000 mg/kg Rat = 22 g/kg Mouse > 24 g/kg Rat >2000 mg/kg Rabbit	>5000 mg/kg Rat >24 g/kg Rat > 2000 mg/kg Rabbit
Heavy Paraffinic Oil	>2400 mg/m^3 Rat 2062 ppm Rat	> 15000 mg/kg Rat > 24 g/kg Rat >5000 mg/kg Rabbit	>15000 mg/kg Rat >24 g/kg Rat > 5000 mg/kg Rabbit
Propane	658 mg/L (Rat) 4h	-	-
Toluene	12.5 mg/L/4h (Rat)	8390 mg/kg (Rabbit)	636 mg/kg (Rat)

ATEmix (dermal) Not available

ATEmix (oral) 15476 mg/kg

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Heptane	-	-	-	-
Heptanes	-	-	-	-
Petroleum distillates, hydrotreated heavy naphthenic	A4 A2	Group 1	Present	Known carcinogen
Heavy Paraffinic Oil	A4 A2	Group 1	Present	Known carcinogen
Propane	-	-	-	-
Toluene	A4	Group 3	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Heptane	-	-	-	-	-	-
Heptanes	-	-	-	-	-	-
Petroleum distillates, hydrotreated heavy naphthenic	-	IARC 1	ACGIH A2 ACGIH A4	-	ACGIH A2 ACGIH A4	-
Heavy Paraffinic Oil	-	IARC 1	ACGIH A2 ACGIH A4	-	ACGIH A2 ACGIH A4	-
Propane	-	-	-	-	-	-
Toluene	-	-	ACGIH A4	ACGIH A4	ACGIH A4	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Heptane	-	-
Heptanes	-	= 375.0mg/L Cichlid fish 96h
Petroleum distillates, hydrotreated heavy naphthenic	-	> 5000mg/L Oncorhynchus mykiss 96h
Heavy Paraffinic Oil	-	> 5000mg/L Oncorhynchus mykiss 96h
Propane	-	-
Toluene	=12.5mg/L Pseudokirchneriella subcapitata 72h >433mg/L Pseudokirchneriella subcapitata 96h	11.0 - 15.0mg/L Lepomis macrochirus 96h 14.1 - 17.16mg/L Oncorhynchus mykiss 96h 15.22 - 19.05mg/L Pimephales promelas 96h 5.89 - 7.81mg/L Oncorhynchus mykiss 96h 50.87 - 70.34mg/L Poecilia reticulata 96h = 12.6mg/L Pimephales promelas 96h = 28.2mg/L Poecilia reticulata 96h = 5.8mg/L Oncorhynchus mykiss 96h = 54mg/L Oryzias latipes 96h

Persistence and degradability Not available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Heptane 426260-76-6	426260-76-6	-	-
Heptanes 142-82-5	142-82-5	4.66	-
Petroleum distillates, hydrotreated heavy naphthenic 64742-52-5	64742-52-5	-	-
Heavy Paraffinic Oil 64742-65-0	64742-65-0	-	-
Propane 74-98-6	74-98-6	2.3 <=2.8	-
Toluene 108-88-3	108-88-3	2.73 at 20 °C (at pH 7, ECHA_API) 3.44 at 25 °C (at pH 7, ECHA_API); 3.93 at 20 °C (at pH 7, ECHA_API)	-

Mobility in soil Not available.

Other adverse effects No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Disposal information The generation of waste should be avoided or minimized whenever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully

compliant with the requirements of all authorities with jurisdiction.

Contaminated packaging

Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its containers must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Subsidiary Risk	
Packing group	
Special Provisions	LTD QTY

TDG

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Packing group	
Special Provisions	LTD QTY

IATA

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Subsidiary Risk	
Packing group	
Special Provisions	LTD QTY

IMDG/IMO

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Packing group	
EmS No	F-D, S-U
Special Provisions	LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Heptane	426260-76-6	-	-	-
Heptanes	142-82-5	X	X	X
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	-	-	-
Heavy Paraffinic Oil	64742-65-0	-	-	-
Propane	74-98-6	-	-	-
Toluene	108-88-3	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency

situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Heptane	426260-76-6	-	-	-
Heptanes	142-82-5	X	X	X
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	X	X	X
Heavy Paraffinic Oil	64742-65-0	X	X	X
Propane	74-98-6	X	X	X
Toluene	108-88-3	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Heptane	426260-76-6	-
Heptanes	142-82-5	-
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	-
Heavy Paraffinic Oil	64742-65-0	-
Propane	74-98-6	-
Toluene	108-88-3	Developmental

California Proposition 65 — WARNING: This product contains a chemical(s) known to the state of California to cause cancer, birth defects or other reproductive harm

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Heptane	426260-76-6	-	-
Heptanes	142-82-5	-	-
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	-	-
Heavy Paraffinic Oil	64742-65-0	-	-
Propane	74-98-6	-	-
Toluene	108-88-3	1000 lb 454 kg 1 lb 0.454 kg	1.0 %

US EPA SARA 311/312 hazardous categorization — Not available

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Heptane	X	-	X	-
Heptanes	X	X	X	-
Petroleum distillates, hydrotreated heavy naphthenic	X	-	X	-
Heavy Paraffinic Oil	X	-	X	-
Propane	X	-	X	-
Toluene	X	-	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available

HMIS

Health	3 *
Flammability	4
Physical hazards	3
Personal protection	To be determined by customer.

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

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Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the

company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

SAFETY DATA SHEET

1. Identification

Product identifier **LPS® 1 (Aerosol)**

Other means of identification

Part Number 00116

Recommended use An industrial lubricant designed to displace moisture from mechanical and electrical equipment, provide light-duty lubrication and short-term rust prevention.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Manufacturer

Company name ITW Pro Brands

Address 4647 Hugh Howell Rd.
Tucker, GA 30084

Country (U.S.A.)

Tel: +1 770-243-8800

In Case of Emergency 1-800-424-9300 (inside U.S.)
+001 703-527-3887 (outside U.S.)

Website www.lpslabs.com

E-mail lpssds@itwprobrands.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Compressed gas
Health hazards	Skin corrosion/irritation	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Causes skin irritation. May cause drowsiness or dizziness.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Avoid breathing gas. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves.

Response If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Distillates Petroleum Hydrotreated Light		64742-47-8	70 - 80
Distillates Petroleum Hydrotreated Med		64742-46-7	10 - 20
Carbon Dioxide		124-38-9	1 - 5
Sorbitan trioleate		26266-58-0	1 - 3
Calcium Sulfonate		61789-86-4	0.1 - 1

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion In the unlikely event of swallowing contact a physician or poison control center. Rinse mouth. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed May cause drowsiness and dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media Alcohol resistant foam. Water spray. Water fog. Dry chemical powder. Dry chemicals. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Contents under pressure. Pressurized container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Fire fighting equipment/instructions In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also consider initial evacuation for 800 meters (1/2 mile) in all directions. ALWAYS stay away from tanks engulfed in flame. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out. In the event of fire and/or explosion do not breathe fumes.

General fire hazards Extremely flammable aerosol. Contents under pressure. Pressurized container may explode when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Avoid breathing gas. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. Use personal protection recommended in Section 8 of the SDS.

Methods and materials for containment and cleaning up

Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Use water spray to reduce vapors or divert vapor cloud drift. Isolate area until gas has dispersed. Dike far ahead of spill for later disposal. Scoop up used absorbent into drums or other appropriate container. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Do not re-use empty containers. Avoid breathing gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in original tightly closed container. Store in a well-ventilated place. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Distillates Petroleum Hydrotreated Light (CAS 64742-47-8)	PEL	5 mg/m3	Oil mist

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3 5000 ppm

ACGIH

Components	Type	Value	Form
Distillates Petroleum Hydrotreated Light (CAS 64742-47-8)	TWA	5 mg/m3	Oil mist

US. ACGIH Threshold Limit Values

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3 30000 ppm
	TWA	9000 mg/m3 5000 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection	
Hand protection	Chemical resistant gloves are recommended.
Other	Avoid contact with the skin. Wear appropriate chemical resistant clothing.
Respiratory protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
Thermal hazards	Not applicable.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Gas.
Form	Aerosol.
Color	Amber.
Odor	Characteristic.
Odor threshold	Not available.
pH	Not applicable
Melting point/freezing point	< -58 °F (< -50 °C)
Initial boiling point and boiling range	415.4 °F (213 °C)
Flash point	174.2 °F (79.0 °C) Tag Closed Cup (dispensed liquid)
Evaporation rate	< 0.1 (BuAc = 1)
Flammability (solid, gas)	Flammable gas.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.6 %
Flammability limit - upper (%)	7 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 0.05 mm Hg @ 20°C
Vapor density	> 1 (air = 1)
Relative density	0.79 - 0.81 @ 20°C
Solubility(ies)	
Solubility (water)	Not soluble
Partition coefficient (n-octanol/water)	< 1
Auto-ignition temperature	> 442.4 °F (> 228 °C)
Decomposition temperature	Not established
Viscosity	< 3.8 cSt @ 25°C
Other information	
Heat of combustion	Not established
Percent volatile	95 - 96 %
VOC	0.4 % per US State & Federal Consumer Product Regulations

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.

Incompatible materials	Oxidizing agents.
Hazardous decomposition products	Carbon oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	May be fatal if swallowed and enters airways.
Symptoms related to the physical, chemical and toxicological characteristics	Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. Exposure may cause temporary irritation, redness, or discomfort. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Decrease in motor functions. Behavioral changes.

Information on toxicological effects

Acute toxicity Narcotic effects.

Components	Species	Test Results
Calcium Sulfonate (CAS 61789-86-4)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
Distillates Petroleum Hydrotreated Light (CAS 64742-47-8)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
Vapor		
LC50	Rat	> 4.5 mg/l, 4 Hours
Distillates Petroleum Hydrotreated Med (CAS 64742-46-7)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Narcotic effects.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not likely, due to the form of the product.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

Components		Species	Test Results
Distillates Petroleum Hydrotreated Light (CAS 64742-47-8)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.9 mg/l, 96 hours

Persistence and degradability Not inherently biodegradable.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)
LPS® 1 (Aerosol) < 1

Mobility in soil No data available.

Other adverse effects None known.

13. Disposal considerations

Disposal instructions Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D003: Waste Reactive material

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

14. Transport information

DOT

UN number UN1950
UN proper shipping name Aerosols, flammable
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Label(s) 2.1
Packing group Not available.
Environmental hazards
Marine pollutant No
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions N82
Packaging exceptions 306
Packaging non bulk None
Packaging bulk None

IATA

UN number UN1950
UN proper shipping name Aerosols, flammable
Transport hazard class(es)
Class 2.1
Subsidiary risk -
Packing group Not available.
Environmental hazards No
ERG Code 10L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Other information
Passenger and cargo aircraft Allowed with restrictions.
Cargo aircraft only Allowed with restrictions.

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS, Flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not available.
Environmental hazards	
Marine pollutant	No
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not available.

DOT

IATA; IMDG

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Distillates Petroleum Hydrotreated Med (CAS 64742-46-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 11-01-2016

Revision date 08-24-2017

Version # 02

Disclaimer ITW Pro Brands cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Hazard(s) identification: Hazard statement
Hazard(s) identification: Prevention
Hazard(s) identification: Response
First-aid measures: Skin contact
First-aid measures: Most important symptoms/effects, acute and delayed
Toxicological information: Acute toxicity
Toxicological information: Skin contact
Toxicological information: Skin contact
Toxicological information: Symptoms related to the physical, chemical and toxicological characteristics
Regulatory Information: Risk Phrases - Labeling
GHS: Classification

SAFETY DATA SHEET (SDS): LIMESTONE

SECTION I –IDENTIFICATION

PRODUCT IDENTIFIER	TRADE NAME	OTHER SYNONYMS
Limestone	Crushed Stone	Sweet Rock, Aggregate, Aglime, Barn Lime, Coverstone, Fluing Agent, Flexible Base, Manufactured Sand, Mineral Filler, Screenings, Limestone CTB

RECOMMENDED USE AND RESTRICTION ON USE
Used for construction purposes
This product is not intended or designed for and should not be used as an abrasive blasting medium or for foundry applications.

MANUFACTURER/SUPPLIER INFORMATION
Martin Marietta Materials
4123 Parklake Ave
Raleigh, North Carolina 27612
Phone: 919-781-4550

For additional health, safety or regulatory information and other emergency situations, call 919-781-4550

SECTION II – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:
Category 1A Carcinogen
Category 1 Specific Target Organ Toxicity (STOT) following repeated exposures
Category 1 Eye Damage
Category 2 Skin Irritant

SIGNAL WORD: DANGER

HAZARD STATEMENTS:
May cause cancer by inhalation.
Causes damage to lungs, kidneys and autoimmune system through prolonged or repeated exposure by inhalation.
Causes skin irritation and serious eye damage.

PRECAUTIONARY STATEMENTS
Do not handle until the safety information presented in this SDS has been read and understood.
Do not breathe dusts or mists. Do not eat, drink or smoke while manually handling this product. Wash skin thoroughly after manually handling.

If on skin: Rinse skin after manually handling and wash contaminated clothing if there is potential for direct skin contact before reuse.
If swallowed: If gastrointestinal discomfort occurs and if person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit.
If inhaled excessively: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing.
If exposed, concerned, unwell or irritation of the eyes, skin, mouth or throat/nasal passage persist: Get medical attention.
Wear eye protection and respiratory protection following this SDS, NIOSH guidelines and other applicable regulations. Use protective gloves if manually handling the product.

Avoid creating dust when handling, using or storing. Use with adequate ventilation to keep exposure below recommended exposure limits.

Dispose of product in accordance with local, regional, national or international regulations.

Please refer to Section XI for details of specific health effects of the components.

SECTION III – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO	% by weight (approx)
Limestone	1317-65-3	80-99
Silicon Dioxide[(1)], SiO_2	7631-86-9	0-10
Aluminum Oxide, Al_2O_3	1344-28-1	<1
Ferric Oxide, Fe_2O_3	1309-37-1	<1
Magnesium Oxide, MgO	1309-48-4	0-8
Calcium Oxide, CaO	1305-78-8	0-43
Sodium Oxide, Na_2O	1313-59-3	<1
Potassium Oxide, K_2O	12136-45-7	<1
Calcium Carbonate, $CaCO_3$	471-34-1	40-100

(1): The composition of SiO_2 may be up to 100% crystalline silica

SECTION IV – FIRST-AID MEASURES

INHALATION: If excessive inhalation occurs, remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or develops later.

EYES: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Remove contact lenses, if present and easy to do, and continue rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or develops later.

SKIN: Rinse skin with soap and water after manually handling and wash contaminated clothing if there is potential for direct skin contact. Contact a physician if irritation persists or develops later.

INGESTION: If gastrointestinal discomfort occurs and if person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. Get medical attention.

SIGNS AND SYMPTOMS OF EXPOSURE: There are generally no signs or symptoms of exposure to respirable crystalline silica. Often, chronic silicosis has no symptoms. The symptoms of chronic silicosis, if present, are shortness of breath, wheezing, cough and sputum production. The symptoms of acute silicosis which can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as 6 months, are the same as those associated with chronic silicosis; additionally, weight loss and fever may also occur. The symptoms of scleroderma, an autoimmune disease, include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

Direct skin and eye contact with dust may cause irritation by mechanical abrasion. Some components of the product are also known to cause corrosive effects to skin, eyes and mucous membranes. Ingestion of large amounts may cause gastrointestinal irritation and blockage. Inhalation of dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits. Repeated excessive exposure may cause pneumoconiosis, such as silicosis and other respiratory effects.

SECTION V – FIRE-FIGHTING MEASURES

EXTINGUISHING AGENT
Not flammable; use extinguishing media compatible with surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARD
Contact with powerful oxidizing agents may cause fire and/or explosions (see Section X of this SDS). While individual components are known to react vigorously with water to produce heat, this is not expected from the limestone.

SPECIAL FIRE FIGHTING PROCEDURES	HAZARDOUS COMBUSTION PRODUCTS
None known	None known

SECTION VI – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Persons involved in cleaning should first follow the precautions defined in Section VII of the SDS. Spilled materials, where dust can be generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust and other components that may pose inhalation hazards. Do not dry sweep spilled material. Collect the material using a method that does not produce dust such as a High-Efficiency Particulate Air (HEPA) vacuum or thoroughly wetting down the dust before cleaning up. Wear appropriate personal protective equipment as specified in Section VIII including appropriate respirators during and following clean up or whenever airborne dust is present to ensure worker exposures remain below occupational exposure limits (OELs - Refer to Section VIII).

Place the dust in a covered container appropriate for disposal. Dispose of the dust according to federal, state and local regulations.

This product is not subject to the reporting requirements of SARA Title III Section 313, and 40 CFR 372.

SECTION VII – HANDLING AND STORAGE

This product is not intended or designed for and should not be used as an abrasive blasting medium or for foundry applications. Follow protective controls set forth in Section VIII of this SDS when handling this product. Dust containing respirable crystalline silica and other components that may be corrosive/irritant may be generated during processing, handling and storage. Use good housekeeping procedures to prevent the accumulation of dust in the workplace.

Do not breathe dust. Avoid contact with skin and eyes. Do not store near food or beverages or smoking materials.
Do not stand on piles of materials; it may be unstable.

Use adequate ventilation and dust collection equipment and ensure that the dust collection system is adequate to reduce airborne dust levels to below the appropriate OELs. If the airborne dust levels are above the appropriate OELs, use respiratory protection during the establishment of engineering controls. Refer to Section VIII - Exposure Controls/Personal Protection for further information.

In accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, 1928.21), state, and/or local right-to-know laws and regulations, familiarize your employees with this SDS and the information contained herein. Warn your employees, your customers and other third parties (in case of resale or distribution to others) of the potential health risks associated with the use of this product and train them in the appropriate use of personal protective equipment and engineering controls, which will reduce their risks of exposure.

See also ASTM International standard practice E 1132-06, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."

For safe handling and use of this product for Hydraulic Fracturing, please see the OSHA/NIOSH Hazard Alert Worker Exposure to Silica during Hydraulic Fracturing DHHS (NIOSH) Publication No. 2012-166 (2012).
http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne OELs for Components of Limestone:

COMPONENT(S) CHEMICAL NAME	MSHA/OSHA PEL	ACGIH TLV-TWA	NIOSH REL
Limestone	(T) 15 mg/m^3, (R) 5 mg/m^3	-	(T) 10 mg/m^3, (R) 5 mg/m^3
Silicon Dioxide, SiO_2 §	(R) 0.05 mg/m^3 (R) 0.025 mg/m^3 (AL)	(R) 0.025 mg/m^3 #	(R) 0.05 mg/m^3 #
Aluminum Oxide, Al_2O_3	(T) 15 mg/m^3, (R) 5 mg/m^3	(1)(R) 1 mg/m^3	-
Ferric Oxide, Fe_2O_3	(2) 10 mg/m^3	(R) 5 mg/m^3	(3) 5 mg/m^3
Magnesium Oxide, MgO	(4) 15 mg/m^3	(I) 10 mg/m^3	-
Calcium Oxide, CaO	5 mg/m^3	2 mg/m^3	2 mg/m^3
Sodium Oxide, Na_2O (5)	2 mg/m^3	(C) 2 mg/m^3	(C) 2 mg/m^3
Potassium Oxide, K_2O	-	(6) (C) 2 mg/m^3	(6) (C) 2 mg/m^3
Calcium Carbonate, $CaCO_3$	(T) 15 mg/m^3, (R) 5 mg/m^3	-	(T) 10 mg/m^3, (R) 5 mg/m^3

§ The OSHA OELs for respirable crystalline silica are listed in the table. As of June 28, 2018, the MSHA standard for respirable crystalline silica has not been changed but may be revised in the future. The MSHA PEL for dust containing crystalline silica (quartz) is based on the silica content of the respirable dust sample and is calculated as: 10 mg/m^3/(% SiO_2 +2). The MSHA PEL for crystalline silica as tridymite and cristobalite is one-half the PEL for crystalline silica (quartz).
# The ACGIH and NIOSH limits are for crystalline silica (quartz), independent of the dust concentration. The ACGIH TLV for crystalline silica as cristobalite is equal to the TLV for crystalline silica as quartz. In 2005, ACGIH withdrew the TLV for crystalline silica as tridymite. The NIOSH REL for crystalline silica as cristobalite and tridymite is the same as for quartz. Refer to Section X for thermal stability information for crystalline silica (quartz).
AL: Action Level
(1): Limits based on Aluminum Metal and Insoluble Compounds.
(2): As Iron Oxide Fume.
(3): Dust and fume, as Iron
(4): As Magnesium Oxide Fume Total Particulate.
(5): Based on Sodium Hydroxide.
(6): Based on Potassium Hydroxide.
(R): Respirable Fraction.
(T): Total Dust.
(I): Inhalable Fraction.
(C): Ceiling Limit

Airborne OELs for Inert/Nuisance Dust:

Standard	Respirable Dust	Total Dust
MSHA/OSHA PEL (as Inert or Nuisance Dust)	5 mg/m^3	15 mg/m^3
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m^3	*10 mg/m^3
NIOSH REL (Particulates Not Otherwise Regulated)	-	-

Note: The limits for Inert Dust are provided as guidelines. Nuisance dust is limited to particulates not known to cause systemic injury or illness.
* The TLV provided is for inhalable particles not otherwise specified.

ENGINEERING CONTROLS

Ventilation: Use local exhaust, general ventilation or natural ventilation adequate to maintain exposures below appropriate exposure limits.

Other control measures: Respirable dust and crystalline silica levels should be monitored regularly. Dust and crystalline silica levels in excess of appropriate exposure limits should be reduced by implementing feasible engineering controls, including (but not limited to) dust suppression (wetting), ventilation, process enclosure and enclosed employee work stations.

EYE/FACE PROTECTION

Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated. If irritation persists, get medical attention immediately. There is potential for severe eye irritation if exposed to excessive concentrations of dust for those using contact lenses.

SKIN PROTECTION

Use appropriate protective gloves if manually handling the product.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION, CONTD.

RESPIRATORY PROTECTION
Respirator Recommendations:

For respirable crystalline silica levels that exceed or are likely to exceed appropriate exposure limits, a NIOSH-approved particulate filter respirator must be worn. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements. For additional information contact NIOSH at 1-800-356-4674 or visit website: http://www.cdc.gov/niosh/npg (search for crystalline silica). See also ANSI standard Z88.2 (latest revision) "American National Standard for Respiratory Protection," 29 CFR 1910.134 and 1926.103, and 42 CFR 84.

NIOSH recommendations for respiratory protection include:
Up to 0.5 mg/m^3:
(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.
Up to 1.25 mg/m^3:
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate (100-series) filter.
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
Up to 2.5 mg/m^3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter
Up to 25 mg/m^3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions (50 mg/m^3 for crystalline silica-quartz): A self-contained breathing apparatus (SCBA) that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode or any supplied-air respirator that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus.

Escape from unknown or IDLH conditions: An air-purifying, full-face piece respirator with a high-efficiency particulate (100-series) filter or any appropriate escape-type, self-contained breathing apparatus.

If the workplace airborne crystalline silica concentration is unknown for a given task, conduct air monitoring to determine the appropriate level of respiratory protection to be worn. Consult with a certified industrial hygienist, your insurance risk manager or the OSHA Consultative Services group for detailed information. Ensure appropriate respirators are worn, as needed, during and following the task, including clean up or whenever airborne dust is present, to ensure worker exposures remain below OELs.

GENERAL HYGIENE CONSIDERATIONS
There are no known hazards associated with this material when used as recommended. Following the guidelines in this SDS are recognized as good industrial hygiene practices. Avoid breathing dust. Avoid skin and eye contact. Wash dust-exposed skin with soap and water before eating, drinking, smoking and using toilet facilities. Wash work clothes after each use.

SECTION IX— PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE Limestone is a mixture of fine to coarse angular white to gray particles ranging in size from powder to small stones	ODOR AND ODOR THRESHOLD Odorless to musty odor and not applicable
pH AND VISCOSITY Not applicable	MELTING POINT/FREEZING POINT Not applicable
BOILING POINT AND RANGE Not applicable	FLASH POINT AND FLAMMABILITY Not applicable
FLAMMABILITY/EXPLOSIVE LIMITS AND AUTOIGNITION TEMPERATURE Not applicable	EVAPORATION RATE AND DECOMPOSITION TEMPERATURE Not applicable
VAPOR PRESSURE AND VAPOR DENSITY IN AIR Not applicable	SPECIFIC GRAVITY. 2.5-2.75
SOLUBILITY IN WATER Insoluble	PARTITION COEFFICIENT: N-OCTANOL/WATER Not applicable

SECTION X – STABILITY AND REACTIVITY	
STABILITY Stable	CONDITIONS TO AVOID Contact with incompatible materials (see below).
THERMAL STABILITY If crystalline silica (quartz) is heated to more than 870°C (1598°F), it can change to a form of crystalline silica known as tridymite, and if crystalline silica (quartz) is heated to more than 1470°C (2678°F), it can change to a form of crystalline silica known as cristobalite.	
INCOMPATIBILITY (Materials to avoid) Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Some components of limestone may react vigorously with water.	
HAZARDOUS DECOMPOSITION PRODUCTS Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.	
HAZARDOUS POLYMERIZATION Not known to polymerize	

SECTION XI – TOXICOLOGICAL INFORMATION

Health Effects: The information below represents an overview of health effects caused by overexposure to one or more components in limestone.

Primary routes(s) of exposure: ■ Inhalation 🔄 Skin ■ Ingestion

EYE CONTACT: Direct contact with dust may cause irritation by mechanical abrasion or corrosive action. Conjunctivitis may occur.

SKIN CONTACT: Direct contact may cause irritation by mechanical abrasion. Some components of material are also known to cause corrosive effects to skin and mucous membranes.

SKIN ABSORPTION: Not expected to be a significant route of exposure.

INGESTION: Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury. Ingestion of large amounts may cause gastrointestinal irritation and blockage.

INHALATION: Dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Inhaling respirable dust and/or crystalline silica may aggravate existing respiratory system disease(s) (e.g., bronchitis, emphysema, chronic obstructive pulmonary disease) and/or dysfunctions. Exposure to dust may aggravate existing skin and/or eye conditions. Smoking and obstructive/restrictive lung diseases may also exacerbate the effects of excessive exposure to this product.

This product is a mixture of components. The composition percentages are listed in Section III. Toxicological information for each component is listed below:

Silicon Dioxide: It is comprised of amorphous and crystalline forms of silica. In some batches, crystalline silica may represent up to 100% of silicon dioxide.

Exposure route: Eyes, respiratory system.

Target organs: Eyes, skin, respiratory system.

ACGIH, MSHA, and OSHA have determined that adverse effects are not likely to occur in the workplace provided exposure levels do not exceed the appropriate exposure limits. Lower exposure limits may be appropriate for some individuals including persons with pre-existing medical conditions as described under medical conditions aggravated by exposure.

A. SILICOSIS

The major concern is silicosis (lung disease), caused by the inhalation and retention of respirable crystalline silica dust. Silicosis leads to conditions such as lung fibrosis and reduced pulmonary function. The form and severity in which silicosis manifests itself, depends in part on the type and extent of exposure to silica dusts: chronic, accelerated and acute forms are recognized. In later stages the critical condition may become disabling and potentially fatal. Restrictive and/or obstructive changes in lung function may occur due to exposure. A risk associated with silicosis is development of pulmonary tuberculosis (silico-tuberculosis). Respiratory insufficiencies due to massive fibrosis and reduced pulmonary function, possibly with accompanying heart failure, are other potential causes of death due to silicosis.

Chronic or Ordinary Silicosis is the most common form of silicosis and can occur after many years of exposure to levels above the occupational exposure limits for airborne respirable crystalline silica dust. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. Symptoms of silicosis may include (but are not limited to): Shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; heart enlargement and/or failure. It is further defined as either simple or complicated silicosis.

Simple Silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF).

Complicated Silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease (cor pumonale) secondary to the lung disease.

Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the progression is more rapid.

Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is a rapidly progressive, incurable lung disease and is typically fatal.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that there is "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the form of quartz or cristobalite", there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz dust" and that there is "*limited evidence* in experimental animals for the carcinogenicity of tridymite dust and cristobalite dust." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite dust is *carcinogenic to humans* (*Group 1*)." The IARC evaluation noted that not all industrial circumstances studied evidenced carcinogenicity. The monograph also stated that "Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, "Silica Dust, Crystalline, in the Form of Quartz or Cristobalite" (2012).

NTP - In its Eleventh Annual Report on Carcinogens, concluded that respirable crystalline silica is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust.

OSHA - Crystalline silica is not on the OSHA carcinogen list.

CALIFORNIA PROPOSITION 65 - Crystalline silica in October 1996 was listed on the Safe Drinking Water and Toxic Enforcement ACT of 1986 as a chemical known to the state to cause cancer or reproductive toxicity.

There have been many articles published on the carcinogenicity of crystalline silica, which the reader should consult for additional information; the following are examples of recently published articles: (1) "Dose-Response Meta-Analysis of Silica and Lung Cancer", *Cancer Causes Control*, (20):925-33 (2009); (2) "Occupational Silica Exposure and Lung Cancer Risk: A Review of Epidemiological Studies 1996-2005', *Ann Oncol*, (17) 1039-50 (2006); (3) "Lung Cancer Among Industrial Sand Workers Exposed to Crystalline Silica", *Am J Epidemiol*, (153) 695-703 (2001); (4) "Crystalline Silica and The Risk of Lung Cancer in The Potteries", *Occup Environ Med*, (55) 779-785 (1998); (5) "Is Silicosis Required for Silica-Associated Lung Cancer?", *American Journal of Industrial Medicine*, (37) 252- 259 (2000); (6) " Silica, Silicosis, and Lung Cancer: A Risk Assessment", *American Journal of Industrial Medicine*, (38) 8-18 (2000); (7) "Silica, Silicosis, and Lung Cancer: A Response to a Recent Working Group Report", *Journal of Occupational and Environmental Medicine*, (42) 704-720 (2000).

C. AUTOIMMUNE DISEASES

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. For a review of the subject, the following may be consulted: (1) "Antinuclear Antibody and Rheumatoid Factor in Silica-Exposed Workers", *Arh Hig Rada Toksikol*, (60) 185-90 (2009); (2) "Occupational Exposure to Crystalline Silica and Autoimmune Disease", *Environmental Health Perspectives*, (107) Supplement 5, 793-802 (1999); (3) "Occupational Scleroderma", *Current Opinion in Rheumatology*, (11) 490-494 (1999); (4) "Connective Tissue Disease and Silicosis", *Am J Ind Med*, (35), 375-381 (1999).

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: (1) "Tuberculosis and Silicosis: Epidemiology, Diagnosis and Chemoprophylaxis", *J Bras Pneumol*, (34) 959-66 (2008); (2) *Occupational Lung Disorders*, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); (3) "Risk of Pulmonary Tuberculosis Relative to Silicosis and Exposure to Silica Dust in South African Gold Miners," *Occup Environ Med*, (55) 496-502 (1998); (4) "Occupational Risk Factors for Developing Tuberculosis", *Am J Ind Med*, (30) 148-154 (1996).

E. KIDNEY DISEASE

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis is associated with the increased incidence of kidney diseases, including end stage renal disease. For additional information on the subject, the following may be consulted: (1) "Mortality from Lung and Kidney Disease in a Cohort of North American Industrial Sand Workers: An Update", *Ann Occup Hyg*, (49) 367-73 (2005); (2) "Kidney Disease and Silicosis", *Nephron*, (85) 14-19 (2000); (3) "End Stage Renal Disease Among Ceramic Workers Exposed to Silica", *Occup Environ Med*, (56) 559-561 (1999); (4) "Kidney Disease and Arthritis in a Cohort Study of Workers Exposed to Silica", *Epidemiology*, (12) 405-412 (2001).

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

F. NON-MALIGNANT RESPIRATORY DISEASES

NIOSH has cited the results of studies that report an association between dusts found in various mining operations and non-malignant respiratory disease, particularly among smokers, including bronchitis, emphysema, and small airways disease. *NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica*, published in April 2002, available from NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226, or at https://www.cdc.gov/niosh/docs/2002-129/default.html.

Respirable dust containing newly broken particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken pieces of silica.

Aluminum Oxide:
Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Inhalation or ingestion of high concentrations of this substance may cause gastrointestinal and/or upper respiratory tract irritation. Eye and skin irritant.

Chronic effect/carcinogenicity: Aluminum oxide is not classifiable as a human carcinogen. On occasion workers chronically exposed to aluminum-containing dusts or fumes have developed severe pulmonary reactions including fibrosis, emphysema and pneumothorax. Long-term exposure may have effects on the central nervous system.

Sodium Oxide:
Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Corrosive – Sodium oxide reacts violently with water to form sodium hydroxide. Causes burns of skin, eyes, respiratory and gastrointestinal tracts, extremely destructive to mucous membranes.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Iron Oxide: (Ferric Oxide)
Exposure route: Inhalation, ingestion, skin

Target organs: Respiratory system, skin, eyes, neurological system

Acute effect: Major findings: stupor, shock, acidosis, hematemesis, bloody diarrhea or coma. Minor findings: vomiting, diarrhea, mild lethargy. Benign pneumoconiosis with X-ray shadows indistinguishable from fibrotic pneumoconiosis. Experimental work in animals exposed by intratracheal injection or by inhalation to iron oxide mixed with less than 5% silica has shown no evidence of fibrosis produced in lung tissue.

Chronic effect/carcinogenicity: Irritability, nausea or vomiting, and normocytic anemia. When exposed to levels greater than 50 to 100 milligram per day, it can result in pathological deposition of iron in the body tissues causing fibrosis of the pancreas, diabetes mellitus, and liver cirrhosis. Workers exposed to iron oxide fume and silica may develop a “mixed dust pneumoconiosis.” Not classifiable as human carcinogen.

Potassium Oxide:
Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Corrosive – Potassium oxide reacts violently with water to produce potassium hydroxide. If inhaled, causes sore throat, cough, burning sensation and shortness of breath. Contact with skin produces pain and blisters. Severe deep burns, redness and pain occur with eye contact. Ingestion results in burning sensations, abdominal pain, shock or collapse.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

Calcium Oxide:
Exposure route: Inhalation, ingestion, skin/eye contact.

Target organs: Eyes, skin, respiratory system.

Acute effect: Direct contact with tissues, can result in burns and severe irritation because of its high reactivity and alkalinity. Major complaints of workers exposed to lime consist of irritation of the skin and eyes, although inflammation of the respiratory passages, ulceration and perforation of the nasal septum, and even pneumonia has been attributed to inhalation of the dust.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Magnesium Oxide:
Exposure route: Inhalation, eye/skin contact.

Target organs: Eyes, respiratory system.

Acute effect: Magnesium oxide dust caused slight irritation of the eyes and nose, conjunctivitis, inflammation of the mucous membrane, and coughing up discolored sputum after industrial exposures amongst workers exposed to an unspecified concentration of MgO.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Calcium Carbonate:
Exposure route: Inhalation, skin/eye contact.

Target organs: Eyes, skin, respiratory system.

Acute effect: Irritation of the eyes, skin and respiratory system and cough. It has been reported that there may be a silicosis risk when using impure limestone containing in excess of 3% quartz. However, it is claimed that pure calcium carbonate does not cause pneumoconiosis. Adverse health effects have generally not been reported in literature among workers using $CaCO_3$.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen

Acute Toxicity Estimates for Limestone – Not Available

SECTION XII – ECOLOGICAL INFORMATION

No data available for this product.

SECTION XIII – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD
Collect and reuse clean materials. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.
The above information applies to Martin Marietta Materials product only as sold. The product may be contaminated during use and it is the responsibility of the user to assess the appropriate disposal method in that situation.

SECTION XIV – TRANSPORT INFORMATION

DOT HAZARD CLASSIFICATION
None

PLACARD REQUIRED
None

LABEL REQUIRED
Label as required by the OSHA Hazard Communication standard {29 CFR 1910.1200(f)}, and applicable state and local regulations.

SECTION XV – REGULATORY INFORMATION

OSHA: Crystalline Silica is not listed as a carcinogen.
SARA Title III: Section 311 and 312: Immediate health hazard and delayed health hazard.
TSCA.: All components of the product appear on the EPA TSCA chemical substance inventory.
RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.
CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR §302.4
EPCRA (Emergency Planning and Community Right to Know Act): Crystalline silica (quartz) is not an extremely hazardous substance under regulations of the **Emergency Planning and Community Right to Know Act, 40 CFR Part 355, Appendices A and B** and is not a toxic chemical subject to the requirements of Section 313.
Clean Air Act: Crystalline silica (quartz) mined and processed by Martin Marietta Materials was not processed with or does not contain any Class I or Class II ozone depleting substances.
FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3).(The FDA standard primarily applies to products containing silica used in the coatings of food contact surfaces).
California Proposition 65: Respirable crystalline silica (quartz) is classified as a substance known to the state of California to be a carcinogen.
Massachusetts Toxic Use Reduction Act: Respirable crystalline silica is considered toxic per the **Massachusetts Toxic Use Reduction Act when used in abrasive blasting and molding.**
Pennsylvania Worker and Community Right to Know Act: Quartz is considered hazardous for purposes of the Act, but it is not a special hazardous substance or an environmental hazardous substance.

SECTION XVI – OTHER INFORMATION

DEFINITIONS OF ACRONYMS/ABBREVIATIONS

ACGIH: American Conference of Governmental Industrial Hygienists
AL: Action Level
ANSI: American National Standards Institute
APF: Assigned Protection Factor
California REL: California Inhalation Reference Exposure Limit
CAS: Chemical Abstracts Service
CERCLA: Comprehensive Environmental Response, Compensation and Liability Act
CFR: US Code of Federal Regulations
DHHS: Department of Health and Human Services
EPA: Environmental Protection Agency
EPCRA: Emergency Planning and Community Right to Know Act
FDA: Food and Drug Administration
GHS: Globally Harmonized System
HEPA: High-Efficiency Particulate Air
IARC: International Agency for Research on Cancer
IDLH: Immediately Dangerous to Life and Health
MSHA: Mine Safety and Health Administration
NIOSH: National Institute for Occupational Safety and Health, US Department of Health and Human Services
NIOSH REL: NIOSH Recommended Exposure Limit
NTP: National Toxicology Program
OEL: Occupational Exposure Limit
OSHA: Occupational Safety and Health Administration, US Department of Labor
PEL: Permissible Exposure Limit
PMF: Progressive Massive Fibrosis
RCRA: Resource Conservation and Recovery Act
SARA Title III: Title III of the Superfund Amendments and Reauthorization Act, 1986
SDS: Safety Data Sheet
STOT: Specific Target Organ Toxicity
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act
TWA: Time-Weighted Average

SECTION XVI – OTHER INFORMATION, CONTD.

User's Responsibility: The OSHA Hazard Communication Standard 29 CFR 1910.1200 requires that this SDS be made available to your employees who handle or may be exposed to this product. Educate and train your employees regarding applicable precautions. Instruct your employees to handle this product properly.

Disclaimer: The information contained in this document applies to this specific material as supplied and Martin Marietta Materials believes that the information contained in this SDS is accurate. The suggested precautions and recommendations are based on recognized good work practices and experience as of the date of publication. They are not necessarily all-inclusive or fully adequate in every circumstance as not all use circumstances can be anticipated. It may not be valid for this material if it is used in combination with other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for one's own particular use. Since the actual use of the product described herein is beyond our control, Martin Marietta Materials, assumes no liability arising out of the use of the product by others. Appropriate warnings and safe handling procedures should be provided to handlers and users. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulation, rules or insurance requirement. However, product must not be used in a manner which could result in harm.

An electronic version of this SDS is available at www.martinmarietta.com . More information on the effects of crystalline silica exposure may be obtained from OSHA (phone number: 1-800-321-OSHA; website: http://www.osha.gov) or from NIOSH (phone number: 1-800-35-NIOSH; website: http://www.cdc.gov/niosh).

DATE OF PREPARATION 6/2018 REPLACES 3/2015

NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE IS MADE

Safety Data Sheet (SDS)

Date Prepared/Revised: 3/20/25 Version no.: 08 Supersedes: (3/20/25)

1.) Identification of the Mixture and of the Company

Product identifier**: Aervoe Construction Marking Paint - Aerosol**

Product name: **Construction Marking Paint**

Fluorescent Colors	Non-Fluorescent Colors	16 oz. I.A.C.
246 Red	251 Black	261 Red
247 Orange	252 Yellow	262 Yellow
248 Green	254 Blue	263 Blue
249 Pink	255 White	267 White
250 Blue	256 Red	272 Fluorescent Orange
253 Yellow	257 Orange	274 Fluorescent Green
283 Red-Orange	258 Hi Vis Yellow	279 Fluorescent Pink
	259 Green	
	260 Purple	

Relevant identified uses of the substance: Designed to adhere to most surfaces, including pavement, gravel, and soil.
Uses advised against: Do not apply if surface is wet, or if rain is imminent within 4 hours of application.

CAS No:	**Not Applicable (mixture)**
EC No:	**Not Applicable (mixture)**
Index No:	**Not Applicable (mixture)**
Manufacturer/Supplier:	**Aervoe LLC**
Street address/P.O. Box:	**1100 Mark Circle**
Country ID/Postcode/Place	**Gardnerville, Nevada 89410**
Telephone number:	**1-775-782-0100**
e-mail:	**mailbox@aervoe.com**
National contact:	**Aervoe LLC**
For Product Information:	**1-800-227-0196**
Emergency telephone number:	**1-800-424-9300 (CHEMTREC – 24 hrs)**

2. Hazards identification

Classifications

Physical Hazards:	Aerosol - Category 1
	Flam. Gas. 1
	Liquefied Gas
	Flam. Liq. 2
Health Hazards:	Car 1B
	Muta 1B
	Asp Tox. 1
	Eye Irrit. - 2
	Rep. 2
	Skin. Irr. 2
	STOT SE3
Environmental Hazards:	Aquatic Chronic 2

Labeling

Signal Word: Danger

Hazard Statements:
H220 – Extremely flammable gas
H222 – Extremely flammable aerosol
H225 – Highly flammable liquid and vapour.
H229 - Pressurized container: may burst if heated
H304 – May be fatal if swallowed and enters airways.
H315 – Causes skin irritation.
H319 – Causes serious eye irritation.
H336 – May cause drowsiness or dizziness.
H340 – May cause genetic defects
H350 – May cause cancer
H361 – Suspected of damaging fertility or the unborn child .
H373 – May cause damage to nervous system through prolonged or repeated exposure(Inhalation)
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements:
P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use
P210 - Keep away from heat/sparks/open flames/hot surfaces - no smoking
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
P262 - Do not get in eyes, on skin, or on clothing
P264 - Wash … thoroughly after handling
P280 - Wear protective gloves/eye protection/face protection

P303+P361+P353 - If on skin or hair, remove/takeoff immediately all contaminated clothing. Rinse skin with water/shower.
P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50ºC/122ºF
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation

Symbols/Pictograms:

3. Composition / Information on Ingredients

Composition

Chemical	Synonyms	CAS Number	EINECS	Weight	Hazard Category	H-Code

			Number	Percent		
Hydrocarbon Propellant	LPG	68476-86-8	270-705-8	10-30%	Liquefied Gas Flam. Gas 1	H220 H229
Hexane	n-Hexane	110-54-3	203-777-6	5-10%	Flam. Liq. 2 Repr. 2 Asp. Tox. 1 STOT RE 2 * Skin Irrit. 2 STOT SE 3 Aquatic Chronic 2	H225 H361f *** H304 H373 ** H315 H336 H411
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-89-8	265-192-2	5-10%	Flam Liq. 2 Skin Irr. 2 Asp. Tox. 1 STOT SE 3 Aquatic Tox. 2	H224 H304 H315 H336 H411
Aliphatic Petroleum Distillates	Solvent Naphtha	64742-88-7	265-191-7	1-5%	Asp. Tox. 1	H304
Aliphatic Petroleum Distillates	Solvent Naphtha	8032-32-4	232-453-7	1-5%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
Non-fluorescent colors also contain:						
Acetone	Propanone	67-64-1	200-662-2	1-5%	Flam. Liq. 2 Eye Irrit. 2 STOT SE 3	H225, H319, H336
#262 Also Contains						
Ethanol	Ethyl Alcohol	64-17-5	200-578-6	1-5%	Flam. Liq. 2	H225

Other Product Information

Chemical Identity: Mixture

4.) First Aid Measures

General Advice: If symptoms persist, always call a doctor.

Inhalation First Aid: Remove victim to fresh air and provide oxygen if breathing is difficult. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention immediately.

Skin Contact First Aid: Wash with soap and water. Remove contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse.

Eye Contact First Aid: If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes, while holding eyelids open. Get medical attention immediately.

Ingestion First Aid: If swallowed, wash out mouth with water provided the person is conscious. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Most Important Symptoms/Effects: Exposure may cause slight irritation to the skin, eyes, and respiratory tract. Excessive exposure may cause central nervous system effects.

5. Fire Fighting Measures

Flammable Properties:	Aerosol
Auto Ignition Temperature:	Not Available
Suitable extinguishing media:	Carbon dioxide, dry chemical, water spray.
Unsuitable extinguishing media:	None known
Special hazards arising from the substance or mixture:	None known
Hazardous combustion products:	Carbon dioxide, Carbon monoxide
Fire & Explosion Hazards:	Closed Containers may rupture due to the buildup of pressure from extreme temperatures.
Precautions for fire-fighters:	Use water spray to cool containers exposed to heat or fire to prevent pressure build up. In the event of a fire, wear full protective clothing and NIOSH- approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

PERSONAL PRECAUTIONARY MEASURES:

1) Follow personal protective equipment recommendations found in section 8.
2) Maintain adequate ventilation.

SPILL CLEAN-UP PROCEDURES:

1.) Evacuate unprotected personnel from the area.
2.) Remove sources of ignition if safe to do so.
3.) Pickup spilled materials using non-sparking tools and place in an appropriate container for disposal.
4.) Contain spill to prevent material from entering sewage or ground water systems.
5.) Always dispose of waste materials in accordance with all EU, National and Local Regulations.

7. Handling and Storage

Handling:

Flammable Aerosol, use in a well ventilated area.
Do not use near sources of ignition.
Do not to eat, drink and smoke while working with this material.
Wash hands after use.

Conditions for safe storage, including any incompatibilities:

Store out of direct sunlight.
Storage Temperature: 32° to 120°F (0° to 49°C).
No known incompatibilities.

8. Exposure Controls / Personal Protection

Appropriate engineering controls:
Ensure adequate ventilation. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.
Keep away from sources of ignition.
Take precautionary measures against static discharge.

Personal Protection:
Eye & face protection devices such as safety glasses, safety goggles or face shield are recommended.

Skin protection
Wear the appropriate protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection:
Use only in an adequately ventilated area. For unknown vapor concentrations use a positive-pressure, pressure-demand, self-contained breathing apparatus (SCBA).

Hazardous Ingredient	CAS Number	ACGIH TLV (TWA)	ACGIH TLV (STEL)	OSHA PEL (TWA)	OSHA PEL (STEL)
Aliphatic Petroleum Distillates	64742-88-7	N/A	N/A	N/A	N/A
Aliphatic Petroleum Distillates	64742-89-8	N/A	N/A	N/A	N/A
Hydrocarbon Propellant	68476-86-8	N/A	N/A	N/A	N/A
Aliphatic Petroleum Distillates	8032-32-4	N/A	N/A	N/A	N/A
Hexane	110-54-3	50PPM	N/A	500PPM	N/A
Acetone	67-64-1	250PPM	500PPM	1000PPM	N/A
Ethanol	64-17-5	N/A	1000PPM	1000PPM	N/A

***Values are based on the 2019 Guide to Occupational Exposure Values by ACGIH**

9. Information on Basic Physical and Chemical Properties

Appearance: Color varies by product.	Odor: Hydrocarbon Odor
Odor Threshold: N/AV	pH: Not Applicable (solvent Base)
Melting Point: N/AV	Freezing Point: N/AV
Initial Boiling Point: N/AV	Boiling Point Range: N/AV
Flash Point: <0° F (-18° C)	Evaporation Rate: Faster than n-Butyl Acetate
Flammability Solid/Gas: Flammable gas	LEL: 0.9% UEL: 13%
Vapor Pressure: N/AV	Vapor Density: Heavier Than Air
Relative Density: N/AV	Solubility: Negligible
Partition Coefficient: n-octanol/ water: N/AV	Auto-ignition Temperature: N/AV
Decomposition Temperature: N/AV	Viscosity: N/AV

Explosive Properties: N/AV	Oxidizing Properties: N/AV

10. Stability & Reactivity

Possibility of hazardous reactions: Hazardous polymerization will not occur under normal conditions
Chemical stability: Stable under normal conditions
Conditions to avoid: Heat and ignition sources
Incompatible materials: Strong Oxidizing Agents
Hazardous decomposition products: Will not occur

11. Toxicological Information

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Repeated overexposure can also damage kidneys, lungs, liver, heart and blood

Routes of exposure: Eyes, skin, ingestion, and/or inhalation

Acute toxicological data:	(Acetone) Acute oral LD50: 5800mg/kg(rat) (Acetone) LC50: 21000 ppm / 8 hr (rat) (Hexane) LD50: 2870 mg/kg (Rat-Oral)
Eye irritation data:	Eye Irrit 2
Skin irritation/sensitization/absorption data:	Skin Irrit 2
Reproductive toxicity data:	Reproductive 2
Mutagenicity data:	Muta 1B
Symptoms associated with physical contact:	N/AV
Acute/chronic effects from short/long term exposure:	Irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis. Not expected to be a skin sensitizer.
Known reportable carcinogens via the following agencies:	
NTP:	N/AV
IARC:	IARC3:Classification not possible from current data
OSHA:	TLV-A4

12. Ecological Information

Ecotoxicity: **No Data Available**
Persistence and degradability: **No Data Available**

Bioaccumulative potential: **No Data Available**
Mobility in soil: **No Data Available**
Results of PBT and vPvB assessment: **No Data Available**
Other adverse effects: **No Data Available**

13. Disposal Considerations

Waste Disposal: Dispose of material in accordance with EU, national and local requirements. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.
Product / Packaging disposal: Dispose of packaging in accordance with federal, state and local requirements, regulations and/or laws governing your location.

14. Transportation Information

US DOT

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Reference 49 CFR 172.101

IMDG

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols	2.1	Not Applicable	Not Applicable	Reference IMDG code part 3

IATA:

UN Number	Proper Shipping Name	Hazard Class	Packing Group	Marine Pollutant	Special Provisions
UN1950	Aerosols, Flammable	2.1	Not Applicable	Not Applicable	Reference IATA Dangerous Goods Regulation

15. Regulatory Information

Workplace classification:
This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200). The Occupational Safety and Health Administration's interpretation of the product's hazard to workers.
SARA Title 3:
Section 311/312 Categorizations (40 CFR 372): This product is a hazardous chemical under 29 CFR 1910.1200, and is categorized as an immediate and delayed health, and flammability physical hazard. Superfund Amendment and Reauthorization Act (SARA) category. SARA requires reporting any spill of any hazardous substance.

Date Prepared/Revised: 3/20/25 Version no.: 08 Supersedes: (3/20/25)

TSCA status: All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.
WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the (M)SDS contains all of the information required by the CPR.
PROP 65 (CA): WARNING: Cancer and Reproductive Harm – www.P65Warnings.ca.gov.

16. Other Information

This SDS has been completed in accordance with GHS Rev04 (2011): U.S OSHA, CMA, ANSI, Canadian WHMIS standards, and European Directives.

Date of Preparation/Revision: 3/20/25
Supersedes: (1/4/22)

To the best of our knowledge, the information contained herein is believed to be accurate. However, the above data does not imply any guarantee or warranty of any kind, expressed or implied. The final determination of the suitability of any material is the sole responsibility of the user. All materials made present un-known hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards existing.

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200), Health Canada HPR (SOR/2015-17), and Mexico NOM-018-STPS-2015

SECTION 1: Identification

Product Identifier	**GT-1® High Performance Motor Oil**
Other means of identification	Kendall GT-1® High Performance Motor Oil SAE 0W-20 Kendall GT-1® High Performance Motor Oil SAE 5W-20 Kendall GT-1® High Performance Motor Oil SAE 5W-30 Kendall GT-1® High Performance Motor Oil SAE 10W-30 Kendall GT-1® High Performance Motor Oil SAE 10W-40 Kendall GT-1® High Performance Motor Oil SAE 20W-50
Code	**LBKN815899**
Issue date	27-Apr-2020
Relevant identified uses	Automotive Engine Oil
Uses advised against	All others
24 Hour Emergency Phone Number	CHEMTREC: 1-800-424-9300 CHEMTREC Mexico 01-800-681-9531 CHEMTREC Global +1 703 527 3887
Manufacturer/Supplier	Phillips 66 Lubricants A Division of Phillips 66 Company P.O. Box 421959 Houston, Texas 77242-1959
SDS Information	URL: www.phillips66.com/SDS Phone: 800-762-0942 Email: SDS@P66.com
Customer Service	U.S.: 800-368-7128 or International: 1-832-765-2500
Technical Information	1-877-445-9198

SECTION 2: Hazard identification

Classified Hazards
No classified hazards

Hazards Not Otherwise Classified (HNOC)
PHNOC: None known

HHNOC: None known

Label elements

No classified hazards

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration[1]
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	<95

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and

water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Prolonged or repeated contact may dry skin and cause irritation.

Notes to Physician: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

SECTION 5: Firefighting measures

NFPA 704: National Fire Protection Association

Health: 0 **Flammability:** 1 **Instability:** 0

0 = minimal hazard
1 = slight hazard
2 = moderate hazard
3 = severe hazard
4 = extreme hazard

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Spills will produce very slippery surfaces. Used motor oils have been shown to cause skin cancer in mice after repeated application to the skin without washing. Brief or intermittent skin contact with used motor oil is not expected to cause harm if the oil is thoroughly removed by washing with soap and water. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits .

Chemical Name	ACGIH	OSHA	Mexico	Phillips 66
Distillates, petroleum, hydrotreated heavy paraffinic	TWA-8hr: 5 mg/m^3 STEL: 10 mg/m^3 as Oil Mist, if Generated	---	---	---

State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Biological occupational exposure limits

None.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.

Skin/Hand Protection: The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals. Suggested protective materials: Nitrile rubber

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen

deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance: Amber; Transparent
Physical Form: Liquid
Odor: Petroleum
Odor Threshold: No data
pH: Not applicable
Vapor Density (air=1): >1
Upper Explosive Limits (vol % in air): No data
Lower Explosive Limits (vol % in air): No data
Evaporation Rate (nBuAc=1): No data
Particle Size: Not applicable
Percent Volatile: No data
Flammability (solid, gas): Not applicable
Solubility in Water: Negligible

Flash Point: > 365 °F / > 185 °C (ASTM D93)
Test Method: Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
Initial Boiling Point/Range: No data
Vapor Pressure: <1 mm Hg
Partition Coefficient (n-octanol/water) (Kow): No data
Melting/Freezing Point: No data
Auto-ignition Temperature: No data
Decomposition Temperature: No data
Specific Gravity (water=1): 0.8 - 0.9 @ 60ºF (15.6ºC)
Bulk Density: 7.0 - 8.0 lbs/gal
Viscosity: 6.9 - 21.9 cSt @ 100°C; 38 - 190 cSt @ 40°C
Pour Point: No data

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Incompatible materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products: Not anticipated under normal conditions of use. During use in engines, contamination of oil with low levels of hazardous fuel combustion by-products (e.g. polycyclic aromatic hydrocarbons) may occur.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Aspiration Hazard: Not expected to be an aspiration hazard

Skin Corrosion/Irritation: Not expected to be irritating. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Not expected to be irritating.

Skin Sensitization: No information available on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification).

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Specific Target Organ Toxicity (Repeated Exposure): No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Carcinogenicity: No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification).

Germ Cell Mutagenicity: No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).

Reproductive Toxicity: No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

Information on Toxicological Effects of Components

Distillates, petroleum, hydrotreated heavy paraffinic

Carcinogenicity: This oil has been highly refined by a variety of processes to reduce aromatics and improve performance characteristics. It meets the IP-346 criteria of less than 3 percent PAH's and is not considered a carcinogen by the International Agency for Research on Cancer.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.This material under most intended uses would become "Used Oil" due to contamination by physical or chemical

impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

UN Number: Not regulated
UN proper shipping name: None
Transport hazard class(es): None
Packing Group: None
Environmental Hazard(s): This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant
Special precautions for user: If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds)
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CERCLA/SARA - Section 313 and 40 CFR 372
This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

EPA (CERCLA) Reportable Quantity (in pounds)
This material does not contain any chemicals with CERCLA Reportable Quantities.

California Proposition 65
This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

International Inventories
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
All components are either on the DSL, or are exempt from DSL listing requirements.

SECTION 16: Other information

Issue date	Previous Issue Date:	SDS Number	Status:
27-Apr-2020	26-Jan-2018	LBKN815899	FINAL

Revised Sections or Basis for Revision:
Other means of identification; Composition (Section 3)

Mexican NOM-018-STPS-2015:
The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; HPR = Hazardous Products Regulations; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:
The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Northland Norsolv

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of issue: 11/03/2014 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Trade name : Northland Norsolv

Product code : 89A0

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Mineral Spirits

1.3. Details of the supplier of the safety data sheet

Northland Products
1000 Rainbow Drive
Waterloo, 50704 - USA

Tel: +1-319-234-5585
+1-800-772-1724

1.4. Emergency telephone number

Emergency number : Chemtrec (800) 424-9300
Chemtrec (Outside USA) +1 703-527-3887 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Aspiration Hazard. 2	H304
Skin Corrosion/Irritation. 2	H315
Serious Eye Damage/Eye Irritation. 2B	H320
Flammable Liquid. 3	H226
Acute Toxicity – Inhalation Vapour. 3	H331
Specific Target Organ System Toxicity (STOT) – Single Exposure. 3	H335

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02 GHS08 GHS06 GHS07

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) :
H226 – Flammable liquid and vapour
H304 – May be fatal if swallowed and enters airways
H315 – Causes skin and eye irritation
H320 – Causes eye irritation
H331 – Toxic if inhaled
H335 – May cause respiratory irritation

Precautionary statements (GHS-US) :
P210 – Keep away from heat, sparks, open flames and hot surfaces – No smoking.
P240 – Ground and bond container and receiving eequipment.
P241 – Use explosion-proof electrical, ventilating, and lighting equipment.
P242 – Use only non-spraking tools.
P243 – Take precautionary measures against static dischsarge.
P261 – Avoid breathing dust, gas, mist, vapors or spray.
P264 – Wash thoroughly after handling.
P271 – Use only outdoors or in well-ventillated area.
P280 – Wear gloves, eye and face protection and protective clothing.
P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P3054+P340 – IF INHALED: Remove vistim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 – Call a POISON CENTER or doctor if you feel unwell.
P321 – Specific treatment (see on this label).

P331 – Do NOT induce vomiting.
P332+P313 – If skin irritation occurs: Get medical advice or attention.
P337+P313 – If eye irritation persists: Get medical advice or attention.
P362 – Take off contaminated clothing and wash it before reuse.
P370 – In case of fire: Use appropriate extinguishing media – See Section 5 on SDS.
P403+P233 – Store in well-ventilated place. Keep container tighlty closed.
P403+P235 – Store in well-ventilated place. Keep cool.
P405 – Store in secure manner.
P501 – Dispose of in accordance with local, regional abd international regulations.

2.3. Other hazards

other hazards which do not result in classification : Breathing high concentrations can cause irregular heartbeats which may be fatal. May cause damage to the following organs: kidneys, lungs, the nervous system, liver, mucous membranes, upper respiratory tract, skin, CNS, eye, lens or cornea.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Distillates, Petroleum, Hydrotreated Light	(CAS No) 64742-47-8	<100	Aspiration Hazard. 2 Skin Corrosion/Irritation. 2 Serious Eye Damage/Eye Irritation. 2B Flammable Liquid. 3 Acute Toxicity – Inhalation Vapour. 3 Specific Target Organ System Toxicity (STOT) – Single Exposure. 3

The chemical identity of some of the above components is considered confidential business information and is being withheld as permitted by 29 CFR 1910.1200 and various State Right-To-Know Laws.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

First-aid measures after skin contact : Immediately flush skin with plenty of water while removing contaminated clothing and shoes. Do not reuse clothing or shoes until cleaned. If irritation develops or persists, get medical attention. Wash with soap and water. Discard items which cannot be decontaminated.

First-aid measures after eye contact : Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention. Remove contact lens if easy to do. Do not use eye ointment.

First-aid measures after ingestion : If swallowed, call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Note to physicians : If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : High vapor or mist concentrations may cause: eye irritation. respiratory irritation. headache. dizziness. anesthesia. drowsiness. unconsciousness. other central nervous system effects, including death. Prolonged exposure may cause serious damage to health. Negligible hazard at ambient temperature. May irritate: nose. throat. lungs.

Symptoms/injuries after skin contact : May cause mild irritation. Prolonged or repeated exposure may cause: irritation. Dermatitis (inflammation of the skin). drying. cracking. Minimally toxic by absorption.

Symptoms/injuries after eye contact : May cause mild irritation. May cause: temporary discomfort.

Symptoms/injuries after ingestion : Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death. May cause: gastrointestinal irritation. nausea. vomiting. diarrhea. Prolonged exposure may cause serious damage to health.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Alcohol resistant foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : May ignite when preheated. When heated above the flash point, releases flammable vapours.

5.3. Advice for firefighters

Precautionary measures fire : Approach from upwind. Vapours may travel long distances along ground before igniting/flashing back to vapour source. This material may burn but will not ignite readily.

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protective equipment for firefighters : Do not enter fire area without proper protective equipment, including respiratory protection. Wear self-contained respiratory apparatus during longer or intensive exposition or spraying processing.

Other information : COMBUSTIBLE LIGUID. May ignite when preheated. Special danger of slipping by leaking/spilling product. Material will float and can be re-ignited on surface of water. Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. Toxic and irritating gases are released following thermal decomposition or combustion. Vapours are heavier than air and may travel considerable distance to an ignition source and flash back to source of vapours.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protective equipment as required. Special danger of slipping by leaking/spilling product. Stop leak if safe to do so. Relevant water authorities should be notified of any large spillage to water course or drain. Uncontrolled release should be responded to by trained personnel using pre-planned procedures. . Will float and can be reignited on water surface.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Wear suitable respiratory protective equipment. For further information refer to section 8 : Exposure-controls/personal protection.

Emergency procedures : The low volatility of this product does not require ventilation. However depending on the condition an adequate ventilation might be required.

6.2. Environmental precautions

Prevent entry to sewers and public waters. An environmental fate analysis is not available for this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum products. Petroleum-based (mineral) lubricating oils normally will float on water. In stagnant or slow-flowing waterways, an oil layer can cover a large surface area. As a result, this oil layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway may be sufficient to cause a fish kill or create an anaerobic environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : COMBUSTIBLE LIQUID. Eliminate all sources of ignition. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit.

Shut off source of leak if safe to do so. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor, but may not prevent ignition in closed spaces. Use non-sparking tools and equipment.

Contain spill, place into drums for proper disposal. Soak up residue with non-flammable absorbent material. DO NOT use sawdust or other cellulose-type material.

Place in non-leaking containers for immediate disposal. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. Prevent entry into basements, low areas, or confined areas.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Special danger of slipping by leaking/spilling product. Electrostatic charges may be generated during pumping . As a result of flow, agitation, etc., electrostatic charges can be generated.

Precautions for safe handling : Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. Use appropriate grounding and bonding practices. Always open containers slowly to allow any excess pressure to vent.

Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Separate working clothes from town clothes. Launder separately. Do not eat, drink or smoke when using this product. Discard contaminated leather articles.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : COMBUSTIBLE LIQUID. Store in a cool, well ventilated area away from all sources of ignition and out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment. Keep away from heat, sparks, and flames. Store at an ambient temperature. See Section 10 for incompatible materials.

Storage conditions : Keep container closed when not in use. Keep only in the original container in a cool, well-ventilated place away from highly flammable substances. Keep away from open flames, hot surfaces and sources of ignition. Keep container tightly closed. Store containers in an upright manner to prevent leakage. Keep locked up and out of reach of children.

Incompatible materials : Strong reducing agents. Oxidizing agents. Strong acids.

Heat and ignition sources : Remove all sources of ignition.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Northland Norsolv		
USA ACGIH	ACGIH TWA (mg/m³)	200 mg/m³ (Skin); Distallates, Petroleum, Hydrotreated, Light

8.2. Exposure controls

Appropriate engineering controls : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits. Use explosion-proof ventilation equipment. Maintain adequate ventilation. Do not use in closed or confined spaces. Avoid creating dust or mist. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.A washing facility/water for eye and skin cleaning purposes should be present. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Personal protective equipment : Personal protective equipment should be selected based upon the conditions under which this product is handled or used. Avoid all unnecessary exposure. The following pictograms represent the minimum requirements for personal protective equipment. Gloves. Protective clothing. Protective goggles. For certain operations, additional Personal Protection Equipment (PPE) may be required.

Hand protection : Wear protective gloves. Nitrile-rubber protective gloves. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Eye protection : Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles.

Skin and body protection : Personal protective clothing should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling. Wear suitable protective clothing. Boots. Protective apron.

Respiratory protection : Respiratory protection may be required to avoid overexposure when handling this product. If exposure limits are exceeded, wear: NIOSH-Approved respirator. NIOSH-Approved air-purifying respirator with: Organic vapor cartridge. NIOSH-Approved Supplied Air Respirator (SAR). NIOSH-Approved selfcontained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use. Work in well-ventilated zones or use proper respiratory protection. In fine dispersion/spraying/misting: In applications where aerosols or vapors are emitted, a full face organic vapor cartridge respirator with a particulate pre-filter should be worn. In confined areas and in emergency situations, use a self-contained breathing apparatus or other air supplied full face respirator.

Thermal hazard protection	:	Wear a self-contained breathing apparatus and appropriate personal protective equipment (PPE). Wear heat resistant boots and protective clothing when handling material at elevated temperatures.
Environmental exposure controls	:	Avoid discharge to the environment. Ensure waste is collected and contained. Notify authorities if product enters sewers or public waters.
Other information	:	Do not eat, drink or smoke during use. Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Colour	:	Clear to light blue.
Odour	:	Petroleum characteristic.
Odour threshold	:	No data available
pH	:	No data available
Relative evaporation rate (butyl acetate=1)	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	159°C (318°F)
Flash point	:	42°C (108ºF) Test method: TCC
Auto-ignition temperature	:	230°C (446°F)
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	< 0.01 mm Hg @ 37.8 °C (100 °F)
Relative vapour density at 20 °C	:	5
Relative density	:	0.780 g/cm³ at 15.6 °C / 60 °F
Solubility	:	Water: insoluble Organic solvent:completely soluble
Log Pow	:	No data available
Log Kow	:	Base oil hydrocarbons: log Kow > 4 (estimate)
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	UEL ~6.0% LEL ~0.6%
% Volatile	:	100 Wt%
VOC	:	100 Wt%

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable at normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Do not pressurize, cut, weld, braze, solder, drill, grind, or expose containers to flames, sparks, heat, or other potential ignition sources.

10.5. Incompatible materials

Strong reducing agents. Oxidizing agents. Strong acids.

10.6. Hazardous decomposition products

Toxic and irritating gases are released following thermal decomposition or combustion. Fume. Carbon monoxide. Carbon dioxide. Hydrogen sulfide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified (Based on available data, the classification criteria are not met)

Distillates, Petroleum, Hydrotreated, Light (64742-47-8)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat (mg/l)	5.2 mg/l/4h
ATE CLP (dust,mist)	5.2000 mg/l/4h

Skin corrosion/irritation : Not classified (Based on available data, the classification criteria are not met)

Serious eye damage/irritation : Not classified (Based on available data, the classification criteria are not met)

Respiratory or skin sensitisation : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity : May damage fertility or the unborn child.

Specific target organ toxicity (single exposure) : Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure) : Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : High vapor or mist concentrations may cause: eye irritation. respiratory irritation. headache. dizziness. anesthesia. drowsiness. unconsciousness. other central nervous system effects, including death. Prolonged exposure may cause serious damage to health. Negligible hazard at ambient temperature. May irritate: nose. throat. lungs.

Symptoms/injuries after skin contact : May cause mild irritation. Prolonged or repeated exposure may cause: irritation. Dermatitis (inflammation of the skin). drying. cracking. Skin Absorption: Minimally toxic.

Symptoms/injuries after eye contact : May cause mild irritation. May cause: temporary discomfort.

Symptoms/injuries after ingestion : Small amounts of this product aspirated into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death. May cause: gastrointestinal irritation. nausea. vomiting. diarrhea. Prolonged exposure may cause serious damage to health.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : An environmental fate analysis is not available for this specific product. Plants and animals may experience harmful or fatal effects when coated with petroleum products. Petroleum-based (mineral) solvents normally will float on water. In stagnant or slow-flowing waterways, an petroleum layer can cover a large surface area. As a result, this petroleum layer might limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway may be sufficient to cause a fish kill or create an anaerobic environment.

Distillates, Petroleum, Hydrotreated Light (64742-47-8)	
LC50 fishes 1	> 5000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 Daphnia 1	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)

12.2. Persistence and degradability

Northland Norsolv	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Northland Norsolv	
Log Kow	Base oil hydrocarbons: log Kow > 4 (estimate)
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Hazardous Waste : D001,D018 (Possible additional number)

Waste disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations. Liquid product may not be disposed of with household waste or landfilled. Do not allow to enter into drains/waters or in the soil.
Additional information	:	Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.
Ecology - waste materials	:	Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN1268

14.2. UN proper shipping name

Petroleum Distillates, N.O.S. (Naphtha Solvent)

14.3. Additional information

Hazard Class	:	3
Packing Group	:	III
Label Required	:	Flammable

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Northland Norsolv	
SARA Section 311/312 Hazard Classes	This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802

Distillates, Petroleum, Hydrotreated Light (64742-47-8)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Distillates, Petroleum, Hydrotreated Light (64742-47-8)
Listed on the Canadian DSL (Domestic Sustances List)

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

No additional information available

15.2.2. National regulations

No additional information available

15.3. US State regulations

*Prop 65 - May Contain the Following Trace Components: Benzene, Naphthalene, Ethylbenzene, Toluene

Distillates, Petroleum, Hydrotreated Light (64742-47-8)
U.S. - Texas - Effects Screening Levels - Long Term U.S. - Texas - Effects Screening Levels - Short Term

SECTION 16: Other information

Other information : None.

Full text of H-phrases: see section 16:

H226	Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H320	Causes eye irritation
H331	Toxic if inhaled
H335	May cause respiratory irritation

SDS US (GHS HazCom 2012)

The information presented herein has been compiled from sources considered to be dependable and is accurate to the best of Northland Products Company's knowledge; however, Northland Products Company makes no warranty whatsoever, expressed or implied, of merchantability or fitness for the particular purpose, regarding the accuracy of such data or the results to be obtained from the use thereof. Northland Products Company assumes no responsibility for the injury to the recipient or to third party persons or for any damage to any property and recipient assumes all such risks.

CHARLOTTE
PIPE AND FOUNDRY COMPANY

Meets the Requirements of OSHA Standard 29 CFR 1910.1200 Hazard Communication and EPA Supplier Notification Requirements under Section 313 of the Emergency Planning and Community Right-to-Know Act.

SAFETY DATA SHEET (SDS)

GRAY IRON CASTINGS

SDS SC-000-041 Rev. 13

DATE ISSUED

03/19

SECTION 1—PRODUCT IDENTIFICATION & COMPANY INFORMATION

PRODUCT NAME

GRAY IRON CASTINGS

OTHER DESIGNATIONS: ASTM (American Society for Testing & Materials) Specification No's., (ACI (Alloy Casting Institute) Alloy Designations—Grades)

ASTM: A48, A74, A126, A159, A278, A319, A667, A748, A823, A942

PRODUCT IDENTIFICATION (Label Identifier)

MANUFACTURER'S NAME Charlotte Pipe and Foundry Co.	**STREET ADDRESS** 10145 Lighthouse Road, Oakboro NC 28129
EMERGENCY TELEPHONE NO.	**MAILING ADDRESS** P.O. Box 35430 Charlotte, NC 28235
TELEPHONE NO. David Waggoner 704-348-5408	**CITY, STATE, ZIP CODE, COUNTRY** Oakboro, NC 28129 US
FAX NO. 800-553-1605	**E-MAIL ADDRESS/WEBSITE** dwaggoner@charlottepipe.com www.charlottepipe.com

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Solid casting; no restrictions on use

SECTION 2—HAZARD IDENTIFICATION

CLASSIFICATION

Castings are metal articles that do not present hazards in their original form.

Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica. Dust or fumes generated by machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting of the casting may produce airborne contaminants. The following proposed classification and label elements are for the hazardous substances that could be released or generated from these processes.

PROPOSED CLASSIFICATION	Respiratory Sensitizer, Category 1A (hexavalent chromium)	H334
	Skin Sensitizer, Category 1 (nickel, hexavalent chromium)	H317
	Carcinogen, Category 1 (inhalation, respiratory tract); (nickel oxide, hexavalent chromium, crystalline silica)	H350
	Specific Target Organ Toxicity - Repeated Exposure, Category 1 (inhalation; respiratory tract) (nickel, hexavalent chromium, crystalline silica)	H370
	Specific Target Organ Toxicity - Repeated Exposure, Category 2 (central nervous system) (manganese)	H373
	Acute Aquatic Toxicity, Category 1 (copper)	H400

LABEL ELEMENTS

Pictogram		
Signal Word	**DANGER**	
Hazard Statements	H317	May cause an allergic skin reaction
	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
	H350	May cause cancer
	H370+ H373	May cause damage to organs through prolonged or repeated exposure
	H400	Very toxic to aquatic life
Precautionary Statements	P201	Obtain special instructions before use
	P202	Do not handle until all safety precautions have been read and understood
	P248	In case of inadequate ventilation, wear respiratory protection
	P260	Do not breath dust and fumes
	P264	Wash hands thoroughly after using
	P270	Do not eat, drink or smoke when using this product
	P280	Wear protective gloves, protective clothing, eye protection and face protection
	P302	IF ON SKIN: Wash with plenty of water
	P342+ P311	If experiencing respiratory problems, call a POISON CENTER/doctor
	P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing
	P333	If skin irritation or rush occurs: Get medical advice/attention
	P362	Wash contaminated clothing before reuse
	P501	Dispose of contents in accordance with local and national regulations

SECTION 3—COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME/COMMON NAME/SYNONYM	Wt %	CAS NUMBER
Carbon (C)	2.5–4.0	7440-44-0
Chromium (Cr)	0.01–1.5	7440-47-3
Chromium, hexavalent*	*	*
Copper (Cu)	0.01–1.00	7440-50-8
Iron (Fe)	86.3–96.2	7439-89-6
Manganese (Mn)	0.2–1.1	7439-96-5
Nickel (Ni)**	0.01–1.5	7440-02-0
Silicon (Si)	1.0–3.5	7440-21-3
Silica, crystalline (SiO_2) ***	***	***
Tin (Sn)	0.1–0.15	7440-31-5

NOTE

* When chromium is heated to high temperatures, such as those that occur in welding arcs or thermal cutting, it can oxidize to form hexavalent chromium. In the product as sold, chromium is in the elemental form.

** When nickel is heated to high temperatures, such as those that occur in welding arcs or thermal cutting, it can form nickel oxides. In the product as sold, nickel is in the elemental form.

*** Castings that have not been cleaned may contain embedded sand containing crystalline silica. Respirable crystalline silica dust may be released during processing.

SECTION 4—FIRST AID MEASURES

No first aid is likely to be needed when castings are handled as sold. The following first aid measures may be needed if processes such as machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting are performed and produce dust and/or fumes.

EYE CONTACT	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.
SKIN CONTACT	Wash thoroughly after handling. Wash with plenty of water. If irritation or rash occurs, get medical advice/attention. Remove contaminated clothing and wash before reuse.
INHALATION	Remove person to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. If exposed, concerned or feeling unwell get medical advice/attention.
INGESTION	NEVER give anything by mouth to an unconscious person. DO NOT INDUCE VOMITING. Give large quantities of water. If vomiting occurs keep airways, clear and give more water. Seek medical attention immediately.

Most Important Symptoms & Effects, Both Acute and Delayed

No adverse effects are expected from handling castings as sold.

Inhalation of fumes or dust from processes such as machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting may cause irritation of the nose, throat or eyes. Nickel, hexavalent chromium compounds and respirable crystalline silica are listed in the National Toxicology Program (NTP) Annual Report on Carcinogens and the International Agency for Research on Cancer (IARC) Monographs as potential carcinogens. Hexavalent chromium and respirable crystalline silica are considered carcinogens by the Occupational Safety & Health Administration (OSHA). Prolonged overexposure to welding or thermal cutting fumes can cause siderosis (iron deposits in lungs). Nickel and hexavalent chromium may cause skin sensitization. Manganese may cause damage to brain and nervous system through prolonged or repeated exposure. Respirable crystalline silica may cause lung effects, immune system effects and kidney effects.

Indication of Immediate Medical Attention and Special Treatment Needs

None known

SECTION 5—FIREFIGHTING MEASURES

Suitable Extinguishing Media	Use suitable extinguishing methods for surrounding fire.
Special Hazards Arising from the Substance	Not applicable for the casting as sold. Welding arcs and sparks can ignite combustibles and flammables.
Combustion Products	Welding and thermal cutting may generate oxides of the metals listed in Section 3.
Special Protective Actions for Firefighters	Not applicable

SECTION 6—ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures	No special precautions necessary for the product as sold.
Environmental Precautions	Avoid releasing dust generated or collected from processing this casting into the environment. Report such spills as required by local and national regulations.
Methods and Material for Containment and Clean-up	Not applicable

SECTION 7—HANDLING & STORAGE

Precautions for Safe Handling	**No special requirements for the product as sold.** The following precautions may be needed if processes such as machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting are performed and produce dust and/or fumes: Avoid breathing fumes or dust. Use good housekeeping practices. Use adequate ventilation to control exposure to dusts and fumes below their applicable occupational exposure limits. Employee exposure should be assessed to determine what specific corrective actions may be needed when performing tasks that release dust or fumes. Take appropriate precautions to prevent fires and explosion when hot work is performed. Do not eat, smoke or drink when performing the tasks listed herein.
Conditions for Safe Storage, Including any Incompatibilities	No special storage requirements.

SECTION 8—EXPOSURE CONTROLS/ PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS- This product is an article as sold.

Dust or fumes generated from machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting of the product may produce contaminants with the following Occupational Exposure Limits (OELs):

Ingredient	CAS #	FEDERAL OSHA PEL* (mg/m^3)	ACGIH TLV® (mg/m^3)
Carbon	7440-44-0	NE	NE
Chromium **Metal** **Hexavalent, insoluble****	7440-47-3	 1 (TWA) 0.005 (TWA)	 0.5 (TWA)(I) 0.01 (TWA)
Copper **Dust** **Fume**	7440-50-8	 1 (TWA) 0.1 (TWA)	 1 (TWA) 0.2 (TWA)
Iron	7439-89-6	10 (TWA) (as iron oxide fume)	5 (TWA)(R) (as iron oxide dust or fume)
Manganese	7439-96-5	5 (C)	0.02 (TWA)(R) 0.1 (TWA)(I)
Nickel **Elemental** **Insoluble** **Oxide*****	7440-02-0	 1 (TWA) 1 (TWA) 1 (TWA)	 1.5 (TWA)(I) 0.2 (TWA) (I) 0.2 (TWA) (I)
Silicon	7440-03-1	15 (TWA) 5 (TWA) (R)	NE
Silica, crystalline	14808-60-7	0.05 (TWA) (R)	0.025 (TWA) (R)
Tin	7440-31-5	2 (TWA)	2 (TWA)(I)

NOTE:

* The following State OSHA Plans have adopted lower Permissible Exposure Limits (PELs) for some of the constituents in this product:

California: Chromium 0.5 mg/m^3 (TWA); Manganese 0.2 mg/m^3 (TWA); Nickel, metal 0.5 mg/m^3 (TWA); PNOR 10 mg/m^3 (TWA) and 5 mg/m^3 (TWA), respirable fraction. Silicon is considered a PNOR.

Minnesota: Manganese fume 1 mg/m^3 (TWA); Total Welding fumes 5 mg/m^3 (TWA).

Michigan: Chromium 0.5 mg/m^3 (TWA); manganese fume 1 mg/m^3 (TWA); Total Welding fumes 5 mg/m^3 as a TWA.

Oregon: Chromium 0.5 mg/m^3 (TWA); PNOR 10 mg/m^3 (TWA) and 5 mg/m^3 (TWA), respirable fraction.

** When chromium is heated to high temperatures, such as those that occur in welding arcs or thermal cutting, it can oxidize to form hexavalent chromium. In the product as sold, chromium is in the elemental form.

*** When nickel is heated to high temperatures, such as those that occur in welding arcs or thermal cutting, it can form nickel oxides. In the product as sold, nickel is in the elemental form.

KEY TO EXPOSURE LIMIT ABBREVIATIONS

ACGIH TLV = American Conference of Governmental Industrial Hygienists Threshold Limit Value® (2019)
ATSDR = US Agency for Toxic Substances & Disease Registry (US Dept. Health & Human Services)
C = Ceiling Limit
I = Inhalable fraction of particulate
mg/m^3 = milligram of substance per cubic meter of air
NE = None Established
OSHA PEL = Occupational Health and Safety Administration Permissible Exposure Limit
PNOR = Particles Not Otherwise Regulated
R = Respirable fraction of particulate
STEL = Short Term Exposure Limit
TWA = Time Weighted Average

APPROPRIATE ENGINEERING CONTROLS

As sold no special requirements are necessary.

If processes such as machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting are performed and produce dust and/or fumes, adequate ventilation should be used to control exposures to dusts and fumes below their applicable occupational exposure limits. Industrial hygiene sampling should be used to determine what specific corrective actions may be needed. Take appropriate precautions to prevent fires and explosion when hot work is performed. Do not eat, smoke or drink when performing the tasks listed above.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye Protection

Wear safety glasses with side-shields if there is a risk of particles getting in eyes. Welding and thermal cutting of this product can generate ultraviolet and infrared radiation. Select appropriate welding shades to prevent eye injury.

Skin Protection

No chemical protective clothing is required. During use of this product, other hazards such as ultraviolet radiation, infrared radiation, hot metal and sparks may be generated. Use appropriate protective clothing and gloves for the application.

Respiratory Protection

As sold, no respiratory protection is expected to be necessary.

If processes such as machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting are performed, dusts and fumes may be created. Respiratory protection may be necessary if the concentrations of the hazardous substances listed in the Table in Section (8) exceed the applicable occupational exposure limits. In these cases, a National Institute of Occupational Safety & Health (NIOSH) approved respirator should be selected based on the form and concentration of the contaminant in air.

SECTION 9—PHYSICAL & CHEMICAL PROPERTIES

APPEARANCE /PHYSICAL STATE Solid, silver gray in color	**KINEMATIC VISCOSITY** Not applicable
ODOR None	**VAPOR DENSITY** Not applicable
MELTING POINT/FREEZING POINT Approximately 2350°F (1300°C)	**SPECIFIC GRAVITY (relative density)** 7.85 g/cm^3 for iron
BOILING POINT 5000°F (2750°C) for iron	**VAPOR PRESSURE** Not applicable
FLASH POINT Not applicable for solid castings	**EVAPORATION RATE** Not applicable
FLAMMABILITY Not flammable	**SOLUBILITY** Insoluble
UPPER AND LOWER FLAMMABILITY LIMITS Not applicable for solid castings	**pH** Not applicable
AUTO IGNITION TEMPERATURE Not applicable	**ABSOLUTE VISCOSITY** Not applicable
DECOMPOSITION TEMPERATURE Not applicable	**PARTITION COEFFICIENT** Not applicable

SECTION 10—STABILITY & REACTIVITY

CHEMICAL STABILITY Stable	**CONDITIONS TO AVOID** None
REACTIVITY Not reactive	**INCOMPATIBLE MATERIALS** None
HAZARDOUS DECOMPOSITION PRODUCTS None	**POSSIBILITY OF HAZARDOUS REACTIONS** Not applicable

SECTION 11—TOXICOLOGICAL INFORMATION

This product is an article as sold.

Dust or fumes generated from machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting of the product may produce airborne contaminants that are hazardous. Information about these components is supplied.

ACUTE TOXICITY

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Carbon	2000 mg/kg (rat)	Not Listed	Not Listed
Chromium	>5000 mg/kg (rat)	Not Listed	5.41 mg/L (rat)
Copper	300–2,500 mg/kg (rat)	>2000 mg/kg (rat)	5.11 mg/L (rat)
Hexavalent Chromium	52 mg/kg (rat)	57 mg/kg (rabbit)	99–262 mg/L (rat)
Iron	> 2000 mg/kg (rat)	Not Listed	5.14 mg/L (rat)
Manganese	> 2000 mg/kg (rat)	Not Listed	> 5.14 mg/L (rat)
Nickel	>9000 mg/kg (rat)	Not Listed	Not Listed
Silicon	3160 mg/kg (rat)	Not Listed	Not Listed

Key to abbreviations

LD50 = Lethal Dose of the substance at which 50% of the exposed population is killed within a given period of time.
LC50 = Lethal Concentration of the substance at which 50% of the exposed population is killed within a given period of time.

SKIN CORROSION/IRRITATION

None expected.

SERIOUS EYE DAMAGE OR IRRITATION

Dusts and fumes may cause eye irritation, but the constituents do not meet the criteria to be classified in this category.

RESPIRATORY OR SKIN SENSITIZATION

Nickel: After an individual becomes sensitized to nickel, dermal contact with a small amount of nickel or oral exposure to low doses of nickel can result in dermatitis.

Hexavalent Chromium: May cause respiratory sensitization (hexavalent chromium)

GERM CELL MUTAGENICITY

Nickel: Chromosomal aberrations and in vitro and in vivo testing has shown that nickel is genotoxic (ATSDR); data is insufficient for classification.

CARCINOGENICITY

Carbon: Not listed by IARC, NTP or OSHA

Chromium (metal): Not listed by IARC, NTP or OSHA
When chromium is heated to high temperatures such as those that occur in welding arcs or during thermal cutting processes it may oxidize to form hexavalent chromium. In the product as sold, chromium is in the elemental form. Hexavalent chromium is listed by IARC (possibly carcinogenic to humans–Group 2BA) and NTP (known human carcinogen).

Copper: Not listed by IARC, NTP or OSHA

Iron: Not listed by IARC, NTP or OSHA

Manganese: Not listed by IARC, NTP or OSHA

Nickel: Listed by IARC (possibly carcinogenic to humans–Group 2BA) and NTP (known human carcinogen). The increased risk of lung and sinus cancer varies with the form of nickel. There is no evidence that metallic nickel is associated with nasal or lung cancer (ATSDR).

Silicon: Not listed by IARC, NTP or OSHA

Silica, Respirable Crystalline**:** Listed as a carcinogen by IARC 1 (Carcinogenic to Humans), NTP (Known to be a human carcinogen) and OSHA. It can cause lung cancer.

Tin: Not listed by IARC, NTP or OSHA

REPRODUCTIVE TOXICITY

Nickel: Effects on fertility but does not meet the GHS (Globally Harmonized System) criteria to be classified in this category.

SPECIFIC TARGET ORGAN TOXICITY-SINGLE EXPOSURE (SE)

Copper: There are reports of copper fume causing “metal fume fever” resulting in symptoms of a burning sensation, throat irritation, coughing, shortness of breath, nausea, aches and fever. These studies lack adequate exposure data and clear evidence that copper fumes caused metal fume fever is lacking. The data is inadequate for classification.

SPECIFIC TARGET ORGAN TOXICITY-REPEATED EXPOSURE (RE)

Hexavalent Chromium: Chrome ulcers, nasal septum holes, inflammation of the nasal mucosa and throat, chronic bronchitis, kidney and liver effects have been reported in chrome workers. The effects result in a Specific Target Organ Toxicity-Repeated or Prolonged Exposure (STOT-RE) Category 1 classification (Part of 29 CFR 1910.1200 Appendix A-Health Hazard Criteria).

Iron: Prolonged exposure may result in iron deposits in the lung, a condition known as siderosis but this effect but does not meet the criteria to be classified in this category.

Manganese: Inflammatory changes in the lung were found in monkeys exposed to manganese dioxide via inhalation for 10 months. At high exposure levels (greater than 5 mg/m^3), manganism (chronic manganese poisoning) has been reported in workers. Symptoms of manganism include sleepiness, weakness in the legs, a mask-like facial appearance, emotional disturbances and a spastic gait. High levels of pneumonia have also been reported in workers inhaling large amounts of manganese dust and fume. In some studies, manganese has been associated with longer reaction times, hand steadiness and eye-hand coordination. Effects appear to be more pronounced with exposures to respirable sized particles. These effects result in a STOT-RE Category 2 classification.

Nickel (elemental and nickel oxide): Animal studies have shown lung changes and inflammation following inhalation exposure. Effects vary with the form of nickel used in the studies, animal species and route of administration. There have been case reports of occupational asthma, pulmonary fibrosis and pulmonary edema in workers however exposure data is lacking. The animal studies result in a STOT-RE Category 1 classification.

Silica, Respirable Crystalline: Prolonged and repeated exposure to respirable crystalline silica may cause silicosis. Respirable crystalline silica may also cause immune system effects and kidney effects.

ASPIRATION HAZARD

Based on the physical form, the product is not expected to be an aspiration hazard.

TERMS

OSHA—Occupational Safety & Health Administration

Y = Listed as a Human Carcinogen

NTP—National Toxicology Program

K = Known to be a Human Carcinogen

R = Reasonably Anticipated to be a Human Carcinogen (RAHC)

IARC—International Agency for Research on Cancer

1 = Carcinogen to Humans

2A = Probably Carcinogenic to Humans

2B = Possibly Carcinogenic to Humans

3 = Unclassifiable as to Carcinogenicity in Humans

4 = Probably not Carcinogenic to Humans

SECTION 12—ECOLOGICAL INFORMATION

ECOTOXICITY

Ecotoxicity is expected to be minimal since the product as sold is a solid with low water solubility.

Dust generated and/or collected from further processing of the casting may be toxic to the environment. The following ecotoxicological information is for the hazardous substances that could be released and generated from these processes which are hazardous to aquatic organisms and may cause long-term adverse effects in the environment.

Component	Freshwater Algae	Freshwater Fish
Chromium (740-44-0)	Not listed	LC50: 14.3 mg/l/96 h (*Pimephales promelas*)

Copper (7400-50-8)	EC50: 0.031 - 0.054 mg/L, 96 h static (*Pseudokirchneriella subcapitata*) EC50: 0.0426 - 0.0535 mg/L, 72h static (*Pseudokirchneriella subcapitata)*	LC50: = 0.112 mg/L, 96 h flow-through (*Poecilia reticulata)* LC50: 0.0068 - 0.0156 mg/L, 96 h *(Pimephales promelas)* LC50: < 0.3 mg/L, 96h static (Pimephales promelas) LC50: = 0.2 mg/L, 96h flow-through (*Pimephales promelas*) LC50: = 0.052 mg/L, 96 h flow-through (*Oncorhynchus mykiss*) LC50: = 1.25 mg/L, 96h static (*Lepomis macrochirus*) LC50: = 0.3 mg/L, 96 h semi-static *(Cyprinus carpio)* LC50: = 0.8 mg/L, 96 h static (*Cyprinus carpio*)
Iron (7439-89-6)	Not listed	LC50: = 13.6 mg/L, 96 h static (*Morone saxatilis*)
Nickel (740-02-0)	EC50: 0.174 - 0.311 mg/L, 96 h static (*Pseudokirchneriella subcapitata*) EC50: = 0.18 mg/L, 72 h (*Pseudokirchneriella subcapitata*)	LC50: = 10.4 mg/L, 96 h static (*Cyprinus carpio*) LC50: = 1.3 mg/L, 9 6h semi-static (*Cyprinus carpio*) LC50: > 100 mg/L, 9 6 h (*Brachydanio rerio)*

PERSISTENCE AND DEGRADABILITY Grey Iron casting	Not applicable
BIOACCUMULATION POTENTIAL Grey Iron casting	Not applicable
MOBILITY IN SOIL Gray Iron castings	Not applicable
OTHER ADVERSE EFFECTS Gray Iron casting	Avoid release to the environment

SECTION 13—DISPOSAL CONSIDERATIONS

Recover or recycle castings or dispose of according to federal, state and local regulations. Dust collected from product processing operations may be classified as a hazardous waste. Dispose of such dust in accordance with federal, state and local regulations.

SECTION 14—TRANSPORT INFORMATION

UN NUMBER Not regulated	**UN PROPER SHIPPING NAME** Not regulated
DOT (US) Not regulated	**TDG** Not regulated
TRANSPORT HAZARD CLASS Not regulated	**PACKING GROUP** Not regulated
ENVIRONMENTAL HAZARDS None	**TRANSPORT IN BULK (IMO instruments)** Not applicable
SPECIAL PRECAUTIONS Not applicable	**LABEL(S) REQUIRED?** No

SECTION 15—REGULATORY INFORMATION

This product is an article as sold.

If this product is further processed, the regulatory status of the components listed in the composition section of this sheet may be altered. The following regulatory information may not be complete and should not be relied upon as the sole source of information regarding regulatory responsibilities**.**

US-OSHA (Hazard Communication Standard)

Reference 29 CFR 1910.1200 and 1910.1000. A finished casting is an article as defined in the OSHA Hazard Communication Standard 29CFR 1910.1200 (c). Dust or fumes generated by cleaning, machining, grinding, or welding of the casting may produce airborne contaminants. These are listed in Section 8.

US-EPA (Toxic Substances Control Act–TSCA)

This product is an article as defined by Toxic Substances Control Act (TSCA) regulations and is exempt from TSCA Inventory listing requirements. All components of these products are on the TSCA inventory list or are excluded from it.

US-EPA (SARA Title III)

Releases to the environment of **Chromium, Copper, Manganese and Nickel**, are be subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

Substance	CAS #	CERCLA RQ* (lbs)	Section 313	NPRI Threshold Category	California Prop 65
Chromium	7440-47-3	5,000	313	1A	Carcinogen (hexavalent form only)
Copper	7440-50-8	5,000	313		
Manganese	7439-96-5		313	1A	
Nickel	7440-02-0	100	313	1A	Carcinogen

***** For metals listed under CERCLA (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc), no reporting of releases of the solid form is required if the mean diameter of the pieces of the solid metal released is greater than 100 micrometers (0.004 inches).

NOTES

CAS = Chemical Abstract Service Registry Number, a 7-digit identifier.

CERCLA RQ = Comprehensive Environmental Response, Compensation & Liability Act of 1980, Reportable Quantity. If a value is listed then releases of particles, ≤ 100 µm in size, to the environment may require reporting under CERCLA Sections 102–103 (40 CFR Part 302).

EINECS = European Inventory of Existing Commercial Chemical Substances, a 7-digit identifier.

NPRI = National Pollutant Release Inventory Threshold Category, if 1A or 1B is listed, may be subject to reporting under the Canadian Environmental Protection Act, 1999.

Prop 65 = Proposition 65, if listed in the table above: WARNING: This product contains chemicals known to the State of California to cause cancer.

Section 313 = if '313' is listed, may be subject to the reporting requirements found under Emergency Planning and Community Right-to-Know Act (EPCRA) Section 313 (40 CFR Part 372).

CANADA-WHMIS (Workplace Hazardous Materials Information System)

This SDS has been prepared according to the hazard criteria of the Controlled Product Regulations (CPR) and the SDS contains the information required by the CPR.

CANADA DSL (Domestic Substance List) Inventory Status

All components of these products are on the DSL Inventory.

CEPA (Canadian Environmental Protection Act)

Chromium and nickel are on the CEPA Priorities Substances Lists

EINECS No. (European Inventory of Existing Commercial Chemical Substances)

All components of these products are on the EINECS list.

RoHS (Restriction of Certain Hazardous Substances) Compliance

Castings comply with RoHS

CALIFORNIA PROPOSITION 65 Compliance

WARNING: This product contains or produces chemicals known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code 25248.5 et seq.)

US STATE REGULATORY INFORMATION

Some of the components listed in Section 3 may be covered under specific state regulations.

SECTION 16—OTHER INFORMATION

SDS SHEET PREPARED BY	DATE
Keramida Environmental, Inc. for American Foundry Society, Inc.	March 2019

DISCLAIMER:

The information provided in this SDS is correct to the best of our knowledge and judgment at the date of its publication. The information given is not necessarily fully adequate in every circumstance.

This SDS is intended to be used as a guide to the appropriate handling, storage, and use of this product by an adequately trained person. The American Foundry Society, Inc. is not responsible for the misuse, mishandling or improper storage of this material by the user.

The American Foundry Society, Inc. neither makes, nor offers, nor shall be held liable for any express or implied warranties, including any warranties of merchantability and fitness for a particular purpose with respect to the use of the information provided.

PRODUCT IDENTIFIER

SC-000-041 Rev. 13

GRAY IRON CASTINGS

SUPPLIER IDENTIFICATION

Company Name_____

Street Address _____

Mailing Address _____

City _____ State ____

Zip/Postal Code _____ Country _____

Emergency Phone Number_____

Other Info_____

HAZARD PICTOGRAMS

SIGNAL WORD

DANGER*

HAZARD STATEMENTS / PRECAUTIONARY STATEMENTS

***Castings do not present hazards in their original form.**

Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica. Dust or fumes generated by machining, grinding, drilling, melting, casting, sawing, blasting, polishing, buffing, brazing, soldering, welding or thermal cutting of the casting may produce airborne contaminants. The following hazard and precautionary statements are for the hazardous substances that could be released or generated from these processes.

- May cause an allergic skin reaction
- May cause allergy or asthma symptoms or breathing difficulties
- May cause cancer
- May cause damage to organs through prolonged or repeated exposure
- Very toxic to aquatic life
- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- In case of inadequate ventilation, wear respiratory protection
- Do not breath dust and fumes
- Wash hands thoroughly after using
- Do not eat, drink or smoke when using this product
- Wear protective gloves, protective clothing, eye protection and face protection
- IF ON SKIN: Wash with plenty of water
- IF INHALED: Remove person to fresh air and keep comfortable for breathing
- If experiencing respiratory problems, call a POISON CENTER/doctor
- If skin irritation or rush occurs: Get medical advice/attention\
- Wash contaminated clothing before reuse
- Dispose of contents in accordance with local and national regulations

OTHER INFORMATION

- None

MATHESON
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Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS **SDS ID: MAT16625**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
NITROGEN, COMPRESSED GAS
Synonyms
MTG SDS 67; DIATOMIC NITROGEN; DINITROGEN; NITROGEN-14; NITROGEN GAS; UN 1066; N2
Chemical Family
inorganic, Gas
Product Description
Classification determined in accordance with Compressed Gas Association standards.
Product Use
Industrial and Specialty Gas Applications.
Restrictions on Use
None known.
Details of the supplier of the safety data sheet
MATHESON TRI-GAS, INC.
150 Allen Road, Suite 302
Basking Ridge, NJ 07920
General Information: 1-800-416-2505
Emergency #: 1-800-424-9300 (CHEMTREC)
Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Gases Under Pressure - Compressed gas
Simple Asphyxiant
GHS Label Elements
Symbol(s)

Signal Word
Warning
Hazard Statement(s)
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
Precautionary Statement(s)
Prevention
None needed according to classification criteria.
Response
None needed according to classification criteria.
Storage
Protect from sunlight.
Store in a well-ventilated place.
Disposal

Dispose in accordance with all applicable regulations.

Other Hazards

Rapid release of compressed gas may cause frostbite.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
7727-37-9	Nitrogen, compressed	100

Section 4 - FIRST AID MEASURES

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

suffocation, frostbite

Delayed

no information on significant adverse effects.

Note to Physicians

For inhalation, consider oxygen.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Negligible fire hazard. Pressurized containers may rupture or explode if exposed to sufficient heat.

Hazardous Combustion Products

oxides of nitrogen

Fire Fighting Measures

Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Stay away from the ends of tanks. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Apply water from a protected location or from a safe distance. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Reduce vapors with water spray. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Do not touch or walk through spilled material. If possible, turn leaking containers so that gas escapes rather than liquid. Do not direct water at spill or source of leak. Allow substance to evaporate. Ventilate closed spaces before entering.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Avoid breathing dust/fume/gas/mist/vapors/spray. Use only with adequate ventilation. Wash hands thoroughly after handling.

Conditions for Safe Storage, Including any Incompatibilities

Protect from sunlight.

Store in a well-ventilated place.

Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

Incompatible Materials

metals, oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Nitrogen, compressed	**7727-37-9**
ACGIH:	(See Appendix F: Minimal Oxygen Content)

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

For the gas: Eye protection not required, but recommended. For the liquid: Wear splash resistant safety glasses.

Skin Protection

For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory Protection

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode. Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Glove Recommendations

For the gas: Protective gloves are not required. For the liquid: Wear insulated gloves.

Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS **SDS ID: MAT16625**

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	**Physical State**	gas
Odor	odorless	**Color**	colorless
Odor Threshold	Not available	**pH**	Not available
Melting Point	-210 °C (-346 °F)	**Boiling Point**	-196 °C (-321 °F)
Boiling Point Range	Not available	**Freezing point**	Not available
Evaporation Rate	Not available	**Flammability (solid, gas)**	Not flammable
Autoignition Temperature	Not available	**Flash Point**	Not available
Lower Explosive Limit	Not available	**Decomposition temperature**	Not available
Upper Explosive Limit	Not available	**Vapor Pressure**	760 mmHg @ -196 °C
Vapor Density (air=1)	0.967	**Specific Gravity (water=1)**	Not available
Water Solubility	1.6 % (@ 20 °C)	**Partition coefficient: n-octanol/water**	Not available
Viscosity	0.01787 cp	**Kinematic viscosity**	Not available
Solubility (Other)	Not available	**Density**	1.2506 g/L
Log KOW	0.67	**Physical Form**	compressed gas
Taste	tasteless	**Volatility**	100 %
Molecular Formula	N2	**Molecular Weight**	28.0134
Critical Temperature	-147.1 °C		

Solvent Solubility
Soluble
liquid ammonia
Slightly Soluble
alcohol

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.
Chemical Stability
Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions
Will not polymerize.
Conditions to Avoid
Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.
Incompatible Materials
metals, oxidizing materials
Hazardous decomposition products
oxides of nitrogen

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure
Inhalation
nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, tingling sensation, loss of coordination, convulsions, coma
Skin Contact
frostbite
Eye Contact
irritation, frostbite
Ingestion
ingestion of a gas is unlikely
Acute and Chronic Toxicity
Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and no selected endpoints have been identified.
Product Toxicity Data
Acute Toxicity Estimate
No data available.
Immediate Effects
suffocation, frostbite
Delayed Effects
no information on significant adverse effects.
Irritation/Corrosivity Data
No animal testing data available for skin or eyes.
Respiratory Sensitization
No data available.
Dermal Sensitization
No data available.
Component Carcinogenicity
None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.
Germ Cell Mutagenicity
No data available.
Tumorigenic Data
No data available
Reproductive Toxicity
No data available.
Specific Target Organ Toxicity - Single Exposure
No target organs identified.
Specific Target Organ Toxicity - Repeated Exposure
No target organs identified.

Aspiration hazard
Not applicable.
Medical Conditions Aggravated by Exposure
None known.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity
No LOLI ecotoxicity data are available for this product's components.
Persistence and Degradability
No data available.
Bioaccumulative Potential
No data available.
Mobility
No data available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose in accordance with all applicable regulations.
Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: NITROGEN, COMPRESSED
Hazard Class: 2.2
UN/NA #: UN1066
Required Label(s): 2.2

IMDG Information:
Shipping Name: NITROGEN, COMPRESSED
Hazard Class: 2.2
UN#: UN1066
Required Label(s): 2.2
International Bulk Chemical Code
This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.
SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories
Gas Under Pressure; Simple Asphyxiant
U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Nitrogen, compressed	**7727-37-9**	No	Yes	Yes	Yes	Yes

Not listed under California Proposition 65

Canada Regulations

Canadian WHMIS Ingredient Disclosure List (IDL)

The components of this product are either not listed on the IDL or are present below the threshold limit listed on the IDL.

Component Analysis - Inventory

Nitrogen, compressed (7727-37-9)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2	KR - REACH CCA	CN	NZ	MX	TW	VN (Draft)
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 0 Fire: 0 Reactivity: 0 Other: SA

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes

Updated: 03/01/2017

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit

Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

Matheson Tri-Gas, Inc. makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Matheson Tri-Gas, Inc. shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

SAFETY DATA SHEET (SDS): NATURAL SAND

SECTION I –IDENTIFICATION

PRODUCT IDENTIFIER	TRADE NAME	OTHER SYNONYMS
Natural Sand	Sand	Construction Aggregate

RECOMMENDED USE AND RESTRICTION ON USE
Used for construction purposes
This product is not intended or designed for and should not be used as an abrasive blasting medium or for foundry applications.

MANUFACTURER/SUPPLIER INFORMATION
Martin Marietta Materials
4123 Parklake Ave
Raleigh, North Carolina 27612
Phone: 919-781-4550

For additional health, safety or regulatory information and other emergency situations, call 919-781-4550

SECTION II – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION:
Category 1A Carcinogen
Category 1 Specific Target Organ Toxicity (STOT) following repeated exposures
Category 2B Eye Irritant

SIGNAL WORD: DANGER

HAZARD STATEMENTS:
May cause cancer by inhalation.
Causes damage to lungs, kidneys and autoimmune system through prolonged or repeated exposure by inhalation.
Causes eye irritation.

PRECAUTIONARY STATEMENTS
Do not handle until the safety information presented in this SDS has been read and understood.
Do not breathe dusts or mists. Do not eat, drink or smoke while manually handling this product.
If swallowed: If gastrointestinal discomfort occurs and if person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit.
If on skin: Rinse skin with soap and water.
If inhaled excessively: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing.
If exposed, concerned, unwell or irritation of the eyes, skin, mouth or throat/nasal passage persist or occur later: Get medical attention.
Wear eye protection and respiratory protection following this SDS, NIOSH guidelines and other applicable regulations.
Avoid creating dust when handling, using or storing. Use with adequate ventilation to keep exposure below recommended exposure limits.

Dispose of product in accordance with local, regional, national or international regulations.

Please refer to Section XI for details of specific health effects of the components.

SECTION III – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO	% by weight (approx)
Natural Sand	None	100
Silicon Dioxide, SiO_2 (1)	7631-86-9	>1

(1): The composition of SiO_2 may be up to 100% crystalline silica, content of this material varies naturally

SECTION IV – FIRST-AID MEASURES

INHALATION: If excessive inhalation occurs, remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or develops later.

EYES: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Remove contact lenses, if present and easy to do, and continue rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or develops later.

SKIN: Rinse skin with soap and water after manually handling and wash contaminated clothing if there is potential for direct skin contact. Contact a physician if irritation persists or develops later.

INGESTION: If gastrointestinal discomfort occurs and if person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. Get medical attention.

SIGNS AND SYMPTOMS OF EXPOSURE: There are generally no signs or symptoms of exposure to respirable crystalline silica. Often, chronic silicosis has no symptoms. The symptoms of chronic silicosis, if present, are shortness of breath, wheezing, cough and sputum production. The symptoms of acute silicosis which can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as 6 months, are the same as those associated with chronic silicosis; additionally, weight loss and fever may also occur. The symptoms of scleroderma, an autoimmune disease, include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

Direct skin and eye contact with dust may cause irritation by mechanical abrasion. Ingestion of large amounts may cause gastrointestinal irritation and blockage. Inhalation of dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits. Repeated excessive exposure may cause pneumoconiosis, such as silicosis and other respiratory effects.

SECTION V – FIRE-FIGHTING MEASURES

EXTINGUISHING AGENT
Not flammable; use extinguishing media compatible with surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARD
Contact with powerful oxidizing agents may cause fire and/or explosions (see Section X of this SDS).

SPECIAL FIRE FIGHTING PROCEDURES	HAZARDOUS COMBUSTION PRODUCTS
None known	None known

SECTION VI – ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Persons involved in cleaning should first follow the precautions defined in Section VII of the SDS. Spilled materials, where dust can be generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust and other components that may pose inhalation hazards. Do not dry sweep spilled material. Collect the material using a method that does not produce dust such as a High-Efficiency Particulate Air (HEPA) vacuum or thoroughly wetting down the dust before cleaning up. Wear appropriate personal protective equipment as specified in Section VIII including appropriate respirators during and following clean up or whenever airborne dust is present to ensure worker exposures remain below occupational exposure limits (OELs - Refer to Section VIII).

Place the dust in a covered container appropriate for disposal. Dispose of the dust according to federal, state and local regulations.

This product is not subject to the reporting requirements of SARA Title III Section 313, and 40 CFR 372.

SECTION VII – HANDLING AND STORAGE

This product is not intended or designed for and should not be used as an abrasive blasting medium or for foundry applications. Follow protective controls set forth in Section VIII of this SDS when handling this product. Dust containing respirable crystalline silica may be generated during processing, handling and storage. Use good housekeeping procedures to prevent the accumulation of dust in the workplace.

Do not breathe dust. Avoid contact with skin and eyes. Do not store near food or beverages or smoking materials.
Do not stand on piles of materials; it may be unstable.

Use adequate ventilation and dust collection equipment and ensure that the dust collection system is adequate to reduce airborne dust levels to below the appropriate OELs. If the airborne dust levels are above the appropriate OELs, use respiratory protection during the establishment of engineering controls. Refer to Section VIII - Exposure Controls/Personal Protection for further information.

In accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, 1928.21), state, and/or local right-to-know laws and regulations, familiarize your employees with this SDS and the information contained herein. Warn your employees, your customers and other third parties (in case of resale or distribution to others) of the potential health risks associated with the use of this product and train them in the appropriate use of personal protective equipment and engineering controls, which will reduce their risks of exposure.

See also ASTM International standard practice E 1132-06, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."

For safe handling and use of this product for Hydraulic Fracturing, please see the OSHA/NIOSH Hazard Alert Worker Exposure to Silica during Hydraulic Fracturing DHHS (NIOSH) Publication No. 2012-166 (2012).
http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne OELs for Components of Natural Sand:

COMPONENT(S) CHEMICAL NAME	MSHA/OSHA PEL	ACGIH TLV-TWA	NIOSH REL
Silicon Dioxide, SiO_2 §	(R) 0.05 mg/m^3 (R) 0.025 mg/m^3 (AL)	(R) 0.025 mg/m^3 #	(R) 0.05 mg/m^3 #

§ The OSHA OELs for respirable crystalline silica are listed in the table. As of June 28, 2018, the MSHA standard for respirable crystalline silica has not been changed but may be revised in the future. The MSHA PEL for dust containing crystalline silica (quartz) is based on the silica content of the respirable dust sample and is calculated as: 10 mg/m^3/(% SiO_2 +2). The MSHA PEL for crystalline silica as tridymite and cristobalite is one-half the PEL for crystalline silica (quartz).
# The ACGIH and NIOSH limits are for crystalline silica (quartz), independent of the dust concentration. The ACGIH TLV for crystalline silica as cristobalite is equal to the TLV for crystalline silica as quartz. In 2005, ACGIH withdrew the TLV for crystalline silica as tridymite. The NIOSH REL for crystalline silica as cristobalite and tridymite is the same as for quartz. Refer to Section X for thermal stability information for crystalline silica (quartz).
AL: Action Level
(R): Respirable Fraction.

Airborne OELs for Inert/Nuisance Dust:

Standard	Respirable Dust	Total Dust
MSHA/OSHA PEL (as Inert or Nuisance Dust)	5 mg/m^3	15 mg/m^3
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m^3	*10 mg/m^3
NIOSH REL (Particulates Not Otherwise Regulated)	-	-

Note: The limits for Inert Dust are provided as guidelines. Nuisance dust is limited to particulates not known to cause systemic injury or illness.
* The TLV provided is for inhalable particles not otherwise specified.

ENGINEERING CONTROLS
Ventilation: Use local exhaust, general ventilation or natural ventilation adequate to maintain exposures below appropriate exposure limits.

Other control measures: Respirable dust and crystalline silica levels should be monitored regularly. Dust and crystalline silica levels in excess of appropriate exposure limits should be reduced by implementing feasible engineering controls, including (but not limited to) dust suppression (wetting), ventilation, process enclosure and enclosed employee work stations.

EYE/FACE PROTECTION
Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated. If irritation persists, get medical attention immediately. There is potential for severe eye irritation if exposed to excessive concentrations of dust for those using contact lenses.

SKIN PROTECTION
Use appropriate protective gloves if manually handling the product.

RESPIRATORY PROTECTION
Respirator Recommendations:

For respirable crystalline silica levels that exceed or are likely to exceed appropriate exposure limits, a NIOSH-approved particulate filter respirator must be worn. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements. For additional information contact NIOSH at 1-800-356-4674 or visit website: http://www.cdc.gov/niosh/npg (search for crystalline silica). See also ANSI standard Z88.2 (latest revision) "American National Standard for Respiratory Protection," 29 CFR 1910.134 and 1926.103, and 42 CFR 84.

NIOSH recommendations for respiratory protection include:
Up to 0.5 mg/m^3:
(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.
Up to 1.25 mg/m^3:
(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate (100-series) filter.
(APF = 25) Any supplied-air respirator operated in a continuous-flow mode
Up to 2.5 mg/m^3:
(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.
(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION, CONTD.

NIOSH recommendations for respiratory protection include, continued:
Up to 25 mg/m^3:
(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions (50 mg/m^3 for crystalline silica-quartz): A self-contained breathing apparatus (SCBA) that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode or any supplied-air respirator that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus.

Escape from unknown or IDLH conditions: An air-purifying, full-face piece respirator with a high-efficiency particulate (100-series) filter or any appropriate escape-type, self-contained breathing apparatus.

If the workplace airborne crystalline silica concentration is unknown for a given task, conduct air monitoring to determine the appropriate level of respiratory protection to be worn. Consult with a certified industrial hygienist, your insurance risk manager or the OSHA Consultative Services group for detailed information. Ensure appropriate respirators are worn, as needed, during and following the task, including clean up or whenever airborne dust is present, to ensure worker exposures remain below OELs.

GENERAL HYGIENE CONSIDERATIONS
There are no known hazards associated with this material when used as recommended. Following the guidelines in this SDS are recognized as good industrial hygiene practices. Avoid breathing dust. Avoid skin and eye contact. Wash dust-exposed skin with soap and water before eating, drinking, smoking and using toilet facilities. Wash work clothes after each use.

SECTION IX— PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Natural Sand is a mixture of angular or round multicolored particles.	ODOR AND ODOR THRESHOLD Odorless and not applicable
pH AND VISCOSITY Not applicable	MELTING POINT/FREEZING POINT Not applicable
BOILING POINT AND RANGE Not applicable	FLASH POINT AND FLAMMABILITY Not applicable
FLAMMABILITY/EXPLOSIVE LIMITS AND AUTOIGNITION TEMPERATURE Not applicable	EVAPORATION RATE AND DECOMPOSITION TEMPERATURE Not applicable
VAPOR PRESSURE AND VAPOR DENSITY IN AIR Not applicable	SPECIFIC GRAVITY. 2.55-2.8
SOLUBILITY IN WATER Negligible	PARTITION COEFFICIENT: N-OCTANOL/WATER Not applicable

SECTION X – STABILITY AND REACTIVITY

STABILITY Stable	CONDITIONS TO AVOID Contact with incompatible materials (see below).

THERMAL STABILITY
If crystalline silica (quartz) is heated to more than 870°C (1598°F), it can change to a form of crystalline silica known as tridymite, and if crystalline silica (quartz) is heated to more than 1470°C (2678°F), it can change to a form of crystalline silica known as cristobalite.

INCOMPATIBILITY (Materials to avoid)
Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions.

SECTION X – STABILITY AND REACTIVITY, CONTD.

HAZARDOUS DECOMPOSITION PRODUCTS
Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.

HAZARDOUS POLYMERIZATION
Not known to polymerize

SECTION XI – TOXICOLOGICAL INFORMATION

Health Effects: The information below represents an overview of health effects caused by overexposure to one or more components in natural sand.

Primary routes(s) of exposure: ■ Inhalation 🔄 Skin ■ Ingestion

EYE CONTACT: Direct contact with dust may cause irritation by mechanical abrasion. Conjunctivitis may occur.

SKIN CONTACT: Direct contact may cause irritation by mechanical abrasion.

SKIN ABSORPTION: Not expected to be a significant route of exposure.

INGESTION: Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury. Ingestion of large amounts may cause gastrointestinal irritation and blockage.

INHALATION: Dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Inhaling respirable dust and/or crystalline silica may aggravate existing respiratory system disease(s) (e.g., bronchitis, emphysema, chronic obstructive pulmonary disease) and/or dysfunctions. Exposure to dust may aggravate existing skin and/or eye conditions. Smoking and obstructive/restrictive lung diseases may also exacerbate the effects of excessive exposure to this product.

This product is a mixture of components. The composition percentages are listed in Section III. Toxicological information for each component is listed below:

Silicon Dioxide: It is comprised of amorphous and crystalline forms of silica. In some batches, crystalline silica may represent up to 100% of silicon dioxide.

Exposure route: Eyes, respiratory system.

Target organs: Eyes, skin, respiratory system.

ACGIH, MSHA, and OSHA have determined that adverse effects are not likely to occur in the workplace provided exposure levels do not exceed the appropriate exposure limits. Lower exposure limits may be appropriate for some individuals including persons with pre-existing medical conditions as described under medical conditions aggravated by exposure.

A. SILICOSIS
The major concern is silicosis (lung disease), caused by the inhalation and retention of respirable crystalline silica dust. Silicosis leads to conditions such as lung fibrosis and reduced pulmonary function. The form and severity in which silicosis manifests itself, depends in part on the type and extent of exposure to silica dusts: chronic, accelerated and acute forms are recognized. In later stages the critical condition may become disabling and potentially fatal. Restrictive and/or obstructive changes in lung function may occur due to exposure. A risk associated with silicosis is development of pulmonary tuberculosis (silico-tuberculosis). Respiratory insufficiencies due to massive fibrosis and reduced pulmonary function, possibly with accompanying heart failure, are other potential causes of death due to silicosis.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

Chronic or Ordinary Silicosis is the most common form of silicosis and can occur after many years of exposure to levels above the OELs for airborne respirable crystalline silica dust. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. Symptoms of silicosis may include (but are not limited to): Shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; heart enlargement and/or failure. It is further defined as either simple or complicated silicosis.

Simple Silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF).

Complicated Silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease (cor pumonale) secondary to the lung disease.

Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the progression is more rapid.

Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is a rapidly progressive, incurable lung disease and is typically fatal.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that there is "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the form of quartz or cristobalite", there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz dust" and that there is "*limited evidence* in experimental animals for the carcinogenicity of tridymite dust and cristobalite dust." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite dust is *carcinogenic to humans* (*Group 1*)." The IARC evaluation noted that not all industrial circumstances studied evidenced carcinogenicity. The monograph also stated that "Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, "Silica Dust, Crystalline, in the Form of Quartz or Cristobalite" (2012).

NTP - In its Eleventh Annual Report on Carcinogens, concluded that respirable crystalline silica is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust.

OSHA - Crystalline silica is not on the OSHA carcinogen list.

CALIFORNIA PROPOSITION 65 - Crystalline silica in October 1996 was listed on the Safe Drinking Water and Toxic Enforcement ACT of 1986 as a chemical known to the state to cause cancer or reproductive toxicity.

There have been many articles published on the carcinogenicity of crystalline silica, which the reader should consult for additional information; the following are examples of recently published articles: (1) "Dose-Response Meta-Analysis of Silica and Lung Cancer", *Cancer Causes Control*, (20):925-33 (2009); (2) "Occupational Silica Exposure and Lung Cancer Risk: A Review of Epidemiological Studies 1996-2005', *Ann Oncol*, (17) 1039-50 (2006); (3) "Lung Cancer Among Industrial Sand Workers Exposed to Crystalline Silica", *Am J Epidemiol*, (153) 695-703 (2001); (4) "Crystalline Silica and The Risk of Lung Cancer in The Potteries", *Occup Environ Med*, (55) 779-785 (1998); (5) "Is Silicosis Required for Silica-Associated Lung Cancer?", *American Journal of Industrial Medicine*, (37) 252- 259 (2000); (6) " Silica, Silicosis, and Lung Cancer: A Risk Assessment", *American Journal of Industrial Medicine*, (38) 8-18 (2000); (7) "Silica, Silicosis, and Lung Cancer: A Response to a Recent Working Group Report", *Journal of Occupational and Environmental Medicine*, (42) 704-720 (2000).

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

C. AUTOIMMUNE DISEASES

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. For a review of the subject, the following may be consulted: (1) “Antinuclear Antibody and Rheumatoid Factor in Silica-Exposed Workers”, *Arh Hig Rada Toksikol*, (60) 185-90 (2009); (2) "Occupational Exposure to Crystalline Silica and Autoimmune Disease", *Environmental Health Perspectives*, (107) Supplement 5, 793-802 (1999); (3) "Occupational Scleroderma", *Current Opinion in Rheumatology*, (11) 490-494 (1999); (4) “Connective Tissue Disease and Silicosis”, *Am J Ind Med*, (35), 375-381 (1999).

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: (1) “Tuberculosis and Silicosis: Epidemiology, Diagnosis and Chemoprophylaxis”, *J Bras Pneumol*, (34) 959-66 (2008); (2) *Occupational Lung Disorders*, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); (3) "Risk of Pulmonary Tuberculosis Relative to Silicosis and Exposure to Silica Dust in South African Gold Miners," *Occup Environ Med*, (55) 496-502 (1998); (4) “Occupational Risk Factors for Developing Tuberculosis”, *Am J Ind Med*, (30) 148-154 (1996).

E. KIDNEY DISEASE

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis is associated with the increased incidence of kidney diseases, including end stage renal disease. For additional information on the subject, the following may be consulted: (1) “Mortality from Lung and Kidney Disease in a Cohort of North American Industrial Sand Workers: An Update”, *Ann Occup Hyg*, (49) 367-73 (2005); (2) "Kidney Disease and Silicosis", *Nephron*, (85) 14-19 (2000); (3) “End Stage Renal Disease Among Ceramic Workers Exposed to Silica”, *Occup Environ Med*, (56) 559-561 (1999); (4) “Kidney Disease and Arthritis in a Cohort Study of Workers Exposed to Silica”, *Epidemiology*, (12) 405-412 (2001).

F. NON-MALIGNANT RESPIRATORY DISEASES

NIOSH has cited the results of studies that report an association between dusts found in various mining operations and non-malignant respiratory disease, particularly among smokers, including bronchitis, emphysema, and small airways disease. *NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica*, published in April 2002, available from NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226, or at https://www.cdc.gov/niosh/docs/2002-129/default.html.

Respirable dust containing newly broken particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken pieces of silica.

Acute Toxicity Estimates for Natural Sand – Not Available

SECTION XII – ECOLOGICAL INFORMATION

No data available for this product.

SECTION XIII – DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD

Collect and reuse clean materials. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

The above information applies to Martin Marietta Materials product only as sold. The product may be contaminated during use and it is the responsibility of the user to assess the appropriate disposal method in that situation.

SECTION XIV – TRANSPORT INFORMATION

DOT HAZARD CLASSIFICATION
None

PLACARD REQUIRED
None

LABEL REQUIRED
Label as required by the OSHA Hazard Communication standard {29 CFR 1910.1200(f)}, and applicable state and local regulations.

SECTION XV – REGULATORY INFORMATION

OSHA: Crystalline Silica is not listed as a carcinogen.
SARA Title III: Section 311 and 312: Immediate health hazard and delayed health hazard.
TSCA.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.
RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.
CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR §302.4
EPCRA (Emergency Planning and Community Right to Know Act): Crystalline silica (quartz) is not an extremely hazardous substance under regulations of the **Emergency Planning and Community Right to Know Act, 40 CFR Part 355, Appendices A and B** and is not a toxic chemical subject to the requirements of Section 313.
Clean Air Act: Crystalline silica (quartz) mined and processed by Martin Marietta Materials was not processed with or does not contain any Class I or Class II ozone depleting substances.
FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3).(The FDA standard primarily applies to products containing silica used in the coatings of food contact surfaces).
California Proposition 65: Respirable crystalline silica (quartz) is classified as a substance known to the state of California to be a carcinogen.
Massachusetts Toxic Use Reduction Act: Respirable crystalline silica is considered toxic per the **Massachusetts Toxic Use Reduction Act when used in abrasive blasting and molding.**
Pennsylvania Worker and Community Right to Know Act: Quartz is considered hazardous for purposes of the Act, but it is not a special hazardous substance or an environmental hazardous substance.

SECTION XVI – OTHER INFORMATION

DEFINITIONS OF ACRONYMS/ABBREVIATIONS

ACGIH: American Conference of Governmental Industrial Hygienists
AL: Action Level
ANSI: American National Standards Institute
APF: Assigned Protection Factor
California REL: California Inhalation Reference Exposure Limit
CAS: Chemical Abstracts Service
CERCLA: Comprehensive Environmental Response, Compensation and Liability Act
CFR: US Code of Federal Regulations
DHHS: Department of Health and Human Services
EPA: Environmental Protection Agency
EPCRA: Emergency Planning and Community Right to Know Act
FDA: Food and Drug Administration
GHS: Globally Harmonized System
HEPA: High-Efficiency Particulate Air
IARC: International Agency for Research on Cancer
IDLH: Immediately Dangerous to Life and Health
MSHA: Mine Safety and Health Administration
NIOSH: National Institute for Occupational Safety and Health, US Department of Health and Human Services
NIOSH REL: NIOSH Recommended Exposure Limit
NTP: National Toxicology Program

SECTION XVI – OTHER INFORMATION, CONTD.

DEFINITIONS OF ACRONYMS/ABBREVIATIONS, CONTD.

OEL: Occupational Exposure Limit
OSHA: Occupational Safety and Health Administration, US Department of Labor
PEL: Permissible Exposure Limit
PMF: Progressive Massive Fibrosis
RCRA: Resource Conservation and Recovery Act
SARA Title III: Title III of the Superfund Amendments and Reauthorization Act, 1986
SDS: Safety Data Sheet
STOT: Specific Target Organ Toxicity
TLV: Threshold Limit Value
TSCA: Toxic Substance Control Act
TWA: Time-Weighted Average

User's Responsibility: The OSHA Hazard Communication Standard 29 CFR 1910.1200 requires that this SDS be made available to your employees who handle or may be exposed to this product. Educate and train your employees regarding applicable precautions. Instruct your employees to handle this product properly.

Disclaimer: The information contained in this document applies to this specific material as supplied and Martin Marietta Materials believes that the information contained in this SDS is accurate. The suggested precautions and recommendations are based on recognized good work practices and experience as of the date of publication. They are not necessarily all-inclusive or fully adequate in every circumstance as not all use circumstances can be anticipated. It may not be valid for this material if it is used in combination with other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for one's own particular use. Since the actual use of the product described herein is beyond our control, Martin Marietta Materials, assumes no liability arising out of the use of the product by others. Appropriate warnings and safe handling procedures should be provided to handlers and users. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulation, rules or insurance requirement. However, product must not be used in a manner which could result in harm.
An electronic version of this SDS is available at www.martinmarietta.com . More information on the effects of crystalline silica exposure may be obtained from OSHA (phone number: 1-800-321-OSHA; website: http://www.osha.gov) or from NIOSH (phone number: 1-800-35-NIOSH; website: http://www.cdc.gov/niosh).
DATE OF PREPARATION 6/2018 REPLACES 3/2015

NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE IS MADE

MATHESON
The Gas Professionals

Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS **SDS ID: MAT12831**

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
OXYGEN, COMPRESSED GAS
Synonyms
MTG MSDS 71; OXYGEN; DIOXYGEN; MOLECULAR OXYGEN; OXYGEN MOLECULE; PURE OXYGEN; UN 1072; LOX; HYPEROXIA; O2
Chemical Family
inorganic, Gas
Product Description
Classification determined in accordance with Compressed Gas Association standards.
Product Use
Industrial and Specialty Gas Applications
Restrictions on Use
None known.
Details of the supplier of the safety data sheet
MATHESON TRI-GAS, INC.
909 Lake Carolyn Parkway
Suite 1300
Irving, TX 75039
General Information: 1-800-416-2505
Emergency #: 1-800-424-9300 (CHEMTREC)
Outside the US: 703-527-3887 (Call collect)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Oxidizing Gases - Category 1
Gases Under Pressure - Compressed gas
GHS Label Elements
Symbol(s)

Signal Word
Danger
Hazard Statement(s)
May cause or intensify fire; oxidizer.
Contains gas under pressure; may explode if heated.
Precautionary Statement(s)
Prevention
Keep valves and fittings free from oil and grease.
Keep/Store away from clothing/combustible materials.
Response
In case of fire: stop leak if safe to do so.
Storage

Protect from sunlight. Store in a well-ventilated place.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other Hazards

Rapid release of compressed gas may cause frostbite.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
7782-44-7	OXYGEN, COMPRESSED GAS	100

Section 4 - FIRST AID MEASURES

Inhalation

If adverse effects occur, remove to uncontaminated area. Get medical attention.

Skin

If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115°F; 41-46°C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

frostbite

Delayed

No information on significant adverse effects.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Note to Physicians

Treat symptomatically and supportively.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

carbon dioxide, regular dry chemical, Large fires: Use water spray, fog or regular foam.

Unsuitable Extinguishing Media

None known.

Special Hazards Arising from the Chemical

Oxidizer. May ignite or explode on contact with combustible materials. Containers may rupture or explode if exposed to heat.

Hazardous Combustion Products

miscellaneous decomposition products

Fire Fighting Measures

Move container from fire area if it can be done without risk. Do not direct water at source of leak or safety devices; icing may occur. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate

hazard area and deny entry. Let the fire burn. Use extinguishing agents appropriate for surrounding fire. Cool containers with water. Apply water from a protected location or from a safe distance.

Special Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Avoid contact with combustible materials. Do not touch or walk through spilled material. Stop leak if possible without personal risk. Do not direct water at spill or source of leak. Keep unnecessary people away, isolate hazard area and deny entry. Isolate area until gas has dispersed. Ventilate closed spaces before entering. Use only non-sparking tools.

Environmental Precautions

Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Keep away from clothing and other combustible materials. Keep reduction valves free from grease and oil. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Damaged cylinders should be handled only by specialists. Open valve slowly. Use only with equipment cleaned for oxygen service. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material.

Conditions for Safe Storage, Including any Incompatibilities

Protect from sunlight. Store in a well-ventilated place.

Store in accordance with all current regulations and standards. Protect from physical damage. Avoid heat, flames, sparks and other sources of ignition. Store in a clean, cool, dry place. Store below 52 C. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

Incompatible Materials

combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

ACGIH - Threshold Limit Values - Biological Exposure Indices (BEI)

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits. Use a back flow preventive device in the piping. Use only equipment of compatible materials of construction. Use only with equipment rated for cylinder pressure. Store in receptacles with relief valves, grounding and bonding, and secondary containment.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

For the gas: Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing.

Respiratory Protection
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Glove Recommendations
Wear insulated gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	colorless gas	**Physical State**	gas
Odor	odorless	**Color**	colorless
Odor Threshold	Not available	**pH**	Not available
Melting Point	-218.4 °C (-361 °F)	**Boiling Point**	-182.96 °C (-297 °F)
Boiling Point Range	Not available	**Freezing point**	Not available
Evaporation Rate	Not available	**Flammability (solid, gas)**	Not flammable
Autoignition Temperature	Not available	**Flash Point**	Not available
Lower Explosive Limit	Not available	**Decomposition temperature**	Not available
Upper Explosive Limit	Not available	**Vapor Pressure**	760 mmHg @ -183 °C
Vapor Density (air=1)	1.43	**Specific Gravity (water=1)**	1.14 at -183 °C
Water Solubility	3.2 % (@ 25 °C)	**Partition coefficient: n-octanol/water**	Not available
Viscosity	0.02075 cp	**Kinematic viscosity**	Not available
Solubility (Other)	Not available	**Density**	1.309 g/L at 25 °C
Physical Form	Compressed gas	**Taste**	tasteless
Molecular Formula	O2	**Molecular Weight**	31.9988
Oxidising properties	Oxidizer		

Solvent Solubility
Soluble
alcohol

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.
Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize. Oxidizer.

Conditions to Avoid

Avoid contact with combustible materials. Protect from physical damage and heat. Containers may rupture or explode if exposed to heat.

Incompatible Materials

combustible materials, halo carbons, metals, bases, reducing agents, amines, metal salts, oxidizing materials

Hazardous decomposition products

miscellaneous decomposition products

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation

irritation, changes in body temperature, nausea, difficulty breathing, irregular heartbeat, chest pain, lung damage, dizziness, Disorientation, hallucinations, mood swings, pain in extremities, tremors, lung congestion, convulsions, cough

Skin Contact

frostbite, blisters

Eye Contact

frostbite, irritation, blurred vision

Ingestion

Ingestion of gas is unlikely.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and no selected endpoints have been identified.

Product Toxicity Data

Acute Toxicity Estimate

No data available.

Immediate Effects

frostbite

Delayed Effects

No information on significant adverse effects.

Irritation/Corrosivity Data

No data available.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA.

Germ Cell Mutagenicity

No data available.

Tumorigenic Data

No data available

Reproductive Toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

No target organs identified.
Specific Target Organ Toxicity - Repeated Exposure
No target organs identified.
Aspiration hazard
Not expected to be an aspiration hazard.
Medical Conditions Aggravated by Exposure
No data available.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity
No LOLI ecotoxicity data are available for this product's components.
Persistence and Degradability
No data available.
Bioaccumulative Potential
No data available.
Mobility
No data available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of contents/container in accordance with local/regional/national/international regulations.
Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: OXYGEN, COMPRESSED
Hazard Class: 2.2
UN/NA #: UN1072
Required Label(s): 2.2, 5.1

IMDG Information:
Shipping Name: OXYGEN, COMPRESSED
Hazard Class: 2.2
UN#: UN1072
Required Label(s): 2.2, 5.1
International Bulk Chemical Code
This material does not contain any chemicals required by the IBC Code to be identified as dangerous chemicals in bulk.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
None of this product's components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.
SARA Section 311/312 (40 CFR 370 Subparts B and C) reporting categories
Gas Under Pressure; Oxidizer
U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA

OXYGEN, COMPRESSED GAS	**7782-44-7**	No	Yes	No	Yes	Yes

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)
Not listed under California Proposition 65.

Component Analysis - Inventory

OXYGEN, COMPRESSED GAS (7782-44-7)

US	CA	AU	CN	EU	JP - ENCS	JP - ISHL	KR KECI - Annex 1	KR KECI - Annex 2
Yes	DSL	Yes	Yes	EIN	Yes	No	Yes	No

KR - REACH CCA	MX	NZ	PH	TH-TECI	TW, CN	VN (Draft)
No	Yes	Yes	Yes	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

NFPA Ratings
Health: 0 Fire: 0 Instability: 0 Other: OX = Oxidizer
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Preparation Date
01/19/2016

Revision date
08/21/2018

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CA/MA/MN/NJ/PA - California/Massachusetts/Minnesota/New Jersey/Pennsylvania*; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CFR - Code of Federal Regulations (US); CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EC – European Commission; EEC - European Economic Community; EIN - European Inventory of (Existing Commercial Chemical Substances); EINECS - European Inventory of Existing Commercial Chemical Substances; ENCS - Japan Existing and New Chemical Substance Inventory; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; F - Background (for Venezuela Biological Exposure Indices); IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; ISHL - Japan Industrial Safety and Health Law; IUCLID - International Uniform Chemical Information Database; JP - Japan; Kow - Octanol/water partition coefficient; KR KECI Annex 1 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL); KR KECI Annex 2 - Korea Existing Chemicals Inventory (KECI) / Korea Existing Chemicals List (KECL) , KR - Korea; LD50/LC50 - Lethal Dose/ Lethal Concentration; KR REACH CCA - Korea Registration and Evaluation of Chemical Substances Chemical Control Act; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MX – Mexico; Ne- Non-specific; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; Nq - Non-quantitative; NSL – Non-Domestic Substance List (Canada); NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PEL- Permissible Exposure Limit; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH-

Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; Sc - Semi-quantitative; STEL - Short-term Exposure Limit; TCCA – Korea Toxic Chemicals Control Act; TDG - Transportation of Dangerous Goods; TH-TECI - Thailand - FDA Existing Chemicals Inventory (TECI); TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TW – Taiwan; TWA - Time Weighted Average; UEL - Upper Explosive Limit; UN/NA - United Nations /North American; US - United States; VLE - Exposure Limit Value (Mexico); VN (Draft) - Vietnam (Draft); WHMIS - Workplace Hazardous Materials Information System (Canada).

Other Information

Disclaimer:

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G520 + AW Oils

Prepared according to Global Harmonized System (GHS) standards

SECTION 1 CHEMICAL PRODUCT IDENTIFICATION

Lubrication Technologies, Inc.
900 Mendelssohn Avenue North
Golden Valley, MN 55427-4309
Tel: 763-545-0707

Product Trade Name: **LTI AWR Hydraulic Oil ISO 46**

CAS Number:	Mixture
Synonyms/Other:	NA
Part Number(s):	NA
Recommended Use:	Hydraulic Fluid
Restrictions on Use:	Not determined
Created Date:	7/13/2016
Preparation/Revision Date:	1/25/2017
Emergency Phone Number:	1-800-424-9300 (CHEMTREC)
SDS CODE:	14000

SECTION 2 HAZARD IDENTIFICATION

Appearance:	Colorless to yellow
Odor:	Petroleum odor
Classification:	This material is not considered to be hazardous according to the Globally Harmonized System of Classification and Labelling Chemicals (GHS).
Target Organs:	Not applicable.
Pictogram(s):	None required.
Signal Word:	None required.
Hazard Statement:	Not required.
Other Hazards:	Not determined.
Prevention:	None required.
Response:	None required.
Storage Procedures:	None required.
Disposal:	None required.
Other:	See section 11 for complete health hazard information.

SECTION 3 COMPOSITION OF INGREDIENTS

Components: No Hazardous Substance(s) or Complex Substance(s) required for disclosure

SECTION 4 FIRST AID MEASURES

Eye Contact:	If irritation occurs, cautiously rinse eyes with lukewarm, gently flowing water for 5 minutes, while holding the eyelids open. If eye irritation persists: Get medical advice/attention.
Skin Contact:	Call a doctor if you feel unwell.
Inhalation:	Get medical advice or attention if you feel unwell or are concerned.
Ingestion:	If you feel unwell or concerned: Get medical advice/attention. Rinse mouth. Do NOT induce vomiting. If vomiting occurs naturally, lie on your side, in the recovery position.

Other: No additional information

SECTION 5 FIRE FIGHTING MEASURES

Flash Point: 170°C by Cleveland Open Cup Tester.

Flammable limits: Not determined.

Extinguishing media: Use dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire.

Special firefighting procedures: DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

Unusual fire & explosion hazards: Dense smoke may be generated while burning. Toxic fumes, gases or vapors may evolve on burning. High temperatures may create heavy flammable vapors that may settle along ground level and low spots to create an invisible fire hazard.

Byproducts of combustion: Fires involving this product may release oxides of carbon, phosphorus, nitrogen and sulfur; reactive hydrocarbons and irritating vapors.

Autoignition temperature: Not determined.

Explosion data: Not determined. Care should always be exercised in dust/mist areas.

Other: Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill control procedures (land): Immediately turn off or isolate any source of ignition (pilot lights, electrical equipment, flames, heaters, etc.). Evacuate area and ventilate. Personnel wearing proper protective equipment should contain spill immediately with inert materials (sand, earth, chemical spill pads of cotton) by forming dikes. Dikes should be placed to contain spill in a manner that will prevent material from entering sewers and waterways. Large spill, once contained, may be picked up using explosion proof, non-sparking vacuum pumps, shovels, or buckets, and disposed of in suitable containers for disposal. If a large spill occurs notify appropriate authorities. In case of road spill or accident contact Chem-Trec (800-424-9300).

Spill control procedures (water): Try to contain large spills with floating booms to prevent spill from spreading. Remove from surface by skimming or with suitable adsorbents. If a large spill occurs notify appropriate authorities (normally the National Response Center or Coast Guard at 800-424-8802).

Waste disposal method: Do not empty into drains. All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded may be a regulated waste. Refer to state and local regulations. Department of Transportation (DOT) regulations may apply for transporting this material when spilled. See Section 14.

Other: CAUTION - If spilled material is cleaned up using a regulated solvent, the resulting waste mixture will be regulated.

SECTION 7 HANDLING AND STORAGE

Handling procedures: Keep containers closed when not in use. Do not transfer to unmarked containers. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld, or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.
Handling temperatures should not exceed 60°C (140°F) to minimize danger of burns. Open containers carefully in a well ventilated area or use appropriate respiratory protection. Wash thoroughly after handling.

Storage procedures: Store containers away from heat, sparks, open flame, or oxidizing materials. Extended storage at excessive temperatures may produce odorous and toxic fumes from product decomposition.

Additional information: No additional information.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product:

	OSHA TWA	OSHA STEL	ACGIH TWA
Contains highly refined petroleum oil	*5 mg/m³ (PEL)	*10 mg/m³	*5 mg/m³ (TLV)

* Exposure limits not defined. Limits used are for, "oil mist".

TWA – Time Weighted Average is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.
STEL – Short Term Exposure Limit is the employee's 15-minute time weighted average exposure which shall not be exceeded at any time during a work day unless another time limit is specified.

All base oils, including additive carriers, contain <3.0% DMSO extractable material.

Personal protection: Applicable mainly to persons in repeated contact situations such as packaging of product, service/maintenance, and cleanup/spill control personnel.

Respiratory protection: None required if ventilation is adequate. Otherwise a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. Where misting may occur, wear an MSHA/NIOSH approved (or equivalent) half-mask form dust/mist air purifying respirator.

Eye protection: Eye protection is strongly recommended. Wear safety glasses with side shields or vented/splash proof goggles (ANSI Z87.1 or approved equivalent).

Hand protection: Impervious, chemically resistant gloves such as neoprene or nitrile rubber to avoid skin sensitization and absorption.

Other protection: Use of an apron and overboots of chemically impervious materials such as neoprene or nitrile rubber is recommended based on level of activity and exposure. If handling hot material use insulated protective equipment. Launder soiled clothes. Properly dispose of contaminated leather articles and other materials which cannot be decontaminated.

Local control measures: Use adequate ventilation when working with material in an enclosed area. Mechanical methods such as fume hoods or area fans may be used to reduce localized vapor/mist areas. If vapor or mist is generated when the material handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure. Eyewash stations and showers should be available in areas where this material is used and stored.

Other: Consumption of food and drink should be avoided in work areas where product is present. Always wash hands and face with soap and water before eating, drinking or smoking.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless to yellow
Odor:	Petroleum odor
Odor threshold:	Not determined.
pH:	Not applicable.
Melting/Freezing point:	Not determined.
Initial boiling point:	Not determined.
Boiling range:	Not determined.
Flash point:	170°C.
Evaporation rate:	Not determined.
Flammability:	Not determined.
Upper flammable limit:	Not determined.
Lower flammable limit:	Not determined.
Vapor pressure:	Not determined.
Vapor density:	Not determined.
Relative density:	Not determined.
Solubility:	Negligible in water, miscible in most petroleum solvents.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	28.8 cSt at 40°C.
Other	Not applicable.

SECTION 10 STABILITY AND REACTIVITY

Reactivity	
Chemical stability:	Material is chemically stable at room temperatures and pressure.
Hazardous polymerization:	Will not occur.
Conditions to avoid:	Avoid high temperatures and product contamination.
Incompatibility with other materials:	Avoid contact with acids and strong oxidizing materials.
Decomposition products:	Smoke, carbon monoxide, carbon dioxide, and other aldehydes of incomplete combustion. Oxides of carbon, nitrogen, and sulfur; reactive hydrocarbons and irritating vapors.
Other:	Not applicable.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity (LD50) *See note at the bottom of the section

Oral:	>5000 mg/kg
Dermal:	>5000 mg/kg
Inhalation:	>20.0 mg/l
Skin irritation:	Non-irritant
Eye irritation:	Non-irritant
Dermal sensitization:	Not expected to have a sensitizing effect.
Respiratory sensitization:	Not expected to have a sensitizing effect.
Aspiration Hazard:	Not applicable
Chronic Toxicity	
Mutagenicity:	Not suspected of causing genetic defects
Carcinogenicity:	Not suspected of causing cancer.

Reproductive toxicity:	Not expected to have adverse effects on reproduction.
STOT-single exposure:	Not expected to have adverse effects.
STOT-repeated exposure:	Not expected to have long term adverse effects.
Other:	*All data in this section is based off calculations from Part 3 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 12 ECOLOGICAL INFORMATION

Environmental toxicity	
Fish:	> 100 mg/l.
Invertebrates:	> 100 mg/l.
Aquatic plants:	> 100 mg/l.
Microorganism:	> 100 mg/l.
Persistence/Degradability:	This product is not expected to be readily biodegradable.
Bioaccumulation:	Not determined.
Mobility in soil:	Not determined.
Other:	All classifications are based on calculations in Part 4 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste disposal:	This product unadulterated by other materials can be classified as a non-hazardous waste. Depending on use, used product may be regulated. Dispose of in a licensed facility. Do not discharge product in to sewer system. Dispose of containers by crushing or puncturing, so as to prevent unauthorized use of used containers. Waste management should be in full compliance with federal, state, and local laws.
Other	The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14 TRANSPORT INFORMATION

Land Transport (DOT):	Not regulated for land transport.
Proper Shipping Name:	Not applicable.
Land Transport (TDG):	Not regulated for land transport.
Proper Shipping Name:	Not applicable.
Sea Transport (IMDG):	Not regulated for sea transport.
Proper Shipping Name:	Not applicable.
Air Transport (IATA):	Not regulated for air transport.
Proper Shipping Name:	Not applicable.
Other:	Not applicable.

SECTION 15 REGULATORY INFORMATION

Federal Regulation

Clean water act/oil: Under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Control Act of 1990, this material is considered an oil. Any spill or discharges that produce a visible sheen or film on surface of water, or in waterways, ditches, or sewers leading to surface water must be reported. Contact the National Response Center at 800-424-8802.

TSCA: All components of this material are listed in the U.S. TSCA Inventory.

Other TSCA: Not applicable.

SARA title III: Section 302/304 extremely hazardous substances:

None.

Section 311, 312 hazard categorization:

Acute (immediate health effects):	NO
Chronic (delayed health effects):	NO
Fire (hazard):	NO
Reactivity (hazard):	NO
Pressure (sudden release hazard):	NO

Section 313 toxic chemicals:

No components present are at or greater than the de minimis (minimum reportable) concentration requirements for reporting.

CERCLA: For stationary/moving sources – reportable quantity (due to): Not hazardous due to the petroleum exclusion.

State Regulations

Right-to-know Not determined.

Other: A release of this product, as supplied, is exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). However, releases may be reportable to the Nation Response Center under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5) - see head of Section 15. Failure to report may result in substantial civil and criminal penalties.

Recommend contacting the local authorities in the event of any type of spill to determine local reporting requirements and also to aid in the cleanup.

SECTION 16 OTHER INFORMATION

	NFPA 704	NPCA-HMIS	KEY
HEALTH:	1	1	0 = Minimal
FIRE:	1	1	1 = Slight
REACTIVITY:	0	0	2 = Moderate
SPECIFIC HAZARD:	None	N/A	3 = Serious
PROTECTION INDEX:	N/A	B	4 = Severe

Version: I

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Revisions / Comments:	None.
Internal use only:	V15 - PM

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL SHC 630**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560500550, 602953-00, 970782
Intended Use: Circulating/gear oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary

from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
1-DECENE, HOMOPOLYMER HYDROGENATED	68037-01-4	20 - < 30%	H304
NAPHTHALENE, REACTION PRODUCTS WITH TETRADECENE	132983-41-6	1 - < 5%	H319(2A), H413
PHOSPHORIC ACID, METHYLPHENYL DIPHENYL ESTER	26444-49-5	0.1 - < 1%	H400(M factor 1), H410(M factor 1)
POLYALKYLATED NAPHTHALENE		10 - < 20%	H413
TRIPHENYL PHOSPHATE	115-86-6	0.1 - < 0.25%	H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
1-DECENE, HOMOPOLYMER HYDROGENATED	Aerosols (thoracic fraction)	TWA	5 mg/m3		N/A	ExxonMobil
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications,

handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Orange
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.854
Flammability (Solid, Gas): N/A

Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 220 cSt (220 mm2/sec) at 40 °C | 28.5 cSt (28.5 mm2/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -36°C (-33°F)

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	

Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

For the product itself:

Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract.

Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to demonstrate chronic toxicity to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land.

Expected to partition to sediment and wastewater solids.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LL50 1003 mg/l: data for similar materials
Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 1 mg/l: data for similar materials

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: TSCA
Special Cases:

Inventory	Status
AICS	Restrictions Apply
IECSC	Restrictions Apply
KECI	Restrictions Apply
NDSL	Restrictions Apply

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
NAPHTHALENE	91-20-3	10
PHENOL, 4,4-METHYLENEBIS(2,6-BIS(1,1-DIMETHYLETHYL)-	118-82-1	5

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

WARNING: Cancer - www.P65Warnings.ca.gov.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1
H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Section 01: Company Contact Methods information was modified.
Section 01: Company Mailing Address information was modified.
Section 05: Hazardous Combustion Products information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 07: Handling and Storage - Storage Phrases information was modified.
Section 11: Other Health Effects Header information was modified.
Section 11: Other Health Effects information was added.
Section 14: Marine Pollutant information was modified.
Section 15: List Citations Table information was modified.
Section 15: Product Registration Status List information was deleted.
Section 15: SARA (311/312) REPORTABLE GHS HAZARD CLASSES information was added.
Section 15: SARA (311/312) REPORTABLE HAZARD CATEGORIES information was deleted.
Section 16: HCode Key information was modified.
Section 16: Standard phrases for California Proposition 65 information was added.

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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL SHC 634**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560500570, 602912-00, 970321
Intended Use: Circulating/gear oil

COMPANY IDENTIFICATION

Supplier: **EXXON MOBIL CORPORATION**
22777 Springwoods Village Parkway
Spring, TX 77389 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300 or 703-527-3887 CHEMTREC
Product Technical Information	800-662-4525
MSDS Internet Address	www.exxon.com, www.mobil.com

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): None as defined under 29 CFR 1910.1200.

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary

from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
1-DECENE, HOMOPOLYMER HYDROGENATED	68037-01-4	5 - < 10%	H304
PHOSPHORIC ACID, METHYLPHENYL DIPHENYL ESTER	26444-49-5	0.1 - < 1%	H400(M factor 1), H410(M factor 1)
TRIPHENYL PHOSPHATE	115-86-6	0.1 - < 1%	H400(M factor 1), H410(M factor 1)

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit / Standard			NOTE	Source
1-DECENE, HOMOPOLYMER HYDROGENATED	Aerosols (thoracic fraction)	TWA	5 mg/m3		N/A	ExxonMobil
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m3		N/A	ACGIH

Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

No biological limits allocated.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Orange
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.869
Flammability (Solid, Gas): N/A
Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

Boiling Point / Range: > 316°C (600°F)
Decomposition Temperature: N/D
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 460 cSt (460 mm2/sec) at 40 °C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: -30°C (-22°F)

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: See sub-sections below.

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
Sensitization	

Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
Aspiration: Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
Germ Cell Mutagenicity: No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
Lactation: No end point data for material.	Not expected to cause harm to breast-fed children.
Specific Target Organ Toxicity (STOT)	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

OTHER INFORMATION

Contains:
Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC	3 = IARC 1	5 = IARC 2B
2 = NTP SUS	4 = IARC 2A	6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to demonstrate chronic toxicity to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LL50 1003 mg/l: data for similar materials
Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 1 mg/l: data for similar materials

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: TSCA
Special Cases:

Inventory	Status
AICS	Restrictions Apply
KECI	Restrictions Apply

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA (311/312) REPORTABLE GHS HAZARD CLASSES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
NAPHTHALENE	91-20-3	10
PHENOL, 4,4-METHYLENEBIS(2,6-BIS(1,1-DIMETHYLETHYL)-	118-82-1	5
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

WARNING: Cancer - www.P65Warnings.ca.gov.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights.

N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Composition: Component Table information was modified.
Section 01: Company Contact Methods information was modified.
Section 01: Company Mailing Address information was modified.
Section 05: Hazardous Combustion Products information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 07: Handling and Storage - Storage Phrases information was modified.
Section 14: Marine Pollutant information was modified.
Section 15: List Citations Table information was modified.
Section 15: Product Registration Status List information was deleted.
Section 15: SARA (311/312) REPORTABLE GHS HAZARD CLASSES information was added.
Section 15: SARA (311/312) REPORTABLE HAZARD CATEGORIES information was deleted.
Section 16: Standard phrases for California Proposition 65 information was added.

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Safety Data Sheet

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Document Group:	23-3022-3	**Version Number:**	5.04
Issue Date:	03/30/20	**Supercedes Date:**	12/20/19

SECTION 1: Identification

1.1. Product identifier
3M™ DESK & OFFICE CLEANER 573

Product Identification Numbers

ID Number	UPC	ID Number	UPC
70-0051-5274-2	500-21200-10384-1	70-0714-9577-7	500-21200-10384-6

7000048018

1.2. Recommended use and restrictions on use

Recommended use
Aerosol foam cleaner for office surfaces.

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Stationery and Office Supplies Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Gas Under Pressure: Liquefied gas.
Simple Asphyxiant.
Specific Target Organ Toxicity (single exposure): Category 1.

2.2. Label elements
Signal word
Danger

Symbols
Gas cylinder | Health Hazard |

Pictograms

Hazard Statements
Contains gas under pressure; may explode if heated.

May displace oxygen and cause rapid suffocation.

Causes damage to organs:
cardiovascular system |

Precautionary Statements

Prevention:
Do not breathe dust/fume/gas/mist/vapors/spray.
Do not eat, drink or smoke when using this product.
Wash thoroughly after handling.

Response:
IF exposed: Call a POISON CENTER or doctor/physician.
Specific treatment (see Notes to Physician on this label).

Storage:
Protect from sunlight. Store in a well-ventilated place.
Store locked up.

Disposal:
Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:
Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

Supplemental Information:
May cause frostbite. Intentional concentration and inhalation may be harmful or fatal.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
WATER	7732-18-5	85 - 95
ISOPROPYL ALCOHOL	67-63-0	3 - 5 Trade Secret *
ISOBUTANE PROPELLANT	75-28-5	1 - 5 Trade Secret *
ETHOXYLATED ALCOHOLS	68439-46-3	1 - 3 Trade Secret *
SODIUM CARBONATE	497-19-8	0.1 - 1
FRAGRANCE	Trade Secret*	< 0.5

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. Get medical attention.

Skin Contact:
Thaw frosted skin with lukewarm water. Do not rub affected area. Get medical attention.

Eye Contact:
Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Hydrocarbons	During Combustion
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or

commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with detergent and water. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Do not use in a confined area with minimal air exchange. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

7.2. Conditions for safe storage including any incompatibilities
Protect from sunlight. Store in a well-ventilated place. Store away from heat. Do not expose to temperatures exceeding 50 C/ 122 F.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
ISOPROPYL ALCOHOL	67-63-0	ACGIH	TWA:200 ppm;STEL:400 ppm	A4: Not class. as human carcin
ISOPROPYL ALCOHOL	67-63-0	OSHA	TWA:980 mg/m3(400 ppm)	
ISOBUTANE PROPELLANT	75-28-5	ACGIH	STEL:1000 ppm	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Full Face Shield
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the

substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended: Polymer laminate

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece supplied-air respirator

For questions about suitability for a specific application, consult with your respirator manufacturer.

Thermal hazards
Wear cold insulating gloves/face shield/eye protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Liquid
Color	White
Specific Physical Form:	Foam
Odor	Clean, Fresh Odor
Odor threshold	*No Data Available*
pH	11 - 12
Melting point	*Not Applicable*
Boiling Point	180 - 213 ºF
Flash Point	No flash point
Evaporation rate	>=1 [*Ref Std:*WATER=1] [*Details:*product as applied (without propellant)]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	1.80 % [*Details:*for propellent]
Flammable Limits(UEL)	12.7 % [*Details:*for propellent]
Vapor Pressure	31 - 43 psi [@ 70 ºF] [*Details:*(aerosol can pressure)]
Vapor Density	*No Data Available*
Density	1 g/ml
Specific Gravity	Approximately 1 [*Ref Std:*WATER=1]
Solubility In Water	*No Data Available*
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Viscosity	*Not Applicable*
Volatile Organic Compounds	5.77 % weight
Percent volatile	96 - 98 % weight
VOC Less H2O & Exempt Solvents	*No Data Available*

SECTION 10: Stability and reactivity

10.1. Reactivity
This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Heat
Sparks and/or flames

10.5. Incompatible materials
Not determined

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:
Frostbite: Signs/symptoms may include intense pain, discoloration of skin, and tissue destruction.

Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:
Frostbite: Signs/symptoms may include intense pain, clouding of the cornea, redness, swelling, and blindness.

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Additional Health Effects:

Single exposure may cause target organ effects:
Single exposure, above recommended guidelines, may cause:

Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Ingestion		No data available; calculated ATE >5,000 mg/kg
ISOPROPYL ALCOHOL	Dermal	Rabbit	LD50 12,870 mg/kg
ISOPROPYL ALCOHOL	Inhalation-Vapor (4 hours)	Rat	LC50 72.6 mg/l
ISOPROPYL ALCOHOL	Ingestion	Rat	LD50 4,710 mg/kg
ISOBUTANE PROPELLANT	Inhalation-Gas (4 hours)	Rat	LC50 276,000 ppm
ETHOXYLATED ALCOHOLS	Dermal	Rabbit	LD50 > 2,000 mg/kg
ETHOXYLATED ALCOHOLS	Ingestion	Rat	LD50 1,378 mg/kg
SODIUM CARBONATE	Dermal	Rabbit	LD50 > 2,000 mg/kg
SODIUM CARBONATE	Ingestion	Rat	LD50 2,800 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
ISOPROPYL ALCOHOL	Multiple animal species	No significant irritation
ISOBUTANE PROPELLANT	Professional judgement	No significant irritation
ETHOXYLATED ALCOHOLS	Rabbit	Irritant
SODIUM CARBONATE	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
ISOPROPYL ALCOHOL	Rabbit	Severe irritant
ISOBUTANE PROPELLANT	Professional judgement	No significant irritation
ETHOXYLATED ALCOHOLS	Professional judgement	Corrosive
SODIUM CARBONATE	Rabbit	Corrosive

Skin Sensitization

Name	Species	Value
ISOPROPYL ALCOHOL	Guinea pig	Not classified

ETHOXYLATED ALCOHOLS	Guinea pig	Not classified

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
ISOPROPYL ALCOHOL	In Vitro	Not mutagenic
ISOPROPYL ALCOHOL	In vivo	Not mutagenic
ISOBUTANE PROPELLANT	In Vitro	Not mutagenic
ETHOXYLATED ALCOHOLS	In Vitro	Not mutagenic
SODIUM CARBONATE	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
ISOPROPYL ALCOHOL	Inhalation	Rat	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
ISOPROPYL ALCOHOL	Ingestion	Not classified for development	Rat	NOAEL 400 mg/kg/day	during organogenesis
ISOPROPYL ALCOHOL	Inhalation	Not classified for development	Rat	LOAEL 9 mg/l	during gestation
ETHOXYLATED ALCOHOLS	Dermal	Not classified for female reproduction	Rat	NOAEL 250 mg/kg/day	2 generation
ETHOXYLATED ALCOHOLS	Dermal	Not classified for development	Rat	NOAEL 250 mg/kg/day	2 generation
ETHOXYLATED ALCOHOLS	Dermal	Not classified for male reproduction	Rat	NOAEL 100 mg/kg/day	2 generation
SODIUM CARBONATE	Ingestion	Not classified for development	Mouse	NOAEL 340 mg/kg/day	during organogenesis

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
ISOPROPYL ALCOHOL	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
ISOPROPYL ALCOHOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
ISOPROPYL ALCOHOL	Inhalation	auditory system	Not classified	Guinea pig	NOAEL 13.4 mg/l	24 hours
ISOPROPYL ALCOHOL	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
ISOBUTANE PROPELLANT	Inhalation	cardiac sensitization	Causes damage to organs	Multiple animal species	NOAEL Not available	
ISOBUTANE PROPELLANT	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
ISOBUTANE PROPELLANT	Inhalation	respiratory irritation	Not classified	Mouse	NOAEL Not available	
ETHOXYLATED	Inhalation	respiratory irritation	Some positive data exist, but the	Not	NOAEL Not	not available

ALCOHOLS			data are not sufficient for classification	available	available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
ISOPROPYL ALCOHOL	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 12.3 mg/l	24 months
ISOPROPYL ALCOHOL	Inhalation	nervous system	Not classified	Rat	NOAEL 12 mg/l	13 weeks
ISOPROPYL ALCOHOL	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 400 mg/kg/day	12 weeks
ISOBUTANE PROPELLANT	Inhalation	kidney and/or bladder	Not classified	Rat	NOAEL 4,500 ppm	13 weeks
ETHOXYLATED ALCOHOLS	Dermal	kidney and/or bladder | hematopoietic system	Not classified	Rat	NOAEL 125 mg/kg/day	13 weeks
SODIUM CARBONATE	Inhalation	respiratory system	Not classified	Rat	LOAEL 0.07 mg/l	3 months

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. Facility must be capable of handling aerosol cans. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Gas under pressure

Health Hazards
Simple Asphyxiant
Specific target organ toxicity (single or repeated exposure)

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

15.4. International Regulations
Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 3 **Flammability:** 1 **Instability:** 0 **Special Hazards:** None
Aerosol Storage Code: 1

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification
Health: 4 **Flammability:** 1 **Physical Hazard:** 0 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV program. HMIS® is a registered mark of the American Coatings Association (ACA).

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Safety Data Sheet
acc. to OSHA HCS

Printing date 09/25/2014 Revised On 09/25/2014

1 Identification of the substance and manufacturer

Trade name: GRAY SANDABLE PRIMER

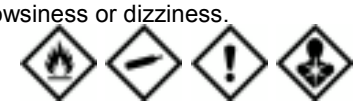
Product code: 53379
Product category PC9a Paints and coatings.
Manufacturer/Supplier: Lawson Products, Inc.
8770 W. Bryn Mawr Avenue
Chicago, IL 60631
USA
phone: 773-304-5050
Emergency telephone number: 888-426-4851

2 Hazard(s) identification

Classification of the substance or mixture

Flam. Aerosol 1	H222	Extremely flammable aerosol.
Press. Gas	H280	Contains gas under pressure; may explode if heated.
Carc. 2	H351	Suspected of causing cancer.
Repr. 2	H361	Suspected of damaging fertility or the unborn child.
Skin Irrit. 2	H315	Causes skin irritation.
Eye Irrit. 2A	H319	Causes serious eye irritation.
STOT SE 3	H336	May cause drowsiness or dizziness.

GHS Hazard pictograms



GHS02 GHS04 GHS07 GHS08

Signal word Danger
Hazard statements
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes skin irritation.
Causes serious eye irritation.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
May cause drowsiness or dizziness.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Wash hands thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use personal protective equipment as required.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation occurs: Get medical advice/attention.
IF ON SKIN: Wash with plenty of water.
Take off contaminated clothing and wash before reuse.
IF exposed or concerned: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Specific treatment (see on this label).
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical Description: This product is a mixture of the substances listed below with nonhazardous additions.

Dangerous components:

67-64-1	Acetone	23.24%
74-98-6	propane	12.6%
13463-67-7	titanium dioxide	7.43%
106-97-8	n-butane	7.4%
108-88-3	Toluene	6.08%
64742-89-8	VM&P Naphtha	5.62%
14807-96-6	Talc	4.3%
1330-20-7	xylene (mix)	3.96%
64-17-5	ethyl alcohol	3.81%

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 09/25/2014 Revised On 09/25/2014

Trade name: GRAY SANDABLE PRIMER

(Contd. of page 1)

64742-47-8	Mineral Spirits	3.0%
123-86-4	n-butyl acetate	2.67%
110-19-0	isobutyl acetate	1.52%
108-65-6	PM acetate	1.31%

4 First-aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact: Remove contaminated clothing. Wash exposed area with soap and water.
After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing: Rinse out mouth and then drink plenty of water.
Rinse mouth with water. Do not induce vomiting.
Most important symptoms and effects: Dizziness
Indication of any immediate medical attention needed: No further relevant information available.

5 Fire-fighting measures

Extinguishing agents: CO2, sand, extinguishing powder, or water spray. Fight larger fires with water spray or alcohol resistant foam.
CO2, extinguishing powder or water spray. Fight larger fires with water spray.
Special hazards: Can form explosive gas-air mixtures.
Protective equipment for firefighters: A respiratory protective device may be necessary.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Methods and material for containment and cleaning up: Dispose contaminated material as waste according to section 13.

7 Handling and storage

Precautions for safe handling Use only in well ventilated areas.
Storage requirements: Keep away from sources of heat and direct sunlight. Do not warehouse in subfreezing conditions.
Store locked up.

8 Exposure controls/personal protection

Components with limit values that require monitoring at the workplace:

67-64-1 Acetone	
PEL (USA)	Long-term value: 2400 mg/m³, 1000 ppm
REL (USA)	Long-term value: 590 mg/m³, 250 ppm
TLV (USA)	Short-term value: (1782) NIC-1187 mg/m³, (750) NIC-500 ppm Long-term value: (1188) NIC-594 mg/m³, (500) NIC-250 ppm BEI
74-98-6 propane	
PEL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
REL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
TLV (USA)	refer to Appendix F
106-97-8 n-butane	
REL (USA)	Long-term value: 1900 mg/m³, 800 ppm
TLV (USA)	Short-term value: 2370 mg/m³, 1000 ppm
108-88-3 Toluene	
PEL (USA)	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
REL (USA)	Short-term value: 560 mg/m³, 150 ppm Long-term value: 375 mg/m³, 100 ppm
TLV (USA)	Long-term value: 75 mg/m³, 20 ppm BEI
1330-20-7 xylene (mix)	
PEL (USA)	Long-term value: 435 mg/m³, 100 ppm

(Contd. on page 3)

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Safety Data Sheet
acc. to OSHA HCS

Printing date 09/25/2014 Revised On 09/25/2014

Trade name: GRAY SANDABLE PRIMER

(Contd. of page 2)

REL (USA)	Short-term value: 655 mg/m³, 150 ppm Long-term value: 435 mg/m³, 100 ppm
TLV (USA)	Short-term value: 651 mg/m³, 150 ppm Long-term value: 434 mg/m³, 100 ppm BEI
64-17-5 ethyl alcohol	
PEL (USA)	Long-term value: 1900 mg/m³, 1000 ppm
REL (USA)	Long-term value: 1900 mg/m³, 1000 ppm
TLV (USA)	Short-term value: 1880 mg/m³, 1000 ppm
123-86-4 n-butyl acetate	
PEL (USA)	Long-term value: 710 mg/m³, 150 ppm
REL (USA)	Short-term value: 950 mg/m³, 200 ppm Long-term value: 710 mg/m³, 150 ppm
TLV (USA)	Short-term value: 950 mg/m³, 200 ppm Long-term value: 713 mg/m³, 150 ppm
110-19-0 isobutyl acetate	
PEL (USA)	Long-term value: 700 mg/m³, 150 ppm
REL (USA)	Long-term value: 700 mg/m³, 150 ppm
TLV (USA)	Long-term value: 713 mg/m³, 150 ppm
108-65-6 PM acetate	
WEEL (USA)	Long-term value: 50 ppm

Ingredients with biological limit values:	
67-64-1 Acetone	
BEI (USA)	50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)
108-88-3 Toluene	
BEI (USA)	0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene 0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene 0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background)
1330-20-7 xylene (mix)	
BEI (USA)	1.5 g/g creatinine Medium: urine Time: end of shift Parameter: Methylhippuric acids

Hygienic protection: Keep away from foodstuffs and animal feed. Wash hands after use.
Immediately remove all soiled and contaminated clothing.
Wash hands after use.
Avoid contact with the eyes and skin.
Do not eat or drink while working.

Breathing equipment: A respirator is generally not necessary when using this product outdoors or in large open areas. In cases where short and/or long term overexposure exists, a charcoal filter respirator should be worn. If you suspect overexposure conditions exist, please consult an authority on chemical hygeine.

Hand protection: Protective gloves. The glove material must be impermeable and resistant to the substance.

Eye protection: Tightly sealed goggles

9 Physical and chemical properties

Appearance: Aerosol.
Odor: Aromatic
Odor threshold: Not determined.

pH-value: Not determined.
Melting point/Melting range Undetermined.
Boiling point: -110 °C (-166 °F)

Flash point: -19 °C (-2 °F)
Flammability (solid, gas): Extremely flammable.

Decomposition temperature: Not determined.

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Safety Data Sheet
acc. to OSHA HCS

Printing date 09/25/2014 Revised On 09/25/2014

Trade name: GRAY SANDABLE PRIMER

(Contd. of page 3)

Auto igniting: Product is not self-igniting.

Danger of explosion: In use, may form flammable/explosive vapour-air mixture.
Lower Explosion Limit: 1.7 Vol %
Upper Explosion Limit: 10.9 Vol %

Vapor pressure: Not determined.
Relative Density: Between 0.77 and 0.85 (Water equals 1.00)
Vapour density Not determined.
Evaporation rate Not applicable.
Partition coefficient: n-octonal/water: Not determined.

Solubility: Not determined.
Viscosity: Not determined.

VOC content: 568.7 g/l / 4.75 lb/gl
VOC content (less exempt solvents): 50.7 %
MIR Value: 1.10

Solids content: 25.5 %

10 Stability and reactivity

Reactivity: Stable at normal temperatures.
Conditions to avoid: Do not allow can to exceed 120 degrees Fahrenheit. Do not warehouse in subfreezing temperatures.
Chemical stability: Not fully evaluated.
Possibility of hazardous reactions: No dangerous reactions known.
Incompatible materials: No further relevant information available.
Hazardous decomposition: No dangerous decomposition products known.

11 Toxicological information

LD/LC50 values that are relevant for classification:		
13463-67-7 titanium dioxide		
Oral	LD50	>20000 mg/kg (rat)
Dermal	LD50	>10000 mg/kg (rbt)
Inhalative	LC50/4 h	>6.82 mg/l (rat)
106-97-8 n-butane		
Inhalative	LC50/4 h	658 mg/l (rat)
1330-20-7 xylene (mix)		
Oral	LD50	8700 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rbt)
Inhalative	LC50/4 h	6350 mg/l (rat)
64-17-5 ethyl alcohol		
Oral	LD50	7060 mg/kg (rat)
Inhalative	LC50/4 h	20000 mg/l (rat)
123-86-4 n-butyl acetate		
Oral	LD50	14000 mg/kg (rat)
Inhalative	LC50/4 h	>21.0 mg/l (rat)
110-19-0 isobutyl acetate		
Oral	LD50	4763 mg/kg (rbt)
108-65-6 PM acetate		
Oral	LD50	8500 mg/kg (rat)
Inhalative	LC50/4 h	35.7 mg/l (rat)

Information on toxicological effects: No data available.
Sensitization: No sensitizing effects known.

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
13463-67-7	titanium dioxide	2B
108-88-3	Toluene	3
14807-96-6	Talc	2B
1330-20-7	xylene (mix)	3
64-17-5	ethyl alcohol	1

NTP (National Toxicology Program)
None of the ingredients is listed.

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Safety Data Sheet
acc. to OSHA HCS

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Trade name: GRAY SANDABLE PRIMER

(Contd. of page 4)

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

Aquatic toxicity: Hazardous for water, do not empty into drains.
Persistence and degradability: The product is degradable after prolonged exposure to natural weathering processes.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Other adverse effects: No further relevant information available.

13 Disposal considerations

Dispose of in accordance with local, state, and federal regulations. Do not puncture, incinerate, or compact. Partially empty cans must be disposed of responsibly. Do not heat or cut empty containers with electric or gas torches.
Recommendation: Completely empty cans should be recycled.

14 Transport information

UN-Number UN1950
DOT Aerosols, flammable
ADR 1950 Aerosols
Transport hazard class(es):
Class 2.1
Marine pollutant: No
Special precautions for user: Warning: Gases
EMS Number: F-D,S-U
Packaging Group: --
UN "Model Regulation": UN1950, Aerosols, 2.1

15 Regulatory information

SARA Section 355 (extremely hazardous substances):

None of the ingredients in this product are listed.

SARA Section 313 (Specific toxic chemical listings):

108-88-3	Toluene
1330-20-7	xylene (mix)

CPSC: This product complies with 16 CFR 1303 and does not contain more than 90 ppm of lead.

California Proposition 65 chemicals known to cause cancer:

13463-67-7	titanium dioxide
100-41-4	ethyl benzene
1333-86-4	Carbon black
108-10-1	methyl isobutyl ketone

California Proposition 65 chemicals known to cause developmental toxicity: 108-88-3 Toluene
67-56-1 Methanol

EPA:

67-64-1	Acetone	I
108-88-3	Toluene	II
1330-20-7	xylene (mix)	I
110-19-0	isobutyl acetate	D

16 Other information

Contact: Regulatory Affairs

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Safety Data Sheet

Printing date 01/25/2024 Revised On 01/25/2024

1 Identification of the substance and manufacturer

Trade name: **GRAY PRIMER**

Product code: 0000160531
Recommended use: Paint and coatings application.
Uses advised against: Any that differs from the recommended use.
Manufacturer/Supplier:

Seymour of Sycamore
917 Crosby Avenue
Sycamore, IL 60178 USA
phone: 815-895-9101
www.seymourpaint.com

Seymour of Sycamore
3041 Dougall Avenue, Suite 503
Windsor, ONT N9E 1S3 CANADA
phone: 800-435-4482
www.seymourpaint.com

Emergency telephone number: 1-800-255-3924

2 Hazard(s) identification

Classification of the substance or mixture

Flammable Aerosols 1	H222 Extremely flammable aerosol.
Gases under Pressure - Liquefied gas	H280 Contains gas under pressure; may explode if heated.
Eye Irritation 2A	H319 Causes serious eye irritation.
Carcinogenicity 2	H351 Suspected of causing cancer. Route of exposure: Inhalation.
Toxic to Reproduction 1B	H360 May damage fertility or the unborn child.
Specific Target Organ Toxicity - Single Exposure 3	H336 May cause drowsiness or dizziness.
Specific Target Organ Toxicity - Repeated Exposure 2	H373 May cause damage to organs through prolonged or repeated exposure.

Additional information:
GHS Hazard pictograms

GHS02 GHS04 GHS07 GHS08

Signal word Danger
Hazard statements
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
Suspected of causing cancer. Route of exposure: Inhalation.
May damage fertility or the unborn child.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
Obtain special instructions before use.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a poison center/doctor if you feel unwell.
If eye irritation persists: Get medical advice/attention.
Store in a well-ventilated place.
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization: Mixtures
Chemical Description: This product is a mixture of the substances listed below with nonhazardous additions.

Dangerous components:

67-64-1	Acetone	25-50%
74-98-6	propane	15-25%
106-97-8	n-butane	5-10%
110-19-0	Isobutyl Acetate	5-10%
64742-47-8	Mineral Spirits	5-10%
13463-67-7	titanium dioxide	1-5%
123-86-4	butyl acetate	1-5%
67-63-0	Isopropyl Alcohol	1-5%
2807-30-9	Glycol Ether EP	1-5%
108-88-3	Toluene	1-5%

4 First-aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.

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Safety Data Sheet

Trade name: GRAY PRIMER

(Contd. of page 1)

After skin contact: Remove contaminated clothing. Wash exposed area with soap and water.
After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing: Rinse out mouth and then drink plenty of water.
Rinse mouth with water. Do not induce vomiting.

Most important symptoms and effects: Dizziness
Indication of any immediate medical attention needed: No further relevant information available.

5 Fire-fighting measures

Extinguishing agents: CO_2, extinguishing powder or water spray. Fight larger fires with water spray.
Special hazards: Can form explosive gas-air mixtures.
Protective equipment for firefighters: A respiratory protective device may be necessary.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away.
Use respiratory protective device against the effects of fumes/dust/aerosol.

Methods and material for containment and cleaning up: Ensure adequate ventilation.
Dispose contaminated material as waste according to section 13.

7 Handling and storage

Precautions for safe handling Use only in well ventilated areas.
Storage requirements: Keep away from sources of heat and direct sunlight. Do not warehouse in subfreezing conditions.
Store locked up.

8 Exposure controls/personal protection

Components with limit values that require monitoring at the workplace:	
67-64-1 Acetone	
PEL (USA)	Long-term value: 2400 mg/m³, 1000 ppm
REL (USA)	Long-term value: 590 mg/m³, 250 ppm
TLV (USA)	Short-term value: 500 ppm Long-term value: 250 ppm A4, BEI
74-98-6 propane	
PEL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
REL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
TLV (USA)	see Appendix F Minimal oxygen content (D, EX)
106-97-8 n-butane	
REL (USA)	Long-term value: 1900 mg/m³, 800 ppm
TLV (USA)	Short-term value: 1000 ppm (EX)
110-19-0 Isobutyl Acetate	
PEL (USA)	Long-term value: 700 mg/m³, 150 ppm
REL (USA)	Long-term value: 700 mg/m³, 150 ppm
TLV (USA)	Short-term value: 150 ppm Long-term value: 50 ppm
123-86-4 butyl acetate	
PEL (USA)	Long-term value: 710 mg/m³, 150 ppm
REL (USA)	Short-term value: 950 mg/m³, 200 ppm Long-term value: 710 mg/m³, 150 ppm
TLV (USA)	Short-term value: 150 ppm Long-term value: 50 ppm
67-63-0 Isopropyl Alcohol	
PEL (USA)	Long-term value: 980 mg/m³, 400 ppm
REL (USA)	Short-term value: 1225 mg/m³, 500 ppm Long-term value: 980 mg/m³, 400 ppm
TLV (USA)	Short-term value: 400 ppm Long-term value: 200 ppm BEI, A4

(Contd. on page 3)

Safety Data Sheet

Trade name: GRAY PRIMER

(Contd. of page 2)

108-88-3 Toluene	
PEL (USA)	Long-term value: 200 ppm Ceiling limit value: 300; 500* ppm *10-min peak per 8-hr shift
REL (USA)	Short-term value: 560 mg/m³, 150 ppm Long-term value: 375 mg/m³, 100 ppm
TLV (USA)	Long-term value: 20 ppm BEI, OTO, A4

Ingredients with biological limit values:	
67-64-1 Acetone	
BEI (USA)	25 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)
67-63-0 Isopropyl Alcohol	
BEI (USA)	40 mg/L Medium: urine Time: end of shift at end of workweek Parameter: Acetone (background, nonspecific)
108-88-3 Toluene	
BEI (USA)	0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene 0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene 0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background)

Hygienic protection: Keep away from foodstuffs and animal feed. Wash hands after use.
Immediately remove all soiled and contaminated clothing.
Wash hands after use.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Do not eat or drink while working.

Breathing equipment: A respirator is generally not necessary when using this product outdoors or in large open areas. In cases where short and/or long term overexposure exists, a NIOSH approved respirator should be worn. If you suspect overexposure conditions exist, please consult an authority on chemical hygiene.

Hand protection: Nitrile gloves.
The glove material must be impermeable and resistant to the substance.

Eye protection: Tightly sealed goggles

9 Physical and chemical properties

Appearance: Aerosol.
Odor: Aromatic
Odor threshold: Not determined.

pH-value: Not determined.
Melting point/Melting range Undetermined.
Boiling point: -110 °C (-166 °F)

Flash point: -19 °C (-2.2 °F)
Flammability (solid, gas): Extremely flammable.

Decomposition temperature: Not determined.

Auto igniting: Product is not self-igniting.

Danger of explosion: In use, may form flammable/explosive vapour-air mixture.
Lower Explosion Limit: 1.7 Vol %
Upper Explosion Limit: 10.9 Vol %

Vapor pressure: Not determined.
Relative Density: Between 0.77 and 0.85 (Water equals 1.00)
Vapor density Not determined.
Evaporation rate Not applicable.
Partition coefficient: n-octonal/water: Not determined.

Solubility: Not determined.

(Contd. on page 4)

Safety Data Sheet

Trade name: GRAY PRIMER

(Contd. of page 3)

Viscosity: Not determined.
Water: 0.0 %

10 Stability and reactivity

Reactivity: Stable at normal temperatures.
Conditions to avoid: Do not allow can to exceed 120 degrees Fahrenheit. Do not warehouse in subfreezing temperatures.
Chemical stability: Not fully evaluated.
Possibility of hazardous reactions: No dangerous reactions known.
Incompatible materials: No further relevant information available.
Hazardous decomposition: No dangerous decomposition products known.

11 Toxicological information

LD/LC50 values that are relevant for classification:		
110-19-0 Isobutyl Acetate		
Oral	LD50	4,763 mg/kg (rbt)
13463-67-7 titanium dioxide		
Oral	LD50	>20,000 mg/kg (rat)
Dermal	LD50	>10,000 mg/kg (rbt)
Inhalative	LC50/4 h	>6.82 mg/l (rat)
123-86-4 butyl acetate		
Oral	LD50	14,000 mg/kg (rat)
Inhalative	LC50/4 h	>21 mg/l (rat)
67-63-0 Isopropyl Alcohol		
Oral	LD50	4,570 mg/kg (rat)
Dermal	LD50	13,400 mg/kg (rab)
Inhalative	LC50/4 h	30 mg/l (rat)

Information on toxicological effects: No data available.
Skin effects: No irritant effect.
Eye effects: Irritating effect.
Sensitization: No sensitizing effects known.

12 Ecological information

Aquatic toxicity: Hazardous for water, do not empty into drains.
Persistence and degradability: The product is degradable after prolonged exposure to natural weathering processes.
Other information: This product does not contain any chlorofluorocarbons (CFC's), hydrochlorofluorocarbons (HCFC's), perfluorocarbons (PFC's), heavy metals (chromium, lead, cadmium), or chlorinated solvents.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Other adverse effects: No further relevant information available.

13 Disposal considerations

Dispose of in accordance with local, state, and federal regulations. Do not puncture, incinerate, or compact. Partially empty cans must be disposed of responsibly. Do not heat or cut empty containers with electric or gas torches.
Recommendation: Completely empty cans should be recycled.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

UN-Number UN1950
DOT UN1950
UN1950
DOT Aerosols, flammable
ADR 1950 Aerosols
Transport hazard class(es):
Class 2.1 Gases
Marine pollutant: Yes
Symbol (fish and tree)
Special precautions for user: Warning: Gases
EMS Number: F-D,S-U
Packaging Group: --
UN "Model Regulation": UN1950, Aerosols, ENVIRONMENTALLY HAZARDOUS, 2.1

(Contd. on page 5)

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Trade name: GRAY PRIMER

(Contd. of page 4)

15 Regulatory information

SARA Section 355 (extremely hazardous substances):
None of the ingredients in this product are listed.

SARA Section 313 (Specific toxic chemical listings):	
7779-90-0	zinc phosphate
67-63-0	Isopropyl Alcohol
108-88-3	Toluene

Toxic Substances Control Act (TSCA): All hazardous ingredients are found on the inventory list of substances.

Canadian Domestic Substances List (DSL): All ingredients are listed or exempted.

Consumer Product Safety Comission (CPSC): This product complies with 16 CFR 1303 and does not contain more than 90 ppm of lead.

California Proposition 65 chemicals known to cause cancer:	
13463-67-7	titanium dioxide
100-41-4	ethyl benzene
1333-86-4	Carbon black

Prop 65 chemicals known to cause birth defects or reproductive harm:	
108-88-3	Toluene

EPA:		
67-64-1	Acetone	I
110-19-0	Isobutyl Acetate	D
7779-90-0	zinc phosphate	D, I, II

16 Other information

Contact: Regulatory Affairs

Cronatron™
A LAWSON BRAND

Material Safety Data Sheet

Revision Date *02-Sep-2014*

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product code CW4889A
Product name White Valve Action® Paint Marker
Recommended Use Marker

Supplier Cronatron, A Lawson Brand
Lawson Products, Inc.
8770 W.Bryn Mawr Ave.- Suite 900
Chicago, IL 60631
1-866-529-7664

Emergency telephone number (888) 426-4851

2. HAZARDS IDENTIFICATION

Emergency Overview
No information available

Aggravated Medical Conditions
None Known

Principal Routes of Exposure
No information available

Potential health effects

Eyes No adverse affects expected

Skin No adverse affects expected

Inhalation No adverse affects expected

Ingestion No adverse affects expected

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
Propylene glycol monomethyl ether	107-98-2	40-70
Ethanol	64-17-5	7-13
Isopropanol	67-63-0	.5-2.5
Ethylacetate	141-78-6	.1-1.1

4. FIRST AID MEASURES

Eye contact No specific treatment is necessary since this material is not likely to be hazardous by eye contact

Skin contact No specific treatment is necessary since this material is not likely to be hazardous by skin contact

Ingestion No specific treatment is necessary since this material is not likely to be hazardous by ingestion

Inhalation No specific treatment is necessary since this material is not likely to be hazardous by inhalation

5. FIRE FIGHTING MEASURES

Flash point °C No data available
Flash point °F No data available
Method No information available

Autoignition temperature °C No data available
Autoignition temperature °F No data available

Flammability Limits (% in Air)
Upper No data available
Lower No data available

Suitable extinguishing media
Use extinguishing media appropriate to surrounding fire

Special protective equipment for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Sensitivity to shock
No information available.

Sensitivity to static discharge
No information available.

6. ACCIDENTAL RELEASE MEASURES

7. HANDLING AND STORAGE

Handling
No information available

Storage
No information available

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	OSHA PEL (TWA)	OSHA PEL (Ceiling)	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Propylene glycol monomethyl ether	-	-	50 ppm	100 ppm

Ethanol	1000 ppm 1900 mg/m^3	-	-	1000 ppm
Ethylacetate	400 ppm 1400 mg/m^3	-	400 ppm	-
Isopropanol	400 ppm 980 mg/m^3	-	200 ppm	400 ppm

Ventilation and Environmental Controls
Adequate ventilation should be provided to keep exposure levels below current acceptable exposure limits

Hygiene measures
General industrial hygiene practice

Respiratory protection
Follow OSHA respirator regulations (29 CFR 1910.134) and if necessary, wear a MSHA/NIOSH approved respirator

Hand Protection
Gloves are not required in normal use

Eye protection
None necessary under normal use conditions

Skin and body protection
None necessary under normal conditions

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	No information available
Color	No information available
Odor	No information available
Odor Threshold	No information available
pH	No data available
Specific Gravity	No data available
Vapor pressure	No data available
Vapor density	No data available
Evaporation Rate	No data available
Water solubility	No data available
Partition Coefficient (n-octanol/water)	No data available
Boiling point/range °C	No data available
Boiling point/range °F	No data available
Melting point/range °C	No data available
Melting point/range °F	No data available
Flash point °F	No data available

10. STABILITY AND REACTIVITY

Stability
Stable

Conditions to avoid
No information available

Incompatability
No information available

Hazardous Decomposition Products
No information available

Polymerization
Hazardous polymerization does not occur

11. TOXICOLOGICAL INFORMATION

Component Information

Chemical Name	LD50 (oral,rat)	LD50 (dermal,rat/rabbit)	LC50 (inhalation,rat)
Propylene glycol monomethyl ether 107-98-2	5000 mg/kg	13 g/kg	6 mg/L
Ethanol 64-17-5	-	-	124.7 mg/L
Ethylacetate 141-78-6	5620 mg/kg	18000 mg/kg	-
Isopropanol 67-63-0	1870 mg/kg	4059 mg/kg	72600 mg/m^3

Synergistic Products None known

Potential health effects

Sensitization None known

Chronic toxicity None known

Mutagenic effects None known

Teratogenic effects None known

Reproductive toxicity None known

Target Organ Effects See Section 2

Carcinogenic effects See table below

Chemical Name	ACGIH OEL - Carcinogens	IARC	NTP - Known Carcinogens	NTP - Suspected Human Carcinogens	OSHA RTK Carcinogens
Propylene glycol monomethyl ether	A4	Not Listed	Not Listed	Not Listed	Not Listed
Ethanol	A3	Group 1	Not Listed	Not Listed	Listed
Ethylacetate	Not Listed	Not Listed	Not Listed	Not Listed	Not Listed
Isopropanol	A4	Not Listed	Not Listed	Not Listed	Not Listed

12. ECOLOGICAL INFORMATION

Propylene glycol monomethyl ether

Water Flea Data
Daphnia magna EC50=23300 mg/L (48 h)

Ethanol

12. ECOLOGICAL INFORMATION

Microtox Data
Photobacterium phosphoreum EC50=34634 mg/L (30 min)
Photobacterium phosphoreum EC50=35470 mg/L (5 min)

Water Flea Data
Daphnia magna LC509268 - 14221 mg/L (48 h)
Daphnia magna EC50=2 mg/L (48 h)

Isopropanol

Water Flea Data
Daphnia magna EC50=13299 mg/L (48 h)

Ethylacetate

Microtox Data
Photobacterium phosphoreum EC50=1180 mg/L (5 min)
Pseudomonas fluorescens EC50=1500 mg/L (15 min)
Photobacterium phosphoreum EC50=5870 mg/L (15 min)
Pseudomonas fluorescens EC50=7400 mg/L (2 h)

Water Flea Data
Daphnia magna EC50=560 mg/L (48 h)

13. DISPOSAL CONSIDERATIONS

14. TRANSPORTATION INFORMATION

DOT
This product conforms to 49 CFR 173.4 for domestic highway or rail transport only. Conforms to 49 CFR 173.4a Excepted quantity of Class 3 Flammable liquid.

TDG
Dangerous goods in excepted quantity.

15. REGULATORY INFORMATION

Chemical Name	US EPA SARA 313 Emission Reporting
Isopropanol	Listed

State Regulations

Chemical Name	New Jersey - RTK	Pennsylvania - RTK	California Prop. 65
Propylene glycol monomethyl ether	Listed	Listed	Not Listed
Ethanol	Not Listed	Listed	Carcinogen Developmental
Ethylacetate	Listed	Listed	Not Listed
Isopropanol	Not Listed	Listed	Not Listed

International Inventories

Chemical Name	EINECS	DSL	NDSL	TSCA
Propylene glycol monomethyl ether	X	X	-	X
Ethanol	X	X	-	X
Ethylacetate	X	X	-	X
Isopropanol	X	X	-	X

CPR
This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all of the information required by the Controlled Product Regulations

16. OTHER INFORMATION

Prepared By Maureen Ruggeberg, Regulatory Affairs Specialist

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

Valve Action® Paint Markers, CERTIFIED Valve Action® Paint Markers

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)
Date of issue: 04/16/2015
Revision date: 11/06/2015
Supersedes: 10/29/2015
Version: 1.2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Article

Trade name : Valve Action® Paint Markers, CERTIFIED Valve Action® Paint Markers

Synonyms : Valve Action® Paint Marker White, Yellow, Black, Blue, Green, Aluminum, Purple, Light Blue, Light Green, Fluorescent Yellow, Fluorescent Green, Fluorescent Orange, Fluorescent Pink, Invisible UV, Red, Orange, Pink, Brown, Gold

CERTIFIED Valve Action® Paint Marker White, Yellow, Red, Black

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Marking.

1.3. Details of the supplier of the safety data sheet

LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL. 60007-5746
Phone: (847) 956-7600
Fax: (847) 956-9885
E-mail: customer_service@laco.com

1.4. Emergency telephone number

Emergency number : 24-hour emergency: CHEMTREC- U.S. : 1-800-424-9300 International: +1-703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification in accordance with the Globally Harmonized Standard

Not classified

2.2 Label elements

GHS-US labelling

No labelling applicable

2.3. Other hazards

2.4 Unknown acute toxicity (GHS US)

0.28 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)
0.28 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)
0.28 percent of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Dust/Mist))

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
1-Methoxy-2-propanol	(CAS No) 107-98-2	47.05 White 53.32 Yellow 56.66 Red 53.03 Black, CERTIFIED Black 55.56 Blue 56.4 Green 53.86 Orange 77.11 Aluminum 50.88 Purple 47.11 Pink 47.57 Light Blue 47.1 Light Green 56.53 Brown 71.2 Gold 42.53 Fluorescent Yellow, Fluorescent Orange 43.05 Fluorescent Green 42.29 Fluorescent Pink 50 Invisible UV 48.35 CERTIFIED White 53.71 CERTIFIED Yellow 56.8 CERTIFIED Red	Flam. Liq. 3, H226 STOT SE 3, H336
ethanol	(CAS No) 64-17-5	13.07 White, CERTIFIED White 15.49 Yellow, CERTIFIED Yellow 13.47 Red, CERTIFIED Red 19.8 Black, CERTIFIED Black 14.18 Blue 12.89 Green 13.18 Orange, Brown 16.3 Purple 12.68 Pink 12.64 Light Blue 12.61 Light Green 8.04 Fluorescent Yellow, Fluorescent Orange 6.8 Fluorescent Green	Flam. Liq. 2, H225
2-methoxy-1-methylethyl acetate	(CAS No) 108-65-6	0.3 – 0.6 White, CERTIFIED White 0.36 – 0.73 Yellow, CERTIFIED Yellow 0.47 – 0.94 Red, CERTIFIED Red 0.55 – 1.1 Black, CERTIFIED Black 0.76 – 1.52 Blue 0.74 – 1.48 Green 0.86 – 1.72 Orange 0.05 – 0.1 Purple 0.4 – 0.8 Pink 0.42 – 0.85 Light Blue 0.48 – 0.96 Light Green 0.6 – 1.21 Brown 0.97 – 1.93 Gold 0.21 – 0.41 Fluorescent Yellow, Fluorescent Orange, Fluorescent Pink 0.22 – 0.45 Fluorescent Green	Flam. Liq. 3, H226
4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%)	(CAS No) 2786-76-7	3.64 Red, CERTIFIED Red 0.89 Pink 1.82 Brown 1.22 Gold	Skin Sens. 1, H317
Isopropanol	(CAS No) 67-63-0	2.31 White, CERTIFIED White 2.73 Yellow, CERTIFIED Yellow 2.38 Red, CERTIFIED Red 3.49 Black, CERTIFIED Black 2.5 Blue 2.28 Green 2.33 Orange, Brown 2.88 Purple 2.24 Pink 2.23 Light Blue, Light Green 1.42 Fluorescent Yellow, Fluorescent Orange 1.2 Fluorescent Green 1.49 Fluorescent Pink 0.54 Invisible UV	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336

Name	Product identifier	% (w/w)	GHS-US classification
Ethyl acetate	(CAS No) 141-78-6	0.76 White, CERTIFIED White 0.91 Yellow, Red, CERTIFIED Yellow, CERTIFIED Red 0.93 Black, CERTIFIED Black 0.83 Blue 0.87 Green 0.89 Orange, Brown 0.79 Aluminum 1.1 Purple 0.73 Pink, Light Blue, Light Green 0.64 Gold 0.65 Fluorescent Yellow, Fluorescent Orange, Fluorescent Pink 0.7 Fluorescent Green 2.22 Invisible UV	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336
Carbon black	(CAS No) 1333-86-4	1.84 Black, CERTIFIED Black	Carc. 2, H351
4-Methyl-7-diethylaminocoumarin	(CAS No) 91-44-1	1.43 Invisible UV	Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
propyl acetate	(CAS No) 109-60-4	0.77 White, Orange, Brown, CERTIFIED White 0.91 Yellow, CERTIFIED Yellow 0.79 Red, CERTIFIED Red 1.16 Black, CERTIFIED Black 0.83 Blue 0.76 Green 0.96 Purple 0.75 Pink 0.74 Light Blue, Light Green 0.47 Fluorescent Yellow, Fluorescent Orange 0.4 Fluorescent Green 0.18 Invisible UV	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H336

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water.

First-aid measures after ingestion : Do NOT induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause drowsiness or dizziness.

Symptoms/injuries after skin contact : May cause moderate irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry chemical. Inert gas. Foam. Water spray. Water fog.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour. Burning produces irritating, toxic and noxious fumes.

Reactivity : No dangerous reactions known.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses. Eliminate all ignition sources if safe to do so.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking. Avoid all eye and skin contact and do not breathe vapour and mist.

6.1.1. For non-emergency personnel

Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Chemical goggles or safety glasses. Wear suitable gloves.

Emergency procedures : Stop leak if safe to do so. Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Eliminate all ignition sources. Stop the flow of material, if this is without risk.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Take up in non-combustible absorbent material and shove into container for disposal.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling : No open flames. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Avoid all eye and skin contact and do not breathe vapour and mist. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible products : Strong oxidizers.

Incompatible materials : Heat sources.

Heat and ignition sources : Keep away from heat, sparks and flame.

Prohibitions on mixed storage : Keep away from incompatible materials.

Storage area : Store in dry, cool, well-ventilated area.

7.3. Specific end use(s)

Marking.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Valve Action® Paint Markers, CERTIFIED Valve Action® Paint Markers	
ACGIH	Not applicable
OSHA	Not applicable

1-Methoxy-2-propanol (107-98-2)		
ACGIH	ACGIH TWA (mg/m³)	369 mg/m³
ACGIH	ACGIH TWA (ppm)	50 ppm
ACGIH	ACGIH STEL (mg/m³)	553 mg/m³
ACGIH	ACGIH STEL (ppm)	100 ppm

1-Methoxy-2-propanol (107-98-2)		
ACGIH	Remark (ACGIH)	Eye irr; CNS impair; A4
OSHA	Not applicable	
Canada (Quebec)	VECD (mg/m³)	553 mg/m³
Canada (Quebec)	VECD (ppm)	150 ppm
Canada (Quebec)	VEMP (mg/m³)	369 mg/m³
Canada (Quebec)	VEMP (ppm)	100 ppm

Ethyl acetate (141-78-6)		
ACGIH	ACGIH TWA (mg/m³)	1440 mg/m³
ACGIH	ACGIH TWA (ppm)	400 ppm
ACGIH	Remark (ACGIH)	URT & eye irr
OSHA	OSHA PEL (TWA) (mg/m³)	1400 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	400 ppm
Canada (Quebec)	VEMP (mg/m³)	1440 mg/m³
Canada (Quebec)	VEMP (ppm)	400 ppm

2-methoxy-1-methylethyl acetate (108-65-6)	
ACGIH	Not applicable
OSHA	Not applicable

4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%) (2786-76-7)	
ACGIH	Not applicable
OSHA	Not applicable

ethanol (64-17-5)		
ACGIH	ACGIH TWA (mg/m³)	1884 mg/m³
ACGIH	ACGIH TWA (ppm)	1000 ppm
ACGIH	ACGIH STEL (ppm)	1000 ppm
ACGIH	Remark (ACGIH)	URT irr
OSHA	OSHA PEL (TWA) (mg/m³)	1900 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	1000 ppm
Canada (Quebec)	VEMP (mg/m³)	1880 mg/m³
Canada (Quebec)	VEMP (ppm)	1000 ppm

Isopropanol (67-63-0)		
ACGIH	ACGIH TWA (mg/m³)	490 mg/m³
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (mg/m³)	960 mg/m³
ACGIH	ACGIH STEL (ppm)	400 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr; CNS impair
OSHA	OSHA PEL (TWA) (mg/m³)	980 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	400 ppm
Canada (Quebec)	VECD (mg/m³)	1230 mg/m³
Canada (Quebec)	VECD (ppm)	500 ppm
Canada (Quebec)	VEMP (mg/m³)	983 mg/m³
Canada (Quebec)	VEMP (ppm)	400 ppm

propyl acetate (109-60-4)		
ACGIH	ACGIH TWA (mg/m³)	835 mg/m³
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (mg/m³)	1040 mg/m³
ACGIH	ACGIH STEL (ppm)	250 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr

propyl acetate (109-60-4)		
OSHA	OSHA PEL (TWA) (mg/m³)	840 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
Canada (Quebec)	VECD (mg/m³)	1040 mg/m³
Canada (Quebec)	VECD (ppm)	250 ppm
Canada (Quebec)	VEMP (mg/m³)	835 mg/m³
Canada (Quebec)	VEMP (ppm)	200 ppm

Carbon black (1333-86-4)		
ACGIH	ACGIH TWA (mg/m³)	3.5 mg/m³
ACGIH	Remark (ACGIH)	Bronchitis
OSHA	OSHA PEL (TWA) (mg/m³)	3.5 mg/m³
Canada (Quebec)	VEMP (mg/m³)	10 mg/m³ (Fibres de carbone et de graphite; Poussière totale) 5 mg/m³ (Fibres de carbone et de graphite; Poussière respirable) 3.5 mg/m³

4-Methyl-7-diethylaminocoumarin (91-44-1)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls : Provide local exhaust ventilation of closed transfer systems to minimize exposures.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : None under normal use. It is a good industrial hygiene practice to minimize skin contact. Wear suitable gloves. rubber.

Eye protection : No special eye protection equipment recommended under normal conditions of use. Eye protection should only be necessary where liquid could be splashed or sprayed.

Respiratory protection : No special respiratory protection equipment is recommended under normal conditions of use with adequate ventilation. In case of inadequate ventilation wear respiratory protection. Use an approved respirator equipped with oil/mist cartridges.

Consumer exposure controls : Keep out of reach of children.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Appearance : Solid marker containing liquid colored paint.

Colour : Variable.

Odour : Solvent.

Odour threshold : No data available

pH : No data available

Relative evaporation rate (butyl acetate=1) : < 1

Melting point : No data available

Freezing point : No data available

Boiling point : 120 °C

Flash point : 31 °C

Auto-ignition temperature : 287 °C

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapour pressure : 11.8

Relative vapour density at 20 °C : No data available

Relative density : 1 - 1.33

Solubility : insoluble in water.

Log Pow : 0.7

Log Kow : No data available

Viscosity, kinematic : No data available

Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

VOC content : 50 - 60 %

SECTION 10: Stability and reactivity

10.1. Reactivity
No dangerous reactions known.

10.2. Chemical stability
Flammable liquid and vapour.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Open flame. Overheating. Direct sunlight. Heat. Sparks.

10.5. Incompatible materials
Strong oxidizing agents.

10.6. Hazardous decomposition products
May release flammable gases. Burning produces irritating, toxic and noxious fumes. Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

1-Methoxy-2-propanol (107-98-2)	
LD50 oral rat	4016 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight
LC50 inhalation rat (ppm)	> 7000 ppm 6 hr
ATE CLP (oral)	4016.000 mg/kg bodyweight

Ethyl acetate (141-78-6)	
LD50 oral rat	5620 mg/kg
LD50 dermal rabbit	> 20000 mg/kg
LC50 inhalation rat (mg/l)	> 18 mg/l/4h
ATE CLP (oral)	5620.000 mg/kg bodyweight

2-methoxy-1-methylethyl acetate (108-65-6)	
LD50 oral rat	8532 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (ppm)	4345 ppm 6 h
ATE CLP (oral)	8532.000 mg/kg bodyweight

4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%) (2786-76-7)	
LD50 oral rat	> 15000 mg/kg
LC50 inhalation rat (mg/l)	> 1580 mg/m³ 4 h

ethanol (64-17-5)	
LD50 oral rat	10470 mg/kg
LD50 dermal rabbit	> 20000 mg/kg
LC50 inhalation rat (mg/l)	133.8 mg/l/4h
ATE CLP (oral)	10470.000 mg/kg bodyweight
ATE CLP (vapours)	133.800 mg/l/4h
ATE CLP (dust,mist)	133.800 mg/l/4h

Isopropanol (67-63-0)	
LD50 oral rat	5840 mg/kg
LD50 dermal rabbit	16.4 ml/kg
LC50 inhalation rat (ppm)	> 10000 ppm/4h
ATE CLP (oral)	5840.000 mg/kg bodyweight

propyl acetate (109-60-4)	
LD50 oral rat	8700 mg/kg
LD50 dermal rabbit	> 17800 mg/kg
LC50 inhalation rat (mg/l)	32 mg/l/4h
ATE CLP (oral)	8700.000 mg/kg bodyweight
ATE CLP (vapours)	32.000 mg/l/4h
ATE CLP (dust,mist)	32.000 mg/l/4h

Carbon black (1333-86-4)	
LD50 oral rat	> 8000 mg/kg
LC50 inhalation rat (mg/l)	> 4.6 mg/m³ 4 h

4-Methyl-7-diethylaminocoumarin (91-44-1)	
LD50 oral rat	> 5000 mg/kg
ATE CLP (dermal)	1100.000 mg/kg bodyweight
ATE CLP (dust,mist)	1.500 mg/l/4h

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified.

Isopropanol (67-63-0)	
IARC group	3 - Not classifiable

Carbon black (1333-86-4)	
IARC group	2B - Possibly carcinogenic to humans, Inhalation of dust
National Toxicology Program (NTP) Status	Not listed in carcinogenicity class

Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified.
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
Potential adverse human health effects and symptoms
Symptoms/injuries after inhalation : May cause drowsiness or dizziness.
Symptoms/injuries after skin contact : May cause moderate irritation.

SECTION 12: Ecological information

12.1 Toxicity

1-Methoxy-2-propanol (107-98-2)	
LC50 fish 1	20800 mg/l
EC50 Daphnia 1	23300 mg/l
ErC50 (algae)	> 1000 mg/l

Ethyl acetate (141-78-6)	
LC50 fish 1	220 mg/l
EC50 Daphnia 1	1200 mg/l
NOEC chronic fish	< 9.35 mg/l

2-methoxy-1-methylethyl acetate (108-65-6)	
LC50 fish 1	100 - 180 mg/l
EC50 Daphnia 1	> 500 mg/l 48 h
ErC50 (algae)	> 1000 mg/l

4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%) (2786-76-7)	
LC50 fish 1	> 500 mg/l 96 h
EC50 Daphnia 1	> 110 mg/l 48 h

ethanol (64-17-5)	
LC50 fish 1	14200 mg/l
EC50 Daphnia 1	5012 mg/l

Isopropanol (67-63-0)	
LC50 fish 1	10000 mg/l

propyl acetate (109-60-4)	
LC50 fish 1	60 mg/l 96 h
EC50 Daphnia 1	91.5 mg/l 48 h

12.2. Persistence and degradability

1-Methoxy-2-propanol (107-98-2)	
Persistence and degradability	Readily biodegradable.
Biodegradation	96 % 28 d

Ethyl acetate (141-78-6)	
Persistence and degradability	Readily biodegradable.

2-methoxy-1-methylethyl acetate (108-65-6)	
Persistence and degradability	Readily biodegradable.
Biodegradation	89 % 10 d

4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%) (2786-76-7)	
Persistence and degradability	Not readily biodegradable.
Biodegradation	0 % 28 d

ethanol (64-17-5)	
Biodegradation	> 96 % 28 d

Isopropanol (67-63-0)	
Persistence and degradability	Readily biodegradable.

propyl acetate (109-60-4)	
Persistence and degradability	Readily biodegradable.
Biodegradation	62 % 5 d

Carbon black (1333-86-4)	
Persistence and degradability	Not readily biodegradable.

12.3. Bioaccumulative potential

Valve Action® Paint Markers, CERTIFIED Valve Action® Paint Markers	
Log Pow	0.7

1-Methoxy-2-propanol (107-98-2)	
Bioaccumulative potential	Not expected to bioaccumulate.

Ethyl acetate (141-78-6)	
Bioaccumulative potential	Not expected to bioaccumulate.

2-methoxy-1-methylethyl acetate (108-65-6)	
Log Pow	0.43

4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%) (2786-76-7)	
BCF fish 1	53 l/kg
Log Pow	1.28

ethanol (64-17-5)	
Bioaccumulative potential	Not expected to bioaccumulate.

Isopropanol (67-63-0)	
Bioaccumulative potential	Not expected to bioaccumulate.

propyl acetate (109-60-4)	
Log Pow	1.23

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal recommendations	:	Do not dispose of waste into sewer.
Waste disposal recommendations	:	Dispose in a safe manner in accordance with local/national regulations.
Additional information	:	Handle empty containers with care because residual vapours are flammable.

SECTION 14: Transport information

In accordance with DOT and TDG

Transport document description	:	UN1263 Paint (including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base), 3, III
UN-No.(DOT)	:	UN1263
Proper Shipping Name (DOT)	:	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base
Transport hazard class(es) (DOT)	:	3 - Flammable liquid
Packing group (DOT)	:	III - Minor Danger

ADR

Transport document description	:	UN 1263 PAINT, 3, III, (D/E)
Proper Shipping Name (ADR)	:	PAINT
Packing group (ADR)	:	III
Transport hazard class(es) (ADR)	:	3

Transport by sea

UN-No. (IMDG)	:	UN 1263
Proper Shipping Name (IMDG)	:	PAINT
Transport hazard class(es) (IMDG)	:	3
Packing group (IMDG)	:	III

Air transport

UN-No. (IATA)	:	UN 1263
Proper Shipping Name (IATA)	:	Paint
Transport hazard class(es) (IATA)	:	3
Packing group (IATA)	:	III

SECTION 15: Regulatory information

15.1. US Federal regulations

1-Methoxy-2-propanol (107-98-2)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

Ethyl acetate (141-78-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
RQ (Reportable quantity, section 304 of EPA's List of Lists)	5000 lb

2-methoxy-1-methylethyl acetate (108-65-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%) **(2786-76-7)**
Listed on the United States TSCA (Toxic Substances Control Act) inventory

ethanol (64-17-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Isopropanol (67-63-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Fire hazard

propyl acetate (109-60-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Carbon black (1333-86-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

4-Methyl-7-diethylaminocoumarin (91-44-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

1-Methoxy-2-propanol (107-98-2)
Listed on the Canadian DSL (Domestic Substances List) inventory.
Ethyl acetate (141-78-6)
Listed on the Canadian DSL (Domestic Substances List) inventory.
2-methoxy-1-methylethyl acetate (108-65-6)
Listed on the Canadian DSL (Domestic Substances List) inventory.
4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%) **(2786-76-7)**
Listed on the Canadian DSL (Domestic Substances List) inventory.
ethanol (64-17-5)
Listed on the Canadian DSL (Domestic Substances List) inventory.
Isopropanol (67-63-0)
Listed on the Canadian DSL (Domestic Substances List) inventory.
propyl acetate (109-60-4)
Listed on the Canadian DSL (Domestic Substances List) inventory.
Carbon black (1333-86-4)
Listed on the Canadian DSL (Domestic Substances List) inventory.
4-Methyl-7-diethylaminocoumarin (91-44-1)
Listed on the Canadian DSL (Domestic Substances List) inventory.

EU-Regulations

1-Methoxy-2-propanol (107-98-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Ethyl acetate (141-78-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
2-methoxy-1-methylethyl acetate (108-65-6)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
4-[[4-(aminocarbonyl)phenyl]azo]-N-(2-ethoxyphenyl)-3-hydroxynaphthalene-2-carboxamide, C.I. Pigment Red 170 (naphthol <1%) **(2786-76-7)**
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
ethanol (64-17-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Isopropanol (67-63-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
propyl acetate (109-60-4)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Carbon black (1333-86-4)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
4-Methyl-7-diethylaminocoumarin (91-44-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Valve Action® Paint Markers, CERTIFIED Valve Action® Paint Markers
All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS). All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL). All ingredients are listed in the Toxic Substances Control Act (TSCA).

15.3. US State regulations

Valve Action® Paint Markers, CERTIFIED Valve Action® Paint Markers	
State or local regulations	The carbon black in this product is bound and is not respirable. California Prop. 65 warnings are not required.

Carbon black (1333-86-4)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
Yes	No	No	No	

1-Methoxy-2-propanol (107-98-2)
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New York - Right to Know List of Hazardous Chemicals

Ethyl acetate (141-78-6)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - List of Hazardous Substances

ethanol (64-17-5)
U.S. - New Jersey - Right to Know Hazardous Substance List

Isopropanol (67-63-0)
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List

propyl acetate (109-60-4)
U.S. - New Jersey - Right to Know Hazardous Substance List

Carbon black (1333-86-4)
U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Indication of changes : Added. Product.

Data sources : ACGIH (American Conference of Governement Industrial Hygienists).

European Chemicals Agency (ECHA) C&L Inventory database. Accessed at http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database.

Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition.

National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition.

OSHA 29CFR 1910.1200 Hazard Communication Standard.

TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html.

Abbreviations and acronyms : ATE: Acute Toxicity Estimate. CAS (Chemical Abstracts Service) number.

CLP: Classification, Labelling, Packaging.

EC50: Environmental Concentration associated with a response by 50% of the test population.

GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).

LD50: Lethal Dose for 50% of the test population.

OSHA: Occupational Safety & Health Administration.

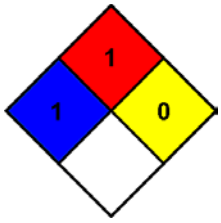
PBT: Persistent, Bioaccumulative, Toxic.

TWA: Time Weight Average.

TSCA: Toxic Substances Control Act.

Other information : None.

NFPA health hazard	:	1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	:	1 - Must be preheated before ignition can occur.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and not reactive with water.



Full text of H-statements:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Sensitisation — Skin, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour
H226	Flammable liquid and vapour
H312	Harmful in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer

SDS Prepared by: The Redstone Group, LLC
6077 Frantz Rd.
Suite 206
Dublin, OH USA 43016
T 614-923-7472
www.redstonegrp.com

LACO NA GHS SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

Safety Data Sheet
acc. to OSHA HCS

Printing date 09/25/2014 Revised On 09/25/2014

1 Identification of the substance and manufacturer

Trade name: **Dark Machinery Gray**

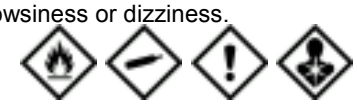
Product code: 98762
Product category PC9a Paints and coatings.
Manufacturer/Supplier: Lawson Products, Inc.
8770 W. Bryn Mawr Avenue
Chicago, IL 60631
USA
phone: 773-304-5050
Emergency telephone number: 888-426-4851

2 Hazard(s) identification

Classification of the substance or mixture

Flam. Aerosol 1	H222	Extremely flammable aerosol.
Press. Gas	H280	Contains gas under pressure; may explode if heated.
Carc. 2	H351	Suspected of causing cancer.
Eye Irrit. 2A	H319	Causes serious eye irritation.
STOT SE 3	H336	May cause drowsiness or dizziness.

GHS Hazard pictograms



GHS02 GHS04 GHS07 GHS08

Signal word Danger
Hazard statements
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
Suspected of causing cancer.
May cause drowsiness or dizziness.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Wash hands thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use personal protective equipment as required.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical Description: This product is a mixture of the substances listed below with nonhazardous additions.

Dangerous components:		
67-64-1	Acetone	20.0%
74-98-6	propane	15.8%
106-97-8	n-butane	9.28%
7727-43-7	barium sulphate, natural	8.43%
108-10-1	methyl isobutyl ketone	5.85%
2807-30-9	Glycol Ether EP	5.4%
13463-67-7	titanium dioxide	4.77%
107-87-9	Methyl Propyl Ketone	2.99%
110-19-0	isobutyl acetate	2.97%
1330-20-7	xylene (mix)	2.56%

4 First-aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact: Remove contaminated clothing. Wash exposed area with soap and water.
After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing: Rinse out mouth and then drink plenty of water.

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Safety Data Sheet
acc. to OSHA HCS

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Trade name: Dark Machinery Gray

(Contd. of page 1)

Rinse mouth with water. Do not induce vomiting.

Most important symptoms and effects: Dizziness

Indication of any immediate medical attention needed: No further relevant information available.

5 Fire-fighting measures

Extinguishing agents: CO2, sand, extinguishing powder, or water spray. Fight larger fires with water spray or alcohol resistant foam.
CO2, extinguishing powder or water spray. Fight larger fires with water spray.

Special hazards: Can form explosive gas-air mixtures.

Protective equipment for firefighters: A respiratory protective device may be necessary.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures: Wear protective equipment. Keep unprotected persons away.
Use respiratory protective device against the effects of fumes/dust/aerosol.

Methods and material for containment and cleaning up: Absorb liquid components with liquid-binding material.

7 Handling and storage

Precautions for safe handling

Storage requirements: Use only in well ventilated areas.
Keep away from sources of heat and direct sunlight. Do not warehouse in subfreezing conditions.
Store locked up.

8 Exposure controls/personal protection

Components with limit values that require monitoring at the workplace:

67-64-1 Acetone	
PEL (USA)	Long-term value: 2400 mg/m³, 1000 ppm
REL (USA)	Long-term value: 590 mg/m³, 250 ppm
TLV (USA)	Short-term value: (1782) NIC-1187 mg/m³, (750) NIC-500 ppm Long-term value: (1188) NIC-594 mg/m³, (500) NIC-250 ppm BEI
74-98-6 propane	
PEL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
REL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
TLV (USA)	refer to Appendix F
106-97-8 n-butane	
REL (USA)	Long-term value: 1900 mg/m³, 800 ppm
TLV (USA)	Short-term value: 2370 mg/m³, 1000 ppm
7727-43-7 barium sulphate, natural	
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV (USA)	Long-term value: 5* mg/m³ *inhalable fraction; E
108-10-1 methyl isobutyl ketone	
PEL (USA)	Long-term value: 410 mg/m³, 100 ppm
REL (USA)	Short-term value: 300 mg/m³, 75 ppm Long-term value: 205 mg/m³, 50 ppm
TLV (USA)	Short-term value: 307 mg/m³, 75 ppm Long-term value: 82 mg/m³, 20 ppm BEI
107-87-9 Methyl Propyl Ketone	
PEL (USA)	Long-term value: 700 mg/m³, 200 ppm
REL (USA)	Long-term value: 530 mg/m³, 150 ppm
TLV (USA)	Short-term value: 529 mg/m³, 150 ppm
110-19-0 isobutyl acetate	
PEL (USA)	Long-term value: 700 mg/m³, 150 ppm
REL (USA)	Long-term value: 700 mg/m³, 150 ppm
TLV (USA)	Long-term value: 713 mg/m³, 150 ppm

(Contd. on page 3)

P-5

Safety Data Sheet
acc. to OSHA HCS

Printing date 09/25/2014 Revised On 09/25/2014

Trade name: Dark Machinery Gray

(Contd. of page 2)

1330-20-7 xylene (mix)	
PEL (USA)	Long-term value: 435 mg/m³, 100 ppm
REL (USA)	Short-term value: 655 mg/m³, 150 ppm Long-term value: 435 mg/m³, 100 ppm
TLV (USA)	Short-term value: 651 mg/m³, 150 ppm Long-term value: 434 mg/m³, 100 ppm BEI

Ingredients with biological limit values:	
67-64-1 Acetone	
BEI (USA)	50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)
108-10-1 methyl isobutyl ketone	
BEI (USA)	1 mg/L Medium: urine Time: end of shift Parameter: MIBK
1330-20-7 xylene (mix)	
BEI (USA)	1.5 g/g creatinine Medium: urine Time: end of shift Parameter: Methylhippuric acids

Hygienic protection: Keep away from foodstuffs and animal feed. Wash hands after use.
Immediately remove all soiled and contaminated clothing.
Wash hands after use.
Avoid contact with the eyes and skin.
Do not eat or drink while working.

Breathing equipment: A respirator is generally not necessary when using this product outdoors or in large open areas. In cases where short and/or long term overexposure exists, a charcoal filter respirator should be worn. If you suspect overexposure conditions exist, please consult an authority on chemical hygeine.

Hand protection: Protective gloves. The glove material must be impermeable and resistant to the substance.

Eye protection: Tightly sealed goggles

9 Physical and chemical properties

Appearance: Aerosol.
Odor: Aromatic
Odor threshold: Not determined.

pH-value: Not determined.
Melting point/Melting range Undetermined.
Boiling point: -44 °C (-47 °F)

Flash point: -19 °C (-2 °F)
Flammability (solid, gas): Extremely flammable.

Decomposition temperature: Not determined.

Auto igniting: Product is not self-igniting.

Danger of explosion: In use, may form flammable/explosive vapour-air mixture.
Lower Explosion Limit: 1.7 Vol %
Upper Explosion Limit: 10.9 Vol %

Vapor pressure: Not determined.
Relative Density: Between 0.77 and 0.85 (Water equals 1.00)
Vapour density Not determined.
Evaporation rate Not applicable.
Partition coefficient: n-octonal/water: Not determined.

Solubility: Not determined.
Viscosity: Not determined.

VOC content: 498.4 g/l / 4.16 lb/gl
VOC content (less exempt solvents): 46.1 %
MIR Value: 1.10

Solids content: 33.3 %

10 Stability and reactivity

Reactivity: Stable at normal temperatures.
Conditions to avoid: Do not allow can to exceed 120 degrees Fahrenheit. Do not warehouse in subfreezing temperatures.
Chemical stability: Not fully evaluated.
Possibility of hazardous reactions: No dangerous reactions known.
Incompatible materials: No further relevant information available.

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Safety Data Sheet
acc. to OSHA HCS

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Trade name: Dark Machinery Gray

(Contd. of page 3)

Hazardous decomposition: No dangerous decomposition products known.

11 Toxicological information

LD/LC50 values that are relevant for classification:

106-97-8 n-butane		
Inhalative	LC50/4 h	658 mg/l (rat)
108-10-1 methyl isobutyl ketone		
Oral	LD50	2100 mg/kg (rat)
Dermal	LD50	16000 mg/kg (rab)
Inhalative	LC50/4 h	8.3-16.6 mg/l (rat)
13463-67-7 titanium dioxide		
Oral	LD50	>20000 mg/kg (rat)
Dermal	LD50	>10000 mg/kg (rbt)
Inhalative	LC50/4 h	>6.82 mg/l (rat)
110-19-0 isobutyl acetate		
Oral	LD50	4763 mg/kg (rbt)
1330-20-7 xylene (mix)		
Oral	LD50	8700 mg/kg (rat)
Dermal	LD50	2000 mg/kg (rbt)
Inhalative	LC50/4 h	6350 mg/l (rat)

Information on toxicological effects: No data available.
Sensitization: No sensitizing effects known.

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
108-10-1	methyl isobutyl ketone	2B
13463-67-7	titanium dioxide	2B
1330-20-7	xylene (mix)	3

NTP (National Toxicology Program)
None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

Aquatic toxicity: Hazardous for water, do not empty into drains.
Persistence and degradability: The product is degradable after prolonged exposure to natural weathering processes.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Other adverse effects: No further relevant information available.

13 Disposal considerations

Dispose of in accordance with local, state, and federal regulations. Do not puncture, incinerate, or compact. Partially empty cans must be disposed of responsibly. Do not heat or cut empty containers with electric or gas torches.
Recommendation: Completely empty cans should be recycled.

14 Transport information

UN-Number UN1950
DOT Aerosols, flammable
ADR 1950 Aerosols
Transport hazard class(es):
Class 2.1
Marine pollutant: No
Special precautions for user: Warning: Gases
EMS Number: F-D,S-U
Packaging Group: --
UN "Model Regulation": UN1950, Aerosols, 2.1

15 Regulatory information

SARA Section 355 (extremely hazardous substances):
None of the ingredients in this product are listed.

SARA Section 313 (Specific toxic chemical listings):

7727-43-7	barium sulphate, natural
108-10-1	methyl isobutyl ketone
1330-20-7	xylene (mix)

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 09/25/2014 Revised On 09/25/2014

Trade name: Dark Machinery Gray

(Contd. of page 4)

CPSC: This product complies with 16 CFR 1303 and does not contain more than 90 ppm of lead.

California Proposition 65 chemicals known to cause cancer:	
108-10-1	methyl isobutyl ketone
13463-67-7	titanium dioxide
100-41-4	ethyl benzene
1333-86-4	Carbon black

EPA:		
67-64-1	Acetone	I
7727-43-7	barium sulphate, natural	D, CBD(inh), NL(oral)
108-10-1	methyl isobutyl ketone	I
110-19-0	isobutyl acetate	D
1330-20-7	xylene (mix)	I

16 Other information

Contact: Regulatory Affairs

US4

Safety Data Sheet

Printing date 01/09/2024 Revised On 01/09/2024

1 Identification of the substance and manufacturer

Trade name: **GLOSS BLACK**

Product code: 0006201415
Recommended use: Paint and coatings application.
Uses advised against: Any that differs from the recommended use.
Manufacturer/Supplier: Seymour of Sycamore
917 Crosby Avenue
Sycamore, IL 60178 USA
phone: 815-895-9101
www.seymourpaint.com

Seymour of Sycamore
3041 Dougall Avenue, Suite 503
Windsor, ONT N9E 1S3 CANADA
phone: 800-435-4482
www.seymourpaint.com

Emergency telephone number: 1-800-255-3924

2 Hazard(s) identification

Classification of the substance or mixture

Flammable Aerosols 1	H222 Extremely flammable aerosol.
Gases under Pressure - Liquefied gas	H280 Contains gas under pressure; may explode if heated.
Eye Irritation 2A	H319 Causes serious eye irritation.
Specific Target Organ Toxicity - Single Exposure 3	H336 May cause drowsiness or dizziness.
Specific Target Organ Toxicity - Repeated Exposure 2	H373 May cause damage to organs through prolonged or repeated exposure.

Additional information:
GHS Hazard pictograms

GHS02 GHS04 GHS07 GHS08

Signal word Danger
Hazard statements
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not spray on an open flame or other ignition source.
Pressurized container: Do not pierce or burn, even after use.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a poison center/doctor if you feel unwell.
If eye irritation persists: Get medical advice/attention.
Store in a well-ventilated place.
Store locked up.
Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.
Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization: Mixtures
Chemical Description: This product is a mixture of the substances listed below with nonhazardous additions.

Dangerous components:		
67-64-1	Acetone	15-25%
74-98-6	propane	15-25%
106-97-8	n-butane	5-10%
7727-43-7	barium sulfate	5-10%
2807-30-9	Glycol Ether EP	≥5-<10%
108-10-1	methyl isobutyl ketone	≥5-<10%
123-86-4	butyl acetate	1-5%
108-65-6	PM acetate	1-5%
110-19-0	Isobutyl Acetate	1-5%
107-87-9	Methyl Propyl Ketone	1-5%

4 First-aid measures

After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact: Remove contaminated clothing. Wash exposed area with soap and water.
After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing: Rinse mouth with water. Do not induce vomiting.
Most important symptoms and effects: Dizziness

(Contd. on page 2)

Safety Data Sheet

Trade name: GLOSS BLACK

(Contd. of page 1)

Indication of any immediate medical attention needed: No further relevant information available.

5 Fire-fighting measures

Extinguishing agents: CO2, extinguishing powder or water spray. Fight larger fires with water spray.
Special hazards: Can form explosive gas-air mixtures.
Protective equipment for firefighters: A respiratory protective device may be necessary.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use respiratory protective device against the effects of fumes/dust/aerosol.
Methods and material for containment and cleaning up: Absorb liquid components with liquid-binding material.

7 Handling and storage

Precautions for safe handling Use only in well ventilated areas.
Storage requirements: Keep away from sources of heat and direct sunlight. Do not warehouse in subfreezing conditions. Store locked up.

8 Exposure controls/personal protection

Components with limit values that require monitoring at the workplace:	
67-64-1 Acetone	
PEL (USA)	Long-term value: 2400 mg/m³, 1000 ppm
REL (USA)	Long-term value: 590 mg/m³, 250 ppm
TLV (USA)	Short-term value: 500 ppm Long-term value: 250 ppm A4, BEI
74-98-6 propane	
PEL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
REL (USA)	Long-term value: 1800 mg/m³, 1000 ppm
TLV (USA)	see Appendix F Minimal oxygen content (D, EX)
106-97-8 n-butane	
REL (USA)	Long-term value: 1900 mg/m³, 800 ppm
TLV (USA)	Short-term value: 1000 ppm (EX)
7727-43-7 barium sulfate	
PEL (USA)	Long-term value: 15* 5** mg/m³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m³ *total dust **respirable fraction
TLV (USA)	Long-term value: 5* mg/m³ *inhalable fraction; E
108-10-1 methyl isobutyl ketone	
PEL (USA)	Long-term value: 410 mg/m³, 100 ppm
REL (USA)	Short-term value: 300 mg/m³, 75 ppm Long-term value: 205 mg/m³, 50 ppm
TLV (USA)	Short-term value: 75 ppm Long-term value: 20 ppm BEI, A3
123-86-4 butyl acetate	
PEL (USA)	Long-term value: 710 mg/m³, 150 ppm
REL (USA)	Short-term value: 950 mg/m³, 200 ppm Long-term value: 710 mg/m³, 150 ppm
TLV (USA)	Short-term value: 150 ppm Long-term value: 50 ppm
108-65-6 PM acetate	
WEEL (USA)	Long-term value: 50 ppm
110-19-0 Isobutyl Acetate	
PEL (USA)	Long-term value: 700 mg/m³, 150 ppm
REL (USA)	Long-term value: 700 mg/m³, 150 ppm

(Contd. on page 3)

Safety Data Sheet

Trade name: GLOSS BLACK

(Contd. of page 2)

TLV (USA)	Short-term value: 150 ppm Long-term value: 50 ppm
107-87-9 Methyl Propyl Ketone	
PEL (USA)	Long-term value: 700 mg/m³, 200 ppm
REL (USA)	Long-term value: 530 mg/m³, 150 ppm
TLV (USA)	Short-term value: 150 ppm

Ingredients with biological limit values:	
67-64-1 Acetone	
BEI (USA)	25 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)
108-10-1 methyl isobutyl ketone	
BEI (USA)	1 mg/L Medium: urine Time: end of shift Parameter: MIBK

Hygienic protection: Immediately remove all soiled and contaminated clothing.
Wash hands after use.
Avoid contact with the eyes and skin.
Do not eat or drink while working.

Breathing equipment: A respirator is generally not necessary when using this product outdoors or in large open areas. In cases where short and/or long term overexposure exists, a NIOSH approved respirator should be worn. If you suspect overexposure conditions exist, please consult an authority on chemical hygiene.

Hand protection: Nitrile gloves.
The glove material must be impermeable and resistant to the substance.

Eye protection: Tightly sealed goggles

9 Physical and chemical properties

Appearance: Aerosol.
Odor: Aromatic
Odor threshold: Not determined.

pH-value: Not determined.
Melting point/Melting range Undetermined.
Boiling point: -44 °C (-47.2 °F)

Flash point: -19 °C (-2.2 °F)
Flammability (solid, gas): Extremely flammable.

Decomposition temperature: Not determined.

Auto igniting: Product is not self-igniting.

Danger of explosion: In use, may form flammable/explosive vapour-air mixture.
Lower Explosion Limit: 1.7 Vol %
Upper Explosion Limit: 10.9 Vol %

Vapor pressure: Not determined.
Relative Density: Between 0.77 and 0.85 (Water equals 1.00)
Vapor density Not determined.
Evaporation rate Not applicable.
Partition coefficient: n-octonal/water: Not determined.

Solubility: Not determined.
Viscosity: Not determined.
Water: 0.0 %

10 Stability and reactivity

Reactivity: Stable at normal temperatures.
Conditions to avoid: Do not allow can to exceed 120 degrees Fahrenheit. Do not warehouse in subfreezing temperatures.
Chemical stability: Not fully evaluated.
Possibility of hazardous reactions: No dangerous reactions known.
Incompatible materials: No further relevant information available.
Hazardous decomposition: No dangerous decomposition products known.

(Contd. on page 4)

Safety Data Sheet

Printing date 01/09/2024 Revised On 01/09/2024

Trade name: GLOSS BLACK

(Contd. of page 3)

11 Toxicological information

LD/LC50 values that are relevant for classification:		
108-10-1 methyl isobutyl ketone		
Oral	LD50	2,100 mg/kg (rat)
Dermal	LD50	16,000 mg/kg (rab)
Inhalative	LC50/4 h	11 mg/l (ATE)
		8.3-16.6 mg/l (rat)
123-86-4 butyl acetate		
Oral	LD50	14,000 mg/kg (rat)
Inhalative	LC50/4 h	>21 mg/l (rat)
108-65-6 PM acetate		
Oral	LD50	8,500 mg/kg (rat)
Inhalative	LC50/4 h	35.7 mg/l (rat)
110-19-0 Isobutyl Acetate		
Oral	LD50	4,763 mg/kg (rbt)

Information on toxicological effects: No data available.
Skin effects: No irritant effect.
Eye effects: Irritating effect.
Sensitization: No sensitizing effects known.

12 Ecological information

Aquatic toxicity: Hazardous for water, do not empty into drains.
Persistence and degradability: The product is degradable after prolonged exposure to natural weathering processes.
Other information: This product does not contain any chlorofluorocarbons (CFC's), hydrochlorofluorocarbons (HCFC's), perfluorocarbons (PFC's), heavy metals (chromium, lead, cadmium), or chlorinated solvents.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Other adverse effects: No further relevant information available.

13 Disposal considerations

Dispose of in accordance with local, state, and federal regulations. Do not puncture, incinerate, or compact. Partially empty cans must be disposed of responsibly. Do not heat or cut empty containers with electric or gas torches.
Recommendation: Completely empty cans should be recycled.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

UN-Number UN1950
DOT UN1950
DOT Aerosols, flammable
ADR 1950 Aerosols
Transport hazard class(es):
Class 2.1 Gases
Special precautions for user: Warning: Gases
EMS Number: F-D,S-U
Packaging Group: --
UN "Model Regulation": UN 1950 AEROSOLS, 2.1

15 Regulatory information

SARA Section 355 (extremely hazardous substances):
None of the ingredients in this product are listed.

SARA Section 313 (Specific toxic chemical listings):	
7727-43-7	barium sulfate
108-10-1	methyl isobutyl ketone

Toxic Substances Control Act (TSCA): All hazardous ingredients are found on the inventory list of substances.
Canadian Domestic Substances List (DSL): All ingredients are listed or exempted.
Consumer Product Safety Comission (CPSC): This product complies with 16 CFR 1303 and does not contain more than 90 ppm of lead.

California Proposition 65 chemicals known to cause cancer:	
108-10-1	methyl isobutyl ketone
1333-86-4	Carbon black

(Contd. on page 5)

Safety Data Sheet

Trade name: GLOSS BLACK

(Contd. of page 4)

100-41-4	ethyl benzene

Prop 65 chemicals known to cause birth defects or reproductive harm:

108-10-1	methyl isobutyl ketone

EPA:

67-64-1	Acetone	I
7727-43-7	barium sulfate	D, CBD(inh), NL(oral)
108-10-1	methyl isobutyl ketone	I
110-19-0	Isobutyl Acetate	D

USDA (United States Department of Agriculture): Category 21: This product was manufactured to conform to the USDA Food Safety and Inspection Service performance standards. These standards include, but are not limited to, the ability of this product to be safe for use in official meat and poultry establishments, and to perform well under a daily regimen of thorough cleaning, cyclical temperature change, and wet conditions. This product may be used where there is a possibility of incidental food contact.

16 Other information

Contact: Regulatory Affairs

SAFETY DATA SHEET

1. Identification

Product identifier **Propane**

Other means of identification

SDS number WC002

Recommended use Soldering and brazing.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Worthington Cylinder Corporation

Address 300 E. Breed St.
Chilton, WI 53014
United States of America

E-mail SDSRequest@worthingtonindustries.com

Telephone 1-800-359-9678

Emergency telephone CHEMTREC 1-800-424-9300 (USA)
1-703-527-3887 International
(CCN 24850)

2. Hazard(s) identification

Physical hazards Flammable gases — Category 1
Gases under pressure — Liquefied gas

Health hazards Not classified.

OSHA defined hazards Simple asphyxiant

Label elements

Signal word Danger

Hazard statement Extremely flammable gas. Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.

Precautionary statement

Prevention Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Use only with adequate ventilation.

Response Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage Protect from sunlight. Store in a well-ventilated place.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) Contact with liquefied gas may cause frostbite.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Propane	74-98-6	87.5 - 100
Propylene	115-07-1	0 - 10
Ethane	74-84-0	0 - 7

Chemical name	CAS number	%
Butane	106-97-8	0 - 2.5

Additives

Chemical name	Common name and synonyms	CAS number	%
Ethyl mercaptan		75-08-1	< 0.005

Composition comments Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Skin contact Not likely, due to the form of the product. If frostbite occurs, immerse affected area in warm water (not exceeding 105°F/41°C). Keep immersed for 20 to 40 minutes. Get medical attention immediately.

Eye contact Not likely, due to the form of the product. If frostbite occurs, immediately flush eyes with plenty of warm water (not exceeding 105°F/41°C) for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention promptly if symptoms persist or occur after washing.

Ingestion This material is a gas under normal atmospheric conditions and ingestion is unlikely.

Most important symptoms/effects, acute and delayed Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themself.

Indication of immediate medical attention and special treatment needed Exposure may aggravate pre-existing respiratory disorders. Provide general supportive measures and treat symptomatically.

General information First aid personnel must be aware of own risk during rescue. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Dry chemical powder. Carbon dioxide (CO2). Water fog. Foam.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical Extremely flammable gas. May form explosive mixtures with air. Gas may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials. Cool containers exposed to flames with water until well after the fire is out.

General fire hazards Extremely flammable gas. Contents under pressure. Pressurized container may explode when exposed to heat or flame.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. In the event of a leak evacuate all personnel until ventilation can restore oxygen concentrations to safe levels. Keep unnecessary personnel away. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Wear appropriate personal protective equipment (See Section 8).

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Isolate area until gas has dispersed. For waste disposal, see section 13 of the SDS.

Environmental precautions

Should not be released into the environment. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. All equipment used when handling the product must be grounded. Do not breathe gas. Avoid prolonged exposure. Do not enter storage areas or confined spaces unless adequately ventilated. Use only outdoors or in a well-ventilated area. Oxygen concentration should not fall below 19.5 % at sea level (pO2 = 135 mmHg). Mechanical ventilation or local exhaust ventilation may be required. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Do not store, incinerate, or heat this material above 120 degrees Fahrenheit. Keep away from heat, sparks and open flame. This material can accumulate static charge which may cause spark and become an ignition source. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Protect cylinders from damage. Stored containers should be periodically checked for general condition and leakage. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Propane (CAS 74-98-6)	PEL	1800 mg/m3
		1000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
Propylene (CAS 115-07-1)	TWA	500 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Follow standard monitoring procedures.

Appropriate engineering controls

Provide adequate ventilation and minimize the risk of inhalation of gas. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear approved safety glasses or goggles. Face shield is recommended.

Skin protection

Hand protection

Wear cold insulating gloves.

Skin protection

Other

Wear protective clothing appropriate for the risk of exposure.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. The type of respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134).
WARNING! Air-purifying respirators do not protect workers in oxygen deficient atmospheres.

Thermal hazards	Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

9. Physical and chemical properties

Appearance	
Physical state	Gas.
Form	Compressed liquefied gas.
Color	Colorless.
Odor	Rotten egg.
Odor threshold	Not determined.
pH	Not applicable.
Melting point/freezing point	-306.4 °F (-188 °C)
Initial boiling point and boiling range	-43.6 °F (-42 °C) 14.7 psia
Flash point	-155.2 °F (-104 °C)
Evaporation rate	Not determined.
Flammability (solid, gas)	Extremely flammable gas.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	2.15 %
Explosive limit - upper (%)	9.6 %
Vapor pressure	127 psig (21°C / 70°F)
Vapor density	Not determined.
Relative density	1.5 (vapor) (Air=1) (59 °F (15 °C)) 0.504 (liquid)
Solubility(ies)	
Solubility (water)	Slightly soluble in water.
Partition coefficient (n-octanol/water)	1.77
Auto-ignition temperature	809.6 °F (432 °C)
Decomposition temperature	Not determined.
Viscosity	Not applicable.
Other information	
Density	Not determined.
Explosive properties	Not explosive.
Kinematic viscosity	Not determined.
Molecular weight	45 g/mol
Oxidizing properties	Not oxidizing.
Particle size	Not applicable.
Percent volatile	100 %

10. Stability and reactivity

Reactivity	Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Polymerization will not occur. May form explosive mixture with air. This product may react with oxidizing agents.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Halogens. Nitrates.
Hazardous decomposition products	Thermal decomposition of this product can generate carbon monoxide and carbon dioxide. Hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Inhalation	High concentrations: Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.
Skin contact	Contact with liquefied gas may cause frostbite.
Eye contact	Contact with liquefied gas may cause frostbite.
Ingestion	This material is a gas under normal atmospheric conditions and ingestion is unlikely.
Symptoms related to the physical, chemical and toxicological characteristics	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themself.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Propane (CAS 74-98-6)		
Acute		
Inhalation		
Gas		
LC50	Rat	> 80000 ppm, 15 Minutes
Propylene (CAS 115-07-1)		
Acute		
Inhalation		
Gas		
LC50	Rat	> 65000 ppm, 4 Hours

Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	Not classifiable as to carcinogenicity to humans.

IARC Monographs. Overall Evaluation of Carcinogenicity

Propylene (CAS 115-07-1) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not relevant, due to the form of the product.
Chronic effects	Exposure over a long period of time may cause central nervous system effects.

12. Ecological information

Ecotoxicity	The product is not expected to be hazardous to the environment.
Persistence and degradability	Not relevant, due to the form of the product.

Bioaccumulative potential Not relevant, due to the form of the product.

Partition coefficient n-octanol / water (log Kow)

Butane (CAS 106-97-8)	2.89
Propylene (CAS 115-07-1)	1.77

Mobility in soil Not relevant, due to the form of the product.

Other adverse effects The product contains volatile organic compounds which have a photochemical ozone creation potential.

13. Disposal considerations

Disposal instructions Use the container until empty. Do not dispose of any non-empty container. Empty containers have residual vapor that is flammable and explosive. Cylinders should be emptied and returned to a hazardous waste collection point. Do not puncture or incinerate even when empty. Dispose in accordance with all applicable regulations.

Local disposal regulations Dispose of in accordance with local regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 °F
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose in accordance with all applicable regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1075
UN proper shipping name	Petroleum gases, liquefied
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	-
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1075
UN proper shipping name	Petroleum gases, liquefied
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	-
Environmental hazards	No
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1075
UN proper shipping name	PETROLEUM GASES, LIQUEFIED
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	-
Environmental hazards	
Marine pollutant	No
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Butane (CAS 106-97-8)	Listed.
Ethyl mercaptan (CAS 75-08-1)	Listed.
Propane (CAS 74-98-6)	Listed.
Propylene (CAS 115-07-1)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) All components of the mixture on the TSCA 8(b) inventory are designated “active”.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories
Flammable (gases, aerosols, liquids, or solids)
Gas under pressure
Simple asphyxiant
Hazard not otherwise classified (HNOC)

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Propylene	115-07-1	0 - 10

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Butane (CAS 106-97-8)
Ethyl mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Butane (CAS 106-97-8)
Ethyl mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

US. New Jersey Worker and Community Right-to-Know Act

Butane (CAS 106-97-8)
Ethyl mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

US. Pennsylvania Worker and Community Right-to-Know Law

Butane (CAS 106-97-8)
Ethyl mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)

Propylene (CAS 115-07-1)

US. Rhode Island RTK

Butane (CAS 106-97-8)
Ethyl mercaptan (CAS 75-08-1)
Propane (CAS 74-98-6)
Propylene (CAS 115-07-1)

California Proposition 65

WARNING: An incomplete combustion of this product during use can expose you to carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm.
For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Butane (CAS 106-97-8)
Propylene (CAS 115-07-1)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Industrial Chemicals (AICIS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 05-May-2014

Revision date 09-September-2022

Version # 04

HMIS® ratings Health: 2
Flammability: 4
Physical hazard: 3

NFPA ratings

Disclaimer All information in this Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

A07885 ZEP PRO RAPID PEN R07201 20N14

Version 2.0 Revision Date 06/08/2017 Print Date 02/07/2018

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : A07885 ZEP PRO RAPID PEN R07201 20N14

Material number : 000000000001046725

Manufacturer or supplier's details

Company : Zep Inc.

Address : 1310 Seaboard Industrial Blvd., NW
Atlanta, GA 30318

Telephone : 404-352-1680

Emergency telephone numbers

For SDS Information	:	Compliance Services 1-877-428-9937
For a Medical Emergency	:	877-541-2016 Toll Free - All Calls Recorded
For a Transportation Emergency	:	CHEMTREC: 800-424-9300 - All Calls Recorded. In the District of Columbia 202-483-7616

Recommended use of the chemical and restrictions on use

Recommended use : Lubricant

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	Aerosol containing a compressed gas
Colour	pink
Odour	characteristic

GHS Classification

Flammable aerosols : Category 1
Gases under pressure : Compressed gas
Skin sensitisation : Sub-category 1A

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H222 Extremely flammable aerosol.
H280 Contains gas under pressure; may explode if heated.
H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves.
P272 Contaminated work clothing should not be allowed out of the workplace.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of water.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
Storage:
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
Disposal:
Dispose of contents/container in accordance with local regulation.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration [%]
Distillates (petroleum), hydrotreated light	64742-47-8	>= 70 - < 90
Propanol, 1(or 2)-(2-methoxymethylethoxy)-, acetate	88917-22-0	>= 5 - < 10
Fuel oil, no. 2	68476-30-2	>= 5 - < 10
carbon dioxide	124-38-9	>= 1 - < 5

The exact percentages of disclosed substances are withheld as trade secrets.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Consult a physician after significant exposure.
If unconscious place in recovery position and seek medical advice.

In case of skin contact : If skin irritation persists, call a physician.
Wash off immediately with plenty of water for at least 15 minutes.
If on clothes, remove clothes.

In case of eye contact : Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
If in eyes, rinse with water for 15 minutes.

If swallowed : Keep respiratory tract clear.
Never give anything by mouth to an unconscious person.

If symptoms persist, call a physician.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed	:	Effects are immediate and delayed. Symptoms may include irritation, redness, pain, and rash. May cause an allergic skin reaction. Review section 2 of SDS to see all potential hazards.
Notes to physician	:	Treat symptomatically. Symptoms may be delayed.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Carbon dioxide (CO2) Water spray jet Alcohol-resistant foam Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon dioxide (CO2) Carbon monoxide Smoke
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for	:	Soak up with inert absorbent material (e.g. sand, silica gel,

containment and cleaning up	acid binder, universal binder, sawdust). Sweep up or vacuum up spillage and collect in suitable container for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Always replace cap after use. Dispose of rinse water in accordance with local and national regulations. Do not breathe vapours or spray mist.
Conditions for safe storage	:	No smoking. Observe label precautions. Keep in a dry, cool and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. BEWARE: Aerosol is pressurized. Keep away from direct sun exposure and temperatures over 50 °C. Do not open by force or throw into fire even after use. Do not spray on flames or red-hot objects.
Materials to avoid	:	No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	:	effective ventilation in all processing areas

Personal protective equipment

Respiratory protection	:	Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
Hand protection		
Material	:	Protective gloves
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Ensure that eyewash stations and safety showers are close to the workstation location. Tightly fitting safety goggles
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and

concentration of the dangerous substance at the work place.

Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Aerosol containing a compressed gas
Colour	:	pink
Odour	:	characteristic
Odour Threshold	:	No data available
pH	:	Not applicable
Melting point/freezing point	:	No data available
Boiling point	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Extremely flammable aerosol.
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Density	:	0.8425 g/cm3
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	not determined
Thermal decomposition	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available
Heat of combustion	:	43.62 kJ/g

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable
Chemical stability	:	Stable under normal conditions.

Possibility of hazardous reactions	:	Vapours may form explosive mixture with air. No decomposition if stored and applied as directed.
Conditions to avoid	:	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials	:	No data available
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Aggravated Medical Condition	:	None known.
Symptoms of Overexposure	:	Effects are immediate and delayed. Symptoms may include irritation, redness, pain, and rash.

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Acute toxicity

Product:

Acute inhalation toxicity	:	Acute toxicity estimate : 9.78 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate : 3,072 mg/kg Method: Calculation method

Components:

Distillates (petroleum), hydrotreated light:

Acute oral toxicity	:	LD50 Rat: > 5,000 mg/kg
Acute inhalation toxicity	:	LC50 Rat: > 4.6 mg/l Exposure time: 6 h

Acute dermal toxicity : LD50 Rat: > 2,000 mg/kg

Skin corrosion/irritation

Product:

Remarks: May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Product:

Remarks: May irritate eyes.

Respiratory or skin sensitisation

Product:

Remarks: Causes sensitisation.

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT - single exposure

No data available

STOT - repeated exposure

No data available

Aspiration toxicity

No data available

Further information

Product:

Remarks: No data available

Components:
Distillates (petroleum), hydrotreated light:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water	:	Remarks: No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information	:	No data available

Components:

Distillates (petroleum), hydrotreated light :

Additional ecological information	:	No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of in accordance with local regulations.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):
ORM-D, CONSUMER COMMODITY

Transportation Regulation: IMDG (Vessel):
UN1950, AEROSOLS, FLAMMABLE, 2.1, - Limited quantity

Transportation Regulation: IATA (Cargo Air):
UN1950, Aerosols, flammable, 2.1, - Limited quantity

Transportation Regulation: IATA (Passenger Air):
UN1950, Aerosols, flammable, 2.1, - Limited quantity

Transportation Regulation: TDG (Canada):
UN1950, AEROSOLS, FLAMMABLE, 2.1, - Limited quantity

The product as delivered to the customer conforms to packaging requirements for shipment by road under US Department of Transportation (DOT) regulations. Additional transportation classifications noted above are for reference only, and not a certification or warranty of the suitability of the packaging for shipment under these alternative transport regulations.

SECTION 15. REGULATORY INFORMATION

TSCA list : No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
naphthalene	91-20-3	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Sudden Release of Pressure Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

California Prop 65 WARNING! This product contains a chemical known to the State of California to cause cancer.

naphthalene 91-20-3

The components of this product are reported in the following inventories:

TSCA On TSCA Inventory

DSL This product contains one or more components that are listed on the Canadian NDSL. All other components are on the Canadian DSL.

For information on the country notification status for other regions please contact the manufacturer's regulatory group.

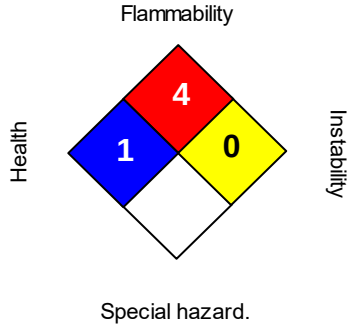
Inventory Acronym and Validity Area Legend:

TSCA (USA), DSL (Canada), NDSL (Canada)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

HEALTH	1
FLAMMABILITY	4
PHYSICAL HAZARD	2

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

OSHA - GHS Label Information:

Hazard pictograms :

Signal word : **Danger:**

Hazard statements : Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May cause an allergic skin reaction.

Precautionary statements :

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wear protective gloves. Contaminated work clothing should not be allowed out of the workplace.
Response: IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/ attention. Take off contaminated clothing and wash it before reuse.
Storage: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/ 122 °F.
Disposal: Dispose of contents/container in accordance with local regulation.

Version:	2.0
Revision Date:	06/08/2017
Print Date:	02/07/2018

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. Users should make their own investigations to determine the suitability and applicability of the information for their particular purposes. This SDS has been prepared by the Compliance Services organization supporting this manufacturer, supplier or distributor.

Zep Inc. markets products under well recognized and established brand names such as Zep®, Zep Commercial®,Zep Professional®, Enforcer®, National Chemical™, Selig™, Misty®, Next Dimension™, Petro®, i-Chem®, TimeMist®, TimeWick™, MicrobeMax®, Country Vet®, Konk®, Original Bike Spirits®, Blue Coral®, Black Magic®, Rain-X®, Niagara National™, FC Forward Chemicals®,Rexodan®, Mykal™, and a number of private labeled brands.

DRUMMOND™
A LAWSON BRAND

Safety Data Sheet

Issue date 28-Mar-2018 **Revision date** 27-Feb-2025 **Revision Number** 9

1. IDENTIFICATION

Product identification

Product identifier	Drummond™ Open and Shut - Nut and Bolt Loosener and Rust Penetrant
Other means of identification	DA6152
Recommended use	Lubricant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Drummond™, A Lawson Brand
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number 1-(888) 426-4851

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and Mexico (NOM-018-STPS-2015) GHS Regulations.

Carcinogenicity	Category 1B
Gases under pressure	Compressed gas

Symbol

Signal word DANGER

Hazard statements
H280 - Contains gas under pressure; may explode if heated
H350 - May cause cancer

Precautionary statements

General
P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required

Response

General
P308 + P313 - If exposed or concerned: Get medical attention

Storage
P405 - Store locked up
P410 + P403 - Protect from sunlight. Store in a well-ventilated place

Disposal
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)
None known.

Physical Hazards Not Otherwise Classified (PHNOC)
None known.

Unknown acute toxicity
0%.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition
Mixture.

Chemical name	Syns/Common Name	CAS-No	Weight %
Tetrachloroethylene	Tetrachloroethylene	127-18-4	50-100
Naphthenic Oil, Severely Hydrotreated	Naphthenic Oil, Severely Hydrotreated	64742-52-5	10-20
Carbon dioxide	Carbon dioxide	124-38-9	1-5

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation
Remove to fresh air. If not breathing, if breathing is irregular, or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If breathing is difficult, give oxygen. If not breathing, administer artificial respiration by trained personnel. Get medical attention if symptoms occur.

Ingestion
Rinse mouth with water. Call a physician or Poison Control Center immediately. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, have victim lean forward with head down to prevent aspiration of fluid into the lungs.

Skin contact
Wipe off with a towel. Wash off immediately with soap and plenty of water. Seek medical attention if irritation persists. Remove contaminated clothing.

Eye contact
Rinse thoroughly with plenty of water for at least 15 minutes, lift eyelids occasionally. Get prompt medical attention.

Most important symptoms (acute)
Not available.

Most important symptoms (over-exposure)
Repeated exposure may cause skin dryness or cracking. May cause drowsiness or dizziness.

Indication of any immediate medical attention and special treatment needed

Symptoms may be delayed.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry Chemical, Carbon Dioxide, Foam or Water Fog. Use water for cooling material stored in vicinity of fire. Use the extinguishing media recommended for the burning material and fire situation.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards

Closed containers can explode due to buildup of pressure when exposed to extreme heat. Liquid content will not support combustion. During emergency conditions, overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention. Hazardous decomposition products. Carbon monoxide. Carbon dioxide. Halogenated compounds. carbonyl halides.

Special protective equipment and precautions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Containers should be cooled with water to prevent vapor pressure build up. Cool containers exposed to flames with water until well after the fire is out. Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering the area. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in the hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information for 'non-emergency personnel'. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small Spill: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry in sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Use spark-proof tools and explosion proof equipment. See section 1 for emergency contact information and section 13 for disposal information.

7. HANDLING AND STORAGE

Precautions for safe handling

Put on appropriate personal protective equipment (see section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or

burn, even after use. Avoid exposure - obtain special instructions before use. Avoid contact during pregnancy/while nursing. Do not handle until all safety precautions have been read and understood. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Do not take internally. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store away from direct sunlight in dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all sources of ignition. Use appropriate containment to avoid environmental contamination. See section 10 for incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA	Mexico OEL-TWAs (VLE-PPTs)	Mexico OEL- BEIs (IBE)
Tetrachloroethylene	100 ppm TWA	25 ppm PEL; 170 mg/m³ PEL	25 ppm TWA		25ppmTWA	3ppm 0.5mg/L
Naphthenic Oil, Severely Hydrotreated	5 mg/m³ TWA	5 mg/m³ PEL (particulate)	5 mg/m³ TWA	5 mg/m³ TWA	5mg/m³TWA	
Carbon dioxide	5000 ppm TWA 9000 mg/m³ TWA	5000 ppm PEL; 9000 mg/m³ PEL	5000 ppm TWA	5000 ppm TWA 9000 mg/m³ TWA	5000ppmTWA	

Appropriate engineering controls

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures, such as personal protective equipment

Eye protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin and body protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use the the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Tetrachloroethylene	25 ppm TWA 170 mg/m³ TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWAEV 170 mg/m³ TWAEV	25 ppm TWA
Naphthenic Oil, Severely Hydrotreated	5 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWAEV	5 mg/m³ TWA
Carbon dioxide	5000 ppm TWA 9000 mg/m³ TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWAEV 9000 mg/m³ TWAEV	5000 ppm TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Aerosol

Color Colorless

Odor Chlorinated solvents

Odor threshold Not available

pH Not applicable

Melting point/range °C Not available

Melting point/range °F Not available

Boiling point/range °C Not available

Boiling point/range °F Not available

Flash point °C / °F Not available

Evaporation rate 2.59 (Butyl Acetate = 1)

Flammability (Solid, Gas) Not available

Lower explosion limit Not available

Upper explosion limit Not available

Vapor pressure No information available

Vapor density	No data available
Relative density	No data available
Solubility	Not available
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	No data available

10. STABILITY AND REACTIVITY

Reactivity	Not available.
Chemical stability	Stable under normal storage conditions.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Not available.
Incompatible materials	Acids. Strong oxidizing agents. Oxygen. Peroxides. Reactive metals. Aluminum.
Hazardous decomposition products	Hydrogen chloride. Phosgene. Chlorine. Oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Dermal. Inhalation. Eyes. Ingestion.
Symptoms	Causes eye and skin irritation. Inhalation can cause central nervous system (CNS) depression. May cause dizziness and drowsiness. May cause respiratory irritation. Ingestion can cause central nervous system (CNS) depression.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	May cause damage to organs through prolonged or repeated exposure. May cause cancer. Risk of cancer depends on duration and level of exposure. Adverse symptoms may include the following:. Eye pain, redness, and watering. Causes respiratory tract irritation. Coughing. Nausea. Headache. May cause drowsiness and dizziness. Unconsciousness. Prolonged skin contact may cause skin irritation. redness.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Tetrachloroethylene	27.8 mg/L Rat	> 3228 mg/kg (Rabbit)	2629 mg/kg Rat
Naphthenic Oil, Severely Hydrotreated	2062 ppm Rat	> 5000 mg/kg Rat > 24 g/kg Rat >5000 mg/kg Rabbit	>5000 mg/kg Rat >24 g/kg Rat > 5000 mg/kg Rabbit
Carbon dioxide	-	-	-

ATEmix (dermal) 12,499.69 mg/kg

ATEmix (oral) 3783.81 mg/kg

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP	Mexico
Tetrachloroethylene	A3	Group 2A	Present	Reasonably Anticipated Carcinogen	A3 - Confirmed animal carcinogen
Naphthenic Oil, Severely Hydrotreated	A4 A2	Group 1	Present	Known carcinogen	A2 - Suspected human carcinogen
Carbon dioxide	-	-	-	-	

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Tetrachloroethylene	-	IARC 2A	ACGIH A3	ACGIH A3	ACGIH A3	C3 Carcinogen
Naphthenic Oil, Severely Hydrotreated	-	IARC 1	ACGIH A2 ACGIH A4	ACGIH A2 ACGIH A4	ACGIH A2 ACGIH A4	-
Carbon dioxide	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Tetrachloroethylene	>500mg/L Pseudokirchneriella subcapitata 96h	12.4 - 14.4mg/L Pimephales promelas 96h 8.6 - 13.5mg/L Pimephales promelas 96h 11.0 - 15.0mg/L Lepomis macrochirus 96h 4.73 - 5.27mg/L Oncorhynchus mykiss 96h
Naphthenic Oil, Severely Hydrotreated	-	> 5000mg/L Oncorhynchus mykiss 96h
Carbon dioxide	-	-

Persistence and degradability Not available.

Bioaccumulation Does not bioaccumulate

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Tetrachloroethylene 127-18-4	127-18-4	2.53 at 23 °C (at pH 7, ECHA_API)	25.8 - 77.1 dimensionless BCF method: OECD Guideline 305 C
Naphthenic Oil, Severely Hydrotreated 64742-52-5	64742-52-5	-	-
Carbon dioxide 124-38-9	124-38-9	-	no bioaccumulation

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations.

Contaminated packaging Personnel should wear appropriate protective equipment. Follow all precautions for handling. Please refer to appropriate sections of MSDS for additional information.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.2
Subsidiary Risk	
Special Provisions	LTD QTY

TDG

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.2
Special Provisions	LTD QTY

IATA

ID-No	UN1950
Proper shipping name	Aerosols, non-flammable
Hazard Class(es)	2.2
Special Provisions	LTD QTY

IMDG/IMO

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.2
Special Provisions	LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Tetrachloroethylene	127-18-4	X	X	X
Naphthenic Oil, Severely Hydrotreated	64742-52-5	-	-	-
Carbon dioxide	124-38-9	-	-	-

Special Precautions Multi-modal shipping descriptions are provided for informational purposes and do not

consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Tetrachloroethylene	127-18-4	X	X	X
Naphthenic Oil, Severely Hydrotreated	64742-52-5	X	X	X
Carbon dioxide	124-38-9	X	X	X

California Prop. 65

WARNING: This product contains a chemical(s) known to the state of California to cause cancer

Chemical name	CAS-No	California Prop. 65
Tetrachloroethylene	127-18-4	Carcinogen
Naphthenic Oil, Severely Hydrotreated	64742-52-5	-
Carbon dioxide	124-38-9	-

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Tetrachloroethylene	127-18-4	100 lb 45.4 kg 1 lb 0.454 kg	0.1 %
Naphthenic Oil, Severely Hydrotreated	64742-52-5	-	-
Carbon dioxide	124-38-9	-	-

Chemical Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL	Mexico - INSQ
Tetrachloroethylene	X	X	X	-	Present
Naphthenic Oil, Severely Hydrotreated	X	-	X	-	Present
Carbon dioxide	X	-	X	-	Present

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available

HMIS

Health	Not available
Flammability	Not available
Physical hazards	Not available

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 18-May-2018

Revision date 27-Feb-2025

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
BEI – IBE (Biological Exposure Indices for occupationally exposed personnel to chemicals)
Biological Exposure Indices)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
INSQ (National Inventory of Chemical Substances)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)
VLE-PPT (Time-weighted average exposure limit value)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER AND NAME: **MARC 104 BREAK-A-WAY II**

SDS DATE: 09/20/2021

SUPPLIER: Mid-American Research Chemical Corp. **ADDRESS:** P. O. Box 927 • Columbus, NE 68602-0927
PHONE: 402-564-7104 **FAX:** 402-563-1290
EMERGENCY PHONE: InfoTrac 1-800-535-5053
E-MAIL: marc1@marc1.com **WEBSITE:** www.marc1.com

RECOMMENDED USE: Lubricant

PREPARED BY: MARC

SECTION 2: HAZARDS IDENTIFICATION

CLASSIFICATION: Gases Under Pressure: Compressed Gas. Skin Irritant: Category 2; Carcinogenicity: Category 2; Specific Target Organ Toxicity (Single Exposure): Category 3; Skin Sensitization: Category 1.

HAZARD STATEMENT(S): WARNING: Contains gas under pressure; may explode if heated. Causes skin irritation. Suspected of causing cancer. May cause respiratory irritation, drowsiness or dizziness. May cause an allergic skin reaction.
This product contains the following percentage of chemicals of unknown toxicity: 0%.
PRECAUTIONARY STATEMENTS: Keep away from heat, sparks, open flames, or hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Pressurized Container - Do not pierce or burn, even after use. Protect from sunlight. Do not expose to temperatures exceeding 50ºC/122ºF. Store in a well-ventilated place. Wash hands thoroughly after handling. Wear protective gloves and eye protection. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash before reuse. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. If exposed or concerned: Get medical advice or attention. Do not breathe dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. Dispose of contents and container in accordance with local, state, and national regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO.	% WT.
Perchloroethylene	127-18-4	70-90%
2-Butoxyethanol	111-76-2	1-5%
Carbon Dioxide	124-38-9	1-5%

SECTION 4: FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek medical attention if irritation persists. **INGESTION:** Rinse mouth. Do NOT induce vomiting. Get medical advice or attention. **INHALATION:** Move to fresh air. If breathing is difficult or unconscious, administer oxygen. If not breathing administer artificial respiration. Seek medical attention if irritation persists. **SKIN:** Immediately wash with soap and water for 15 minutes. Remove contaminated clothing and shoes immediately. Seek medical attention if irritation develops. **ACUTE HEALTH HAZARDS:** Eyes: redness, tearing, blurred vision Skin: defatting and dermatitis. Inhalation: Respiratory irritation, dizziness, drowsiness. Oral: abdominal irritation, nausea, vomiting, and diarrhea. **CHRONIC HEALTH HAZARDS:** Possible cancer-causing agent and overexposure may also include damage to kidneys, liver, dizziness, headache, nausea, mental confusion, visual disturbances, dermatitis, lungs, blood, or central nervous system. **NOTE TO PHYSICIAN:** Do not administer adrenaline or epinephrine to a victim of chlorinated solvent poisoning. This product contains ingredients that may be anticipated to be a carcinogen.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, foam. **UNSUITABLE EXTINGUISHING MEDIA:** N/A.
SPECIAL FIRE FIGHTING PROCEDURES: Wear NIOSH approved Self-Contained Breathing Apparatus with a full-face piece operated in a positive pressure demand mode with full body protective clothing when fighting fires. Use water spray only to cool exposed containers.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Contents under pressure. Exposure to temperatures above 120°F may cause bursting.
HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon, chlorine, hydrogen chloride and phosgene.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Refer to section VIII for proper Personal Protective Equipment.
SPILL: Contain spill, eliminate ignition sources and ventilate area. Prevent spill from entering sewers, storm drains, and natural waterways. Use non-combustible material like vermiculite, sand or earth for larger spills.
WASTE DISPOSAL: Dispose of in accordance with federal, state, and local regulations. Do not reuse, puncture, or incinerate container. Wrap container and place in trash collection**.**
RCRA STATUS: Waste solvent likely considered F001, hazardous, under RCRA, however product should be fully characterized prior to disposal (40 CFR 261).

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Do not use or store near heat or open flame. Store in cool dry place. Follow all label instructions. Vapors may accumulate in low lying areas. **OTHER PRECAUTIONS:** Keep out of the reach of children. Follow label directions exactly. Vapors may collect in low lying areas. **INCOMPATIBILITY:** Strong acids, strong alkalis, strong oxidizing agents, chemically active metals, such as aluminum, barium, lithium, sodium, magnesium, potassium, titanium, beryllium, concentrated nitric acid some plastics, rubbers, and coatings.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

HAZARDOUS INGREDIENT	OSHA PEL	ACGIH TLV
Perchloroethylene	50 ppm	100 ppm
2-Butoxyethanol	50ppm	25 ppm
Carbon Dioxide	5000 ppm	5000 ppm

ENGINEERING CONTROLS/VENTILATION: General ventilation and local exhaust may be required to meet TLV requirements. **RESPIRATORY PROTECTION:** Wear NIOSH/MSHA approved respiratory protection if exposure limits are exceeded. **PERSONAL PROTECTIVE EQUIPMENT:** Safety glasses and chemical resistant gloves. **ADDITIONAL MEASURES:** Wash hands thoroughly after handling**.**

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE-PHYSICAL STATE/COLOR:	Dark Brown Spray
ODOR:	Chlorinated solvent odor.
ODOR THRESHOLD:	N/D
pH:	N/A
SOLUBILITY IN WATER:	0%
SPECIFIC GRAVITY:	1.2
MELTING/FREEZING POINT:	N/D
BOILING POINT:	over 104°F
FLASH POINT/METHOD USED:	N/D
EVAPORATION RATE:	>2
FLAMMABILITY:	Not considered a flammable aerosol or an extremely flammable aerosol by OSHA (29CFR 1910.1200)
FLAMMABILITY LIMITS:	N/D
VAPOR PRESSURE (mmHg):	N/D
VAPOR DENSITY (AIR = 1):	N/D
AUTO-IGNITION TEMPERATURE:	N/A
DECOMPOSITION TEMPERATURE:	N/D
VISCOSITY:	N/D
VOLATILE ORGANIC COMPOUNDS (VOC):	10.6%

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: None known. **CHEMICAL STABILITY:** Stable. **POSSIBLE HAZARDOUS REACTIONS**: None known.
CONDITIONS TO AVOID: Temperatures greater than 122°F and sources of ignition.
INCOMPATIBLE MATERIALS: Strong acids, strong alkalis, strong oxidizing agents, chemically active metals, such as aluminum, barium, lithium, sodium, magnesium, potassium, titanium, beryllium, concentrated nitric acid some plastics, rubbers, and coatings.
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, chlorine, hydrogen chloride and phosgene.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION-- Perchloroethylene (127-18-4): LD50 (Oral, Rat) 2629 mg/kg; LC50 (Inhalation, Mouse, 8hr) 34200 mg/m3; 2-Butoxyethanol (111-76-2): LD50 (Oral, Rat) 320 mg/kg; LC50 (Inhalation, Mice, 4hr) 700 ppm; LD50 (Dermal, Rabbit) 440 mg/kg.

ROUTES OF ENTRY: Eyes, Ingestion, Inhalation, Skin.
EYES: Causes irritation, redness, tearing. **INGESTION:** Nausea, vomiting, headaches, abdominal pain, diarrhea, dizziness, tremor, drowsiness, pulmonary edemas, absorption through the gastrointestinal tract may produce symptoms of CNS depression ranging from unconsciousness to death. **INHALATION:** Irritation to respiratory tract, dizziness, headache, nausea, depression of central nervous system, prolonged exposure may cause unconsciousness, heart effects, liver effects, kidney effects, and death. **SKIN:** Causes irritation, dryness.
MEDICAL CONDITION AGGRAVATED: Excessive exposure will aggravate pre-existing disorders of eyes, skin, respiratory, liver, kidney, cardiovascular system, pulmonary illnesses, or central nervous system.
ACUTE HEALTH HAZARDS-- Eyes: redness, tearing, blurred vision Skin: defatting and dermatitis. Inhalation: Respiratory irritation, dizziness, drowsiness Oral: abdominal irritation, nausea, vomiting, and diarrhea
CHRONIC HEALTH HAZARDS: Possible cancer-causing agent and overexposure may also include damage to kidneys, liver, dizziness, headache, nausea, mental confusion, visual disturbances, dermatitis, lungs, blood, or central nervous system.
CARCINOGENICITY-- OSHA: No. ACGIH: No data. NTP: 2 – Anticipated.
IARC: 2A – Probable. **OTHER**: CA Prop 65.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not established. **PERSISTENCE AND DEGRADABILITY:** This product is biodegradable.
BIOACCUMULATIVE POTENTIAL: This product is not expected to bioaccumulate. **MOBILITY IN SOIL*:*** This product is mobile in soil.
OTHER ADVERSE EFFECTS: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of in accordance with federal, state, and local regulations. Do not reuse, puncture, or incinerate container. Wrap container and place in trash collection. **RCRA STATUS:** Waste solvent likely considered U210 (Perchloroethylene) under RCRA, however product should be fully characterized prior to disposal (40 CFR 261).

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (for ground/non-bulk containers)--
CONTAINER: Aerosol
PROPER SHIPPING NAME: LUBRICATING OIL, GREASE OR PETROLEUM
HAZARD CLASS: N/A
ID NUMBER: N/A
PACKING GROUP: N/A
LABEL STATEMENT: LIMITED QUANTITY

SECTION 15: REGULATORY INFORMATION

TSCA STATUS: All Chemicals are listed or exempt.
CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): Perchloroethylene (127-18-4)-Reportable Quantity = 100 pounds.
SARA 311/312 HAZARD CATEGORIES: Acute Health, Chronic Health.
SARA 313 REPORTABLE INGREDIENTS: Perchloroethylene (127-18-4), 2-Butoxyethanol (111-76-2).
STATE REGULATIONS: This product can expose you to Perchloroethylene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.
INTERNATIONAL REGULATIONS-Perchloroethylene (127-18-4)--WHMIS (Canada) Class D-1B: Material causing immediate and serious toxic effects (TOXIC). Class D-2A: Material causing other toxic effects (VERY TOXIC).

SECTION 16: OTHER INFORMATION

HMIS/NFPA Ratings: Health = 3, Flammability = 1, Reactivity = 0, Other = -, Protection = B.

N/A = Not Applicable. N/D = Not Determined.

DISCLAIMER: To the best of our knowledge, information contained herein is accurate. However, there is no assumption of liability for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazard which exists. The information contained in this SDS was obtained from current and reliable sources; however, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions or handling, storage and disposal of this product are beyond the control of the manufacturer, the manufacturer will not be responsible for loss, injury, or expense arising out of the products improper use. No warranty, expressed or inferred, regarding the product described in this SDS shall be created or inferred by any statement in this SDS. Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this SDS. The user is responsible for full compliance.

Quartzite

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Date of issue: 12/05/2014 Revision date: 12/05/2014 Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : Quartzite

Product code : Not available.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Various.

1.3. Details of the supplier of the safety data sheet

Manufacturer:

OMG Midwest
2401 SE Tones Drive - Suite 13
Ankeny IA, 50021 - USA
T (515) 266-9928

Supplier:

Southern Minnesota Construction
1905 3rd Ave/ PO BOX 3069
Mankato, MN 56002 – USA

1.4. Emergency telephone number

Emergency number : (515) 266-9928

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified.

*This classification is based on the product as sold. If this product is processed in such a way that dust may be formed, other hazards may apply. This SDS is not applicable to the dust form of this product.

2.2. Label elements

GHS-US labelling

No labeling applicable.

2.3. Other hazards

No additional information available.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable.

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Granite	(CAS No) Not available	100	Not classified
Quartz (composition varies naturally – typically contained in granite)	(CAS No) 14808-60-7	≤ 97.6	Acute Tox. 4 (Oral) Carc. 1A[1] STOT RE 1[1]
[1]Only applies to airborne particles of respirable size.			

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : If irritation occurs, flush skin with plenty of water. Get medical attention if irritation persists.

First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water. Remove contact lenses, if worn. If irritation persists, get medical attention.

First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory tract irritation.

Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/injuries after ingestion : May result in obstruction and temporary irritation of the digestive tract.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Pick up large pieces, then place in a suitable container. Minimize generation of dust. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Scoop up material and place in a disposal container. Provide ventilation. Do not dry sweep spilled material.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid generating and breathing dust. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a dry, cool and well-ventilated area.

7.3. Specific end use(s)

Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Granite (Not available)	
ACGIH	Not applicable
OSHA	Not applicable

Quartz (14808-60-7)		
ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³ (respirable fraction)
OSHA	OSHA TWA (mg/m³)	(30)/(%SiO2 + 2) mg/m³ (total dust)
	OSHA TWA (mppcf)	(250)/(%SiO2 + 5) mppcf (respirable fraction)
	OSHA TWA (mg/m³)	(10)/(%SiO2 + 2) mg/m³ (respirable fraction)

8.2. Exposure controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Hand protection : Wear suitable gloves.

Eye protection : Safety glasses or goggles are recommended when using product.

Skin and body protection : Wear suitable protective clothing.

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Respiratory protection	: In case of insufficient ventilation, wear suitable respiratory equipment. A NIOSH approved respirator is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded.
Environmental exposure controls	: Maintain levels below Community environmental protection thresholds.
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Angular particles ranging in size from pebbles to boulders
Color	: Light salt and pepper colored
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: 0
Melting point	: No data available
Freezing point	: No data available
Boiling point	: Not applicable
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not flammable
Vapor pressure	: Not applicable
Relative vapor density at 20 °C	: Not applicable
Relative density	: 2.6 - 2.81
Solubility	: Negligible
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use. Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.

10.4. Conditions to avoid

Heat. Incompatible materials.

10.5. Incompatible materials

Strong oxidizing agents. Hydrofluoric acid.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified.

Quartzite	
LD50 oral rat	>300 but ≤2000 mg/kg
LD50 dermal rabbit	Not available
LC50 inhalation rat	Not available

Quartz (14808-60-7)	
LD50 oral rat	500 mg/kg

Skin corrosion/irritation : Based on available data, the classification criteria are not met.

Serious eye damage/irritation : Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation : Based on available data, the classification criteria are not met.

Germ cell mutagenicity : Based on available data, the classification criteria are not met.

Carcinogenicity : Based on available data, the classification criteria are not met. Quartzite contains crystalline silica that, when respirable, is classified by IARC and NTP as a known human carcinogen. Cutting, crushing or grinding hardened product or other crystalline silica-bearing materials will release respirable crystalline silica.

Quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans (airborne particles of respirable size)
National Toxicology Program (NTP) Status	2 - Known Human Carcinogens (airborne particles of respirable size)

Reproductive toxicity : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure) : Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure) : Based on available data, the classification criteria are not met. This product contains crystalline silica. Under normal use and application Quartzite does not release crystalline silica. However, cutting, crushing or grinding hardened product or other crystalline silica-bearing materials will release respirable crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a serious disabling and fatal lung disease.

Aspiration hazard : Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation : May cause respiratory tract irritation.

Symptoms/injuries after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Symptoms/injuries after eye contact : May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/injuries after ingestion : May result in obstruction and temporary irritation of the digestive tract.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

Quartzite	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Quartzite	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Pick up and reuse clean materials. This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

SECTION 14: Transport information

In accordance with DOT.

Not regulated for transport.

Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

15.2. US State regulations

Quartzite	
State or local regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

SECTION 16: Other information

Indication of changes : None.

Date of issue : 12/05/2014

Other information : None.

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

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Safety Data Sheet

Issue date 18-May-2018 **Revision date** 07-Nov-2022 **Revision Number** 2

1. IDENTIFICATION

Product identification

Product identifier	Lawson Dispense-A-Gasket Red Silicone Sealant
Other means of identification	93206
Recommended use	Sealant
Restrictions on use	Not available

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin sensitization	Category 1
Specific target organ toxicity (repeated exposure)	Category 2
Gases under pressure	Liquefied Gas

Symbol

Signal word WARNING

Hazard statements

H280 - Contains gas under pressure; may explode if heated
H317 - May cause an allergic skin reaction
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary statements

General	P101 - If medical advice is needed, have product container or label at hand P102 - Keep out of reach of children P103 - Read label before use.
Prevention	P280 - Wear protective gloves P260 - Do not breathe dust/fume/gas/mist/vapors/spray P272 - Contaminated work clothing should not be allowed out of the workplace
Response	
General	P314 - Get medical advice/attention if you feel unwell.
Eyes	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P337 + P313 - If eye irritation persists: Get medical advice/attention
Skin	P302 + P352 - IF ON SKIN: Wash with plenty of soap and water P332 + P313 - If skin irritation occurs: Get medical advice/attention P363 - Wash contaminated clothing before reuse
Inhalation	P340 - Remove victim to fresh air and keep at rest in a position comfortable for breathing
Ingestion	P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
Fire	P370 + P378 - In case of fire: Use carbon dioxide to extinguish
Spill	P390 - Absorb spillage to prevent material damage P391 - Collect spillage
Storage	P403 - Store in a well-ventilated place P410 - Protect from sunlight
Disposal	P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable
Hazard(s) Not Otherwise Classified (HNOC)	None known.
Physical Hazards Not Otherwise Classified (PHNOC)	None known.
Unknown acute toxicity	None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition Mixture.

Chemical name	CAS-No	Weight %
Methyltris (Ethylmethylketoxime) Silane	22984-54-9	5-10
Siloxanes and Silicones, di-Me	63148-62-9	1-5
1,1-Difluoroethane	75-37-6	1-5
Silicon dioxide - hydrated	7631-86-9	<1
Quartz (Crystalline Silica)	14808-60-7	<1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or environment and hence require reporting in this section

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Rest in a half upright position, and loosen clothing. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Seek medical advice after significant exposure. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms maybe delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Ingestion

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact

IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Clean shoes thoroughly before reuse.

Eye contact

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs. Get medical attention following exposure or if feeling unwell.

Most important symptoms (acute)

Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. May cause allergic skin reaction.

Most important symptoms (over-exposure)

Adverse symptoms may include the following:. Eye irritation. Redness.

Indication of any immediate medical attention and special treatment needed

In case of inhalation of decomposition products in a fire, symptoms maybe delayed. The exposed person may need to be kept under medical surveillance for 48 hours. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media

None known.

Specific hazards

No specific fire or explosion hazard. Hazardous Thermal Decomposition Products:. Carbon monoxide. Carbon dioxide. carbonyl halides. metal oxide/oxides. Nitrogen oxides (NOx). Halogenated compounds.

Special protective equipment for fire-fighters

No special precautions are required. Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering the area. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information for 'non-emergency personnel'. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small Spill:. Stop leak if you can without risk. Move containers from spill area. Dilute with water and mop up if water soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry in sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. See section 1 for emergency contact information and section 13 for disposal information.

7. HANDLING AND STORAGE

Precautions for safe handling

Put on appropriate personal protective equipment (see section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not re-use empty containers. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking, and smoking. See also section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Protect from sunlight. Keep containers tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled or mislabeled containers. Use appropriate containment to avoid environmental contamination.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Methyltris (Ethylmethylketoxime) Silane	-			
Siloxanes and Silicones, di-Me	-			
1,1-Difluoroethane	-			
Silicon dioxide - hydrated	20 mppcf TWA TWA 50 µg/m³ TWA	6 mg/m³ PEL (total dust); 3 mg/m³ PEL (respirable fraction)		6 mg/m³ TWA
Quartz (Crystalline Silica)	50 µg/m³ TWA	0.05 mg/m³ PEL (total dust); 0.1 mg/m³ PEL (respirable dust)	0.025 mg/m³ TWA	0.05 mg/m³ TWA

Appropriate engineering controls

If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne

contaminants below any recommended or statutory limits. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures, such as personal protective equipment

Eye protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection:. Safety glasses with side-shields.

Skin and body protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use the the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Methyltris (Ethylmethylketoxime) Silane	-	-	-	-	-	-	-	-	-	-
Siloxanes and Silicones, di-Me	-	-	-	-	-	-	-	-	-	-
1,1-Difluoroethane	-	-	-	-	-	-	-	-	-	-
Silicon dioxide - hydrated	-	4 mg/m³ TWA 1.5 mg/m³ TWA	-	3 mg/m³ TWA 10 mg/m³ TWA	-	-	-	-	6 mg/m³ TWAEV	10 mg/m³ TWA 3 mg/m³ TWA
Quartz (Crystalline Silica)	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.1 mg/m³ TWA	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.10 mg/m³ TWA	0.025 mg/m³ TWA	0.1 mg/m³ TWAEV	0.05 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Liquid Paste

Color Red

Odor some odor

Odor threshold	Not available
pH	Not available
Melting point/range °C	Not available
Melting point/range °F	Not available
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C / °F	Not available
Evaporation rate	Not available
Flammability (Solid, Gas)	Not available
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	1.05
Solubility	Not available
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	This material is considered stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	Avoid moisture. Oxidizers.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Dermal. Inhalation. Ingestion. Eyes.

Symptoms Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. May cause an allergic skin reaction. May cause skin irritation. redness.

Delayed and immediate effects as well as chronic effects from short and long-term exposure May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Methyltris (Ethylmethylketoxime) Silane	-	>2000 mg/kg Rat	> 2000 mg/kg Rat
Siloxanes and Silicones, di-Me	-	> 24 g/kg Rat	>24 g/kg Rat
1,1-Difluoroethane	437500 ppm Rat	-	-
Silicon dioxide - hydrated	>58.8 mg/L Rat	> 2000 mg/kg (Rabbit)	> 5000 mg/kg (Rat)
Quartz (Crystalline Silica)	-	-	-

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Methyltris (Ethylmethylketoxime) Silane	-	-	-	-
Siloxanes and Silicones, di-Me	-	-	-	-
1,1-Difluoroethane	-	-	-	-
Silicon dioxide - hydrated	-	Group 1 Group 3	Present	Known carcinogen
Quartz (Crystalline Silica)	A2	Group 1	Present	Known carcinogen

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Methyltris (Ethylmethylketoxime) Silane	-	-	-	-	-	-
Siloxanes and Silicones, di-Me	-	-	-	-	-	-

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
1,1-Difluoroethane	-	-	-	-	-	-
Silicon dioxide - hydrated	-	-	-	-	-	-
Quartz (Crystalline Silica)	A2 - Suspected Human Carcinogen	IARC 1 ACGIH A2	ACGIH A2	-	ACGIH A2	C2 carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Methyltris (Ethylmethylketoxime) Silane	-	-
Siloxanes and Silicones, di-Me	-	-
1,1-Difluoroethane	-	-
Silicon dioxide - hydrated	=440mg/L Pseudokirchneriella subcapitata 72h	= 5000mg/L Brachydanio rerio 96h
Quartz (Crystalline Silica)	-	-

Persistence and degradability No data available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Methyltris (Ethylmethylketoxime) Silane 22984-54-9	22984-54-9	-	-
Siloxanes and Silicones, di-Me 63148-62-9	63148-62-9	-	-
1,1-Difluoroethane 75-37-6	75-37-6	-	-
Silicon dioxide - hydrated 7631-86-9	7631-86-9	-	no bioaccumulation expected
Quartz (Crystalline Silica) 14808-60-7	14808-60-7	-	-

Mobility in soil Not available.

Other adverse effects No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Disposal information The generation of waste should be avoided or minimized whenever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Contaminated packaging Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its containers must be disposed of in a

safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Follow label cautions even after the container is empty since empty containers could retain product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Special Provisions	LTD QTY

TDG

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Special Provisions	LTD QTY

IATA

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Special Provisions	LTD QTY

IMDG/IMO

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Special Provisions	LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Methyltris (Ethylmethylketoxime) Silane	22984-54-9	-	-	-
Siloxanes and Silicones, di-Me	63148-62-9	-	-	-
1,1-Difluoroethane	75-37-6	-	-	-
Silicon dioxide - hydrated	7631-86-9	-	-	-
Quartz (Crystalline Silica)	14808-60-7	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.
Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Methyltris (Ethylmethylketoxime) Silane	22984-54-9	-	-	-
Siloxanes and Silicones, di-Me	63148-62-9	-	-	-
1,1-Difluoroethane	75-37-6	X	X	-
Silicon dioxide - hydrated	7631-86-9	X	X	X
Quartz (Crystalline Silica)	14808-60-7	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Methyltris (Ethylmethylketoxime) Silane	22984-54-9	-
Siloxanes and Silicones, di-Me	63148-62-9	-
1,1-Difluoroethane	75-37-6	-
Silicon dioxide - hydrated	7631-86-9	Carcinogen
Quartz (Crystalline Silica)	14808-60-7	Carcinogen

U.S. Federal Regulations

EPA pesticide registration number Not applicable

RCRA - D Series Wastes Not available

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Methyltris (Ethylmethylketoxime) Silane	22984-54-9	-	-
Siloxanes and Silicones, di-Me	63148-62-9	-	-
1,1-Difluoroethane	75-37-6	-	-
Silicon dioxide - hydrated	7631-86-9	-	-
Quartz (Crystalline Silica)	14808-60-7	-	-

US EPA SARA 311/312 hazardous categorization Sudden Release of Pressure Hazard
Acute Health Hazard

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Methyltris (Ethylmethylketoxime) Silane	X	-	X	-
Siloxanes and Silicones, di-Me	X	-	X	-
1,1-Difluoroethane	X	-	X	-
Silicon dioxide - hydrated	X	-	X	X
Quartz (Crystalline Silica)	X	-	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available

HMIS

Health	2
Flammability	1
Physical hazards	0

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 18-May-2018

Revision date 07-Nov-2022

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

Safety Data Sheet

Issue date 21-May-2018 **Revision date** 07-Nov-2022 **Revision Number** 3

1. IDENTIFICATION

Product identification

Product identifier	Lawson Flexseal Dispense-A-Sealant RTV Clear Silicone
Other means of identification	93205
Recommended use	Sealant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Gases under pressure	Liquefied Gas

Symbol

Signal word WARNING

Hazard statements

H280 - Contains gas under pressure; may explode if heated
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements

General
P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention
P264 - Wash hands thoroughly after handling
P280 - Wear protective gloves
P280 - Wear eye protection/ face protection

Response

General
P314 - Get medical advice/attention if you feel unwell.

Eyes
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

Skin
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Inhalation
P340 - Remove victim to fresh air and keep at rest in a position comfortable for breathing

Ingestion
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

Fire
P370 + P378 - In case of fire: Use carbon dioxide to extinguish

Spill
Not applicable

Storage
P403 - Store in a well-ventilated place
P410 - Protect from sunlight

Disposal
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)
None known.

Physical Hazards Not Otherwise Classified (PHNOC)
None known.

Unknown acute toxicity
None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition
Mixture.

Chemical name	CAS-No	Weight %
Triacetoxyethylsilane	17689-77-9	1-5
Methylsilanetriyl Triacetate	4253-34-3	1.5
1,1-Difluoroethane	75-37-6	1.5
Silicon dioxide - hydrated	7631-86-9	<1
Silicon Dioxide (Crystalline Quartz)	14808-60-7	<1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or environment and hence require reporting in this section

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Rest in a half upright position, and loosen clothing. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Seek medical advice after significant exposure. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms maybe delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
Most important symptoms (acute)	Causes serious eye irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Causes skin irritation. Irritating to mouth, throat and stomach.
Most important symptoms (over-exposure)	Adverse symptoms may include the following:. Eye irritation. eye pain, redness, and watering. Skin irritation. Redness.
Indication of any immediate medical attention and special treatment needed	In case of inhalation of decomposition products in a fire, symptoms maybe delayed. The exposed person may need to be kept under medical surveillance for 48 hours. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards	No specific fire or explosion hazard.
Special protective equipment for fire-fighters	No special precautions are required. Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Decomposition products may include the following materials:. Carbon dioxide. Carbon monoxide. Halogenated compounds. carbonyl halides. Metal oxides.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering the area. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when

ventilation is inadequate. Put on appropriate personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Large Spill:. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Do not dry sweep. Dispose of via a licensed waste disposal contractor. Small Spill:. Move containers from spill area. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

7. HANDLING AND STORAGE

Precautions for safe handling

Put on appropriate personal protective equipment (see section 8). Do not ingest. Avoid contact with skin, eyes and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not re-use empty containers. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking, and smoking.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep containers tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled or mislabeled containers. Use appropriate containment to avoid environmental contamination.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Triacetoxyethylsilane	-			
Methylsilanetriyl Triacetate	-			
1,1-Difluoroethane	-			
Silicon dioxide - hydrated	20 mppcf TWA TWA 50 µg/m³ TWA	6 mg/m³ PEL (total dust); 3 mg/m³ PEL (respirable fraction)		6 mg/m³ TWA
Silicon Dioxide (Crystalline Quartz)	50 µg/m³ TWA	0.05 mg/m³ PEL (total dust); 0.1 mg/m³ PEL (respirable dust)	0.025 mg/m³ TWA	0.05 mg/m³ TWA

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants. A safety shower and eye wash station should be available for emergency use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures, such as personal protective equipment

Eye protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin and body protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during

use the the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Triacetoxyethylsilane	-	-	-	-	-	-	-	-	-	-
Methylsilanetriyl Triacetate	-	-	-	-	-	-	-	-	-	-
1,1-Difluoroethane	-	-	-	-	-	-	-	-	-	-
Silicon dioxide - hydrated	-	4 mg/m³ TWA 1.5 mg/m³ TWA	-	3 mg/m³ TWA 10 mg/m³ TWA	-	-	-	-	6 mg/m³ TWAEV	10 mg/m³ TWA 3 mg/m³ TWA
Silicon Dioxide (Crystalline Quartz)	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.1 mg/m³ TWA	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.10 mg/m³ TWA	0.025 mg/m³ TWA	0.1 mg/m³ TWAEV	0.05 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Paste

Color Clear

Odor Acetic acid odor

Odor threshold Not available

pH Not available

Melting point/range °C Not available

Melting point/range °F Not available

Boiling point/range °C Not available

Boiling point/range °F Not available

Flash point °C >100°

Flash point °F >212°

Flash point method used Cleveland closed cup

Evaporation rate	Not available
Flammability (Solid, Gas)	Not available
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	1.007
Solubility	Not available
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	This material is considered stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	Oxidizers.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Dermal. Inhalation. Ingestion. Eyes.
Symptoms	Causes skin irritation. Irritating to mouth, throat and stomach. Causes serious eye irritation. Adverse symptoms may include the following:. eye pain, redness, and watering. Eye irritation. Skin irritation. redness.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Triacetoxyethylsilane	-	-	-
Methylsilanetriyl Triacetate	-	= 2060 mg/kg Rat	2060 mg/kg Rat
1,1-Difluoroethane	437500 ppm Rat	-	-
Silicon dioxide - hydrated	>58.8 mg/L Rat	> 2000 mg/kg (Rabbit)	> 5000 mg/kg (Rat)
Silicon Dioxide (Crystalline Quartz)	-	-	-

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Triacetoxyethylsilane	-	-	-	-
Methylsilanetriyl Triacetate	-	-	-	-
1,1-Difluoroethane	-	-	-	-
Silicon dioxide - hydrated	-	Group 1 Group 3	Present	Known carcinogen
Silicon Dioxide (Crystalline Quartz)	A2	Group 1	Present	Known carcinogen

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Triacetoxyethylsilane	-	-	-	-	-	-
Methylsilanetriyl Triacetate	-	-	-	-	-	-
1,1-Difluoroethane	-	-	-	-	-	-
Silicon dioxide - hydrated	-	-	-	-	-	-
Silicon Dioxide (Crystalline Quartz)	A2 - Suspected Human Carcinogen	IARC 1 ACGIH A2	ACGIH A2	-	ACGIH A2	C2 carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Triacetoxyethylsilane	-	-
Methylsilanetriyl Triacetate	-	-

Chemical name	Algae/aquatic plants	Fish LC50
1,1-Difluoroethane	-	-
Silicon dioxide - hydrated	=440mg/L Pseudokirchneriella subcapitata 72h	= 5000mg/L Brachydanio rerio 96h
Silicon Dioxide (Crystalline Quartz)	-	-

Persistence and degradability No data available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Triacetoxyethylsilane 17689-77-9	17689-77-9	-	-
Methylsilanetriyl Triacetate 4253-34-3	4253-34-3	-	-
1,1-Difluoroethane 75-37-6	75-37-6	-	-
Silicon dioxide - hydrated 7631-86-9	7631-86-9	-	no bioaccumulation expected
Silicon Dioxide (Crystalline Quartz) 14808-60-7	14808-60-7	-	-

Mobility in soil Not available.

Other adverse effects No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Disposal information The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Contaminated packaging Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No UN1950
Proper shipping name Aerosols, flammable
Hazard Class(es) 2.1
Subsidiary Risk
Packing group
Special Provisions LTD QTY

TDG

ID-No UN1950
Proper shipping name Aerosols, flammable

Hazard Class(es) 2.1
Subsidiary Risk
Packing group
Special Provisions LTD QTY

IATA

ID-No UN1950
Proper shipping name Aerosols, flammable
Hazard Class(es) 2.1
Subsidiary Risk
Packing group
Special Provisions LTD QTY

IMDG/IMO

ID-No UN1950
Proper shipping name Aerosols, flammable
Hazard Class(es) 2.1
Subsidiary Risk
Packing group
EmS No
Special Provisions LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Triacetoxyethylsilane	17689-77-9	-	-	-
Methylsilanetriyl Triacetate	4253-34-3	-	-	-
1,1-Difluoroethane	75-37-6	-	-	-
Silicon dioxide - hydrated	7631-86-9	-	-	-
Silicon Dioxide (Crystalline Quartz)	14808-60-7	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Triacetoxyethylsilane	17689-77-9	-	-	-
Methylsilanetriyl Triacetate	4253-34-3	-	-	-
1,1-Difluoroethane	75-37-6	X	X	-
Silicon dioxide - hydrated	7631-86-9	X	X	X
Silicon Dioxide (Crystalline Quartz)	14808-60-7	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Triacetoxyethylsilane	17689-77-9	-
Methylsilanetriyl Triacetate	4253-34-3	-
1,1-Difluoroethane	75-37-6	-
Silicon dioxide - hydrated	7631-86-9	Carcinogen
Silicon Dioxide (Crystalline Quartz)	14808-60-7	Carcinogen

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Triacetoxyethylsilane	17689-77-9	-	-
Methylsilanetriyl Triacetate	4253-34-3	-	-
1,1-Difluoroethane	75-37-6	-	-
Silicon dioxide - hydrated	7631-86-9	-	-
Silicon Dioxide (Crystalline Quartz)	14808-60-7	-	-

US EPA SARA 311/312 hazardous categorization Sudden Release of Pressure Hazard
Acute Health Hazard

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Triacetoxyethylsilane	X	-	X	-
Methylsilanetriyl Triacetate	X	-	X	-
1,1-Difluoroethane	X	-	X	-
Silicon dioxide - hydrated	X	-	X	X
Silicon Dioxide (Crystalline Quartz)	X	-	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health 2
Flammability 1
Instability 0

HMIS

Health Not available
Flammability Not available
Physical hazards Not available

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 21-May-2018

Revision date 07-Nov-2022

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

Safety Data Sheet

Issue date 21-May-2018 **Revision date** 07-Nov-2022 **Revision Number** 4

1. IDENTIFICATION

Product identification

Product identifier	Lawson Flexseal Dispense-A-Gasket RTV Black Silicone
Other means of identification	93844
Recommended use	Sealant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Gases under pressure	Liquefied Gas

Symbol

Signal word WARNING

Hazard statements
H280 - Contains gas under pressure; may explode if heated
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements

General
P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention
P264 - Wash hands thoroughly after handling
P280 - Wear protective gloves
P280 - Wear eye protection/ face protection

Response

General
P314 - Get medical advice/attention if you feel unwell.

Eyes
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313 - If eye irritation persists: Get medical advice/attention

Skin
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Inhalation
P340 - Remove victim to fresh air and keep at rest in a position comfortable for breathing

Ingestion
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

Fire
P370 + P378 - In case of fire: Use carbon dioxide to extinguish

Spill
Not applicable

Storage
P403 - Store in a well-ventilated place
P410 - Protect from sunlight

Disposal
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)
None known.

Physical Hazards Not Otherwise Classified (PHNOC)
None known.

Unknown acute toxicity
None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition
Mixture.

Chemical name	CAS-No	Weight %
Triacetoxyethylsilane	17689-77-9	1-5
Methylsilanetriyl Triacetate	4253-34-3	1.5
1,1-Difluoroethane	75-37-6	1.5
Silicon dioxide - hydrated	7631-86-9	<1
Silicon Dioxide (Crystalline Quartz)	14808-60-7	<1

Any concentration shown as a range is to protect confidentiality or is due to batch variation.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or environment and hence require reporting in this section

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Rest in a half upright position, and loosen clothing. If breathing is difficult, administer oxygen. If breathing has stopped, give artificial respiration. Seek medical advice after significant exposure. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms maybe delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Ingestion	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin contact	Flush contaminated skin with plenty of water. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
Most important symptoms (acute)	Causes serious eye irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Causes skin irritation. Irritating to mouth, throat and stomach.
Most important symptoms (over-exposure)	Adverse symptoms may include the following:. Eye irritation. eye pain, redness, and watering. Skin irritation. Redness.
Indication of any immediate medical attention and special treatment needed	In case of inhalation of decomposition products in a fire, symptoms maybe delayed. The exposed person may need to be kept under medical surveillance for 48 hours. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards	No specific fire or explosion hazard.
Special protective equipment for fire-fighters	No special precautions are required. Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Decomposition products may include the following materials:. Carbon dioxide. Carbon monoxide. Halogenated compounds. carbonyl halides. Metal oxides.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering the area. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when

ventilation is inadequate. Put on appropriate personal protective equipment. If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Large Spill:. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Do not dry sweep. Dispose of via a licensed waste disposal contractor. Small Spill:. Move containers from spill area. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

7. HANDLING AND STORAGE

Precautions for safe handling

Put on appropriate personal protective equipment (see section 8). Do not ingest. Avoid contact with skin, eyes and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not re-use empty containers. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking, and smoking.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep containers tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled or mislabeled containers. Use appropriate containment to avoid environmental contamination.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Triacetoxyethylsilane	-			
Methylsilanetriyl Triacetate	-			
1,1-Difluoroethane	-			
Silicon dioxide - hydrated	20 mppcf TWA TWA 50 µg/m³ TWA	6 mg/m³ PEL (total dust); 3 mg/m³ PEL (respirable fraction)		6 mg/m³ TWA
Silicon Dioxide (Crystalline Quartz)	50 µg/m³ TWA	0.05 mg/m³ PEL (total dust); 0.1 mg/m³ PEL (respirable dust)	0.025 mg/m³ TWA	0.05 mg/m³ TWA

Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants. A safety shower and eye wash station should be available for emergency use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures, such as personal protective equipment

Eye protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin and body protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during

use the the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hygiene measures Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Triacetoxyethylsilane	-	-	-	-	-	-	-	-	-	-
Methylsilanetriyl Triacetate	-	-	-	-	-	-	-	-	-	-
1,1-Difluoroethane	-	-	-	-	-	-	-	-	-	-
Silicon dioxide - hydrated	-	4 mg/m³ TWA 1.5 mg/m³ TWA	-	3 mg/m³ TWA 10 mg/m³ TWA	-	-	-	-	6 mg/m³ TWAEV	10 mg/m³ TWA 3 mg/m³ TWA
Silicon Dioxide (Crystalline Quartz)	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.1 mg/m³ TWA	0.025 mg/m³ TWA	0.025 mg/m³ TWA	0.10 mg/m³ TWA	0.025 mg/m³ TWA	0.1 mg/m³ TWAEV	0.05 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Paste

Color Silver

Odor Acetic acid odor

Odor threshold Not available

pH Not available

Melting point/range °C Not available

Melting point/range °F Not available

Boiling point/range °C Not available

Boiling point/range °F Not available

Flash point °C >100°

Flash point °F >212°

Flash point method used Cleveland closed cup

Evaporation rate	Not available
Flammability (Solid, Gas)	Not available
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	1.007
Solubility	Not available
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	This material is considered stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	Oxidizers.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	Dermal. Inhalation. Ingestion. Eyes.
Symptoms	Causes skin irritation. Irritating to mouth, throat and stomach. Causes serious eye irritation. Adverse symptoms may include the following:. eye pain, redness, and watering. Eye irritation. Skin irritation. redness.
Delayed and immediate effects as well as chronic effects from short and long-term exposure	Causes serious eye irritation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. Causes skin irritation. Irritating to mouth, throat and stomach.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Triacetoxyethylsilane	-	-	-
Methylsilanetriyl Triacetate	-	= 2060 mg/kg Rat	2060 mg/kg Rat
1,1-Difluoroethane	437500 ppm Rat	-	-
Silicon dioxide - hydrated	>58.8 mg/L Rat	> 2000 mg/kg (Rabbit)	> 5000 mg/kg (Rat)
Silicon Dioxide (Crystalline Quartz)	-	-	-

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Triacetoxyethylsilane	-	-	-	-
Methylsilanetriyl Triacetate	-	-	-	-
1,1-Difluoroethane	-	-	-	-
Silicon dioxide - hydrated	-	Group 1 Group 3	Present	Known carcinogen
Silicon Dioxide (Crystalline Quartz)	A2	Group 1	Present	Known carcinogen

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Triacetoxyethylsilane	-	-	-	-	-	-
Methylsilanetriyl Triacetate	-	-	-	-	-	-
1,1-Difluoroethane	-	-	-	-	-	-
Silicon dioxide - hydrated	-	-	-	-	-	-
Silicon Dioxide (Crystalline Quartz)	A2 - Suspected Human Carcinogen	IARC 1 ACGIH A2	ACGIH A2	-	ACGIH A2	C2 carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Triacetoxyethylsilane	-	-
Methylsilanetriyl Triacetate	-	-

Chemical name	Algae/aquatic plants	Fish LC50
1,1-Difluoroethane	-	-
Silicon dioxide - hydrated	=440mg/L Pseudokirchneriella subcapitata 72h	= 5000mg/L Brachydanio rerio 96h
Silicon Dioxide (Crystalline Quartz)	-	-

Persistence and degradability No data available.

Bioaccumulation

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Triacetoxyethylsilane 17689-77-9	17689-77-9	-	-
Methylsilanetriyl Triacetate 4253-34-3	4253-34-3	-	-
1,1-Difluoroethane 75-37-6	75-37-6	-	-
Silicon dioxide - hydrated 7631-86-9	7631-86-9	-	no bioaccumulation expected
Silicon Dioxide (Crystalline Quartz) 14808-60-7	14808-60-7	-	-

Mobility in soil Not available.

Other adverse effects No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATIONS

Disposal information The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Contaminated packaging Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Subsidiary Risk	
Packing group	
Special Provisions	LTD QTY

TDG

ID-No	UN1950
Proper shipping name	Aerosols, flammable

Hazard Class(es) 2.1
Subsidiary Risk
Packing group
Special Provisions LTD QTY

IATA
ID-No UN1950
Proper shipping name Aerosols, flammable
Hazard Class(es) 2.1
Subsidiary Risk
Packing group
Special Provisions LTD QTY

IMDG/IMO
ID-No UN1950
Proper shipping name Aerosols, flammable
Hazard Class(es) 2.1
Subsidiary Risk
Packing group
EmS No
Special Provisions LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Triacetoxyethylsilane	17689-77-9	-	-	-
Methylsilanetriyl Triacetate	4253-34-3	-	-	-
1,1-Difluoroethane	75-37-6	-	-	-
Silicon dioxide - hydrated	7631-86-9	-	-	-
Silicon Dioxide (Crystalline Quartz)	14808-60-7	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Triacetoxyethylsilane	17689-77-9	-	-	-
Methylsilanetriyl Triacetate	4253-34-3	-	-	-
1,1-Difluoroethane	75-37-6	X	X	-
Silicon dioxide - hydrated	7631-86-9	X	X	X
Silicon Dioxide (Crystalline Quartz)	14808-60-7	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Triacetoxyethylsilane	17689-77-9	-
Methylsilanetriyl Triacetate	4253-34-3	-
1,1-Difluoroethane	75-37-6	-
Silicon dioxide - hydrated	7631-86-9	Carcinogen
Silicon Dioxide (Crystalline Quartz)	14808-60-7	Carcinogen

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Triacetoxyethylsilane	17689-77-9	-	-
Methylsilanetriyl Triacetate	4253-34-3	-	-
1,1-Difluoroethane	75-37-6	-	-
Silicon dioxide - hydrated	7631-86-9	-	-
Silicon Dioxide (Crystalline Quartz)	14808-60-7	-	-

US EPA SARA 311/312 hazardous categorization Sudden Release of Pressure Hazard
Acute Health Hazard

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Triacetoxyethylsilane	X	-	X	-
Methylsilanetriyl Triacetate	X	-	X	-
1,1-Difluoroethane	X	-	X	-
Silicon dioxide - hydrated	X	-	X	X
Silicon Dioxide (Crystalline Quartz)	X	-	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	2
Flammability	1
Instability	0

HMIS

Health	Not available
Flammability	Not available
Physical hazards	Not available

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

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Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name	ROUNDUP POWERMAX® 3 HERBICIDE
Product code (UVP)	86734028
SDS Number	102000053823
EPA Registration No.	524-659

Relevant identified uses of the substance or mixture and uses advised against

Use	Herbicide
Restrictions on use	See product label for restrictions.

Information on supplier

Supplier	Bayer CropScience LP 800 North Lindbergh Blvd. St. Louis, MO 63167 USA
Responsible Department	Email: SDSINFO.BCS-NA@bayer.com

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days)	1-800-334-7577
Product Information Telephone Number	1-866-99BAYER (1-866-992-2937)

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200
Eye irritation: Category 2A
Acute toxicity(Inhalation): Category 4

Labelling in accordance with regulation HCS 29CFR §1910.1200

Signal word: Warning

Hazard statements
Causes serious eye irritation.
Harmful if inhaled.

Precautionary statements
Use only outdoors or in a well-ventilated area.
Avoid breathing mist/ vapours/ spray.
Wash hands thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.

Hazards Not Otherwise Classified (HNOC)
No physical hazards not otherwise classified.
No health hazards not otherwise classified.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Potassium salt of glyphosate	70901-12-1	51.2
Surfactant blend (proprietary)		7.0 – 13.0

The specific chemical identity and/or concentration range is being withheld because it is trade secret information.

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Call a physician or poison control center immediately.
Eye contact	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Symptoms	To date no symptoms are known.

Indication of any immediate medical attention and special treatment needed

Risks	This product is not a cholinesterase inhibitor.
Treatment	Treatment with atropine and oximes is not indicated. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable	High volume water jet
Special hazards arising from the substance or mixture	In the event of fire the following may be released:, Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Oxides of phosphorus

Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing. Equipment should be thoroughly decontaminated after use.
Further information	Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.
Flash point	does not flash
Auto-ignition temperature	No data available
Lower explosion limit	No data available
Upper explosion limit	No data available
Explosivity	Not explosive

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions	Use personal protective equipment. Keep unauthorized people away. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Additional advice	Use personal protective equipment. If the product is accidentally spilled, do not allow to enter soil, waterways or waste water canal. Do not allow product to contact non-target plants.
Reference to other sections	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling	Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.
Hygiene measures	Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics. Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing. Keep working clothes separately. Garments that cannot be cleaned must be destroyed (burnt).

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Store in original container. Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in a place accessible by authorized persons only. Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode. Protect from freezing. Partial crystallization may occur on prolonged storage below the minimum storage temperature. Freezing will affect the physical condition but will not damage the material. Thaw and mix before using.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

No known occupational limit values.

Exposure controls

Personal protective equipment
In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection	When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.
Hand protection	Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Chemical-resistant gloves (barrier laminate, butyl rubber, nitrile rubber or Viton) Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.
Eye protection	Use tightly sealed goggles and face protection.
Skin and body protection	Wear long-sleeved shirt and long pants and shoes plus socks.
General protective measures	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Form	clear, liquid
Colour	light yellow to red brown
Odor	odourless
Odour Threshold	No data available
pH	4.3 - 4.8 (6.0 %) (23 °C) (deionized water)
Melting point/range	No data available
Boiling Point	No data available

Flash point	does not flash
Flammability	Not applicable
Auto-ignition temperature	No data available
Minimum ignition energy	Not applicable
Self-accelarating decomposition temperature (SADT)	No data available
Upper explosion limit	No data available
Lower explosion limit	No data available
Vapor Pressure	No data available
Evaporation rate	No data available
Relative vapour density	No data available
Relative density	1.379 (20 °C)
Density	1.38 g/cm³ (20 °C)
Water solubility	soluble
Partition coefficient: n-octanol/water	Potassium salt of glyphosate: log Pow: < -3.2 (25 °C)
Viscosity, dynamic	No data available
Viscosity, kinematic	No data available
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive
Other information	Further safety related physical-chemical data are not known.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

Conditions to avoid	Extremes of temperature and direct sunlight.
Incompatible materials	Galvanised steel, Unlined mild steel
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes	Skin contact, Eye contact, Inhalation
Immediate Effects	
Eye	Causes substantial but temporary eye injury.
Skin	Not expected to produce significant adverse effects when recommended use instructions are followed.
Ingestion	Not expected to produce significant adverse effects when recommended use instructions are followed.
Inhalation	Not expected to produce significant adverse effects when recommended use instructions are followed.

Information on toxicological effects

Acute oral toxicity	LD50 (Rat) 5,000 mg/kg No deaths
Acute inhalation toxicity	LC50 (Rat) 2.23 mg/l
Acute dermal toxicity	LD50 (Rat) 5,000 mg/kg No deaths
Skin corrosion/irritation	Slight irritant effect - does not require labelling. (Rabbit)
Serious eye damage/eye irritation	Moderate eye irritation. (Rabbit)
Respiratory or skin sensitisation	Skin: Non-sensitizing. (Guinea pig)

Assessment STOT Specific target organ toxicity – single exposure

Potassium salt of glyphosate: Based on available data, the classification criteria are not met.

Assessment STOT Specific target organ toxicity – repeated exposure

Potassium salt of glyphosate did not cause specific target organ toxicity in experimental animal studies.

Assessment mutagenicity

Potassium salt of glyphosate is not considered mutagenic.

Assessment carcinogenicity

Potassium salt of glyphosate: Based on available data, the classification criteria are not met.
Important comment to IARC Listing:, Our expert opinion is that classification as a carcinogen is not warranted.

ACGIH

None.

NTP

None.

IARC

Potassium salt of glyphosate	70901-12-1	Overall evaluation: 2A

OSHA

None.

Assessment toxicity to reproduction

Potassium salt of glyphosate: Based on available data, the classification criteria are not met.

Assessment developmental toxicity

Potassium salt of glyphosate: Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Lepomis macrochirus (Bluegill sunfish)) 47 mg/l static test; Exposure time: 96 h Test conducted with a similar formulation.
Chronic toxicity to fish	Oncorhynchus mykiss (rainbow trout) flow-through test NOEC: >= 9.63 mg/l The value mentioned relates to the active ingredient glyphosate.
Toxicity to aquatic invertebrates	LC50 (Crassostrea gigas (Portuguese oyster)) 40 mg/l static test; Exposure time: 48 h Test conducted with a similar formulation.
Chronic toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)): 12.5 mg/l Exposure time: 21 d The value mentioned relates to the active ingredient glyphosate.
Toxicity to aquatic plants	ErC50 (Skeletonema costatum) 13.5 mg/l Growth rate; Exposure time: 72 h Test conducted with a similar formulation.
	EC50 (Selenastrum capricornutum (green algae)) 0.46 mg/l static test; Exposure time: 72 h Test conducted with a similar formulation.

Toxicity to other organisms	LC50 (Eisenia fetida (earthworms)) 10,000 mg/kg Exposure time: 14 d Test conducted with a similar formulation.
Biodegradability	Potassium salt of glyphosate: Not readily biodegradable.
Koc	Potassium salt of glyphosate: Koc: 884
Bioaccumulation	Potassium salt of glyphosate: Bioconcentration factor (BCF) < 1
Mobility in soil	Potassium salt of glyphosate: Variable, depends on temperature, soil type, soil moisture, soil pH and organic matter content.

Results of PBT and vPvB assessment

PBT and vPvB assessment	Potassium salt of glyphosate: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
Additional ecological information	No further ecological information is available.
Environmental precautions	Apply this product as specified on the label. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Retain and dispose of contaminated wash water.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product	It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Do not contaminate water, food, or feed by disposal. Follow all local/regional/national/international regulations.
Contaminated packaging	Follow advice on product label and/or leaflet. Do not re-use empty containers. Triple rinse containers. Puncture container to avoid re-use. Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR Not dangerous goods / not hazardous material

IMDG

UN number	**3082**
Class	9
Packaging group	III
Marine pollutant	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (AMINE ALKOXYLATE)

IATA

UN number	**3082**
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (AMINE ALKOXYLATE)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 524-659
US Federal Regulations
TSCA list
Water 7732-18-5
US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
No export notification needs to be made.
SARA Title III - Section 302 - Notification and Information
Not applicable.
SARA Title III - Section 313 - Toxic Chemical Release Reporting
None.

US States Regulatory Reporting
CA Prop65
This product does not contain any substances known to the State of California to cause cancer.

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Formaldehyde	50-00-0	Carcinogenic.
Sulphuric acid	7664-93-9	Carcinogenic.

US State Right-To-Know Ingredients
None.

Environmental
CERCLA
None.
Clean Water Section 307(a)(1)
None.
Safe Drinking Water Act Maximum Contaminant Levels
None.

EPA/FIFRA Information:
This chemical is a pesticide product regulated by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Causes moderate eye irritation.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms

49CFR	Code of Federal Regulations, Title 49
ACGIH	US. ACGIH Threshold Limit Values
ATE	Acute toxicity estimate
CAS-Nr.	Chemical Abstracts Service number
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
EINECS	European inventory of existing commercial substances
ELINCS	European list of notified chemical substances
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
N.O.S.	Not otherwise specified
NTP	US. National Toxicology Program (NTP) Report on Carcinogens
OECD	Organization for Economic Co-operation and Development
TDG	Transportation of Dangerous Goods
TWA	Time weighted average
UN	United Nations
WHO	World health organisation

NFPA 704 (National Fire Protection Association):

Health - 2	Flammability - 1	Instability - 1	Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 2	Flammability - 1	Physical Hazard - 1	PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Reviewed and updated for general editorial purposes. The following sections have been revised: Section 12. Ecological information.

Revision Date: 12/16/2021

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions. The product names are registered trademarks of Bayer.

Safety Data Sheet

Issue date 06-Jun-2018 **Revision date** 07-Nov-2022 **Revision Number** 3

1. IDENTIFICATION

Product identification

Product identifier	Lawson Flexseal Blue RTV Silicone Sealant
Other means of identification	91776
Recommended use	Adhesive, Sealant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification While this material is not classified as hazardous under OSHA, GHS or WHMIS 2015 regulations, this SDS contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

Symbol Not applicable

Signal word Not applicable

Hazard statements Not applicable

Precautionary statements

General P102 - Keep out of reach of children
P103 - Read label before use.

Prevention P271 - Use only outdoors or in a well-ventilated area

Response Not applicable

Storage Not applicable

Disposal Not applicable

Hazard(s) Not Otherwise Classified (HNOC) None known.

Physical Hazards Not Otherwise Classified (PHNOC) None known.

Unknown acute toxicity None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition Mixture.

Chemical name	CAS-No	Weight %
Dimethiconol	70131-67-8	70-90
Silicon Dioxide	7631-86-9	5-10
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	64742-46-7	5-10
Iron oxide	1332-37-2	1-5
Aluminum	7429-90-5	1-5
Titanium dioxide	13463-67-7	1-5
Carbon Black	1333-86-4	0.1-1
Acetic anhydride	108-24-7	0-0.1
Acetic acid	64-19-7	0-0.1

4. FIRST-AID MEASURES

Necessary first-aid measures

General Information Get medical attention if symptoms occur.

Inhalation Remove to fresh air. Get medical attention if symptoms occur.

Ingestion Do NOT induce vomiting. Get medical attention if symptoms occur. Immediately rinse mouth with water.

Skin contact Wash off immediately with soap and plenty of water. Get medical attention if symptoms occur.

Eye contact Flush eyes with plenty of water. If eye irritation persists: Get medical advice/attention.

Most important symptoms (acute) None known.

Most important symptoms (over-exposure) None known.

Indication of any immediate medical attention and special treatment needed Treat symptomatically. No special precautions are required.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media Dry Chemical, Carbon Dioxide, Foam or Water Fog.

Unsuitable extinguishing media

None known.

Specific hazards

Exposure to combustion products may be a hazard to health. Hazardous Thermal Decomposition Products:. Oxides of carbon. silicon oxides. Formaldehyde.

Special protective equipment for fire-fighters

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water mist may be used to cool closed containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area. Wear self contained breathing apparatus for fire fighting if necessary. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Follow safe handling advice and personal protective equipment recommendations. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. Take up mechanically and collect in suitable container for disposal. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For waste disposal, see section 13 of the SDS.

7. HANDLING AND STORAGE

Precautions for safe handling

Use personal protection recommended in Section 8. Use only with adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

Do not store in unlabeled or mislabeled containers. Store and handle in accordance with all current regulations and standards. Store away from oxidizers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
Dimethiconol	-			
Silicon Dioxide	20 mppcf TWA TWA 50 µg/m³ TWA	6 mg/m³ PEL (total dust); 3 mg/m³ PEL (respirable fraction)		6 mg/m³ TWA
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	5 mg/m³			
Iron oxide	-			
Aluminum	15 mg/m³ TWA 5 mg/m³ TWA	10 mg/m³ PEL (total dust); 5 mg/m³ PEL (respirable fraction) 5 mg/m³ PEL	1 mg/m³ TWA	10 mg/m³ TWA 5 mg/m³ TWA 5 mg/m³ TWA 5 mg/m³ TWA
Titanium dioxide	15 mg/m³ TWA	5 mg/m³ PEL (respirable fraction, listed under Particulates not otherwise regulated); 10 mg/m³ PEL (total dust, listed under Particulates not otherwise regulated)	0.2 mg/m³ TWA 2.5 mg/m³ TWA	2.4 mg/m³ TWA 0.3 mg/m³ TWA
Carbon Black	3.5 mg/m³ TWA	3.5 mg/m³ PEL	3 mg/m³ TWA	3.5 mg/m³ TWA 0.1 mg/m³ TWA
Acetic anhydride	5 ppm TWA 20 mg/m³ TWA	5 ppm PEL; 20 mg/m³ PEL	1 ppm TWA	
Acetic acid	10 ppm TWA	10 ppm PEL; 25 mg/m³	10 ppm TWA	10 ppm TWA

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
	25 mg/m³ TWA	PEL		25 mg/m³ TWA

Appropriate engineering controls

Processing may form hazardous compounds, refer to section 10. Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

Individual protection measures, such as personal protective equipment

Eye protection

Safety glasses.

Skin and body protection

Wash face, hands and any exposed skin thoroughly after handling.

Respiratory protection

Use a NIOSH/MSHA respirator unless adequate local exhaust is provided and air testing shows exposure levels are within recommended exposure guidelines. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air purifying respirators may not provide adequate protection.

Hygiene measures

Ensure that eyewash stations and safety showers are close to the workstation location. When using, do not eat, drink or smoke. Wash contaminated clothing before reuse. These precautions are for room temperature handling. Use at elevated temperature or aerosol or spray applications may require added precautions.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
Dimethiconol	-	-	-	-	-	-	-	-	-	-
Silicon Dioxide	-	4 mg/m³ TWA 1.5 mg/m³ TWA	-	3 mg/m³ TWA 10 mg/m³ TWA	-	-	-	-	6 mg/m³ TWAEV	10 mg/m³ TWA 3 mg/m³ TWA
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	-	-	-	-	-	-	-	-	-	-
Iron oxide	-	-	-	-	-	-	-	-	-	-
Aluminum	10 mg/m³ TWA 5 mg/m³ TWA	1.0 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWA 5 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWAEV 5 mg/m³ TWAEV 5 mg/m³ TWAEV	10 mg/m³ TWA 5 mg/m³ TWA
Titanium dioxide	10 mg/m³ TWA	10 mg/m³ TWA 3 mg/m³ TWA	0.2 mg/m³ TWA 2.5 mg/m³ TWA	10 mg/m³ TWA	0.2 mg/m³ TWA 2.5 mg/m³ TWA	0.2 mg/m³ TWA 2.5 mg/m³ TWA	10 mg/m³ TWA	0.2 mg/m³ TWA 2.5 mg/m³ TWA	10 mg/m³ TWAEV	10 mg/m³ TWA
Carbon Black	3.5 mg/m³ TWA	3 mg/m³ TWA	3 mg/m³ TWA	3.5 mg/m³ TWA	3 mg/m³ TWA	3 mg/m³ TWA	3 mg/m³ TWA	3 mg/m³ TWA	3 mg/m³ TWAEV	3.5 mg/m³ TWA
Acetic anhydride	-	1 ppm TWA	1 ppm TWA	5 ppm TWA 21 mg/m³ TWA	1 ppm TWA	1 ppm TWA	1 ppm TWA	1 ppm TWA	1 ppm TWAEV	5 ppm TWA
Acetic acid	10 ppm TWA 25 mg/m³ TWA	10 ppm TWA	10 ppm TWA	10 ppm TWA 25 mg/m³ TWA	10 ppm TWA	10 ppm TWA	10 ppm TWA	10 ppm TWA	10 ppm TWAEV 25 mg/m³ TWAEV	10 ppm TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Paste
Color	Colorless
Odor	Acetic acid odor
Odor threshold	Not available
pH	Not applicable
Melting point/range °C	Not available
Melting point/range °F	Not available
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C	>100
Flash point °F	>212
Flash point method used	Closed cup
Evaporation rate	Not applicable
Flammability (Solid, Gas)	Not classified
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	1.007
Solubility	Not available
Partition coefficient (n-octanol/water)	Not applicable
Autoignition temperature °C	Not applicable
Autoignition temperature °F	Not applicable
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	The product is stable and not reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions.
Possibility of hazardous	Use at elevated temperatures may form highly hazardous compounds. Can react with

reactions strong oxidizing agents. Acetic acid is formed upon contact with water or humid air. When heated to temperatures above 300 degrees F in the presence of air, this product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard and known skin and respiratory sensitizer. Ensure adequate ventilation, especially in confined areas. See OSHA formaldehyde standard, 29 CFR 1910.1048.

Conditions to avoid None known.

Incompatible materials Oxidizing agents.

Hazardous decomposition products Formaldehyde.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Dermal. Ingestion. Eyes.

Symptoms Not acutely toxic.

Delayed and immediate effects as well as chronic effects from short and long-term exposure Not applicable.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Dimethiconol	>8750 mg/m³ Rat	> 15400 mg/kg Rat >16 mL/kg Rabbit	>15400 mg/kg Rat > 16 mL/kg Rabbit
Silicon Dioxide	>58.8 mg/L Rat	= 7900 mg/kg Rat >5000 mg/kg Rabbit	7900 mg/kg Rat > 5000 mg/kg Rabbit
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	4.6 mg/L Rat	= 7400 mg/kg Rat >2000 mg/kg Rabbit	= 7400 mg/kg (Rat)
Iron oxide	-	-	-
Aluminum	>0.888 mg/L Rat	-	-
Titanium dioxide	5.09 mg/L Rat	> 10000 mg/kg Rat	>10000 mg/kg Rat
Carbon Black	>4.6 mg/m³ Rat	> 15400 mg/kg Rat	>15400 mg/kg Rat
Acetic anhydride	4.2 - 8.5 mg/L Rat	= 630 mg/kg Rat 4000 mg/kg Rabbit	630 mg/kg Rat = 4000 mg/kg Rabbit
Acetic acid	11.4 mg/L Rat	= 3310 mg/kg Rat 1060 mg/kg Rabbit	3310 mg/kg Rat = 1060 mg/kg Rabbit

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Dimethiconol	-	-	-	-

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Silicon Dioxide	-	Group 1 Group 3	Present	Known carcinogen
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	-	-	-	-
Iron oxide	-	-	-	-
Aluminum	A4	-	-	-
Titanium dioxide	A3	Group 2B	Present	-
Carbon Black	A3	Group 2B	Present	-
Acetic anhydride	A4	-	-	-
Acetic acid	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Dimethiconol	-	-	-	-	-	-
Silicon Dioxide	-	-	-	-	-	-
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	-	-	-	-	-	-
Iron oxide	-	-	-	-	-	-
Aluminum	-	-	ACGIH A4	-	ACGIH A4	-
Titanium dioxide	-	IARC 2B	ACGIH A3	ACGIH A4	ACGIH A3	-
Carbon Black	-	IARC 2B	ACGIH A3	ACGIH A4	ACGIH A3	C3 Carcinogen
Acetic anhydride	-	-	ACGIH A4	-	ACGIH A4	-
Acetic acid	-	-	-	-	-	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
Dimethiconol	-	-
Silicon Dioxide	=440mg/L Pseudokirchneriella subcapitata 72h	= 5000mg/L Brachydanio rerio 96h
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	-	= 35mg/L Pimephales promelas 96h > 10000mg/L Pimephales promelas 96h
Iron oxide	-	-
Aluminum	-	-
Titanium dioxide	-	-
Carbon Black	-	-
Acetic anhydride	-	-
Acetic acid	-	= 75mg/L Lepomis macrochirus 96h = 79mg/L Pimephales promelas 96h

Persistence and degradability Not available.

Bioaccumulation Not available

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
Dimethiconol 70131-67-8	70131-67-8	-	-
Silicon Dioxide 7631-86-9	7631-86-9	-	no bioaccumulation expected
Petroleum distillates, hydrotreated middle (<3% DMSO extractable) 64742-46-7	64742-46-7	-	-
Iron oxide 1332-37-2	1332-37-2	-	-
Aluminum 7429-90-5	7429-90-5	-	-
Titanium dioxide 13463-67-7	13463-67-7	-	-
Carbon Black 1333-86-4	1333-86-4	-	-
Acetic anhydride 108-24-7	108-24-7	-0.27	-
Acetic acid 64-19-7	64-19-7	-0.17 at 25 °C (at pH 7, ECHA_API)	-

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of in accordance with federal, state and local regulations. This material, as supplied, does not meet the criteria of hazardous waste if discarded in its purchased form.

Contaminated packaging Dispose of as unused product. Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT
Proper shipping name Not regulated

TDG
Proper shipping name Not regulated

IATA
Proper shipping name Not regulated

IMDG/IMO
Proper shipping name Not regulated

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Dimethiconol	70131-67-8	-	-	-
Silicon Dioxide	7631-86-9	-	-	-
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	64742-46-7	-	-	-
Iron oxide	1332-37-2	-	-	-
Aluminum	7429-90-5	-	-	-
Titanium dioxide	13463-67-7	-	-	-

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Carbon Black	1333-86-4	-	-	-
Acetic anhydride	108-24-7	-	-	-
Acetic acid	64-19-7	-	-	-

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Dimethiconol	70131-67-8	-	-	-
Silicon Dioxide	7631-86-9	X	X	X
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	64742-46-7	-	-	-
Iron oxide	1332-37-2	-	-	-
Aluminum	7429-90-5	X	X	X
Titanium dioxide	13463-67-7	X	X	X
Carbon Black	1333-86-4	X	X	X
Acetic anhydride	108-24-7	X	X	X
Acetic acid	64-19-7	X	X	X

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Dimethiconol	70131-67-8	-
Silicon Dioxide	7631-86-9	Carcinogen
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	64742-46-7	-
Iron oxide	1332-37-2	-
Aluminum	7429-90-5	-
Titanium dioxide	13463-67-7	Carcinogen
Carbon Black	1333-86-4	Carcinogen
Acetic anhydride	108-24-7	-
Acetic acid	64-19-7	-

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Dimethiconol	70131-67-8	-	-
Silicon Dioxide	7631-86-9	-	-
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	64742-46-7	-	-
Iron oxide	1332-37-2	-	-
Aluminum	7429-90-5	-	1.0 %
Titanium dioxide	13463-67-7	-	-
Carbon Black	1333-86-4	-	-

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Acetic anhydride	108-24-7	5000 lb 2270 kg	-
Acetic acid	64-19-7	5000 lb 2270 kg	-

US EPA SARA 311/312 hazardous categorization Not applicable

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Dimethiconol	X	-	X	-
Silicon Dioxide	X	-	X	X
Petroleum distillates, hydrotreated middle (<3% DMSO extractable)	X	-	X	-
Iron oxide	X	-	X	-
Aluminum	X	-	X	-
Titanium dioxide	X	-	X	-
Carbon Black	X	-	X	-
Acetic anhydride	X	-	X	-
Acetic acid	X	-	X	X

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	1
Flammability	1
Instability	0

HMIS

Health	1
Flammability	0
Physical hazards	0

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

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Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

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LUBE-TECH
Accelerating Performance

Prepared according to Global Harmonized System (GHS) standards

SECTION 1 CHEMICAL PRODUCT IDENTIFICATION

Lubrication Technologies, Inc.
900 Mendelssohn Avenue North
Golden Valley, MN 55427-4309
Tel: 763-545-0707

Product Trade Name: **LTI Aqua Kleen Asphalt Release**

CAS Number:	Mixture
Synonyms/Other:	N/A
Part Number(s):	N/A
Recommended Use:	Mild detergent
Restrictions on Use:	Not determined
Created Date:	7/1/2015
Preparation/Revision Date:	7/1/2015
Emergency Phone Number:	1-800-424-9300 (CHEMTREC)
SDS CODE:	10019

SECTION 2 HAZARD IDENTIFICATION

Appearance: Thin yellow fluid.
Odor: Mild.
Classification: Skin corrosion / irritation category 1
Eye damage / irritation category 1
Acute Toxicity - oral category 5
Target Organs: Skin, Eyes
Pictogram(s):

Signal Word: DANGER
Hazard Statement: H303 - May be harmful if swallowed
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
Other Hazards: Not determined.
Prevention: P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P264 - Wash hands thoroughly after handling
P280 - Wear protective gloves/protective clothing/eye protection/face protection
Response: P310 - Immediately call a POISON CENTER or doctor/physician
P312 - Call a POISON CENTER or doctor/physician if you feel unwell
P321 - Specific treatment (see Section 4)
P363 - Wash contaminated clothing before reuse
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304+P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

HOME

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Storage Procedures: P405 - Store locked up
Disposal: P501 - Dispose of contents and container in accordance with federal, state, and local regulations
Other: See section 11 for complete health hazard information.

SECTION 3 COMPOSITION OF INGREDIENTS

Component	CAS Number	Percentage (by weight)
Sodium hydroxide	1310-73-2	1.0-4.0
C10-16-alkylbenzene sulfonic acid	68584-22-5	10-14
Triethanolamine	102-71-6	1.0-3.0

The balance of components do not contribute to the overall classification of the fluid, according to the GHS Standard.

SECTION 4 FIRST AID MEASURES

Eye Contact: Avoid direct contact. Wear chemical protective gloves, if necessary. Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a doctor.

Skin Contact: Avoid direct contact. Wear chemical protective clothing, if necessary. Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash skin with lukewarm, gently flowing water and mild soap until product is removed. Immediately call a doctor. Call a doctor if you feel unwell. Discard contaminated clothing.

Inhalation: Get medical advice or attention if you feel unwell or are concerned.

Ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a doctor. If vomiting occurs naturally, lie on your side, in the recovery position.

Other: No additional information

SECTION 5 FIRE FIGHTING MEASURES

Flash Point: Not determined.

Flammable limits: Not determined.

Extinguishing media: Use dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire.

Special firefighting procedures: DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

Unusual fire & explosion hazards: Dense smoke may be generated while burning. Toxic fumes, gases or vapors may evolve on burning. High temperatures may create heavy flammable vapors that may settle along ground level and low spots to create an invisible fire hazard.

Byproducts of combustion: Fires involving this product may release oxides of carbon, phosphorus, nitrogen and sulfur; reactive hydrocarbons and irritating vapors.

Autoignition temperature: Not determined.

Explosion data: Not determined. Care should always be exercised in dust/mist areas.

Other: Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

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SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill control procedures (land): Immediately turn off or isolate any source of ignition (pilot lights, electrical equipment, flames, heaters, etc.). Evacuate area and ventilate. Personnel wearing proper protective equipment should contain spill immediately with inert materials (sand, earth, chemical spill pads of cotton) by forming dikes. Dikes should be placed to contain spill in a manner that will prevent material from entering sewers and waterways. Large spill, once contained, may be picked up using explosion proof, non-sparking vacuum pumps, shovels, or buckets, and disposed of in suitable containers for disposal. Clean up residue with water. If a large spill occurs notify appropriate authorities. In case of road spill or accident contact Chem-Trec (800-424-9300).

Spill control procedures (water): If a large spill occurs notify appropriate authorities (normally the National Response Center or Coast Guard at 800-424-8802).

Waste disposal method: Do not empty into drains. All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded may be a regulated waste. Refer to state and local regulations. Department of Transportation (DOT) regulations may apply for transporting this material when spilled. See Section 14.

Other: CAUTION - If spilled material is cleaned up using a regulated solvent, the resulting waste mixture will be regulated.

SECTION 7 HANDLING AND STORAGE

Handling procedures: Keep containers closed when not in use. Do not transfer to unmarked containers. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld, or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.
Handling temperatures should not exceed 60℃ (140℉) to min imize danger of burns. Open containers carefully in a well ventilated area or use appropriate respiratory protection. Wash thoroughly after handling.

Storage procedures: Store containers away from heat, sparks, open flame, or oxidizing materials. Extended storage at excessive temperatures may produce odorous and toxic fumes from product decomposition.

Additional information: No additional information.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product:

	OSHA TWA	OSHA STEL	ACGIH TWA
Sodium hydroxide	2 mg/m³ (PEL)	-	2 mg/m³ (TLV)

TWA – Time Weighted Average is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.
STEL – Short Term Exposure Limit is the employee's 15-minute time weighted average exposure which shall not be exceeded at any time during a work day unless another time limit is specified.

Personal protection: Applicable mainly to persons in repeated contact situations such as packaging of product, service/maintenance, and cleanup/spill control personnel.

Respiratory protection: None required if ventilation is adequate. Otherwise a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. Where misting may occur, wear an MSHA/NIOSH approved (or equivalent) half-mask form dust/mist air purifying respirator.

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Eye protection:	Eye protection is strongly recommended. Wear safety glasses with side shields or vented/splash proof goggles (ANSI Z87.1 or approved equivalent).
Hand protection:	Impervious, chemically resistant gloves such as neoprene or nitrile rubber to avoid skin sensitization and absorption.
Other protection:	Use of an apron and overboots of chemically impervious materials such as neoprene or nitrile rubber is recommended based on level of activity and exposure. If handling hot material use insulated protective equipment. Launder soiled clothes. Properly dispose of contaminated leather articles and other materials which cannot be decontaminated.
Local control measures:	Use adequate ventilation when working with material in an enclosed area. Mechanical methods such as fume hoods or area fans may be used to reduce localized vapor/mist areas. If vapor or mist is generated when the material handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure. Eyewash stations and showers should be available in areas where this material is used and stored.
Other:	Consumption of food and drink should be avoided in work areas where product is present. Always wash hands and face with soap and water before eating, drinking or smoking.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Thin yellow fluid.
Odor:	Mild.
Odor threshold:	Not determined.
pH:	8.5-8.9.
Melting/Freezing point:	0°C.
Initial boiling point:	100°C.
Boiling range:	Not determined.
Flash point:	Not determined.
Evaporation rate:	<1.
Flammability:	Not determined.
Upper flammable limit:	Not determined.
Lower flammable limit:	Not determined.
Vapor pressure:	Similar to water.
Vapor density:	>1.
Relative density:	1.03-1.04.
Solubility:	Miscible in water, negligible in most petroleum solvents.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	Not determined.
Other	Not applicable.

SECTION 10 STABILITY AND REACTIVITY

Reactivity	
Chemical stability:	Material is chemically stable at room temperatures and pressure.
Hazardous polymerization:	Will not occur.
Conditions to avoid:	Avoid high temperatures and product contamination.
Incompatibility with other materials:	Avoid contact with acids and strong oxidizing materials.

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Decomposition products: Smoke, carbon monoxide, carbon dioxide, and other aldehydes of incomplete combustion. Oxides of carbon, nitrogen, and sulfur; reactive hydrocarbons and irritating vapors.

Other: Not applicable.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity (LD50) *See note at the bottom of the section

Oral:	2000 - 5000 mg/kg
Dermal:	>5000 mg/kg
Inhalation:	>20.0 mg/l
Skin irritation:	Causes severe skin burns and eye damage
Eye irritation:	Causes serious eye damage
Dermal sensitization:	Not expected to have a sensitizing effect.
Respiratory sensitization:	Not expected to have a sensitizing effect.
Aspiration Hazard:	Not applicable

Chronic Toxicity

Mutagenicity:	Not suspected of causing genetic defects
Carcinogenicity:	Not suspected of causing cancer.
Reproductive toxicity:	Not expected to have adverse effects on reproduction.
STOT-single exposure:	Not expected to have adverse effects.
STOT-repeated exposure:	Not expected to have long term adverse effects.
Other:	*All data in this section is based off calculations from Part 3 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 12 ECOLOGICAL INFORMATION

Environmental toxicity

Fish:	> 100 mg/l.
Invertebrates:	> 100 mg/l.
Aquatic plants:	> 100 mg/l.
Microorganism:	> 100 mg/l.
Persistence/Degradability:	This product is not expected to be readily biodegradable.
Bioaccumulation:	Not determined.
Mobility in soil:	Not determined.
Other:	All classifications are based on calculations in Part 4 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste disposal: This product unadulterated by other materials can be classified as a non-hazardous waste. Depending on use, used product may be regulated. Dispose of in a licensed facility. Do not discharge product in to sewer system. Dispose of containers by crushing or puncturing, so as to prevent unauthorized use of used containers. Waste management should be in full compliance with federal, state, and local laws.

Other The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate.

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SECTION 14 TRANSPORT INFORMATION

Land Transport (DOT):	Not regulated for land transport.
Proper Shipping Name:	Not applicable.
Land Transport (TDG):	Not regulated for land transport.
Proper Shipping Name:	Not applicable.
Sea Transport (IMDG):	Not regulated for sea transport.
Proper Shipping Name:	Not applicable.
Air Transport (IATA):	Not regulated for air transport.
Proper Shipping Name:	Not applicable.
Other:	Not applicable.

SECTION 15 REGULATORY INFORMATION

Federal Regulation

Clean water act/oil: Under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Control Act of 1990, this material is considered an oil. Any spill or discharges that produce a visible sheen or film on surface of water, or in waterways, ditches, or sewers leading to surface water must be reported. Contact the National Response Center at 800-424-8802.

TSCA: All components of this material are listed in the U.S. TSCA Inventory.

Other TSCA: Not applicable.

SARA title III: Section 302/304 extremely hazardous substances:

None.

Section 311, 312 hazard categorization:

Acute (immediate health effects):	YES
Chronic (delayed health effects):	NO
Fire (hazard):	NO
Reactivity (hazard):	NO
Pressure (sudden release hazard):	NO

Section 313 toxic chemicals:

No components present are at or greater than the de minimis (minimum reportable) concentration requirements for reporting.

CERCLA: For stationary/moving sources – reportable quantity (due to): Not hazardous due to the petroleum exclusion.

State Regulations

Right-to-know Not determined.

Other: A release of this product, as supplied, is exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). However, releases may be reportable to the Nation Response Center under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5) - see head of Section 15. Failure to report may result in substantial civil and criminal penalties.

Recommend contacting the local authorities in the event of any type of spill to determine local reporting requirements and also to aid in the cleanup.

SECTION 16 OTHER INFORMATION

	NFPA 704	NPCA-HMIS	KEY
HEALTH:	1	1	0 = Minimal
FIRE:	0	0	1 = Slight
REACTIVITY:	0	0	2 = Moderate
SPECIFIC HAZARD:	None	N/A	3 = Serious
PROTECTION INDEX:	N/A	B	4 = Severe

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Version: 1

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Revisions / Comments: None.

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Safety Data Sheet

Issue date 22-May-2018 **Revision date** 07-Jul-2023 **Revision Number** 4

1. IDENTIFICATION

Product identification

Product identifier	Lawson Flush Off Citrus Degreaser
Other means of identification	95660
Recommended use	Degreaser
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Acute toxicity - Oral	Category 4
Skin sensitization	Category 1
Flammable aerosols	Category 1
Gases under pressure	Liquefied Gas

Symbol

Signal word DANGER

Hazard statements

H222 - Extremely flammable aerosol
H280 - Contains gas under pressure; may explode if heated
H317 - May cause an allergic skin reaction
H302 - Harmful if swallowed

Precautionary statements

General

P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open flame or other ignition source
P251 - Pressurized container: Do not pierce or burn, even after use
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash hands thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing and eye/face protection
P270 - Do not eat, drink or smoke when using this product

Response

Skin

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse

Ingestion

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P330 - Rinse mouth

Fire

P370 + P378 - In case of fire: Use carbon dioxide to extinguish

Spill

Not available

Storage

P405 - Store locked up
P410 - Protect from sunlight
P412 - Do not expose to temperatures exceeding 50 °C/122 °F

Disposal

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Hazard(s) Not Otherwise Classified (HNOC)

None known.

Physical Hazards Not Otherwise Classified (PHNOC)

None known.

Unknown acute toxicity

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition

Mixture.

Chemical name	CAS-No	Weight %
D-Limonene	5989-27-5	90-100
Carbon Dioxide	124-38-9	1-5
Alkylphenol ethoxylate	127087-87-0	1-5
Oxirane, [(2-methylphenoxy)methyl]-	2210-79-9	0.1-1
Ethylene oxide	75-21-8	0.1-1

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician or Poison Control Center if you feel unwell.
Ingestion	Harmful or fatal if swallowed. Seek medical attention immediately. Aspiration hazard if swallowed. May enter lungs and cause damage.
Skin contact	Wash off immediately with soap and plenty of water. If skin irritation or rash occurs, get medical advice/attention. Take off contaminated clothing and wash before reuse.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Most important symptoms (acute)	Can cause Central Nervous System depression. Harmful or fatal if swallowed and enters the airways.
Most important symptoms (over-exposure)	Not available.
Indication of any immediate medical attention and special treatment needed	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water spray. Foam. Water fog.
Unsuitable extinguishing media	Not available.
Specific hazards	Extremely Flammable Aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may cause fire or explosion hazard. Hazardous Thermal Decomposition Products:. Carbon dioxide. Carbon monoxide.
Special protective equipment for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if you can do it without risk. Use water spray to keep fire-exposed containers cool. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use personal protection recommended in Section 8.
Methods and materials for containment and cleaning up	Stop leak if possible without personal risk. Evacuate area of unprotected and unnecessary personnel. Eliminate all sources of ignition. If leak or spill has not ignited, use water spray to disperse the vapors. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. DO NOT use clay-type absorbent materials. Absorb unrecoverable product. Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for	Store and use away from heat, sparks, open flame or any other ignition source. Exposure to

safe handling

temperatures above 120F may cause bursting. Do not get in eyes, on skin, or on clothing. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	California - PELs	ACGIH OEL (TWA)	NIOSH - TWA
D-Limonene	-			
Carbon Dioxide	5000 ppm TWA 9000 mg/m³ TWA	5000 ppm PEL; 9000 mg/m³ PEL	5000 ppm TWA	5000 ppm TWA 9000 mg/m³ TWA
Alkylphenol ethoxylate	-			
Oxirane, [(2-methylphenoxy)methyl]-	-			
Ethylene oxide	1 ppm TWA	1 ppm PEL; 2 mg/m³ PEL	1 ppm TWA	0.1 ppm TWA 0.18 mg/m³ TWA

Appropriate engineering controls

A safety shower and eye wash station should be available for emergency use. Use adequate ventilation to keep the exposure levels below the OELs.

Individual protection measures, such as personal protective equipment

Eye protection

ANSI approved safety glasses or splash goggles are recommended.

Skin and body protection

Impervious gloves. Rubber boots. Wear protective nitrile rubber gloves. Neoprene gloves.

Respiratory protection

Use NIOSH-approved air-purifying respirator with organic vapor cartridge or canister, as appropriate. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Hygiene measures

Wash hands before breaks and immediately after handling the product. A safety shower and eye wash station should be available for emergency use.

Canadian Province Occupational Exposure Limits

Chemical name	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK
D-Limonene	-	-	-	-	-	-	-	-	-	-
Carbon Dioxide	5000 ppm TWA 9000 mg/m³ TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWA 9000 mg/m³ TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWA	5000 ppm TWAEV 9000 mg/m³ TWAEV	5000 ppm TWA
Alkylphenol ethoxylate	-	-	-	-	-	-	-	-	-	-
Oxirane, [(2-methylphenoxy) methyl]-	-	-	-	-	-	-	-	-	-	-
Ethylene oxide	1 ppm TWA 1.8 mg/m³ TWA	0.1 ppm TWA	1 ppm TWA	1 ppm TWA 1.8 mg/m³ TWA	1 ppm TWA	1 ppm TWA	1 ppm TWA 1.8 mg/m³ TWA 1 ppm TWA	1 ppm TWA	1 ppm TWAEV 1.8 mg/m³ TWAEV	1 ppm TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Aerosol
Color	Colorless
Odor	Citrus
Odor threshold	Not available
pH	Not available
Melting point/range °C	Not available
Melting point/range °F	Not available
Boiling point/range °C	176 (estimated) °C
Boiling point/range °F	Not available
Flash point °C	51
Flash point method used	based on components
Evaporation rate	Not available
Flammability (Solid, Gas)	Not available
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	No data available
Solubility	Emulsifies in water
Partition coefficient (n-octanol/water)	Not available
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	Not applicable.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Not available.
Conditions to avoid	Heat, flames and sparks. Welding.

Incompatible materials Acids. Strong oxidizing agents. Inorganic clays (clay-type absorbents).

Hazardous decomposition products Carbon dioxide (CO2). Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Dermal. Inhalation. Ingestion.

Symptoms Causes serious eye irritation. eye pain, redness, and watering. May cause skin irritation. Adverse symptoms may include the following:. burning. drying of skin. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Aspiration hazard. Harmful or fatal if aspirated into the lungs from ingestion or vomiting. Harmful if swallowed.

Delayed and immediate effects as well as chronic effects from short and long-term exposure None known.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
D-Limonene	-	= 5200 mg/kg Rat = 4400 mg/kg Rat = 5300 mg/kg Rat >5 g/kg Rabbit	4400 mg/kg (Rat)
Carbon Dioxide	-	-	-
Alkylphenol ethoxylate	-	= 1310 mg/kg Rat = 2590 mg/kg Rat 1780 µL/kg Rabbit	1310 mg/kg Rat 2590 mg/kg Rat = 1780 µL/kg Rabbit
Oxirane, [(2-methylphenoxy)methyl]-	>6.1 ppm Rat 1220 ppm Rat	= 4 g/kg Rat = 4300 mg/kg Rat >2200 mg/kg Rabbit >2000 mg/kg Rabbit	= 4 g/kg (Rat)
Ethylene oxide	800 ppm Rat	= 72 mg/kg Rat >5000 mg/kg Rabbit	72 mg/kg (Rat)

ATEmix (dermal) Not available

ATEmix (oral) Not available

ATEmix (inhalation-gas) Not available

ATEmix (inhalation-vapor) Not available

ATEmix (inhalation-dust/mist) Not available

Carcinogenicity

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
D-Limonene	-	Group 2A Group 3	Present	-
Carbon Dioxide	-	-	-	-
Alkylphenol ethoxylate	-	-	-	-

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA Carcinogens	NTP
Oxirane, [(2-methylphenoxy)methyl]-	-	-	-	-
Ethylene oxide	A2	Group 1 Group 2A	X	Known carcinogen

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
D-Limonene	-	-	-	-	-	-
Carbon Dioxide	-	-	-	-	-	-
Alkylphenol ethoxylate	-	-	-	-	-	-
Oxirane, [(2-methylphenoxy)methyl]-	-	-	-	-	-	-
Ethylene oxide	A2 - Suspected Human Carcinogen	IARC 1 ACGIH A2	ACGIH A2	ACGIH A2	ACGIH A2	C2 carcinogen

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish LC50
D-Limonene	-	0.619 - 0.796mg/L Pimephales promelas 96h = 35mg/L Oncorhynchus mykiss 96h
Carbon Dioxide	-	-
Alkylphenol ethoxylate	-	-
Oxirane, [(2-methylphenoxy)methyl]-	-	2.8 - 5.1mg/L Oncorhynchus mykiss 96h
Ethylene oxide	-	73 - 96mg/L Pimephales promelas 96h

Persistence and degradability Not available.

Bioaccumulation Not available

Chemical name	CAS-No	Partition coefficient (log Kow)	Bioconcentration factor (BCF)
D-Limonene 5989-27-5	5989-27-5	4.38 at 37 °C [OECD Guideline 117] (at pH 7.2, ECHA_API)	-
Carbon Dioxide 124-38-9	124-38-9	-	no bioaccumulation
Alkylphenol ethoxylate 127087-87-0	127087-87-0	5.669 at 25 °C [OECD Guideline 117] (at pH 7.5, ECHA_API) 3.7 at 25 °C [OECD Guideline 117] (ECHA_API)	-
Oxirane, [(2-methylphenoxy)methyl]- 2210-79-9	2210-79-9	2.5 at 21 °C [OECD Guideline 107] (ECHA_API)	-
Ethylene oxide 75-21-8	75-21-8	-0.3 at 25 °C [OECD Guideline 107] (at pH 7, ECHA_API)	-

Mobility in soil Not available.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of in accordance with federal, state and local regulations.

Contaminated packaging Dispose in accordance with local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Marine pollutant	This product contains a chemical which is listed as a marine pollutant according to DOT.
Special Provisions	LTD QTY

TDG

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
Marine pollutant	This product contains a chemical which is listed as a marine pollutant according to TDG.
Special Provisions	LTD QTY

IATA

ID-No	UN1950
Proper shipping name	Aerosols, flammable
Hazard Class(es)	2.1
Special Provisions	LTD QTY

IMDG/IMO

ID-No	UN1950
Proper shipping name	Aerosols
Hazard Class(es)	2.1
EmS No	2-13
Marine pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO
Special Provisions	LTD QTY

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
D-Limonene	5989-27-5	X	X	X
Carbon Dioxide	124-38-9	-	-	-
Alkylphenol ethoxylate	127087-87-0	-	-	-
Oxirane, [(2-methylphenoxy)methyl]-	2210-79-9	-	-	-
Ethylene oxide	75-21-8	-	-	-

Special Precautions Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency

situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
D-Limonene	5989-27-5	-	X	-
Carbon Dioxide	124-38-9	X	X	X
Alkylphenol ethoxylate	127087-87-0	-	-	-
Oxirane, [(2-methylphenoxy)methyl]-	2210-79-9	-	-	-
Ethylene oxide	75-21-8	X	X	X

California Prop. 65

WARNING: This product contains a chemical(s) known to the state of California to cause cancer, birth defects or other reproductive harm

Chemical name	CAS-No	California Prop. 65
D-Limonene	5989-27-5	-
Carbon Dioxide	124-38-9	-
Alkylphenol ethoxylate	127087-87-0	-
Oxirane, [(2-methylphenoxy)methyl]-	2210-79-9	-
Ethylene oxide	75-21-8	Carcinogen Developmental Female Reproductive Male Reproductive

U.S. Federal Regulations

US EPA SARA 313

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
D-Limonene	5989-27-5	-	-
Carbon Dioxide	124-38-9	-	-
Alkylphenol ethoxylate	127087-87-0	-	1.0 %
Oxirane, [(2-methylphenoxy)methyl]-	2210-79-9	-	-
Ethylene oxide	75-21-8	10 lb 4.54 kg	0.1 %

US EPA SARA 311/312 hazardous categorization

Acute Health Hazard
Chronic Health Hazard
Fire Hazard
Sudden Release of Pressure Hazard

TSCA and Canadian Inventories

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
D-Limonene	X	-	X	-
Carbon Dioxide	X	-	X	-

Chemical name	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification	DSL	NDSL
Alkylphenol ethoxylate	X	X	X	-
Oxirane, [(2-methylphenoxy)methyl]-	X	-	X	-
Ethylene oxide	X	-	X	X

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	Not available
Flammability	Not available
Instability	Not available

HMIS

Health	2
Flammability	4
Physical hazards	0
Personal protection	G

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by Regulatory Affairs

Issue date 22-May-2018

Revision date 07-Jul-2023

Revision note

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

SAFETY DATA SHEET

1. Identification

Product number	1000028739
Product identifier	**7216 NAPA PREMIUM START FLUID 11OZ DS**
Company information	NAPA Balkamp 2601 Stout Heritage Parkway Plainfield, IN 46168 United States
Company phone	General Assistance 1-317-754-3900
Emergency telephone US	1-866-836-8855
Emergency telephone outside US	1-952-852-4646
Version #	01
Recommended use	Not available.
Recommended restrictions	None known.

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
Health hazards	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Reproductive toxicity (fertility, the unborn child)	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
OSHA defined hazards	Not classified.	

Label elements

Signal word Danger

Hazard statement Extremely flammable aerosol. Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. Suspected of damaging the unborn child. Suspected of damaging fertility. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Do not breathe gas. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

Response If swallowed: Immediately call a poison center/doctor. Rinse mouth. Do NOT induce vomiting. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If exposed or concerned: Get medical advice/attention. Call a poison center/doctor if you feel unwell. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Storage Store in a well-ventilated place. Keep container tightly closed. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)	Toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Diethyl Ether		60-29-7	40 - 60
n-Hexane		110-54-3	10 - 20
Butylated Hydroxytoluene		128-37-0	2.5 - 10
Carbon Dioxide		124-38-9	2.5 - 10
n-Heptane		142-82-5	2.5 - 10
Cyclohexane		110-82-7	0.1 - 1
Toluene		108-88-3	0.1 - 1
Other components below reportable levels			20 - 40

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Alcohol resistant foam. Powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame. During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. In the event of fire and/or explosion do not breathe fumes.
General fire hazards	Extremely flammable aerosol.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe gas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Refer to attached safety data sheets and/or instructions for use. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Prevent entry into waterways, sewer, basements or confined areas. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not breathe gas. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

Store locked up. Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Carbon Dioxide (CAS 124-38-9)	PEL	9000 mg/m3
		5000 ppm
Cyclohexane (CAS 110-82-7)	PEL	1050 mg/m3
		300 ppm
Diethyl Ether (CAS 60-29-7)	PEL	1200 mg/m3
		400 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3
		500 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm

US. OSHA Table Z-2 (29 CFR 1910.1000)

Components	Type	Value
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Butylated Hydroxytoluene (CAS 128-37-0)	TWA	2 mg/m3	Inhalable fraction and vapor.
Carbon Dioxide (CAS 124-38-9)	STEL	30000 ppm	
	TWA	5000 ppm	
Cyclohexane (CAS 110-82-7)	TWA	100 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Diethyl Ether (CAS 60-29-7)	STEL	500 ppm	
	TWA	400 ppm	
n-Heptane (CAS 142-82-5)	STEL	500 ppm	
	TWA	400 ppm	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
Toluene (CAS 108-88-3)	TWA	20 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butylated Hydroxytoluene (CAS 128-37-0)	TWA	10 mg/m3
Carbon Dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	9000 mg/m3
		5000 ppm
Cyclohexane (CAS 110-82-7)	TWA	1050 mg/m3
		300 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3
		440 ppm
	TWA	350 mg/m3
		85 ppm
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3
		50 ppm
Toluene (CAS 108-88-3)	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedion, without hydrolysis	Urine	*
Toluene (CAS 108-88-3)	0.3 mg/g	o-Cresol, with hydrolysis	Creatinine in urine	*
	0.03 mg/l	Toluene	Urine	*
	0.02 mg/l	Toluene	Blood	*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

n-Hexane (CAS 110-54-3) Can be absorbed through the skin.
Toluene (CAS 108-88-3) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Toluene (CAS 108-88-3) Skin designation applies.

US ACGIH Threshold Limit Values: Skin designation

n-Hexane (CAS 110-54-3) Can be absorbed through the skin.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Observe any medical surveillance requirements. When using do not smoke. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Gas.
Form	Aerosol.
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	-109.3 °F (-78.5 °C) estimated
Flash point	-19.2 °F (-28.5 °C) estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.2 % estimated
Flammability limit - upper (%)	7.1 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	564.8 °F (296 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	0.375 estimated

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Causes skin irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Harmful if swallowed. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Narcotic effects.

Components	Species	Test Results
Butylated Hydroxytoluene (CAS 128-37-0)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
		> 2000 mg/kg, 4 wk (3 x/wk)
Oral		
LD50	Mouse	2000 mg/kg
	Rat	> 2930 mg/kg
Cyclohexane (CAS 110-82-7)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 32880 mg/m3, 4 Hours
		> 5540 ppm, 4 Hours
Oral		
LD50	Rabbit	> 5000 mg/kg
	Rat	> 5000 mg/kg
Diethyl Ether (CAS 60-29-7)		
Acute		
Dermal		
LD50	Rabbit	> 20000 mg/kg, 24 Hours
Inhalation		
LC50	Mouse	31300 ppm, 90 Minutes
	Rat	32000 ppm, 4 Hours
Oral		
LD50	Rat	1200 mg/kg
n-Heptane (CAS 142-82-5)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 29.29 mg/l, 4 Hours

Components	Species	Test Results
Oral		
LD50	Rat	> 5000 mg/kg
n-Hexane (CAS 110-54-3)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 4 Hours
		> 5 ml/kg, 4 Hours
Inhalation		
LC50	Rat	> 5000 ppm, 24 Hours
		> 31.86 mg/l
		73860 ppm, 4 Hours
Oral		
LD50	Rat	24 g/kg
		24 ml/kg
	Wistar rat	49 g/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, 24 Hours
Inhalation		
LC50	Mouse	6405 - 7436 ppm, 6 Hours
		5320 ppm, 8 Hours
	Rat	5879 - 6281 ppm, 6 Hours
		25.7 mg/l, 4 Hours
Oral		
LD50	Rat	> 5000 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Butylated Hydroxytoluene (CAS 128-37-0) 3 Not classifiable as to carcinogenicity to humans.
Toluene (CAS 108-88-3) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

Not available.

Reproductive toxicity Suspected of damaging fertility. Suspected of damaging the unborn child.

Specific target organ toxicity - single exposure May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Respiratory system. Skin. Central nervous system. Eyes. Peripheral nervous system. May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects May cause damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Butylated Hydroxytoluene (CAS 128-37-0)			
Aquatic			
Algae	IC50	Algae	6 mg/L, 72 Hours
Crustacea	EC50	Water flea (Daphnia pulex)	1.44 mg/l, 48 hours
Cyclohexane (CAS 110-82-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	23.03 - 42.07 mg/l, 96 hours
Diethyl Ether (CAS 60-29-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2560 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
Fish	LC50	Mozambique tilapia (Tilapia mossambica)	375 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours
Toluene (CAS 108-88-3)			
Aquatic			
Algae	IC50	Algae	433.0001 mg/L, 72 Hours
Crustacea	EC50	Daphnia	7.645 mg/L, 48 Hours
		Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Coho salmon,silver salmon (Oncorhynchus kisutch)	8.11 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)	
Cyclohexane	3.44
Diethyl Ether	0.89
n-Heptane	4.66
n-Hexane	3.9
Toluene	2.73

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.

14. Transport information

DOT

UN number	UN1950
UN proper shipping name	Aerosols, flammable, (each not exceeding 1 L capacity)
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Special provisions	N82
Packaging exceptions	306
Packaging non bulk	None
Packaging bulk	None

This product meets the exception requirements of section 173.306 as a limited quantity and may be shipped as a limited quantity. Until 12/31/2020, the "Consumer Commodity - ORM-D" marking may still be used in place of the new limited quantity diamond mark for packages of UN 1950 Aerosols. Limited quantities require the limited quantity diamond mark on cartons after 12/31/20 and may be used now in place of the "Consumer Commodity ORM-D" marking and both may be displayed concurrently.

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	Yes
ERG Code	10L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed with restrictions.
Cargo aircraft only	Allowed with restrictions.
Packaging Exceptions	LTD QTY

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	Yes
EmS	F-D, S-U
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling. Read safety instructions, SDS and emergency procedures before handling.
Packaging Exceptions	LTD QTY
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

DOT

IATA; IMDG

Marine pollutant

General information IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Cyclohexane (CAS 110-82-7)	Listed.
Diethyl Ether (CAS 60-29-7)	Listed.
n-Hexane (CAS 110-54-3)	Listed.
Toluene (CAS 108-88-3)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
n-Hexane	110-54-3	10 - 20
Cyclohexane	110-82-7	0.1 - 1
Toluene	108-88-3	0.1 - 1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

n-Hexane (CAS 110-54-3)
Toluene (CAS 108-88-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Diethyl Ether (CAS 60-29-7)

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Diethyl Ether (CAS 60-29-7)	6584
Toluene (CAS 108-88-3)	6594

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Diethyl Ether (CAS 60-29-7)	35 %WV
Toluene (CAS 108-88-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Diethyl Ether (CAS 60-29-7)	6584
Toluene (CAS 108-88-3)	594

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

n-Hexane (CAS 110-54-3)
Toluene (CAS 108-88-3)

US. Massachusetts RTK - Substance List

Butylated Hydroxytoluene (CAS 128-37-0)
Carbon Dioxide (CAS 124-38-9)
Cyclohexane (CAS 110-82-7)
Diethyl Ether (CAS 60-29-7)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
Toluene (CAS 108-88-3)

US. New Jersey Worker and Community Right-to-Know Act

Butylated Hydroxytoluene (CAS 128-37-0)
Carbon Dioxide (CAS 124-38-9)
Cyclohexane (CAS 110-82-7)
Diethyl Ether (CAS 60-29-7)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
Toluene (CAS 108-88-3)

US. Pennsylvania Worker and Community Right-to-Know Law

Butylated Hydroxytoluene (CAS 128-37-0)
Carbon Dioxide (CAS 124-38-9)
Cyclohexane (CAS 110-82-7)
Diethyl Ether (CAS 60-29-7)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
Toluene (CAS 108-88-3)

US. Rhode Island RTK

Cyclohexane (CAS 110-82-7)
Diethyl Ether (CAS 60-29-7)
n-Hexane (CAS 110-54-3)
Toluene (CAS 108-88-3)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Toluene (CAS 108-88-3) Listed: January 1, 1991

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 02-10-2016

Version # 01

Disclaimer The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision information Product and Company Identification: Alternate Trade Names

Revision Number: 007.0

Issue date: 12/27/2022

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Loctite(R) 277 Threadlocker High Strength**
Product type/use: Anaerobic Adhesive
Restriction of Use: None identified
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

IDH number: 231089
Item number: 21434
Region: United States
Contact information:
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING: CAUSES SKIN IRRITATION.
CAUSES SERIOUS EYE IRRITATION.
MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	2

PICTOGRAM(S)

Precautionary Statements

Prevention: Do not breathe vapors, mist, or spray. Wash affected area thoroughly after handling. Wear protective gloves, eye protection, and face protection.
Response: IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if you feel unwell. If skin irritation occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.
Storage: Not prescribed
Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Cumene hydroperoxide	80-15-9	1 - 5
Saccharin	81-07-2	1 - 5

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.

Unusual fire or explosion hazards: Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.

Hazardous combustion products: Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling: Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.

Storage: For safe storage, store at or below 38 °C (100.4 °F)
Keep in a cool, well ventilated area away from heat, sparks and open flame.
Keep container tightly closed until ready for use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Saccharin	None	None	None	None

Engineering controls: Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection:	Use NIOSH approved respirator if there is potential to exceed exposure limit(s).
Eye/face protection:	Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.
Skin protection:	Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Neoprene gloves. Butyl rubber gloves. Natural rubber gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Color:	Red
Odor:	Characteristic
Odor threshold:	Not available.
pH:	Not applicable, Product is non-polar/aprotic.
Vapor pressure:	< 5 mm hg (27 °C (80.6 °F)) < 0.1300000 mbar (20.0 °C (68°F)) < 300 mbar (50 °C (122°F)) no method
Boiling point/range:	> 150 °C (> 302°F)
Melting point/ range:	Not applicable, Product is a liquid
Specific gravity:	1.1
Vapor density:	> 1 20 °C
Flash point:	> 100.00 °C (> 212°F) Tagliabue closed cup; No flash point up to 100 °C165 °C (329°F) Cleveland open cup
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not available.
Flammability:	The product is not flammable.
Evaporation rate:	Not available.
Solubility in water:	Slight
Partition coefficient (n-octanol/water):	Not available.
VOC content:	0.71 %; 7.13 g/l (California SCAQMD Method 316B) (Estimated)
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of storage and use.
Hazardous reactions:	None under normal processing. Polymerization may occur at elevated temperature or in the presence of incompatible materials.
Hazardous decomposition products:	Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours. Phenolics.
Incompatible materials:	Strong acids and oxidizing agents. Copper. Rust. Iron. Oxygen scavengers. Strong alkalis. Reducing agents. Other polymerization initiators.
Reactivity:	Not available.
Conditions to avoid:	Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Inhalation of vapors or mists of the product may be irritating to the respiratory system.
Skin contact: Causes skin irritation.
Eye contact: Causes serious eye irritation.
Ingestion: May cause gastrointestinal tract irritation if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Cumene hydroperoxide	None	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Saccharin	Oral LD50 (Mouse) = 17 g/kg	No Target Organs

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Cumene hydroperoxide	No	No	No
Saccharin	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)
Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
DOT Hazardous Substance(s): alpha,alpha-Dimethylbenzylhydroperoxide

International Air Transportation (ICAO/IATA)
Proper shipping name: RQ, Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III

Water Transportation (IMO/IMDG)
Proper shipping name: RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
Additional information: IMDG-Code: Segregation group 1- Acids

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification: None above reporting de minimis

CERCLA/SARA Section 302 EHS: None above reporting de minimis.
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA Section 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Cumene hydroperoxide (CAS# 80-15-9). Saccharin (CAS# 81-07-2).
CERCLA Reportable quantity: Cumene hydroperoxide (CAS# 80-15-9) 10 lbs. (4.54 kg)

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: 3,8,9,11

Prepared by: Product Safety and Regulatory Affairs

Issue date: 12/27/2022

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Revision Number: 008.0

Issue date: 07/12/2022

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **Loctite Medium Strength Threadlocker**
Product type/use: Anaerobic Sealant
Restriction of Use: None identified
Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

IDH number: 504466
Item number: 37614
Region: United States
Contact information:
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING: CAUSES SKIN IRRITATION.
CAUSES SERIOUS EYE IRRITATION.
MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	2

PICTOGRAM(S)

Precautionary Statements

Prevention: Do not breathe dust or fumes. Wash affected area thoroughly after handling. Wear protective gloves, eye protection, and face protection.
Response: IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if you feel unwell. If skin irritation occurs: Get medical attention. If eye irritation persists: Get medical attention. Take off contaminated clothing.
Storage: Not prescribed
Disposal: Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Percentage*
Silica, amorphous, fumed, cryst.-free	112945-52-5	1 - 5
Polyglycol dioctanoate	18268-70-7	1 - 5
Saccharin	81-07-2	1 - 5
Ethylene glycol	107-21-1	1 - 5
Ethene, homopolymer	9002-88-4	1 - 5
Cumene hydroperoxide	80-15-9	1 - 5

Cumene	98-82-8	0.1 - 1

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin contact: Immediately flush skin with plenty of water (using soap, if available). Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Ingestion: DO NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Symptoms: See Section 11.

5. FIRE FIGHTING MEASURES

Extinguishing media: Water spray (fog), foam, dry chemical or carbon dioxide.

Special firefighting procedures: Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. In case of fire, keep containers cool with water spray.

Unusual fire or explosion hazards: Uncontrolled polymerization may occur at high temperatures resulting in explosions or rupture of storage containers.

Hazardous combustion products: Oxides of carbon. Oxides of nitrogen. Oxides of sulfur. Irritating organic vapours.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Remove all sources of ignition. Evacuate and ventilate spill area; dike spill to prevent entry into water system; wear full protective equipment during clean-up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Scrape up as much material as possible. Store in a partly filled, closed container until disposal. Refer to Section 8 "Exposure Controls / Personal Protection" prior to clean up.

7. HANDLING AND STORAGE

Handling: Use only with adequate ventilation. Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling. Keep container closed. Refer to Section 8.

Storage: For safe storage, store at or below 38 °C (100.4 °F)
Keep in a cool, well ventilated area away from heat, sparks and open flame.
Keep container tightly closed until ready for use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Silica, amorphous, fumed, cryst.-free	3 mg/m3 TWA Respirable particles. 10 mg/m3 TWA Inhalable particles.	20 MPPCF TWA 0.8 mg/m3 TWA 50 MPPCF TWA Total dust. 5 mg/m3 TWA Respirable fraction. 15 mg/m3 TWA Total dust. 15 MPPCF TWA Respirable fraction.	None	None
Polyglycol dioctanoate	None	None	None	None
Saccharin	None	None	None	None
Ethylene glycol	25 ppm TWA Vapor fraction 50 ppm STEL Vapor fraction 10 mg/m3 STEL Aerosol, inhalable.	None	None	None
Ethene, homopolymer	10 mg/m3 TWA Inhalable particles. 3 mg/m3 TWA Respirable particles.	15 MPPCF TWA Respirable fraction. 15 mg/m3 TWA Total dust. 50 MPPCF TWA Total dust. 5 mg/m3 TWA Respirable fraction. 5 mg/m3 PEL Respirable fraction. 15 mg/m3 PEL Total dust.	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Cumene	5 ppm TWA	50 ppm (245 mg/m3) PEL (SKIN)	None	None

Engineering controls: Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Eye/face protection: Safety goggles or safety glasses with side shields. Full face protection should be used if the potential for splashing or spraying of product exists. Safety showers and eye wash stations should be available.

Skin protection: Use chemical resistant, impermeable clothing including gloves and either an apron or body suit to prevent skin contact. Neoprene gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Wax
Color: Blue
Odor: Mild
Odor threshold: Not available.
pH: Not applicable
pH: Not applicable, Product is non-polar/aprotic.
Vapor pressure: < 5 mm hg (27 °C (80.6 °F))
Boiling point/range: > 149 °C (> 300.2 °F)
Melting point/ range: Not available.
Specific gravity: 1.1097
Vapor density: Not available.
Flash point: Product is a solid. Burn Rate: Greater than 7 cms (2.8 inches)
Flammable/Explosive limits - lower: Not available.
Flammable/Explosive limits - upper: Not available.

Autoignition temperature:	Not available.
Flammability:	Not applicable
Evaporation rate:	Not available.
Solubility in water:	Slight
Partition coefficient (n-octanol/water):	Not available.
VOC content:	2.90 %; 31.9 g/l
Viscosity:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions of storage and use.

Hazardous reactions: None under normal processing. Polymerization may occur at elevated temperature or in the presence of incompatible materials.

Hazardous decomposition products: Oxides of carbon. Oxides of sulfur. Oxides of nitrogen. Irritating organic vapours.

Incompatible materials: Strong oxidizing agents.

Reactivity: Not available.

Conditions to avoid: Elevated temperatures. Heat, flames, sparks and other sources of ignition. Store away from incompatible materials.

11. TOXICOLOGICAL INFORMATION

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation:	Inhalation of vapors or mists of the product may be irritating to the respiratory system.
Skin contact:	Causes skin irritation.
Eye contact:	Causes serious eye irritation.
Ingestion:	May cause gastrointestinal tract irritation if swallowed.

Hazardous Component(s)	LD50s and LC50s	Immediate and Delayed Health Effects
Silica, amorphous, fumed, cryst.-free	None	No Data
Polyglycol dioctanoate	None	Irritant
Saccharin	Oral LD50 (Mouse) = 17 g/kg	No Target Organs
Ethylene glycol	Oral LD50 (Rat) = 5.89 g/kg Oral LD50 (Mouse) = 14.6 g/kg Dermal LD50 (Rabbit) = 9,530 mg/kg	Blood, Bone Marrow, Central nervous system, Developmental, Eyes, Irritant, Kidney, Liver, Metabolic
Ethene, homopolymer	None	No Target Organs
Cumene hydroperoxide	None	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Cumene	Oral LD50 (Rat) = 2.91 g/kg Oral LD50 (Rat) = 1,400 mg/kg	Central nervous system, Irritant, Lung

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Silica, amorphous, fumed, cryst.-free	No	No	No
Polyglycol dioctanoate	No	No	No
Saccharin	No	No	No
Ethylene glycol	No	No	No
Ethene, homopolymer	No	No	No
Cumene hydroperoxide	No	No	No
Cumene	Reasonably Anticipated to be a Human Carcinogen.	Group 2B	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any package/configuration.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name:	RQ, Environmentally hazardous substance, solid, n.o.s.
Hazard class or division:	9
Identification number:	UN 3077
Packing group:	III
DOT Hazardous Substance(s):	alpha,alpha-Dimethylbenzylhydroperoxide

International Air Transportation (ICAO/IATA)

Proper shipping name:	RQ, Environmentally hazardous substance, solid, n.o.s.
Hazard class or division:	9
Identification number:	UN 3077
Packing group:	III

Water Transportation (IMO/IMDG)

Proper shipping name:	RQ, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard class or division:	9
Identification number:	UN 3077
Packing group:	III

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification:	None above reporting de minimis
CERCLA/SARA Section 302 EHS:	None above reporting de minimis.
CERCLA/SARA Section 311/312:	Immediate Health, Delayed Health
CERCLA/SARA Section 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Saccharin (CAS# 81-07-2). Ethylene glycol (CAS# 107-21-1). Cumene hydroperoxide (CAS# 80-15-9). Cumene (CAS# 98-82-8).
CERCLA Reportable quantity:	Cumene hydroperoxide (CAS# 80-15-9) 10 lbs. (4.54 kg)
California Proposition 65:	This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status:	Contains one or more components listed on the Non-Domestic Substances List. All other components are listed on or are exempt from listing on the Domestic Substances List. Components listed on the NDSL must be tracked by all Canadian Importers of Record as required by Environment Canada. They may be imported into Canada in limited quantities. Please contact Regulatory Affairs for additional details.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: 15

Prepared by: Product Safety and Regulatory Affairs

Issue date: 07/12/2022

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Prepared according to Global Harmonized System (GHS) standards

SECTION 1 CHEMICAL PRODUCT IDENTIFICATION

Lubrication Technologies, Inc.
900 Mendelssohn Avenue North
Golden Valley, MN 55427-4309
Tel: 763-545-0707

Product Trade Name: **LTI Endurance Super Tractor Fluid**

CAS Number:	Mixture
Synonyms/Other:	N/A
Part Number(s):	N/A
Recommended Use:	Tractor Hydraulic Fluid
Restrictions on Use:	Not Determined
Created Date:	5/7/2015
Preparation/Revision Date:	5/7/2015
Emergency Phone Number:	1-800-424-9300 (CHEMTREC)
SDS CODE:	12643

SECTION 2 HAZARD IDENTIFICATION

Appearance:	Clear, Amber
Odor:	Petroleum
Classification:	This material is not considered to be hazardous according to the Globally Harmonized System of Classification and Labelling Chemicals (GHS), Third Revised Edition.
Target Organs:	Not applicable.
Pictogram(s):	None required.
Signal Word:	None required.
Hazard Statement:	Not required.
Other Hazards:	Not determined.
Prevention:	None required.
Response:	None required.
Storage Procedures:	None required.
Disposal:	None required.
Other:	See section 11 for complete health hazard information.

SECTION 3 COMPOSITION OF INGREDIENTS

No Hazardous Substance(s) or Complex Substance(s) Required for Disclosure.

SECTION 4 FIRST AID MEASURES

Eye Contact:	If irritation occurs, cautiously rinse eyes with lukewarm, gently flowing water for 5 minutes, while holding the eyelids open. If eye irritation persists: Get medical
Skin Contact:	Call a doctor if you feel unwell.
Inhalation:	Get medical advice or attention if you feel unwell or are concerned.
Ingestion:	If you feel unwell or concerned: Get medical advice/attention. Rinse mouth. Do NOT induce vomiting. If vomiting occurs naturally, lie on your side, in the recovery position.
Other:	No additional information

SECTION 5 FIRE FIGHTING MEASURES

Flash Point:	222℃ by Cleveland Open Cup Tester.
Flammable limits:	Not determined.
Extinguishing media:	Use dry chemical, alcohol foam, all purpose AFFF or carbon dioxide to extinguish fire.
Special firefighting procedures:	DO NOT direct a solid stream of water or foam into hot, burning pools of liquid since this may cause frothing and increase fire intensity. Frothing can be violent and possibly endanger any firefighter standing too close to the burning liquid. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning material with water used for cooling purposes. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).
Unusual fire & explosion hazards:	Dense smoke may be generated while burning. Toxic fumes, gases or vapors may evolve on burning. High temperatures may create heavy flammable vapors that may settle along ground level and low spots to create an invisible fire hazard.
Byproducts of combustion:	Fires involving this product may release oxides of carbon, phosphorus, nitrogen and sulfur; reactive hydrocarbons and irritating vapors.
Autoignition temperature:	Not determined.
Explosion data:	Not determined. Care should always be exercised in dust/mist areas.
Other:	Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spill control procedures (land):	Immediately turn off or isolate any source of ignition (pilot lights, electrical equipment, flames, heaters, etc.). Evacuate area and ventilate. Personnel wearing proper protective equipment should contain spill immediately with inert materials (sand, earth, chemical spill pads of cotton) by forming dikes. Dikes should be placed to contain spill in a manner that will prevent material from entering sewers and waterways. Large spill, once contained, may be picked up using explosion proof, non-sparking vacuum pumps, shovels, or buckets, and disposed of in suitable containers for disposal. If a large spill occurs notify appropriate authorities. In case of road spill or accident contact Chem-Trec (800-424-9300).
Spill control procedures (water):	Try to contain large spills with floating booms to prevent spill from spreading. Remove from surface by skimming or with suitable adsorbents. If a large spill occurs notify appropriate authorities (normally the National Response Center or Coast Guard at 800-424-8802).
Waste disposal method:	Do not empty into drains. All disposals must comply with federal, state, and local regulations. The material, if spilled or discarded may be a regulated waste. Refer to state and local regulations. Department of Transportation (DOT) regulations may apply for transporting this material when spilled. See Section 14.
Other:	CAUTION - If spilled material is cleaned up using a regulated solvent, the resulting waste mixture will be regulated.

SECTION 7 HANDLING AND STORAGE

Handling procedures:	Keep containers closed when not in use. Do not transfer to unmarked containers. Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld, or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse. Handling temperatures should not exceed 60℃ (140℉) to min imize danger of burns. Open containers carefully in a well ventilated area or use appropriate respiratory protection. Wash thoroughly after handling.

Storage procedures: Store containers away from heat, sparks, open flame, or oxidizing materials. Extended storage at excessive temperatures may produce odorous and toxic fumes from product decomposition.

Additional information: No additional information.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits/standards for materials that can be formed when handling this product:

	OSHA TWA	OSHA STEL	ACGIH TWA
Contains highly refined petroleum oil	*5 mg/m³ (PEL)	*10 mg/m³	*5 mg/m³ (TLV)

* Exposure limits not defined. Limits used are for, "oil mist".

TWA – Time Weighted Average is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.
STEL – Short Term Exposure Limit is the employee's 15-minute time weighted average exposure which shall not be exceeded at any time during a work day unless another time limit is specified.

All base oils, including additive carriers, contain <3.0% DMSO extractable material.

Personal protection: Applicable mainly to persons in repeated contact situations such as packaging of product, service/maintenance, and cleanup/spill control personnel.

Respiratory protection: None required if ventilation is adequate. Otherwise a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. Where misting may occur, wear an MSHA/NIOSH approved (or equivalent) half-mask form dust/mist air purifying respirator.

Eye protection: Eye protection is strongly recommended. Wear safety glasses with side shields or vented/splash proof goggles (ANSI Z87.1 or approved equivalent).

Hand protection: Impervious, chemically resistant gloves such as neoprene or nitrile rubber to avoid skin sensitization and absorption.

Other protection: Use of an apron and overboots of chemically impervious materials such as neoprene or nitrile rubber is recommended based on level of activity and exposure. If handling hot material use insulated protective equipment. Launder soiled clothes. Properly dispose of contaminated leather articles and other materials which cannot be decontaminated.

Local control measures: Use adequate ventilation when working with material in an enclosed area. Mechanical methods such as fume hoods or area fans may be used to reduce localized vapor/mist areas. If vapor or mist is generated when the material handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure. Eyewash stations and showers should be available in areas where this material is used and stored.

Other: Consumption of food and drink should be avoided in work areas where product is present. Always wash hands and face with soap and water before eating, drinking or smoking.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, Amber
Odor: Petroleum
Odor threshold: Not determined.
pH: Not applicable.
Melting/Freezing point: Not determined.

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Initial boiling point:	Not determined.
Boiling range:	Not determined.
Flash point:	222℃.
Evaporation rate:	Not determined.
Flammability:	Not determined.
Upper flammable limit:	Not determined.
Lower flammable limit:	Not determined.
Vapor pressure:	Not determined.
Vapor density:	Not determined.
Relative density:	0.868 @ 15.6℃
Solubility:	Negligible in water, miscible in most petroleum solvents.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	59 cSt at 40℃.
Other	Not applicable.

SECTION 10 STABILITY AND REACTIVITY

Reactivity	
Chemical stability:	Material is chemically stable at room temperatures and pressure.
Hazardous polymerization:	Will not occur.
Conditions to avoid:	Avoid high temperatures and product contamination.
Incompatibility with other materials:	Avoid contact with acids and strong oxidizing materials.
Decomposition products:	Smoke, carbon monoxide, carbon dioxide, and other aldehydes of incomplete combustion. Oxides of carbon, nitrogen, and sulfur; reactive hydrocarbons and irritating vapors.
Other:	Not applicable.

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity (LD50) *See note at the bottom of the section

Oral:	>5000 mg/kg
Dermal:	>5000 mg/kg
Inhalation:	>20.0 mg/l
Skin irritation:	Non-irritant
Eye irritation:	Non-irritant
Dermal sensitization:	Not expected to have a sensitizing effect.
Respiratory sensitization:	Not expected to have a sensitizing effect.
Aspiration Hazard:	Not applicable
Chronic Toxicity	
Mutagenicity:	Not suspected of causing genetic defects
Carcinogenicity:	Not suspected of causing cancer.
Reproductive toxicity:	Not expected to have adverse effects on reproduction.
STOT-single exposure:	Not expected to have adverse effects.
STOT-repeated exposure:	Not expected to have long term adverse effects.
Other:	*All data in this section is based off calculations from Part 3 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 12 ECOLOGICAL INFORMATION

Environmental toxicity

Fish:	> 100 mg/l.
Invertebrates:	> 100 mg/l.
Aquatic plants:	> 100 mg/l.
Microorganism:	> 100 mg/l.
Persistence/Degradability:	This product is not expected to be readily biodegradable.
Bioaccumulation:	Not determined.
Mobility in soil:	Not determined.
Other:	All classifications are based on calculations in Part 4 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) utilizing information from the constituent components.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste disposal:	This product unadulterated by other materials can be classified as a non-hazardous waste. Depending on use, used product may be regulated. Dispose of in a licensed facility. Do not discharge product in to sewer system. Dispose of containers by crushing or puncturing, so as to prevent unauthorized use of used containers. Waste management should be in full compliance with federal, state, and local laws.
Other	The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this SDS incomplete, inaccurate or otherwise inappropriate.

SECTION 14 TRANSPORT INFORMATION

Land Transport (DOT):	Not Regulated for Land Transport
Proper Shipping Name:	Not applicable.
Land Transport (TDG):	Not Regulated for Land Transport
Proper Shipping Name:	Not applicable.
Sea Transport (IMDG):	Not Regulated for Sea Transport
Proper Shipping Name:	Not applicable.
Air Transport (IATA):	Not Regulated for Air Transport
Proper Shipping Name:	Not applicable.
Other:	Not applicable.

SECTION 15 REGULATORY INFORMATION

Federal Regulation

Clean water act/oil:	Under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Control Act of 1990, this material is considered an oil. Any spill or discharges that produce a visible sheen or film on surface of water, or in waterways, ditches, or sewers leading to surface water must be reported. Contact the National Response Center at 800-424-8802.
TSCA:	All components of this material are listed in the U.S. TSCA Inventory.
Other TSCA:	Not applicable.
SARA title III:	Section 302/304 extremely hazardous substances: None.

Section 311, 312 hazard categorization:

Acute (immediate health effects):	NO
Chronic (delayed health effects):	NO
Fire (hazard):	NO
Reactivity (hazard):	NO
Pressure (sudden release hazard):	NO

Section 313 toxic chemicals:
No components present are at or greater than the de minimis (minimum reportable) concentration requirements for reporting.

CERCLA: For stationary/moving sources – reportable quantity (due to): Not hazardous due to the petroleum exclusion.

State Regulations

Right-to-know Not determined.

Other: A release of this product, as supplied, is exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). However, releases may be reportable to the Nation Response Center under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5) - see head of Section 15. Failure to report may result in substantial civil and criminal penalties.

Recommend contacting the local authorities in the event of any type of spill to determine local reporting requirements and also to aid in the cleanup.

SECTION 16 OTHER INFORMATION

	NFPA 704	NPCA-HMIS	KEY
HEALTH:	1	1	0 = Minimal
FIRE:	1	1	1 = Slight
REACTIVITY:	0	0	2 = Moderate
SPECIFIC HAZARD:	None	N/A	3 = Serious
PROTECTION INDEX:	N/A	B	4 = Severe

Version: I

INFORMATION PROVIDED IN THIS SDS IS CONSIDERED ACCURATE AND RELIABLE BASED ON INFORMATION ISSUED FROM INTERNAL AND OUTSIDE SOURCES TO THE BEST OF THE AUTHORS' KNOWLEDGE. HOWEVER, THE AUTHOR'S MAKE NO REPRESENTATIONS, GUARANTEES OR WARRANTIES, EXPRESSED OR IMPLIED, OF MERCHANTABILITY OR FITNESS FOR THE PARTICULAR PURPOSE, REGARDING THE ACCURACY OF SUCH INFORMATION OR THE RESULT TO BE OBTAINED FROM THE USE THEREOF, OR AS TO THE SUFFICIENCY OF THE INFORMATION HEREIN PRESENTED. THE AUTHORS ASSUME NO RESPONSIBILITY FOR INJURY TO RECIPIENT OR TO THIRD PERSONS OR FOR ANY DAMAGE TO ANY PROPERTY AND RECIPIENT ASSUMES ALL SUCH RISKS.

Revisions / Comments: None.

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PEAK Dexron III/Mercon ATF

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 06/01/2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture

Product name : PEAK Dexron III/Mercon ATF

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Automatic transmission fluid

1.3. Details of the supplier of the safety data sheet

Old World Industries, LLC
3100 Sanders Road
Northbrook, IL 60062 - USA
T (847) 559-2000
www.oldworldind.com

1.4. Emergency telephone number

Emergency number : 800 424 9300 (United States); 00 1 703 527 3887 (International)
Chemtrec

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

Signal word (GHS-US) : None

Hazard statements (GHS-US) : None

Precautionary statements (GHS-US) : P273 - Avoid release to the environment.
P501 - Dispose of contents/container to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

Other hazards not contributing to the classification : Avoid prolonged or repeated contact with used fluid.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Get medical advice/attention if you feel unwell.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes, lifting lower and upper lids. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion : Do NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER/doctor.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : ON CONTINUOUS EXPOSURE/CONTACT: May cause respiratory irritation.

Symptoms/effects after skin contact : Contact during a long period may cause light irritation.

Symptoms/effects after eye contact : Direct contact with the eyes is likely to be irritating.

Symptoms/effects after ingestion : Ingestion is likely to be harmful or have adverse effects.

4.3. Indication of any immediate medical attention and special treatment needed

Aspiration during swallowing or vomiting may severely damage the lungs. If evacuation of stomach contents is necessary, use method least likely to cause aspiration.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Alcohol-resistant foam. Carbon dioxide. dry chemical.

Unsuitable extinguishing media : Do not use a heavy water stream. Will float and can be reignited on water surface.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable. Promotes combustion.

Explosion hazard : Not applicable.

Reactivity : No dangerous reactions known under normal conditions of use.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Fight fire with normal precautions from a reasonable distance. Under fire conditions, hazardous fumes will be present.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid contact with skin, eyes and clothing. Avoid breathing vapors, mist, spray.

6.1.1. For non-emergency personnel

Protective equipment : Use appropriate personal protection equipment (PPE).

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Stop leak if safe to do so. Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain released product. Plug the leak, cut off the supply. Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Any proposed use of this product in elevated-temperature processes should be thoroughly evaluated to assure that safe operating conditions are established and maintained. Practice good housekeeping - spillage can be slippery on smooth surface either wet or dry.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Store in a dry place. Store in a well-ventilated place. Keep cool. Keep container closed when not in use. Protect from sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not store near food, foodstuffs, drugs or potable water supplies.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PEAK Dexron III/Mercon ATF		
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³ Chemical name: Oil mist, mineral
ACGIH	ACGIH STEL (mg/m³)	10 mg/m³ Chemical name: Oil mist, mineral
OSHA	OSHA PEL (TWA) (mg/m³)	5 mg/m³ Chemical name: Oil mist, mineral
OSHA	Remark (OSHA)	Skin notation

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Protective goggles. Gloves. Insufficient ventilation: wear respiratory protection.

Hand protection:

Wear suitable gloves resistant to chemical penetration

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Color : Red
Odor : petroleum-like odor
Odor threshold : No data available
Relative evaporation rate (butylacetate=1) : No data available
Freezing point : No data available
Boiling point : 280 °C (536 °F)
Flash point : 193 °C (379 °F)
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available

Specific Gravity	:	0.87
Density	:	0.87 kg/l (7.26 lbs/gal)
Solubility	:	Water: Negligible
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	34.99 cSt @ 40 ºC
Viscosity, dynamic	:	No data available
Explosive properties	:	Not applicable.
Oxidizing properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

VOC content : 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Keep away from open flames, hot surfaces and sources of ignition.

10.5. Incompatible materials

Keep away from strong acids, strong bases and oxidizing agents.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. hydrocarbons.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	:	Not classified
Skin corrosion/irritation	:	Not classified
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified
Carcinogenicity	:	Not classified
Reproductive toxicity	:	Not classified
STOT-single exposure	:	Not classified
STOT-repeated exposure	:	Not classified
Aspiration hazard	:	Not classified
Symptoms/effects after inhalation	:	ON CONTINUOUS EXPOSURE/CONTACT: May cause respiratory irritation.
Symptoms/effects after skin contact	:	Contact during a long period may cause light irritation.
Symptoms/effects after eye contact	:	Direct contact with the eyes is likely to be irritating.
Symptoms/effects after ingestion	:	Ingestion is likely to be harmful or have adverse effects.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No additional information available.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the ozone layer : No known effect on the ozone layer

Effect on global warming : No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container, in a safe manner, to appropriate waste disposal facility, in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Refer to current TDG Canada for further Canadian regulations

ADR

Not regulated

Transport by sea

In accordance with IMDG / IMO

Not regulated

Air transport

In accordance with IATA / ICAO

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

PEAK Dexron III/Mercon ATF	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed

15.2. International regulations

CANADA

PEAK Dexron III/Mercon ATF	
WHMIS Classification	This SDS has been prepared according to the criteria of the Hazardous Products Regulations (HPR) (WHMIS 2015) and the SDS contains all of the information required by the HPR. Applicable GHS information is listed in section 2.2 of this SDS.

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substance(s) known to the state of California to cause cancer, developmental toxicity and/or reproductive toxicity

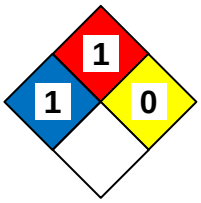
SECTION 16: Other information

Revision date : 06/01/2018

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



SDS GHS US (GHS HazCom 2012) OWI

Old World Industries, LLC makes no warranty, representation or guarantee as to the accuracy, sufficiency or completeness of the material set forth herein. It is the user's responsibility to determine the safety, toxicity and suitability of his own use, handling and disposal of this product. Since actual use by others is beyond our control, no warranty, expressed or implied, is made by Old World Industries, LLC as to the effects of such use, the results to be obtained or the safety and toxicity of this product, nor does Old World Industries, LLC assume liability arising out of the use by others of this product referred to herein. The data in this SDS relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Safety Data Sheet

Conforms to OSHA CFR 29 1910.1200 and aligns to the United Nations Globally Harmonized System
Conforms to The United Nations Regulation Globally Harmonized System
The Workplace Hazardous Materials Information System (WHMIS 2015)
Conforms to Regulation (EU) No 453/2010
Mexican Official Standard, NOM-018-STPS-2015, Harmonized System for the Identification and Communication of Hazards and Risks of Hazardous Chemicals in the Workplace
Conforms to the Australian Preparation of Safety Data Sheets for Hazardous Chemicals under section 274 of the Work Health and Safety Act

Section 1 - Chemical Product and Company Identification

1.1 Product Name: SEF 50:1 2 Cycle

1.2 VP Racing Fuels, Inc., 7124 Richter Road, Elmendorf, TX 78112, 210.635.7744

1.3 Recommended Use: Small Engine Fuel

1.4 RESTRICTIONS on USE **THIS PRODUCT IS FOR SMALL 2 CYCLE GASOLINE ENGINE USE ONLY!**

1.5 Emergency Response Number: CHEMTREC 800-424-9300

International Emergency Telephone Number: +1-703-527-3887

1.6 See Section 16.3 for CHEMTRC in Country Emergency Number

Section 2 - Hazards Identification

2.1 GHS HAZARD

Hazard Classes	Hazard Categories
Highly Flammable liquid/vapor	Category 2
Specific Target Organs toxicity single exposure	Category 3
Specific Target Organs repeated exposure	Category 1
Eye Irritation	Category 2A
Skin Irritation	Category 2
Acute Toxicity (Oral)	Category 4
Mutagenicity	Category 1B
Carcinogen	Category 1B
Reproductive Toxicity	Category 2
Aspiration Hazard	Category 1
Toxic to Aquatic Life Long Lasting Effects	Category 2

2.2 Signal Word: Danger

2.3 *Pictograms:*

Flame Health Hazard Irritant Aquatic Hazard

2.4 *Hazard Statements*

PHYSICAL HAZARDS:

H225: Highly flammable liquid and vapor

HEALTH HAZARDS:

H302: Harmful if swallowed
H304: May be fatal if swallowed and enter the airway
H315: Causes skin irritation
H319: Causes serious eye irritation
H336: May cause drowsiness or dizziness
H340: May cause genetic defects
H350: May cause cancer
H361: Suspected of damaging fertility or the unborn child
H372: Causes damage to organs through prolonged or repeated exposure

ENVIRONMENTAL HAZARDS:

H411: Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS:

P102: Keep out of reach of children
P201: Obtain special instructions before use. READ SDS BEFORE USE
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from sparks and open flames- No smoking
P240: Ground or bond container and receiving equipment
P241: Use explosion-proof equipment
P242 Use only non-sparking tools
P243 Take precautionary measures against static discharge
P260: Do not breathe vapors
P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in well ventilated area
P273: Avoid release to the environment

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P280: Wear protective gloves, clothing and eye protection

RESPONSE STATEMENTS:

P301 +310+ P331: IF SWALLOWED: USA Immediately call the National POISON CENTER at 800-222-1222. OUTSIDE USA Immediately call poison center or doctor.DO NOT induce vomiting
P303+P361+353: IF ON SKIN Take off immediately all contaminated clothing. Rinse skin with water
P304+340: IF INHALED. Remove to fresh air and keep comfortable for breathing
P305+P351: IF IN EYES rinse cautiously with water for at least 15 minutes
P308+P313: If exposed or concerned get medical attention
P362+P364: IF ON CLOTHING, take off contaminated clothing and wash it before reuse
P313+P332+P337: If skin or eye irritation persists get medical attention
H314: Get medical attention if you feel unwilling
P330: Rinse mouth
P370: In case of fire use foam, carbon dioxide, dry chemical to extinguish fire
P376: Stop leaks if safe to do so.

STORAGE STATEMENTS:

P403+P405+P235: Store in a well-ventilated place, store locked up and keep cool

DISPOSAL STATEMENTS:

P501: Dispose of content and/or container in accordance with local, regional, national or international regulations

2.5 Hazards not otherwise classified (HNOC) or not covered by GHS: Repeated exposure may cause skin dryness or cracking

Section 3 - Composition / Information on Ingredients

3.1

CAS#	EC#	Chemical Names	Percent	Other Identifiers
N/A	N/A	Blend of Aliphatic and Aromatic Hydrocarbons C-2 to C-20	97-98%	None
8012-95-1	232-384-2	2 Cycle Oil	2-3%	Mineral oil

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3.2 Blend

Chemical Names	CAS#	EC#
1,1,2-Trimethylethane	78-78-4	201-142-8
Phenylmethane	108-88-3	203-625-9
Alkylate Full Range	64741-64-6	265-066-7
Hydrotreated light distillate	64742-47-8	265-149-8

3.3 Trade Secret Provision and Chemical Concentration Disclosure: In accordance with OSHA and GHS Regulations we have withheld specific percentages of the chemicals in this mixture. The chemical concentrations have been disclosed as a blend and are applicable to the hazards as identified in this Safety Data Sheet

Section 4 - First Aid Measures

4.1 Eye: Contact with the eyes can cause serious irritation. Symptoms may include discomfort or pain and redness. Severe overexposure can result in swelling of the conjunctiva along with tissue damage.

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

4.2 Skin: Prolonged and repeated liquid contact can cause defatting and drying of the skin and can lead to irritation and/or dermatitis.

Skin: Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

4.3 Ingestion: Liquid ingestion can cause inebriation, headache, gastrointestinal pain, nausea, and vomiting leading to central nervous system depression. Aspiration of liquid into the lungs must be avoided as even small quantities in the lungs can produce chemical pneumonia, pulmonary edema and even death.

Ingestion: Do NOT induce vomiting. Get medical aid immediately.

4.4 Inhalation: Prolonged breathing of high vapor concentrations can produce headache, dizziness, nausea, and impaired vision. Excessive overexposure can cause central nervous system depression, loss of consciousness, liver damage and death resulting from respiratory failure.

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult and **IF TRAINED**, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation without protection.

44.5 ***After first aid, get appropriate paramedic, or community medical support.*** The severity of outcome following an exposure may be more related to the time between the exposure and treatment, rather than the amount of the exposure. Therefore, there is a need for rapid treatment of any exposure.

4.6 Note to Physicians: If you determine that a medical emergency exists and the specific chemical identity is necessary for emergency or first-aid treatment we will immediately disclose the specific chemical identity. Call CHEMTREC 800-424-9300 or +1-703-527-3887. We will require a written statement of need and confidentiality agreement, in accordance with OSHA's Trade Secret Regulations as soon as circumstances permit. In non-emergency situations, we will upon written request disclose a specific chemical identity

Section 5 - Fire-Fighting Measures

5.1 General Fire Hazards: Use water to cool containers exposed to fire.

5.2 Hazardous Combustion Products: Avoid fumes of burning product.

5.3 Extinguishing Media: Carbon dioxide, dry chemical, foam.

5.4 Fire Fighting Equipment/Instructions: Fire fighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. Fire fighters should avoid inhaling any combustion products.

Section 6 - Accidental Release Measures

6.1 Spill /Leak Procedures: Ventilate area highly flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition away from the spill.

6.2 Spills: Avoid direct contact with material. Stop leak if without risk. Move containers from spill area. Prevent entry into sewers or waterways. Contain and collect spillage with non-combustible, absorbent material such as sand, earth, vermiculite or diatomaceous earth and place in a container for disposal.

Section 7 - Handling and Storage

7.1 Handling Precautions: Wash hands and exposed skin thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid ingestion and contact with eyes, skin or clothing. Keep container tightly closed. Avoid inhalation.

7.2 Storage Requirements: Store in a tightly closed container in a cool, dry and well-ventilated area.

Section 8 - Exposure Controls / Personal Protection

8.1

Chemical Names	ACGIH- TLV	OSHA - PEL
Blend of Aliphatic and Aromatic Hydrocarbons C-2 to C-20	20 - 300 ppm TWA	20- 300 ppm TWA
2 Cycle Oil	5 mg/m3 TWA	5 mg/m3 TWA

8.2.
ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value.
OSHA = US Occupational Safety and Health Administration. PEL = Permissible Exposure Limits.
NOTE: TWA Means "TWA is the employee's average airborne exposure in any 8-hour work shift of a 40-hour work week which shall not be exceeded.

8.3 Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below TLV/PELs Local exhaust ventilation are preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

T-5

8.4 Contaminated Equipment: Separate contaminated work clothes from street clothes and launder before reuse. Remove this material from your shoes and clean personal protective equipment.

8.5 Personal protective equipment

8.5.1 Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

8.5.2 Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact with this product. Dispose of contaminated gloves after use. Select gloves tested to the **ANSI/ISEA 105-2011** or European EN374 Standard.
Full contact: Nitrile rubber
Splash contact: Nitrile rubber

8.5.3 Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

8.5.4 Skin and body protection

Impervious clothing, flame retardant antistatic protective clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

8.6 Protective Clothing Pictograms

Section 9 - Physical and Chemical Properties

9.1

Physical State: Liquid
Appearance: Blue
Odor: Aromatic Hydrocarbon Odor
Vapor Pressure: Not Available
Vapor Density (Air=1): 3.9
Specific Gravity (H2O=1,): 0.70
Relative Density: Not Available
Odor Threshold: Not Available
Flammability (solid, gas): Not applicable.
Evaporation rate: Not Available
Partition coefficient octanol/water: Not Available

Water Solubility: Insoluble
Melting point/freezing point: Not Available
Flash Point: -40°F (-40°C) close cup
Boiling Point / Range: 97.7 – 402.1°F (36.5 – 205.6°C)
Lower Explosive Limits (vol % in air): 1%
Upper Explosive Limits (vol % in air): 8%
Viscosity: Kinematic 0.46 cSt 104°F,40°C
Auto ignition Temperature: Not Available
Decomposition temperature: Not Available
pH: None

Section 10 - Stability and Reactivity

10.1 Stability: Stable under ordinary conditions of use and storage

10.2 Polymerization: Hazardous polymerization has not been reported

10.3 Chemical Incompatibilities: Strong oxidizing agents

10.4 Hazardous Decomposition Products: Combustion produces carbon monoxide and carbon dioxide

10.5 Conditions to Avoid: Avoid heat, sparks open flames and other ignition sources

Section 11- Toxicological Information

11.1 Product Name	**Results**	**Species**	**Dose**	**Exposure**
Blend of Aliphatic and Aromatic Hydrocarbons C-2 to C-20	Oral LD50	Rat	>300mg/kg <2000 mg/kg	None Listed
2 Cycle Oil	Oral LD50	Rat	5000 mg/kg	None Listed

11.1.1 OECD Guideline 401 Tests results found in the European Chemical Agency Data Base shows that components of this product to cause Oral Toxicity.

11.2 Route of Entry: Inhalation**,** Ingestion, Absorption, Skin and/or Eye Contact

11.3 Aspiration Hazard: European Chemical Agency Data Base shows that components of this product may be fatal if swallowed and enters airways.

11.4 Mutagenicity: OECD Guideline 476 Tests results found in the European Chemical Agency Data Base show components of this product to cause genetic defects

11.5 Skin Corrosion/Irritation: OECD Guideline 404 Tests results found in the European Chemical Agency Data Base shows that components of this product to cause skin irritation. Repeated exposure may cause skin dryness or cracking.

11.6 Serious Eye Damage/Irritation: OECD Guideline 405 Tests results found in the European Chemical Agency Data Base shows that components of this product to cause serious eye irritation.

11.8 Reproductive toxicity: OECD Guideline 421 Tests results found in the European Chemical Agency Data Base show components of this product to cause damage to fertility or the unborn child.

11.9 Skin Sensitisation OECD Guideline Tests results found in the European Chemical Agency Data Base show no components of this product to cause skin sensitively.

11.10 Respiratory Sensitisation OECD Guideline Tests results found in the European Chemical Agency Data Base show no components of this product to cause respiratory sensitively.

11.11 Specific Target Organ Toxicity (Single Exposure): European Chemical Agency Data Base shows that components of this product may cause damage to the central nervous system (CNS).

11.12 Specific Target Organ Toxicity (Repeated Exposure): Contains material which may cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract, skin, eyes, central nervous system (CNS).

11.13 Signs and Symptoms: Effects due to exposure may include: Headache, Dizziness, Drowsiness, Metabolic Acidosis, Coma, Seizures. Symptoms may be delayed

11.14 Carcinogenicity: OECD Guideline 453 Tests results found in the European Chemical Agency Data Base shows that components of this product to cause cancer.

Chemical Name	IARC	ACGIH	NTP	OSHA
Blend of Aliphatic and Aromatic Hydrocarbons C-2 to C-20	Not classifiable as a human carcinogen	Not classifiable as a human carcinogen	Not listed	Not listed
2 Cycle Oil	Not listed	Not listed	Not listed	Not listed

Section 12 - Ecological Information

12.1

Product Name	Results	Species	Exposure
Blend of Aliphatic and Aromatic Hydrocarbons C-2 to C-20	Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the environment		
2 Cycle Oil	LC50 100mg/l	Fish	96 hours

Toxicity: OECD Guideline 204 Test results found in the European Chemical Agency Data Base show components of this product to cause long-term toxicity to aquatic life.

12.2 Mobility: Floats on water

12.3 Persistence/degradability: Inconclusive technical data.

12.4 Bioaccumulation: Inconclusive technical data.

12.5 Other adverse effects: Inconclusive technical data.

Section 13 - Disposal Considerations

13.1 Disposal: DO NOT REUSE EMPTY CONTAINER! Container should be completely emptied prior to discard. Container with residues should be considered to be hazardous wastes. Contact a licensed contractor for detailed recommendations. Follow applicable federal, state, and local regulations.

Section 14 - Transport Information

14.1 DOT Transport Information

ID No.: UN 1203
Shipping Name: Gasoline
Hazard Class: 3
Packing Group: II
Label: Flammable
Placard: Flammable
Marking: MARINE POLLUTANT Alkylate Full Range when shipping ground greater than 119 gallons' single container or any quantity by water

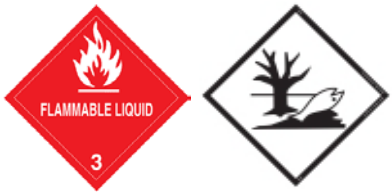
14.2 TDG Canadian Transport Information

ID No.: UN 1203
Shipping Name: Gasoline
Hazard Class: 3
Packing Group: II
Label: Flammable
Placard: Flammable
Marking: MARINE POLLUTANT Alkylate Full Range Not regulated if shipped by road or rail

14.3 IMDG Transport Information

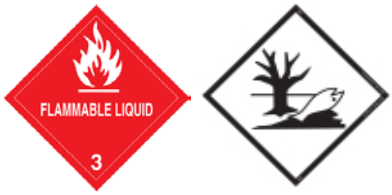
ID No.: UN 1203
Shipping Name: GASOLINE
Hazard Class: 3
Packing Group: II
Flash Point: (-40°C c.c.)
EmS Number: F-E, S-E
Label: Flammable
Placard: Flammable
Marking: Marine Pollutant Alkylate Full Range

14.4 ADR/RID Transport Information



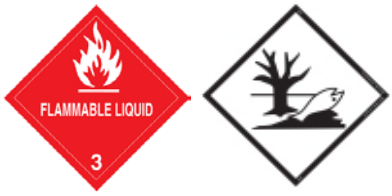
ID No.: UN 1203
Shipping Name: Gasoline
Hazard Class: 3
Packing Group: II
Label: Flammable
Placard: Flammable
Marking: Marine Pollutant Alkylate Full Range
Classification Code: F1

14.5 Australian Dangerous Goods Transport Information

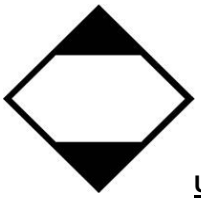


ID No.: ID No.: UN1203
Shipping Name: Gasoline
Hazard Class: 3
Packing Group: II
Label: Flammable
Placard: Flammable
Marking: Marine Pollutant Alkylate Full Range
Marking: MARINE POLLUTANT The marine pollutant mark is only applicable for packages containing more than 5 liters for liquids.

14.6 UN Dangerous Goods Transport Information

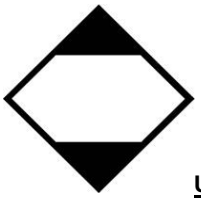


ID No.: ID No.: UN1203
Shipping Name: Gasoline
Hazard Class: 3
Packing Group: II
Label: Flammable
Placard: Flammable
Marking: Marine Pollutant Alkylate Full Range



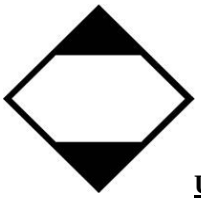
Use marking when shipping as a consumer commodity ground in the US

14.7 DOT Transport Limited Quantity/Consumer Commodity
Inner packaging not over
1.0L (0.3 gallons) net capacity each.
Outer Package not over 30kg (66lbs) each



Use marking when shipping as a limited quantity ground in the Canada

14.8 TDG Canada Transport Limited Quantity
Inner packaging not over
1.0L (0.3 gallons) net capacity each.
Outer Package not over 30kg (66lbs) each



Use marking when shipping as a limited quantity by vessel.

14.9 IMDG Transport Limited Quantity
Inner packaging not over
1.0L (0.3 gallons) net capacity each.
Outer Package not over 30kg (66lbs) each
ID No.: UN 1203
Shipping Name: GASOLINE LTD.QTY.
Hazard Class: 3
Packing Group: II
Flash Point: (-40˚ C c.c.)
EmS Number: F-E, S-E
NOTE: Because the MARINE POLLUTANT Naphtha (petroleum), full-range alkylate in the inner packaging of the combination packaging is a net quantity of 5 L or less. The MARINE POLLUTANT marking is not required

Section 15 - Regulatory Information

15.1 US Regulations

US. Toxic Substances Control Act: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CERCLA Hazardous Substances and corresponding RQs: Phenylmethane 1000lbs.

SARA Community Right-to-Know Program: Phenylmethane

Clean Water Act: Phenylmethane

Clean Air Act: 1,1,2-Trimethylethane

OSHA: All ingredients are regulated by 1910.1200

State Regulations
California prop. 65: Phenylmethane Reproductive
Chemicals on the following State Right to Know Lists:
Massachusetts: All components of this product are on the Massachusetts Inventory or are exempt from Inventory requirements.

New Jersey All components of this product are on the New Jersey inventory or are exempt from Inventory requirements.

Pennsylvania: All components of this product are on the Pennsylvania Inventory or are exempt from Inventory requirements.

15.2 Canadian Regulation:

The following substances are specified on the public Portion of the Domestic Substances List (DSL): All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

15.3 Europe Regulations

Europe inventory:
All substances contained in this product are listed on the EU directives or are not required to be listed.

International Regulations:
Australian Inventory of Chemical Substance: All components of this product are on the Inventory or are exempt from Inventory requirements

National Existing Chemical Inventory in Taiwan: All components of this product are on Inventory or are exempt from Inventory requirements

Philippine Inventory of Chemicals and Chemical Substances All components of this product are on the Inventory or are exempt from Inventory requirements

China Existing Chemical Inventory: All components of this product are on the Inventory or are exempt from Inventory requirements

Section 16 - Other Information

16.1 Disclaimer: The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above is furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use.

16.2 References: CHEMpendium data base of Canadian Centre for Occupational Health and Safety (CCOHS), JJ Keller on Line, European Chemical Agency Data Base and MSDS and SDS of chemicals in this mixture.

16.3 CHEMTREC in country emergency dial numbers:

Australia (Sydney) + (61)-290372994
China 4001-204937 must be call within China
Germany 0800-181-7059 must be call within Germany
Germany (Frankfurt) + (49)-6964350840
Russia 8-800-100-6346 Must be call within Russia

16.4 SDS Preparation Date 01/23/2016
SDS Previous Issue Date: None
SDS Revision Date: 05/16/2017 Sections 2,3,4,5,8,9,11,14
Prepared by SJC Compliance Education, Inc
16516 El Camino Real Suite 417
Houston, TX 77062

SAFETY DATA SHEET

Section 1. Identification

Product name Gasoline, All Grades, United States

SDS # 12631

Code 12631

Relevant identified uses of the substance or mixture and uses advised against

Product use USE AS MOTOR FUEL ONLY.

Supplier

BP Products North America Inc.
30 South Wacker Drive
Chicago, IL 60606
USA

EMERGENCY HEALTH INFORMATION:

1 (800) 447-8735

Outside the US: +1 703-527-3887 (CHEMTREC)

EMERGENCY SPILL INFORMATION:

1 (800) 424-9300 CHEMTREC (USA)

Section 2. Hazards identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

FLAMMABLE LIQUIDS - Category 1
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
GERM CELL MUTAGENICITY - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms

Signal word Danger

Hazard statements

Extremely flammable liquid and vapor.
May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye irritation.
May cause drowsiness or dizziness.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.

Precautionary statements

HOME

Section 2. Hazards identification

Prevention
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

Response
IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage
Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal
Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements
Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and receiving equipment. These alone may be insufficient to remove static electricity.

Hazards not otherwise classified
Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor may cause flash fire or explosion.

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Ingredient name	CAS number	%
Gasoline	Mixture	85 - 100
Ethanol	64-17-5	0 - 15
Contains:		
Benzene	71-43-2	0 - 3.8
Cyclohexane	110-82-7	0 - 1
Ethylbenzene	100-41-4	0 - 2
Toluene	108-88-3	4 - 11
1,2,4-Trimethylbenzene	95-63-6	0 - 3
xylene	1330-20-7	4 - 11
Naphthalene	91-20-3	0 - 0.5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

Skin contact
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Drench contaminated clothing with water before removing. This is necessary to avoid the risk of sparks from static electricity that could ignite contaminated clothing. Contaminated clothing is a fire hazard. Contaminated leather, particularly footwear, must be discarded. Clean shoes thoroughly before reuse. Get medical attention. If skin irritation or rash occurs: Get medical advice/ attention.

Inhalation
If inhaled, remove to fresh air. Get medical attention. If exposure to vapor, mists or fumes causes drowsiness, headache, blurred vision or irritation of the eyes, nose or throat, remove immediately to fresh air. Keep patient warm and at rest. If any symptoms persist obtain medical advice.

Section 4. First aid measures

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Aspiration hazard if swallowed. Can enter lungs and cause damage. Get medical attention immediately.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects. Product can be aspirated on swallowing or following regurgitation of stomach contents, and can cause severe and potentially fatal chemical pneumonitis, which will require urgent treatment. Because of the risk of aspiration, induction of vomiting and gastric lavage should be avoided. Gastric lavage should be undertaken only after endotracheal intubation. Monitor for cardiac dysrhythmias.

Specific treatments

No specific treatment.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.

Unsuitable extinguishing media

Do not use water jet. The use of a water jet may cause the fire to spread by splashing the burning product.

Specific hazards arising from the chemical

Extremely flammable liquid and vapor. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Vapors can form explosive mixtures with air. Vapors are heavier than air and can spread along the ground or float on water surfaces to remote ignition sources. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. This product is a poor conductor of electricity and can become electrostatically charged. If sufficient charge is accumulated, ignition of flammable mixtures can occur. To reduce potential for static discharge, use proper bonding and grounding procedures. This liquid may accumulate static electricity when filling properly grounded containers. Static accumulation may be significantly increased by the presence of small quantities of water or other contaminants. Liquid will float and may reignite on surface of water.

Hazardous combustion products

Combustion products may include the following:
carbon oxides (CO, CO_2) (carbon monoxide, carbon dioxide)

Special protective actions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling. Eliminate all ignition sources. Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained positive pressure breathing apparatus (SCBA).

For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

Environmental precautions

Liquid leaks generate large volumes of flammable vapor, heavier than air, which may travel to remote sources of ignition (eg. along drainage systems). Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other contaminated materials in suitable tanks or containers for recycle, recovery or safe disposal.

Methods and materials for containment and cleaning up

Small spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres.

Large spill

Eliminate all ignition sources. Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Dike spill area and do not allow product to reach sewage system and surface or ground water. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product. The method and equipment used must be in conformance with appropriate regulations and industry practice on explosive atmospheres. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Avoid contact of spilled material and runoff with soil and surface waterways. Handling operations that can promote accumulation of

Section 7. Handling and storage

static charges include but are not limited to: mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations. Restrict flow velocity according to API 2003 (2008), NFPA 77 (2007), and Laurence Britton, “Avoiding Static Ignition Hazards in Chemical Operations”. To reduce potential for static discharge, ensure that all equipment is properly grounded and bonded and meets appropriate electrical classification requirements.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. Contaminated work clothing should not be allowed out of the workplace. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/ containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Light hydrocarbon vapors can build up in the headspace of tanks. These can cause flammability/explosion hazards even at temperatures below the normal flash point (note: flash point must not be regarded as a reliable indicator of the potential flammability of vapor in tank headspaces). Tank headspaces should always be regarded as potentially flammable and care should be taken to avoid static electrical discharge and all ignition sources during filling, ullaging and sampling from storage tanks. Do not enter storage tanks. If entry to vessels is necessary, follow permit to work procedures. Entry into a confined space or poorly ventilated area contaminated with vapor, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. When the product is pumped (e.g. during filling, discharge or ullaging) and when sampling, there is a risk of static discharge. Ensure equipment used is properly earthed or bonded to the tank structure. Electrical equipment should not be used unless it is intrinsically safe (i.e. will not produce sparks). Explosive air/vapor mixtures may form at ambient temperature. If product comes into contact with hot surfaces, or leaks occur from pressurized fuel pipes, the vapor or mists generated will create a flammability or explosion hazard. Product contaminated rags, paper or material used to absorb spillages, represent a fire hazard, and should not be allowed to accumulate. Dispose of safely immediately after use.

Do not enter storage tanks without breathing apparatus unless the tank has been well ventilated and the tank atmosphere has been shown to contain hydrocarbon vapor concentrations of less than 1% of the lower flammability limit and an oxygen concentration of at least 20% volume.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Gasoline	**ACGIH TLV (United States).** TWA: 300 ppm 8 hours. Issued/Revised: 5/1996 TWA: 890 mg/m³ 8 hours. Issued/Revised: 5/1996 STEL: 500 ppm 15 minutes. Issued/Revised: 5/1996 STEL: 1480 mg/m³ 15 minutes. Issued/ Revised: 5/1996
Ethanol	**ACGIH TLV (United States).** STEL: 1000 ppm 15 minutes. Issued/Revised:

	11/2008 **OSHA PEL (United States).** TWA: 1900 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 1000 ppm 8 hours. Issued/Revised: 6/1993
Toluene	**OSHA PEL Z2 (United States).** AMP: 500 ppm 10 minutes. Issued/Revised: 6/1993 CEIL: 300 ppm Issued/Revised: 6/1993 TWA: 200 ppm 8 hours. Issued/Revised: 6/1993 **ACGIH TLV (United States). Ototoxicant.** TWA: 20 ppm 8 hours. Issued/Revised: 1/2021
xylene	**OSHA PEL (United States). [Xylenes]** TWA: 435 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 100 ppm 8 hours. Issued/Revised: 6/1993 **ACGIH TLV (United States). [p-xylene and mixtures containing p-xylene] Ototoxicant.** TWA: 20 ppm 8 hours. Issued/Revised: 1/2022
Benzene	**ACGIH TLV (United States). Absorbed through skin.** STEL: 8 mg/m³ 15 minutes. Issued/Revised: 5/1997 STEL: 2.5 ppm 15 minutes. Issued/Revised: 5/1997 TWA: 1.6 mg/m³ 8 hours. Issued/Revised: 5/1997 TWA: 0.5 ppm 8 hours. Issued/Revised: 5/1997 **OSHA PEL (United States).** STEL: 5 ppm 15 minutes. Issued/Revised: 6/1993 TWA: 1 ppm 8 hours. Issued/Revised: 6/1993 **OSHA PEL Z2 (United States).** AMP: 50 ppm 10 minutes. Issued/Revised: 6/1993 CEIL: 25 ppm Issued/Revised: 6/1993 TWA: 10 ppm 8 hours. Issued/Revised: 6/1993
1,2,4-Trimethylbenzene	**ACGIH TLV (United States).** TWA: 10 ppm 8 hours. Issued/Revised: 1/2022
Ethylbenzene	**ACGIH TLV (United States). Ototoxicant.** TWA: 20 ppm 8 hours. Issued/Revised: 1/2022 **OSHA PEL (United States).** TWA: 435 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 100 ppm 8 hours. Issued/Revised: 6/1993
cyclohexane	**ACGIH TLV (United States).** TWA: 100 ppm 8 hours. Issued/Revised: 1/2002

	OSHA PEL (United States). TWA: 1050 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 300 ppm 8 hours. Issued/Revised: 6/1993
naphthalene	**ACGIH TLV (United States). Absorbed through skin.** TWA: 52 mg/m³ 8 hours. Issued/Revised: 4/2014 TWA: 10 ppm 8 hours. Issued/Revised: 4/2014 **OSHA PEL (United States).** TWA: 50 mg/m³ 8 hours. Issued/Revised: 6/1993 TWA: 10 ppm 8 hours. Issued/Revised: 6/1993

While specific OELs for certain components may be shown in this section, other components may be present in any mist, vapor or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

Biological exposure indices

Ingredient name	Exposure indices
Toluene	**ACGIH BEI (United States, 1/2023)** BEI: 0.03 mg/l, toluene [in urine]. Sampling time: end of shift. BEI: 0.3 mg/g creatinine, o-cresol [in urine]. Sampling time: end of shift. BEI: 0.02 mg/l, toluene [in blood]. Sampling time: prior to last shift of workweek.
xylene	**ACGIH BEI (United States, 1/2023) [xylenes (technical or commercial grade)]** BEI: 1.5 g/g creatinine, methylhippuric acids [in urine]. Sampling time: end of shift.
Benzene	**ACGIH BEI (United States, 1/2023)** BEI: 25 µg/g creatinine, S-phenylmercapturic acid [in urine]. Sampling time: end of shift. BEI: 500 µg/g creatinine, t,t-muconic acid [in urine]. Sampling time: end of shift.
Ethylbenzene	**ACGIH BEI (United States, 1/2023)** BEI: 0.15 g/g creatinine, sum of mandelic acid and phenylglyoxylic acid [in urine]. Sampling time: end of shift.
cyclohexane	**ACGIH BEI (United States, 1/2023)** BEI: 50 mg/g creatinine, 1,2-cyclohexanediol [in urine]. Sampling time: end of shift at end of workweek.
naphthalene	**ACGIH BEI (United States, 1/2023)** BEI: Nonquantitative: Biological monitoring should be considered for this compound based on the review; however, a specific BEI® could not be determined due to insufficient data., 1-naphthol + 2-naphthol [(sample not specified)]. Sampling time: end of shift.

Section 8. Exposure controls/personal protection

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.
Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Chemical splash goggles.

Skin protection

Hand protection

Wear chemical resistant gloves.

Do not re-use gloves. Protective gloves must give suitable protection against mechanical risks (i.e. abrasion, blade cut and puncture). Protective gloves will deteriorate over time due to physical and chemical damage. Inspect and replace gloves on a regular basis. The frequency of replacement will depend upon the circumstances of use.

Recommended: Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals.

Body protection

Use of protective clothing is good industrial practice.
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.
Wear suitable protective clothing.
Footwear highly resistant to chemicals.
When there is a risk of ignition wear inherently fire resistant protective clothes and gloves.
When there is a risk of ignition from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static.
When the risk of skin exposure is high (from experience this could apply to the following tasks: cleaning work, maintenance and service, filling and transfer, taking samples and cleaning up spillages) then a chemical protective suit and boots will be required.
Work clothing / overalls should be laundered on a regular basis. Laundering of contaminated work clothing should only be done by professional cleaners who have been told about the hazards of the contamination. Always keep contaminated work clothing away from uncontaminated work clothing and uncontaminated personal clothes.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection

Use only with adequate ventilation. Do not breathe vapor or mist. If ventilation is inadequate, use a NIOSH-certified respirator with an organic vapor cartridge and P95 particulate filter.

If operating conditions cause high vapor concentrations or the TLV is exceeded, use NIOSH-certified, supplied-air respirator.

Use with adequate ventilation.
If there is a requirement for the use of a respiratory protective device, but the use of breathing apparatus (independent of ambient atmosphere) is not required, then a suitable filtering device must be worn.
The filter class must be suitable for the maximum contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state Clear, Liquid.

Color Colorless to light yellow.

Odor Gasoline

Odor threshold 0.025 ppm (Based on Gasoline)

pH Not applicable. Based on Solubility in water (Very slightly soluble in water)

Melting point/freezing point Not available.

Boiling point, initial boiling point, and boiling range 26.67 to 221.1°C (80 to 430°F)

Flash point Closed cup: -42.778°C (-45°F)

Evaporation rate Not available.

Flammability Not applicable. Based on - Physical state

Lower and upper explosion limit/flammability limit Lower: 1.3%
Upper: 7.6% (Estimated.)

Vapor pressure 48.3 to 103.4 kPa (361.97 to 775.66 mm Hg) [37.8°C (100°F)]

Relative vapor density 3 to 4 [Air = 1]

Density 750 kg/m³ (0.75 g/cm³)

Solubility(ies)

Media	Result
water	Very slightly soluble

Miscible with water No.

Partition coefficient: n-octanol/water >3

Auto-ignition temperature 257°C (494.6°F)

Decomposition temperature Not available.

Viscosity Kinematic: <20.5 mm^2/s (<20.5 cSt) at 40°C

Particle characteristics

Median particle size Not applicable.

Section 10. Stability and reactivity

Reactivity No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

Chemical stability The product is stable.

Section 10. Stability and reactivity

Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid

Keep away from heat, sparks and flame. Avoid all possible sources of ignition (spark or flame).

Incompatible materials

Reactive or incompatible with the following materials: oxidizing materials.
Chlorine and Fluorine

Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Species	Result	Exposure	Remarks
Gasoline	LC50 Inhalation Vapor	Rat	>5610 g/m³ analytical	4 hours	Based on Gasoline
	LC50 Inhalation Vapor	Rat	>7630 mg/m³ Nominal	4 hours	Based on Gasoline
	LD50 Dermal	Rabbit	>2000 mg/kg	-	Based on Gasoline
	LD50 Oral	Rat	>5000 mg/kg	-	Based on Gasoline
Ethanol	LC50 Inhalation Vapor	Rat	124.7 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapor	Rat	116.9 mg/l	4 hours	Based on Ethanol
	LC50 Inhalation Vapor	Rat	133.8 mg/l	4 hours	Based on Ethanol
	LD50 Oral	Rat	10470 mg/kg	-	Based on Ethanol

Conclusion/Summary Not classified. Based on available data, the classification criteria are not met.

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Gasoline	Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on Gasoline
	Rabbit	Skin - Irritant	-	-	-	-	Based on Gasoline
Ethanol	Rabbit	Eyes - Cornea opacity	-	-	-	-	Based on Ethanol
	Rabbit	Eyes - Iris lesion	-	-	-	-	Based on Ethanol
	Rabbit	Eyes - Irritant	-	-	-	-	Based on Ethanol
	Rabbit	Skin - Non-irritant to	-	-	-	-	Based on Ethanol

skin.

Skin Causes skin irritation.

Eyes Causes serious eye irritation.

Sensitizer

Product/ingredient name	Route of exposure	Species	Result	Remarks
Gasoline	skin	Guinea pig	Not sensitizing	Based on Gasoline

Skin Not classified. Based on available data, the classification criteria are not met.

Mutagenicity

Product/ingredient name	Test	Experiment	Result	Remarks
Gasoline	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Gasoline
	Equivalent to OECD 471	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Gasoline
	EPA OPPTS 870.5395	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline vapor condensate
	Equivalent to OECD 475	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Gasoline
Ethanol	Equivalent to OECD 476	Experiment: In vitro Subject: Mammal - species unspecified	Negative	Based on Ethanol
	Equivalent to OECD 473	Experiment: In vitro Subject: Non-mammalian species	Negative	Based on Ethanol
	Equivalent to OECD 478	Experiment: In vivo Subject: Unspecified Cell: Germ	Negative	Based on Ethanol

Conclusion/Summary May cause genetic defects.

Carcinogenicity

Product/ingredient name	Test authority / Test number		Species	Route	Exposure	Result	Remarks
Gasoline	Equivalent to OECD	451	Mouse	Dermal	102 weeks	Negative - Dermal - Unspecified	Based on Gasoline
	Equivalent to OECD	451	Rat	Inhalation	113 weeks	Negative - Inhalation - Unspecified	Based on Gasoline
Ethanol	Equivalent to OECD	-	Rat	Oral	104 weeks	Negative - Oral - Unspecified	Based on Ethanol
	EPA	OPPTS 870.4200	Mouse	Oral	105 weeks	Positive - Oral - Unspecified	Based on Ethanol

Conclusion/Summary May cause cancer.

Section 11. Toxicological information

Classification

Product/ingredient name	OSHA	IARC	NTP
Gasoline	-	2B	-
Toluene	-	3	-
xylene	-	3	-
Benzene	+	1	Known to be a human carcinogen.
Ethylbenzene	-	2B	-
naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Descriptors:

OSHA:
+ - Potential occupational carcinogen

IARC:
1 - Carcinogenic to human.
2A - Probable human carcinogen.
2B - Possible carcinogen to human.
3 - Not classifiable as a human carcinogen.
4 - Probably not a human carcinogen.

NTP:
Proven - Known to be human carcinogens.
Possible - Reasonably anticipated to be human carcinogens.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Result	Exposure
Gasoline	-	-	Negative	Rat	Inhalation	14 days
	-	Negative	-	Rat	Inhalation	2 generation
Ethanol	-	-	Negative	Rat	Inhalation	18 days
	-	Positive	-	Rat	Oral	2 generation

Conclusion/Summary

Development: Suspected of damaging the unborn child.
Fertility: Not classified. Based on available data, the classification criteria are not met.
Effects on or via lactation: Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Gasoline	Category 3	-	Narcotic effects
Toluene	Category 3	-	Narcotic effects
xylene	Category 3	-	Respiratory tract irritation
1,2,4-Trimethylbenzene	Category 3	-	Respiratory tract irritation
Ethylbenzene	Category 3	-	Respiratory tract irritation
cyclohexane	Category 3	-	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 2	-	hearing organs
Benzene	Category 1	-	blood system

Aspiration hazard

Name	Result
Gasoline	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
xylene	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
cyclohexane	ASPIRATION HAZARD - Category 1

Section 11. Toxicological information

Information on the likely routes of exposure Routes of entry anticipated: Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact Causes serious eye irritation.

Skin contact Causes skin irritation.

Inhalation Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Ingestion Irritating to mouth, throat and stomach. Aspiration hazard if swallowed -- harmful or fatal if liquid is aspirated into lungs.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact Adverse symptoms may include the following:
pain or irritation
watering
redness

Skin contact Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.

Potential delayed effects Not available.

Potential chronic health effects

General Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Carcinogenicity May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity May cause genetic defects.

Teratogenicity Suspected of damaging the unborn child.

Developmental effects No known significant effects or critical hazards.

Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Route	ATE value
Oral	>2000 mg/kg
Dermal	>2000 mg/kg
Inhalation (vapors)	>20 mg/l
Inhalation (dusts and mists)	>5 mg/l

Other information

Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Do not siphon by mouth.

Additional information

Gasoline - Excess exposure to vapors may produce headaches, dizziness, nausea, drowsiness, irritation of eyes, nose and throat and central nervous system depression. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product. Inhalation of unleaded gasoline vapors did not produce birth defects in laboratory animals. Ingestion of this material can cause gastrointestinal irritation and diarrhea.

In a long-term inhalation study of whole unleaded gasoline vapors, exposure-related kidney damage and kidney tumors were observed in male rats. Similar kidney effects were not seen in female rats or in mice. At the highest exposure level (2056 ppm), female mice had an increased incidence of liver tumors. Results from subsequent scientific studies have shown that a broad variety of chemicals cause these kidney effects only in the male rat. Further studies have discovered the means by which the physiology of the male rat uniquely predispose it to these effects. Consequently, the Risk Assessment Forum of the Environmental Protection Agency has recognized that these responses are not predictive of a human health hazard. The liver tumors that were increased in the high-dose female mice are likewise of questionable significance because of their high spontaneous occurrence even without chemical exposure and because the rate of their occurrence is accelerated by a broad spectrum of chemicals not commonly considered to be carcinogens (e.g., phenobarbital). Thus, the significance of the mouse liver tumor response in terms of human health is questionable.

Gasoline is a complex mixture of hydrocarbons and contains benzene (typically no more than 2 volume%), toluene, and xylene. Chronic exposure to high levels of benzene has been shown to cause cancer (leukemia) in humans and other adverse blood effects (anemia). Benzene is considered a human carcinogen by IARC, NTP and OSHA. Over exposure to xylene and toluene can cause irritation to the upper respiratory tract, headache and narcosis. Some liver damage and lung inflammation were seen in chronic studies on xylene in guinea pigs but not in rats.

Solvent "sniffing" (abuse) or intentional overexposure to vapors can produce serious central nervous system effects, including unconsciousness, and possibly death.

Gasoline: Additional toxicity information on components.

Overexposure to n-hexane may cause progressive and potentially irreversible damage to the peripheral nervous system, particularly in the arms and legs.
Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired color vision and decreased performance in some neurobehavioral tests.
Prolonged high level exposure to toluene or xylene has caused some degree of hearing loss in experimental animals.
Inhalation of very high concentrations of gasoline vapors and some of its components can result in cardiac sensitization and irregular heartbeats, leading to potentially fatal changes in heart rhythms. Injection of adrenaline-like agents may enhance this effect.

Benzene: Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, or excitation. Exposure to very high levels can result in unconsciousness and death.

Benzene: Long-term overexposure to benzene has been associated with certain types of leukemia in humans. In addition, the International Agency for Research on Cancer (IARC), the National Toxicology Program, and OSHA consider benzene to be a human carcinogen. Chronic exposures to high levels of benzene have been reported to cause adverse blood effects including anemia. Benzene exposure can occur by inhalation and absorption through the skin.
Inhalation and forced feeding studies of benzene in laboratory animals have produced a carcinogenic response in a variety of organs, including possibly leukemia, other adverse effects on the blood, chromosomal changes and some effects on the immune system. Exposure to benzene at levels up to 300 ppm did not produce birth defects in animal studies; however, exposure to higher dosage levels resulted in a reduction of body weight of the rat pups (fetotoxicity). Changes in the testes have been observed in mice exposed to benzene at 300 ppm, but reproductive performance was not altered in rats exposed to benzene at the same level. Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material.

Toluene: Aspiration of this material into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this material. Deliberate inhalation of high concentrations of toluene has been linked to damage of the brain, liver and kidney. Inhalation of very high concentrations of toluene, such as in cases of solvent abuse, has resulted in sudden death which may be a result of cardiac arrhythmia or central nervous system depression. Mental and/or growth retardation has been reported in children of women who deliberately inhale toluene during pregnancy (usually at thousands of ppm). Fetal developmental toxicity was observed when pregnant rats were exposed to toluene at levels of 1500 ppm. Maternal toxicity was also observed at this concentration. Prolonged, high level exposure to toluene in laboratory animals has resulted in hearing loss. Exposure studies in rats have resulted in adverse effects on the kidney, liver and central nervous system. Studies in occupationally exposed individuals indicate that toluene exposure has been associated with impaired color vision and decreased performance in some neurobehavioral tests. There are occupational studies which report an association between inhalation exposure to toluene and adverse effects on reproduction including spontaneous abortion. The methodology of these studies and the reliability of the results have been questioned. In a two-generation study in rats, inhalation of toluene at levels up to 2000 ppm did not produce adverse effects on fertility or reproductive performance.

Xylenes: Xylene has been reported to cause central nervous system effects at concentrations above the recommended exposure limit. Xylene vapor becomes irritating at relatively high levels. In one study, eye irritation was reported at exposures of 460 ppm and in one person at 230 ppm after 15 minutes. In another study, no one reported eyes, nose and throat irritation at mixed xylene exposures up to 230 ppm for 30 minutes. Dermal LD50 is expected to be greater than 10g/kg in rabbits, based on test results from similar materials.

Mixed xylenes caused slight hearing loss in rats exposed to 800 ppm in the air for 14 hours/day for six weeks. There is no information available for lower concentrations; however, similar chemicals that have caused these hearing effects at similar concentrations have not caused effects at lower concentrations.

Pregnant animals exposed to xylene or its isomers have been reported to cause development toxicity in rodents when exposed by inhalation. The developmental effects observed consisted of delayed development and minor skeletal variations, but no malformations. Because of the high exposure levels used in these studies, we do not believe that these results imply an increased risk of reproductive toxicity to workers exposed to xylene levels at or below the exposure limits.

Xylene and its isomers are not genotoxic.

Technical grade xylene has been tested in a National Toxicology Program carcinogenicity study in rats and mice dosed orally for two years. There was no evidence of carcinogenicity.

Ethylbenzene: The National Toxicology Program (NTP) conducted a 13-week inhalation study with male and female rats and mice at exposure concentrations ranging from 100 to 1000 ppm ethylbenzene. No rats or mice died during the study. Kidney, liver, and lung

Section 11. Toxicological information

weights were increased in the exposed rats, while weight increases were observed only in the livers of exposed mice. Treatment-related histopathologic changes were not observed in any tissues of rats and mice.
NTP also exposed male and female rats and mice by inhalation to 0, 75, 250, or 750 ppm ethylbenzene for 2 years. There was a statistically significant increase in the number of kidney tumors in male and female rats at 750 ppm. There were also increased incidences of lung tumors in male mice and liver tumors in female mice that were statistically significant at 750 ppm. Except for the male rat kidney tumors, the incidence of the tumors were within the range observed for non-exposed animals from other studies conducted by NTP. The significance of these findings to humans is unknown. Ethylbenzene is not genotoxic. The International Agency for Research on Cancer (IARC) has evaluated ethylbenzene and found it to be possibly carcinogenic to humans (Group 2B).

Ethylbenzene is not genotoxic.

This product contains trimethylbenzenes. These compounds cause irritation to the eyes, nose and respiratory tract. Repeated dermal exposure can defat and irritate the skin. Inhalation may cause dizziness and drowsiness. Studies in laboratory animals with mixtures of C9 aromatic hydrocarbons produced adverse effects on development such as increased fetal mortality, reduced fetal weight, and delayed ossification at high exposure concentrations. Effects were reduced if exposure was terminated prior to delivery. There was no evidence of reproductive toxicity.

Naphthalene has been reported to cause developmental toxicity in mice after oral exposure to relatively high dose levels, but developmental toxicity was not observed in NTP (National Toxicology Program) sponsored studies in rats and rabbits. Ingestion or inhalation of naphthalene can result in hemolysis and other blood abnormalities, and individuals (and infants) deficient in glucose-6-phosphate dehydrogenase may be especially susceptible to these effects. Inhalation of naphthalene may cause headache and nausea. Airborne exposure can result in eye irritation. Naphthalene exposure has been associated with cataracts in animals and humans.

Ethanol - Human data: In humans excessive consumption of alcoholic beverages during pregnancy is associated with the induction of Fetal Alcohol Syndrome in the offspring. Reduced birth weight and physical and mental defects occur. There is no evidence that such effects might be caused by exposures other than direct ingestion of alcoholic drinks. In humans high lifetime consumption of alcoholic beverages can be associated with certain cancers and effects on the liver. There is no evidence that these can be caused by exposure other than direct ingestion of alcoholic drinks (IARC 1988).

Section 12. Ecological information

Toxicity

No testing has been performed by the manufacturer.

Product/ingredient name	Species	Test/Result	Exposure	Effects	Remarks
Gasoline	Micro-organism	Acute EC50 15.41 mg/l Nominal Fresh water	40 hours	growth inhibition	-
	Algae	Acute EL50 3.1 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Algae	Acute EL50 3.7 mg/l Nominal Fresh water	96 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute EL50 4.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on straight-run light gasoline
	Fish	Acute LL50 10 mg/l Nominal	96 hours	Mortality	Based on Naphtha

		Fresh water			(petroleum), isomerisation
	Fish	Acute LL50 8.2 mg/l Nominal Fresh water	96 hours	Mortality	Based on Naphtha (petroleum), light alkylate
	Algae	Acute NOELR 0.5 mg/l Nominal Fresh water	72 hours	(growth rate)	Based on Gasoline
	Daphnia	Acute NOELR 0.5 mg/l Nominal Fresh water	48 hours	Mobility	Based on Straight run gas oil
	Daphnia	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate
	Daphnia	Chronic EL50 >40 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate
	Fish	Chronic EL50 10 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species
	Fish	Chronic LL50 5.2 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed
	Daphnia	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on Naphtha (petroleum), light alkylate
	Daphnia	Chronic NOELR 16 mg/l Nominal Fresh water	21 days	Mobility	Based on Naphtha (petroleum), light alkylate
	Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	14 days	Mortality	Based on Naphtha (petroleum), light catalytic reformed
	Fish	Chronic NOELR 2.6 mg/l Nominal Fresh water	21 days	Reproduction	Based on: Naphtha (petroleum), light alkylate; read across between species
	soil, plants	Chronic PNEC >0.4 mg/kg	-	-	-
Ethanol	Algae	EC50 675 mg/l	4 days	-	Based on Ethanol
	Aquatic plants	EC50 4432 mg/l	7 days	-	Based on Ethanol
	Daphnia	Acute LC50 5012 mg/l	48 hours	-	Based on Ethanol

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Fish	Acute LC50 153 g/l	96 hours	-	Based on Ethanol
Fish	Acute LC50 14.2 g/l	96 hours	-	Based on Ethanol
Daphnia	Chronic LC50 2 mg/l	10 days	-	Based on Ethanol
Daphnia	Chronic LC50 9.6 mg/l	9 days	-	Based on Ethanol

Conclusion/Summary Toxic to aquatic life with long lasting effects.

Persistence and degradability

Expected to be biodegradable.

Product/ingredient name	Test	Result	Remarks
Ethanol	EPA	95 % - Readily - 15 days	Based on Ethanol
	EPA	84 % - Readily - 20 days	Based on Ethanol
	EPA	74 % - Readily - 5 days	Based on Ethanol
	EPA	74 % - Readily - 10 days	Based on Ethanol

Conclusion/Summary Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethylbenzene	-	-	Inherent

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition coefficient (K_{OC}) Not available.

Mobility Spillages may penetrate the soil causing ground water contamination.

Other adverse effects No known significant effects or critical hazards.

Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Toluene	108-88-3	Listed	U220
Xylene	1330-20-7	Listed	U239
Benzene (I,T)	71-43-2	Listed	U019
Cyclohexane (I)	110-82-7	Listed	U056

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	-	-	-	-
UN proper shipping name	See: Special precautions for user RQ (Benzene, xylene)	See: Special precautions for user	See: Special precautions for user. Marine pollutant	See: Special precautions for user
Transport hazard class(es)	3	3	3	3
Packing group	II	II	II	II
Environmental hazards	No.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	**Reportable quantity** 263.16 lbs / 119.47 kg [42.082 gal / 159.3 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules** F-E, S-E	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user

Proper classification to be determined at the time of shipment

Select UN number and Proper Shipping Name based on the ethanol content of the product:
Ethanol 0 - 10%: UN1203 GASOLINE
Ethanol >10 - 15%: UN3475 ETHANOL AND GASOLINE MIXTURE

Transport in bulk according to IMO instruments

Proper shipping name

MARPOL Annex 1 rules apply for bulk shipments by sea.
Category: gasoline and spirits

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) All components are active or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification

FLAMMABLE LIQUIDS - Category 1
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
GERM CELL MUTAGENICITY - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
ASPIRATION HAZARD - Category 1
HNOC - Static-accumulating flammable liquid

SARA 313

	Product name	CAS number	Concentration
Form R - Reporting requirements	Toluene	108-88-3	4 - 11
	xylene	1330-20-7	4 - 11
	Benzene	71-43-2	0 - 3.8
	1,2,4-Trimethylbenzene	95-63-6	0 - 3
	Ethylbenzene	100-41-4	0 - 2
	cyclohexane	110-82-7	0 - 1
	Naphthalene	91-20-3	0 - 0.5
Supplier notification	Toluene	108-88-3	4 - 11
	xylene	1330-20-7	4 - 11
	Benzene	71-43-2	0 - 3.8
	1,2,4-Trimethylbenzene	95-63-6	0 - 3
	Ethylbenzene	100-41-4	0 - 2
	cyclohexane	110-82-7	0 - 1
	Naphthalene	91-20-3	0 - 0.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts The following components are listed: ETHYL ALCOHOL; TOLUENE; XYLENE; BENZENE; PSEUDOCUMENE; ETHYL BENZENE; CYCLOHEXANE

New Jersey The following components are listed: ETHYL ALCOHOL; TOLUENE; XYLENES; BENZENE; PSEUDOCUMENE; ETHYL BENZENE; CYCLOHEXANE; NAPHTHALENE

Pennsylvania The following components are listed: GASOLINE; ETHANOL; BENZENE, METHYL-; BENZENE, DIMETHYL-; BENZENE; PSEUDOCUMENE; BENZENE, ETHYL-; CYCLOHEXANE

California Prop. 65 Other Prop 65 chemicals will result under certain conditions from the use of this material. For example, burning fuels produces combustion products including carbon monoxide, a Prop 65 reproductive toxin.

⚠ **WARNING**: This product can expose you to chemicals including Benzene, Benzene and Benzene, which are known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Gasoline, Ethylbenzene, Naphthalene, Ethylbenzene, cumene, Ethylbenzene, Ethylbenzene, cumene, Naphthalene, Naphthalene, Naphthalene, acetaldehyde, Furan, Propylene oxide and Styrene, which are known to the State of California to cause cancer, and Toluene, Toluene, Toluene and Toluene, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Other regulations

Australia inventory (AIIC) At least one component is not listed.

Canada inventory Not determined.

China inventory (IECSC) At least one component is not listed.

Japan inventory (CSCL) At least one component is not listed.

Section 15. Regulatory information

Korea inventory (KECI)	At least one component is not listed.
Philippines inventory (PICCS)	At least one component is not listed.
Taiwan Chemical Substances Inventory (TCSI)	At least one component is not listed.
REACH Status	For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

National Fire Protection Association (U.S.A.)

History

Date of issue/Date of revision	07/20/2024.
Date of previous issue	10/27/2022.
Prepared by	Product Stewardship
Key to abbreviations	ACGIH = American Conference of Industrial Hygienists ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor CAS Number = Chemical Abstracts Service Registry Number GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) OEL = Occupational Exposure Limit SDS = Safety Data Sheet STEL = Short term exposure limit TWA = Time weighted average UN = United Nations UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods. Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Fleetweld® 180
Product Size: 3/32" (2.4 mm)

Other means of identification
SDS number: 200000000572

Recommended use and restriction on use
Recommended use: SMAW (Shielded Metal Arc Welding)
Restrictions on use: Not known. Read this SDS before using this product.

Manufacturer/Importer/Supplier/Distributor Information

Company Name:	The Lincoln Electric Company
Address:	22801 Saint Clair Avenue Cleveland, Ohio 44117 USA
Telephone:	+1 (216) 481-8100
Contact Person:	Safety Data Sheet Questions: www.lincolnelectric.com/sds Arc Welding Safety Information: www.lincolnelectric.com/safety
Company Name:	The Lincoln Electric Company of Canada LP
Address:	179 Wicksteed Avenue Toronto, Ontario M4G 2B9 CANADA
Telephone:	+1 (416) 421-2600
Contact Person:	Safety Data Sheet Questions: www.lincolnelectric.com/sds Arc Welding Safety Information: www.lincolnelectric.com/safety

Emergency telephone number:

USA/Canada/Mexico	+1 (888) 609-1762
Americas/Europe	+1 (216) 383-8962
Asia Pacific	+1 (216) 383-8966
Middle East/Africa	+1 (216) 383-8969

3E Company Access Code: 333988

2. HAZARDS IDENTIFICATION

Classified according to the criteria of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS), The United States Occupational Safety and Health Administration's Hazard Communication Standard (29 CFR 1910.1200), Canada's Hazardous Product Regulations and Mexico's Harmonized System for the Identification and Communication of Hazards and Risks from Hazardous Chemicals in the Workplace.

Hazard Classification Not classified as hazardous according to applicable GHS hazard classification criteria.

Label Elements

Hazard Symbol: No symbol

Signal Word: No signal word.

Hazard Statement: Not applicable

Precautionary Not applicable

Statements:

Other hazards which do not result in GHS classification:

Electrical Shock can kill. If welding must be performed in damp locations or with wet clothing, on metal structures or when in cramped positions such as sitting, kneeling or lying, or if there is a high risk of unavoidable or accidental contact with work piece, use the following equipment: Semiautomatic DC Welder, DC Manual (Stick) Welder, or AC Welder with Reduced Voltage Control.

Arc rays can injure eyes and burn skin. Welding arc and sparks can ignite combustibles and flammable materials. Overexposure to welding fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product. Refer to Section 8.

Substance(s) formed under the conditions of use:

The welding fume produced from this welding electrode may contain the following constituent(s) and/or their complex metallic oxides as well as solid particles or other constituents from the consumables, base metal, or base metal coating not listed below

Chemical Identity	CAS-No.
Carbon dioxide	124-38-9
Carbon monoxide	630-08-0
Nitrogen dioxide	10102-44-0
Ozone	10028-15-6
Manganese	7439-96-5

3. COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Ingredients
Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Iron	7439-89-6	50 - <100%
Cellulose, pulp	65996-61-4	1 - <5%
Potassium silicate	1312-76-1	1 - <5%
Titanium dioxide	13463-67-7	1 - <5%
Manganese	7439-96-5	0.1 - <1%
Iron oxide	1309-37-1	0.1 - <1%
Limestone	1317-65-3	0.1 - <1%
Sodium silicate	1344-09-8	0.1 - <1%
Potassium carbonate	584-08-7	0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition Comments:

The term "Hazardous Ingredients" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a welding hazard. The product may contain additional non-hazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

4. FIRST AID MEASURES

Ingestion:

Unlikely due to form of product, except for granular materials. Avoid hand,

	clothing, food, and drink contact with metal fume or powder which can cause ingestion of particulate during hand to mouth activities such as drinking, eating, smoking, etc. If ingested, do not induce vomiting. Contact a poison control center. Unless the poison control center advises otherwise, wash out mouth thoroughly with water. If symptoms develop, seek medical attention at once.
Inhalation:	Move to fresh air if breathing is difficult. If breathing has stopped, perform artificial respiration and obtain medical assistance at once.
Skin Contact:	Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.
Eye contact:	Dust or fume from this product should be flushed from the eyes with copious amounts of clean, tepid water until transported to an emergency medical facility. Do not allow victim to rub or keep eyes tightly closed. Obtain medical assistance at once. Arc rays can injure eyes. If exposed to arc rays, move victim to dark room, remove contact lenses as necessary for treatment, cover eyes with a padded dressing and rest. Obtain medical assistance if symptoms persist.

Most important symptoms/effects, acute and delayed

Symptoms:	Short-term (acute) overexposure to fumes and gases from welding and allied processes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to fumes and gases from welding and allied processes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects. Refer to Section 11 for more information.
Hazards:	Welding and allied process hazards are complex and may include physical and health hazards such as but not limited to electric shock, physical strains, radiation burns (eye flash), thermal burns due to hot metal or spatter and potential health effects of overexposure to welding fume or dust. Refer to Section 11 for more information.

Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

General Fire Hazards:	As shipped, this product is nonflammable. However, welding arc and sparks can ignite combustibles and flammable products. Read and understand American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" and National Fire Protection Association NFPA 51B, "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" before using this product.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	As shipped, the product will not burn. In case of fire in the surroundings: use appropriate extinguishing agent.
Unsuitable extinguishing media:	Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Welding arc and sparks can ignite combustibles and flammable products.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Use standard firefighting procedures and consider the hazards of other involved materials.

Special protective equipment for fire-fighters: Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: If airborne dust and/or fume is present, use adequate engineering controls and, if needed, personal protection to prevent overexposure. Refer to recommendations in Section 8.

Methods and material for containment and cleaning up: Absorb with sand or other inert absorbent. Stop the flow of material, if this is without risk. Clean up spills immediately, observing precautions in the personal protective equipment in Section 8. Avoid generating dust. Prevent product from entering any drains, sewers or water sources. Refer to Section 13 for proper disposal.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. HANDLING AND STORAGE

Precautions for safe handling: Prevent formation of dust. Provide appropriate exhaust ventilation at places where dust is formed.

Read and understand the manufacturer's instruction and the precautionary label on the product. Refer to Lincoln Safety Publications at www.lincolnelectric.com/safety. See American National Standard Z49.1, "Safety In Welding, Cutting and Allied Processes" published by the American Welding Society, http://pubs.aws.org and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, www.gpo.gov.

Conditions for safe storage, including any incompatibilities: Store in closed original container in a dry place. Store in accordance with local/regional/national regulations. Store away from incompatible materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits: US

Chemical Identity	Type	Exposure Limit Values	Source
Titanium dioxide	TWA	10 mg/m3	US. ACGIH Threshold Limit Values (12 2010)
Titanium dioxide - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Manganese - Fume. - as Mn	Ceiling	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	REL	1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL	3 mg/m3	US. NIOSH: Pocket Guide to Chemical

			Hazards (2005)
Manganese - Inhalable fraction. - as Mn	TWA	0.1 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
Manganese - Respirable fraction. - as Mn	TWA	0.02 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
Iron oxide - Respirable fraction.	TWA	5 mg/m3	US. ACGIH Threshold Limit Values (12 2010)
Iron oxide - Fume.	PEL	10 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Iron oxide - Dust and fume. - as Fe	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Limestone - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Limestone - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Limestone - Respirable.	REL	5 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Limestone - Total	REL	10 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)

Occupational Exposure Limits: CANADA

Chemical Identity	Type	Exposure Limit Values	Source
Titanium dioxide	TWA	10 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide	TWA	10 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	8 HR ACL	10 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	20 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - as Mn	TWA	0.2 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	0.2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	8 HR ACL	0.2 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	0.6 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Manganese - Fume. - as Mn	TWA	1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the

			Work Environment) (12 2008)
Manganese - Dust. - as Mn	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Fume. - as Mn	STEL	3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Respirable fraction. - as Mn	TWA	0.02 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - Inhalable fraction. - as Mn	TWA	0.1 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - as Mn	TWA	0.2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Iron oxide - Respirable.	TWA	5 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Iron oxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Iron oxide - Dust. - as Fe	TWA	5 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Iron oxide - Fume. - as Fe	STEL	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Iron oxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Iron oxide - Fume. - as Fe	TWA	5 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Iron oxide - Respirable fraction.	TWA	5 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	TWA	5 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Iron oxide	8 HR ACL	10 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	20 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Iron oxide - Dust and fume. - as Fe	15 MIN ACL	10 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	8 HR ACL	5 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Iron oxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Iron oxide - Dust and fume. - as Fe	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Limestone	TWA	10 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)

Limestone - Total dust.	STEL	20 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Limestone - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Limestone	8 HR ACL	10 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	20 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Limestone - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)

Occupational Exposure Limits: MEXICO

Chemical Identity	Type	Exposure Limit Values	Source
Titanium dioxide	VLE-PPT	10 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)
Manganese - as Mn	VLE-PPT	0.2 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)
Iron oxide - Respirable fraction.	VLE-PPT	5 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)

Additional exposure limits under the conditions of use: US

Chemical Identity	Type	Exposure Limit Values		Source
Carbon dioxide	TWA	5,000 ppm		US. ACGIH Threshold Limit Values (12 2010)
	STEL	30,000 ppm		US. ACGIH Threshold Limit Values (12 2010)
	PEL	5,000 ppm	9,000 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	30,000 ppm	54,000 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	REL	5,000 ppm	9,000 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Carbon monoxide	TWA	25 ppm		US. ACGIH Threshold Limit Values (12 2010)
	PEL	50 ppm	55 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	REL	35 ppm	40 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	Ceil_Time	200 ppm	229 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Nitrogen dioxide	TWA	0.2 ppm		US. ACGIH Threshold Limit Values (02 2012)
	Ceiling	5 ppm	9 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	1 ppm	1.8 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Ozone	PEL	0.1 ppm	0.2 mg/m3	US. OSHA Table Z-1 Limits for Air

				Contaminants (29 CFR 1910.1000) (02 2006)
	Ceil_Time	0.1 ppm	0.2 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	TWA	0.05 ppm		US. ACGIH Threshold Limit Values (03 2014)
	TWA	0.20 ppm		US. ACGIH Threshold Limit Values (03 2014)
	TWA	0.10 ppm		US. ACGIH Threshold Limit Values (03 2014)
	TWA	0.08 ppm		US. ACGIH Threshold Limit Values (03 2014)
Manganese - Fume. - as Mn	Ceiling		5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	REL		1 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	STEL		3 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
Manganese - Inhalable fraction. - as Mn	TWA		0.1 mg/m3	US. ACGIH Threshold Limit Values (03 2014)
Manganese - Respirable fraction. - as Mn	TWA		0.02 mg/m3	US. ACGIH Threshold Limit Values (03 2014)

Additional exposure limits under the conditions of use: CANADA

Chemical Identity	Type	Exposure Limit Values		Source
Carbon dioxide	STEL	30,000 ppm	54,000 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	5,000 ppm	9,000 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	5,000 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	15,000 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	5,000 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	STEL	30,000 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	STEL	30,000 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	TWA	5,000 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	8 HR ACL	5,000 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	30,000 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	TWA	5,000 ppm	9,000 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	30,000 ppm	54,000 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Carbon monoxide	TWA	25 ppm	29 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)

	TWA	25 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	100 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	25 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
	TWA	25 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (07 2010)
	8 HR ACL	25 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	190 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	TWA	35 ppm	40 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	STEL	200 ppm	230 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Nitrogen dioxide	STEL	5 ppm	9.4 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	3 ppm	5.6 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	CEILING	1 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.2 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2012)
	STEL	5 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	TWA	3 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	8 HR ACL	3 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	5 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	TWA	3 ppm	5.6 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Ozone	STEL	0.3 ppm	0.6 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	0.1 ppm	0.2 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA	0.05 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.1 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational

				Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.08 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.2 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.1 ppm	0.2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (07 2010)
	STEL	0.3 ppm	0.6 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (07 2010)
	15 MIN ACL	0.15 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	8 HR ACL	0.05 ppm		Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	CEILING	0.1 ppm	0.2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
	TWA	0.20 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
	TWA	0.05 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
	TWA	0.08 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
	TWA	0.10 ppm		Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - as Mn	TWA		0.2 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	TWA		0.2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	8 HR ACL		0.2 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL		0.6 mg/m3	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Manganese - Fume. - as Mn	TWA		1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Dust. - as Mn	TWA		5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Fume. - as Mn	STEL		3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Manganese - Respirable fraction. - as Mn	TWA		0.02 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - Inhalable fraction. - as Mn	TWA		0.1 mg/m3	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2014)
Manganese - as Mn	TWA		0.2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)

Additional exposure limits under the conditions of use: MEXICO

Chemical Identity	Type	Exposure Limit Values	Source
Carbon dioxide	VLE-CT	30,000 ppm	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)
	VLE-PPT	5,000 ppm	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)
Carbon monoxide	VLE-PPT	25 ppm	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)
Nitrogen dioxide	VLE-PPT	0.2 ppm	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)
Ozone	VLE-P	0.1 ppm	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)
Manganese - as Mn	VLE-PPT	0.2 mg/m3	Mexico. OELs. (NOM-010-STPS-2014 Chemical Pollutants at the Workplace; Assessment and Control) (04 2014)

Appropriate Engineering Controls

Ventilation: Use enough ventilation, local exhaust at the arc, or both to keep the fumes and gases from the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes. **Keep exposure as low as possible.**

Individual protection measures, such as personal protective equipment

General information:

Exposure Guidelines: Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) are values published by the American Conference of Government Industrial Hygienists (ACGIH). ACGIH Statement of Positions Regarding the TLVs® and BEIs® states that the TLV-TWA should be used as a guide in the control of health hazards and should not be used to indicate a fine line between safe and dangerous exposures. See Section 10 for information on potential fume constituents of health interest. Threshold Limit Values are figures published by the American Conference of Government Industrial Hygienists.

Maximum Fume Exposure Guideline™ (MFEG)™ for this product (based on content of Manganese) is 0.7 mg/m3. This exposure guideline is calculated using the most conservative value of the ACGIH TLV or OSHA PEL for the stated substance. If your local applicable exposure limits are lower than the ACGIH TLV or OSHA PEL for any of the metallic substances listed in Section 2 or 3 of this SDS, you must take that into consideration before utilizing or applying this guideline.

Eye/face protection:

Wear helmet or use face shield with filter lens shade number 12 or darker for open arc processes – or follow the recommendations as specified in ANSI Z49.1, Section 4, based on your process and settings. No specific lens shade recommendation for submerged arc or electroslag processes. Shield others by providing appropriate screens and flash goggles.

Skin Protection

Hand Protection:

Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

Other:

Protective Clothing: Wear hand, head, and body protection which help to prevent injury from radiation, sparks and electrical shock. See Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Wear dry gloves free of holes or split seams.

	Train the welder not to permit electrically live parts or electrodes to contact skin . . . or clothing or gloves if they are wet. Insulate yourself from the work piece and ground using dry plywood, rubber mats or other dry insulation.
Respiratory Protection:	Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits.
Hygiene measures:	Do not eat, drink or smoke when using the product. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Determine the composition and quantity of fumes and gases to which workers are exposed by taking an air sample from inside the welder's helmet if worn or in the worker's breathing zone. Improve ventilation if exposures are not below limits. See ANSI/AWS F1.1, F1.2, F1.3 and F1.5, available from the American Welding Society, www.aws.org.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Steel rod with extruded flux coating.
Physical state:	Solid
Form:	Solid
Color:	No data available.
Odor:	No data available.
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Density:	No data available.
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. STABILITY AND REACTIVITY

Reactivity:	The product is non-reactive under normal conditions of use, storage and transport.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	None under normal conditions.
Conditions to avoid:	Avoid heat or contamination.
Incompatible Materials:	Strong acids. Strong oxidizing substances. Strong bases.
Hazardous Decomposition Products:	Fumes and gases from welding and allied processes cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the worker area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities.) When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 3, plus those from the base metal and coating, etc., as noted above. Reasonably expected fume constituents produced during arc welding include the oxides of iron, manganese and other metals present in the welding consumable or base metal. Hexavalent chromium compounds may be in the welding fume of consumables or base metals which contain chromium. Gaseous and particulate fluoride may be in the welding fume of consumables which contain fluoride. Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation:	Potential chronic health hazards related to the use of welding consumables are most applicable to the inhalation route of exposure. Refer to Inhalation statements in Section 11.
Skin Contact:	Arc rays can burn skin. Skin cancer has been reported.
Eye contact:	Arc rays can injure eyes.
Ingestion:	Health injuries from ingestion are not known or expected under normal use.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: Short-term (acute) overexposure to fumes and gases from welding and allied processes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema). Long-term (chronic) overexposure to fumes and gases from welding and allied processes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: Not classified

Specified substance(s):

Iron	LD 50 (Rat): 98.6 g/kg
Limestone	LD 50 (Rat): 6,450 mg/kg
Sodium silicate	LD 50 (Rat): 1.1 g/kg
Potassium carbonate	LD 50 (Rat): 1,900 mg/kg

Dermal

Product: Not classified

Specified substance(s):

Potassium carbonate	LD 50 (Rabbit): > 2,000 mg/kg

Inhalation

Product: Not classified

Specified substance(s):

Potassium carbonate	LC 50 (Rat, 4.5 h): > 4.96 mg/l

Repeated dose toxicity

Product: Not classified

Skin Corrosion/Irritation

Product: Not classified

Serious Eye Damage/Eye Irritation

Product: Not classified

Respiratory or Skin Sensitization

Product: Not classified

Carcinogenicity

Product: Arc rays: Skin cancer has been reported.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Titanium dioxide	Overall evaluation: 2B. Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: Not classified

In vivo

Product: Not classified

Reproductive toxicity
Product: Not classified

Specific Target Organ Toxicity - Single Exposure
Product: Not classified

Specific Target Organ Toxicity - Repeated Exposure
Product: Not classified

Aspiration Hazard
Product: Not classified
Other effects: Organic polymers may be used in the manufacture of various welding consumables. Overexposure to their decomposition byproducts may result in a condition known as polymer fume fever. Polymer fume fever usually occurs within 4 to 8 hours of exposure with the presentation of flu like symptoms, including mild pulmonary irritation with or without an increase in body temperature. Signs of exposure can include an increase in white blood cell count. Resolution of symptoms typically occurs quickly, usually not lasting longer than 48 hours.

Symptoms related to the physical, chemical and toxicological characteristics under the condition of use

Inhalation:
Specified substance(s):
Manganese — Overexposure to manganese fumes may affect the brain and central nervous system, resulting in poor coordination, difficulty speaking, and arm or leg tremor. This condition can be irreversible.

Additional toxicological Information under the conditions of use:

Acute toxicity
Inhalation
Specified substance(s):

Carbon dioxide	LC Lo (Human, 5 min): 90000 ppm
Carbon monoxide	LC 50 (Rat, 4 h): 1,300 mg/l
Nitrogen dioxide	LC 50 (Rat, 4 h): 88 ppm
Ozone	LC Lo (Human, 30 min): 50 ppm

Other effects:
Specified substance(s):

Carbon dioxide	Asphyxia
Carbon monoxide	Carboxyhemoglobinemia
Nitrogen dioxide	Lower respiratory tract irritation

12. ECOLOGICAL INFORMATION

Ecotoxicity
Acute hazards to the aquatic environment:
Fish
Product: Not classified
Specified substance(s):

Sodium silicate	LC 50 (Western mosquitofish (Gambusia affinis), 96 h): 1,800 mg/l
Potassium carbonate	LC 50 (Fathead minnow (Pimephales promelas), 96 h): < 750 mg/l

Aquatic Invertebrates
Product: Not classified

Specified substance(s):

Manganese	EC 50 (Water flea (Daphnia magna), 48 h): 40 mg/l
Sodium silicate	EC 50 (Water flea (Ceriodaphnia dubia), 48 h): 22.94 - 49.01 mg/l
Potassium carbonate	LC 50 (Water flea (Ceriodaphnia dubia), 48 h): 580 - 670 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: Not classified

Aquatic Invertebrates

Product: Not classified

Toxicity to Aquatic Plants

Product: Not classified

Persistence and Degradability

Biodegradation

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Mobility in soil: No data available.

13. DISPOSAL CONSIDERATIONS

General information: The generation of waste should be avoided or minimized whenever possible. When practical, recycle in an environmentally acceptable, regulatory compliant manner. Dispose of non-recyclable products in accordance with all applicable Federal, State, Provincial, and Local requirements.

Disposal instructions: Dispose of this material and its container to hazardous or special waste collection point.

Contaminated Packaging: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

14. TRANSPORT INFORMATION

DOT

UN Number:
UN Proper Shipping Name: NOT DG REGULATED
Transport Hazard Class(es)
Class: NR
Label(s): –
Packing Group: –
Marine Pollutant: No

IMDG

UN Number:
UN Proper Shipping Name: NOT DG REGULATED
Transport Hazard Class(es)
Class: NR
Label(s): –

EmS No.:

Packing Group:	–
Marine Pollutant:	No

IATA

UN Number:	
Proper Shipping Name:	NOT DG REGULATED
Transport Hazard Class(es):	
Class:	NR
Label(s):	–
Packing Group:	–
Marine Pollutant:	No
Cargo aircraft only:	Allowed.

TDG

UN Number:	
UN Proper Shipping Name:	NOT DG REGULATED
Transport Hazard Class(es)	
Class:	NR
Label(s):	–
Packing Group:	–
Marine Pollutant:	No

15. REGULATORY INFORMATION

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity	Reportable quantity
Manganese	Included in the regulation but with no data values. See regulation for further details.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Not listed.

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

Chemical Identity	Reportable quantity
Manganese	Included in the regulation but with no data values. See regulation for further details.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
Iron	10000 lbs
Cellulose, pulp	10000 lbs
Potassium silicate	10000 lbs
Titanium dioxide	10000 lbs
Manganese	10000 lbs
Iron oxide	10000 lbs

Limestone	10000 lbs
Sodium silicate	10000 lbs
Potassium carbonate	10000 lbs

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

Titanium dioxide	Carcinogenic.

WARNING: This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.)

US. New Jersey Worker and Community Right-to-Know Act
Chemical Identity
Titanium dioxide

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances
Chemical Identity
Titanium dioxide

US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

Canada Federal Regulations

List of Toxic Substances (CEPA, Schedule 1)
Not Regulated

Export Control List (CEPA 1999, Schedule 3)
Not Regulated

National Pollutant Release Inventory (NPRI)

Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements

NPRI PT5	Not Regulated

Canada. Canadian Environmental Protection Act (CEPA). National Pollutant Release Inventory (NPRI) (Parts 1-4)

NPRI	Not Regulated

Greenhouse Gases
Not Regulated

Controlled Drugs and Substances Act

CA CDSI	Not Regulated

CA CDSII	Not Regulated
CA CDSIII	Not Regulated
CA CDSIV	Not Regulated
CA CDSV	Not Regulated
CA CDSVII	Not Regulated
CA CDSVIII	Not Regulated

Precursor Control Regulations
Not Regulated

Mexico. Substances subject to reporting for the pollutant release and transfer registry (PRTR): not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	One or more components are not listed or are exempt from listing.
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	One or more components are not listed or are exempt from listing.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	One or more components are not listed or are exempt from listing.
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	One or more components are not listed or are exempt from listing.
Japan Pharmacopoeia Listing:	One or more components are not listed or are exempt from listing.
Mexico INSQ:	One or more components are not listed or are exempt from listing.
Ontario Inventory:	One or more components are not listed or are exempt from listing.
Taiwan Chemical Substance Inventory:	One or more components are not listed or are exempt from listing.

16. OTHER INFORMATION

Definitions:

The Maximum Fume Exposure Guideline™ (MFEG)™ is a guideline limit for total welding fume exposure for a specific consumable product which may be used by employers to manage worker exposure to welding fume where that product is used. The MFEG™ is an estimate of the level of total welding fume exposure for a given product above which the exposure limit for one of the fume constituents may be exceeded. The exposure limits referenced are the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV®) and the U.S. OSHA Permissible Exposure Limit (PEL) whichever limit is lower. If local applicable limits for substances listed in Section 2 or 3 of this SDS are lower than the TLV or PEL this must be taken into consideration before utilizing or applying this guideline. The MFEG™ never exceeds 5 mg/m³ which is the maximum recommended exposure limit for total welding fume. **The MFEG™ is intended to serve as a general guideline to assist in the management of workplace exposure to welding fume and does not replace the regular measurement and analysis of worker exposure to individual welding fume constituents in accordance with recommended industrial hygiene practice.**

Revision Date:	09/19/2017
Further Information:	Additional information is available by request.
Disclaimer:	The Lincoln Electric Company urges each end user and recipient of this SDS to study it carefully. See also www.lincolnelectric.com/safety. If necessary, consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product. This information is

believed to be accurate as of the revision date shown above. However, no warranty, expressed or implied, is given. Because the conditions or methods of use are beyond Lincoln Electric's control, we assume no liability resulting from the use of this product. Regulatory requirements are subject to change and may differ between various locations. Compliance with all applicable Federal, State, Provincial, and local laws and regulations remain the responsibility of the user.

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SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	Build Up LH, Self Hardening, Multipass 22, Railend 932, 1102, 1105
Product Type:	Coated Electrodes for Shielded Metal Arc Welding
Classification:	Not specified by AWS
Supplier:	Stoody Company, 5557 Nashville Road, Bowling Green, KY 42101, USA
Telephone No.:	(270) 781-9777 or (800) 369-4864
Emergency No.:	(800) 424-9300 (CHEMETREC), CHEMTREC (International): +1 703-527-3887
Website:	www.stoody.com
Date:	April 14, 2016

2. HAZARDS IDENTIFICATION

Emergency Overview: This product is not considered hazardous as shipped. Gloves should be worn when handling to prevent contaminating hands with product dust. Avoid inhalation of dust and eye contact with this product. When this product is used with a welding machine in an arc welding process, the most important hazards are radiation, welding fumes, heat, and electrical shock.

Hazard Classifications: Not classifiable according to GHS.

Hazardous Decomposition Products – Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedure, and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coating on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of work area, the quality and the amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and from the ingredients listed in Section 3. Fumes and gas decomposition products that evolve from welding activity and not the ingredients in the electrode, are important. The concentration of a given fume or gas component may decrease or increase by many times the original concentration in the electrode. Also, new compounds not in the electrodes may form from welding activity. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 3, plus those from the base metal coatings, etc. as noted above.

Reasonably expected decomposition products from normal use of these products include a complex set of oxides of materials listed in Section 3, as well as carbon monoxide, carbon dioxide, ozone and nitrogen oxides**. The exposure limits for exposure to chromium, nickel, manganese, cobalt, and/or hexavalent chrome may be reached before the general limit for welding fumes (5 mg/m^3) is reached.**

The recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample inside the welder's helmet (if worn) or in the worker's breathing zone. See ANSI/AWS F1.1 *"Method for Sampling Airborne Particles Generated by Welding and Allied Processes"* and *"Characterization of Arc Welding Fume"* available from the American Welding Society, 8669 NW 36 #130, Miami, FL 33166.

3. COMPOSITION/INFORMATION ON INGREDIENTS

	Mn	Si	Cr	Mo	W	V	$CaCO_3$	TiO_2	Fe	Fluorides
Build Up LH, Railend 932	0.3 – 2	0.3 – 2	1 – 8	0.5 – 1.5	--	--	<10	<20	Balance	<10
Self Hardening, Multipass 22	0.3 – 2	0.3 – 2	1 – 8	--	--	--	<10	<20	Balance	<10
1102, 1105	0.5 – 2	0.2 – 1	2 – 8	0.3 – 2	0 – 1.5	0 – 1.5	<10	<20	Balance	<10
CAS No.	7439-96-5	7440-21-3	7440-47-3	7439-98-7	7440-33-7	1314-62-1	1317-65-3	13463-67-7	1309-37-1	7789-75-5
OSHA PEL (mg/m^3)	(C) 5 (fume)	5 (resp) 15 (dust)	0.5 0.5 $\mu g/m^3$ (Cr VI)	15 (dust)	--	(C) 0.1 (V_2O_5 fume) (C) 0.5 (V_2O_5 resp)	5 (resp) 15 (dust)	15 (dust)	10 (fume)	2.5
ACGIH TLV (mg/m^3)	0.2 (resp) 0.1 (inhalable)	--	--	10 (inhalable) 3 (resp)	10 (soluble) 5 (insoluble)	0.05 (inhalable)	--	10	5 (resp)	2.5
NIOSH REL (mg/m^3)	1 (dust) STEL 3 IDLH 500	10 (dust) 5 (resp)	0.5 (dust) IDLH 250	--	5 (dust) STEL 10	(C) 0.05 (fume & dust) (15 mins.) IDLH 35	5 (resp) 10 (dust)	--	5 (dust) IDLH 2500	2.5 (dust) IDLH 25

C = Ceiling
STEL = Short Term Exposure Limit
IDLH = Immediately Dangerous to Life and Health
Mppcf = mppcf X 35.3 = million particles per cubic meter = particles per cc
Resp = Respirable

4. FIRST AID MEASURES

Inhalation:	If breathing has stopped, perform artificial respiration and obtain medical assistance immediately! If breathing is difficult, provide fresh air and call physician.
Eye contact:	For radiation burns due to arc exposure, see physician. To remove foreign objects or for eye irritation, flush with water for at least fifteen minutes. If irritation persists, obtain medical assistance.
Skin contact:	For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist. To remove dust or particles, wash with mild soap and water.
Electric shock:	Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. If not breathing, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin Cardio Pulmonary Resuscitation (CPR). Immediately call a physician.
General:	Move to fresh air and call for medical aid.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Follow all Hot Work procedures. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning materials and fire situation such as water, alcohol-resistant foam, dry chemical or carbon dioxide, etc.
Unsuitable Extinguishing Media: Not applicable.
Specific Hazards Arising from Fire: Welding arcs and sparks can ignite combustible and flammable materials. Welding activity can produce oxides, manganese and manganese oxides, and iron oxides. See American National Standard Z49.1: Safety in Welding and Cutting published by the American Welding Society.
Recommended Protective Equipment: Wear complete protective clothing and self-contained breathing apparatus as fumes or vapors may be harmful.

6. ACCIDENTAL RELEASE MEASURES

Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse. Ensure collected materials are placed in appropriate containers, particularly if still hot.

Personal precautions: Refer to Section 8.

Environmental precautions: Refer to Section 13.

7. HANDLING AND STORAGE

Handling: Handle with care to avoid stings and cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

Storage: Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials, and dust.

Engineering measures: Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases away from welding operator breathing zone and generally occupied areas. Keep working place and protective clothing clean and dry. Train welders to avoid contact with live electrical parts and insulate conductive parts. Check condition of protective clothing and equipment on a regular basis.

Personal protective equipment: Use respirator or air supplied respirator when welding in a confined space, or where local exhaust or ventilation is not sufficient to keep exposure values within safe limits. Use special care when welding painted or coated steels since hazardous substances from the coating may be emitted. Wear hand, head, eyes, ear, and body protection like welder's gloves, helmet or face shield with filter lens, safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry.

EU Specification EN 12477: Gloves for Welders Type A. For eye protection, use a welder's helmet compliant to EN 379 with filter shade 9 or greater. Clothing should meet Class 2 requirements.

Use industrial hygiene monitoring equipment to ensure that human exposure does not exceed applicable published exposure limits. For information about welding fume analysis refer to Section 10.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Cored wire, color grey/black, with core containing solid metal and non-metal particles
Odor:	Odorless
Odor threshold:	Not available
pH:	Not available
Melting point:	>1000°F (>500°C)
Boiling point:	Not available
Flash point:	Not available
Evaporation rate:	Not available
Flammability:	Not available
Flammability limits:	Not available
Vapor pressure:	Not available
Vapor density:	Not available
Relative density:	0.18 – 0.33 lb/cu ft. (5 – 9 g/cc)
Solubility:	Insoluble in water
Octanol-water partition coefficient:	Not available
Bioconcentration factor:	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not available

10. STABILITY AND REACTIVITY

General: These products are only intended for normal welding purposes.

Chemical Stability: These products are stable under normal conditions. No stabilizers are required.

Reactivity: Contact with chemical substances like acids or strong bases could cause generation of gas.

Other: When these products are used in a welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3 and those from the base metal and coating.

The rate of fumes generated from arc welding varies with wire size and welding process parameters but is generally no more than 10 g/min. Fumes from these products may contain compounds of the following chemical elements: Al, B, C, Ca, Co, Cr, Cu, F, Fe, K, Mn, Mo, N, Na, Nb, O, Si, Ti, V, W, and Zr.

Refer to applicable exposure limits for fume compounds, including those exposure limits for fume compounds found in Section 3. A significant amount of the chromium in the fumes can be hexavalent chromium, which has a very low exposure limit in some countries. Manganese and nickel also have low exposure limits, in some countries that may be easily exceeded.

Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminates around the welding area can be affected by the welding process and influence the composition and quantity of fumes and gases produced.

Fume Generation Analysis – Fume generation and fume analysis data, including hexavalent chrome content is available for a range of products and may be obtained by sending a request in writing or sending us an inquiry on the Stoody Company web page (www.stoody.com).

11. TOXICOLOGICAL INFORMATION

The wire product as sold and distributed is not expected to cause hazardous exposures. During welding activity, the likely routes of exposure could include ingestion, skin, eyes but most importantly by inhalation of welding fumes and dust. Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fume is difficult because of site specific factors such as varying base materials, coatings, air contamination, and processes. The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (Group 2B).

Acute toxicity: Over exposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat, or eyes.

Chronic Toxicity: Overexposure to welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances, and spastic gait. Prolonged inhalation of titanium dioxide above safe exposure limits can cause cancer. Inhalable quartz is a respiratory carcinogen; however, the process of welding converts crystalline quartz to the amorphous from which is not considered to be a carcinogen.

12. ECOLOGICAL INFORMATION

Welding consumables and materials could degrade/weather into compounds originating from the consumables or from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or ground water.

Nickel powder is harmful for the environment, harmful to aquatic organisms, and may cause long term adverse effects in the aquatic environment. The biological concentration factors, BCF, of components of these wires that may be present are chromium 200; manganese 59052; and iron 140000.

13. DISPOSAL CONSIDERATIONS

Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with international, federal, and local regulations. Use recycling procedures if available.

USA RCRA: Unused products or product residue containing chromium could be considered hazardous waste if discarded. Assess for the applicability of RCRA ID characteristic Toxic Hazardous Waste D007 (TCLP).

Residues from welding consumables and processes could degrade and accumulate in soils and ground water. Welding slag from these products typically contain mainly the following components originating from these wires: Al, B, C, Ca, Co, Cr, Cu, F, Fe, K, Mn, Mo, N, Na, Nb, O, Si, Ti, V, W, and Zr.

14. TRANSPORT INFORMATION

UN #: Welding wires and rods are not classified as dangerous goods and have no UN number.

UN proper shipping name: There is no proper shipping name.

Transport hazard class: There is no transport hazard and are not classified as dangerous goods for transportation.

Packing Group #: Not applicable.

Environmental hazards: Welding rods and wire are not environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID and AND) and/or a marine pollutant to the IMDG Code.

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable as transported in package form.

15. REGULATORY INFORMATION

Read and understand the manufacturer's instructions, your employer's safety practices, and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.

WARNING: Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation.

ELECTRIC SHOCK can kill.

ARC RAYS and SPARKS can injure eyes and burn skin.

Wear correct hand, head, eye, and body protection.

Canada: Not classifiable in product form.

Canadian Environmental Protection Act (CEPA): All constituents of these products are on the Domestic Substance List (DSL).

USA: Under the OSHA Hazard Communication Standard, these products are considered hazardous.

These products contain or produce a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). (California Health and Safety Code § 25249.5 et seq.)

United States EPA Toxic Substance Control Act: All constituents of these products are on the TSCA inventory list or are excluded from listing.

CERCLA/SARA Title III

Reportable Quantities (RQs) and or Threshold Planning Quantities (TPQs):

Product comprises of metallic and possibly non-metallic solid particles. Releases in excess of RQs are not considered feasible.

Section 311 Hazard Class

As shipped: Immediate In use: Immediate delayed

EPCRA/SARA Title III 313 Toxic Chemicals

The following metallic constituents are listed in SARA 313 "Toxic Chemicals" and are potentially subject to annual SARA 313 reporting: Chromium, Manganese, Nickel. See Section 3 for weight percent.

16. OTHER INFORMATION

This Safety Data Sheet has been revised due to requirements of CLP/GHS Classification. This SDS supersedes any earlier created version.

Refer to ESAB "Welding and Cutting – Risks and Measures", F52-529 "Precautions and Safe Practices for Electric Welding and Cutting" and F2035 "Precautions and Safe Practices for Gas Welding, Cutting and Heating" available from ESAB, and to:

USA: American National Standard Z49.1 "Safety in Welding and Cutting", ANSI/AWS F1.5 "Methods for Sampling and Analyzing Gases from Welding and Allied Processes", ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", AWS F3.2M/F3.2 "Ventilation Guide for Weld Fume", American Welding Society, 8669 NW 36th St #130, Miami, FL 33166. Safety and Health Fact Sheets available from AWS at www.aws.org.

OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Publishing Office, tel. 1-866-512-1800.

American Conference of Governmental Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices, 1330 Kemper Meadow Drive, Cincinnati, OH 45240, USA.

NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.

UK: WMA Publication 236 and 237, "Hazards from Welding Fume", "The arc welder at work, some general aspects of health and safety".

Germany: Unfallverhütungsvorschrift BGV D1, "Schweißen, Schneiden und verwandte Verfahren".

Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting and Allied Processes".

These products have been classified according to the hazard criteria of the CPR and the SDS contains all the information required by CPR.

Stoody requests the users of these products to study this Safety Data Sheet (SDS) and become aware of product hazards and safety information. To promote safe use of these products a user should:

- Notify its employees, agents, and contractors of the information on this SDS and any product hazards/safety information.
- Furnish this same information to each of its customers for these products.
- Request such customers to notify employees and customers for the same product hazards and safety information.

The information herein is given in good faith and based on technical data that Stoody believes to be reliable. Since the conditions of use are outside our control, we assume no liability in connection with any use of this information and no warranty, expressed or implied is given. Contact Stoody for more information.

EMPLOYEE HANDBOOK

For

HOME

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INTRODUCTION

Welcome to Heartland Asphalt, Inc.

We are glad you are a part of the Heartland Asphalt, Inc. organization. We hope you find your new job challenging, interesting and fulfilling.

The most important number at Heartland Asphalt is “zero”, which stands for “zero lost time accidents”. Each task you perform shall comply with this goal. Your family and co-workers depend on you.

This handbook is designed to help you adapt to your new surroundings. It contains employment policies, practices, work rules and benefits, all of which have been established to create an upbeat and wholesome relationship.

We hope our association with you is a mutually rewarding experience!!

Sincerely,

George Jessen, President
Heartland Asphalt, Inc.

NOTICE

This handbook is presented as a matter of information only. Heartland Asphalt, Inc. reserves the right to change or eliminate any or all of the policies, procedures or benefits at any time, with or without notice.

Just as you retain the right to terminate your employment at any time for any reason. Heartland Asphalt, Inc. retains a similar right. No policy or practice of Heartland Asphalt, Inc. should be construed to change this relationship. Only corporate officers have the right to modify or change this practice, and such action must be in writing.

As of the date on each page, this supersedes all earlier versions of the employee handbook, which should be discarded.

HEARTLAND
ASPHALT, INC.
DRIVEWAYS TO HIGHWAYS
2601 S. FEDERAL AVENUE
MASON CITY, IA 50401
OFFICE : 641-424-1733
FAX : 641-424-0334

NOTICE FOR ALL EMPLOYEES & APPLICANTS EEO/AA POLICY

Operating Statement

It is the policy of Heartland Asphalt, Inc. to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age, disability or any other federal or state of Iowa protected classes. Such action shall include employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship, pre-apprenticeship, or on-the-job training.

- - - -

GENERAL POLICY

AMERICANS WITH DISABILITIES ACT

Heartland Asphalt, Inc. is subject to the Americans with Disabilities Act as well as various state laws, which prohibit discrimination on the "Basis of Disability". Heartland Asphalt, Inc. is committed to adhering to its obligations under these laws, including the making of "reasonable accommodation." Heartland Asphalt, Inc. expects the full and complete cooperation of all of its employees with regard to this policy.

Employees are reminded that the company's "harassment" policy extends to the area of disability.

Officer Certification

The preceding duties, procedures and guidelines are the EEO/AA policy of Heartland Asphalt, Inc. The following signatories certify these statements.

_____	_____
George Jessen, President Date	Christian Nitzschke, EEO/AA Officer Date
Heartland Asphalt, Inc.	Heartland Asphalt, Inc.

GENERAL POLICY

SEXUAL HARASSMENT STATEMENT

The purpose of this policy statement is to clearly communicate to all Heartland Asphalt, Inc. employees that the management of Heartland Asphalt, Inc. does not condone sexual harassment, and will take appropriate actions to ensure that employees are protected from any kind of harassment.

In accordance with guidelines issued by the Equal Employment Opportunity Commission on discrimination because of sex: sexual harassment of employees is a prohibited personnel practice and
The management of Heartland Asphalt, Inc. strongly disapproves of such conduct.

Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment when:

1. Submission to such conduct is made either explicitly or implicitly a term condition of an individual's employment.

2. Submission to or rejection of such conduct by an individual is used as the basis of an adverse employment decision(s) affecting the individual.

3. Such conduct has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile, or offensive work environment.

No supervisor, co-employee or non-employee shall threaten or suggest that an employee's refusal to submit to sexual advances will adversely affect the employee's employment, wages, advancement, assigned duties, shifts, or any other condition of employment.

Other types of prohibited conduct by a supervisor, co-employee or non-employee include sexual advances, propositions, verbal abuse of a sexual nature, suggestive touching, suggestive gestures and comments, graphic verbal description of an individual's body, and the display in the work place of sexually suggestive objects or pictures.

If an employee believes that he or she is being subjected to sexual harassment, or is aware of any sexual harassment in the workplace, the employee should personally notify his/her immediate supervisor, or if this is not satisfactory, his/her superintendent, or the company EEO officer.

An investigation will be undertaken and sanctions and corrective measures will be instituted if warranted. Sanctions may include actions up to and including termination of employment.

Employees are assured that this procedure has been established for their benefit and to allow them the freedom of expressing their feelings and/or complaints. No employee needs fear that he/she will be penalized for registering a harassment complaint. The management of Heartland Asphalt, Inc. is committed to a prompt and impartial investigation and resolution of any complaint.

Please direct any questions or comments regarding this matter to the supervisor, your superintendent, or any of the following members of management/company officers:

George Jessen, President	641-424-1733
Christian Nitzschke, HR Director	641-424-1733

GENERAL POLICY

IMMIGRATION REFORM AND CONTROL ACT OF 1986

It is the policy of Heartland Asphalt, Inc. to adhere to the provisions of the Immigration and Reform and Control Act of 1986, which law provides for the employment of American citizens and aliens who are authorized to work in the United States.

Heartland Asphalt, Inc. will ensure the completion and retention of the one page form (I-9) required to verify employment eligibility. All new employees will be verified through the E-verify System as required by law.

CONTINUATION OF GROUP HEALTH COVERAGE FOR QUALIFIED PERSONS
(Consolidated Omnibus Budget Reconciliation Act of 1985 - COBRA)

It is the policy of Heartland Asphalt, Inc. to adhere to the provisions of COBRA regulations. New employees will be provided an initial written notice of this program on their hire date. Upon termination, or any other COBRA "qualifying event", the appropriate notification and procedures will be implemented by Heartland Asphalt, Inc.

It is the responsibility of the employee to notify Heartland Asphalt, Inc. of any qualifying event(s).

FAMILY AND MEDICAL LEAVE OF ABSENCE

It is the policy of Heartland Asphalt, Inc. to comply with The Family and Medical Leave Act of 1993 (FMLA), which was established to assist employees in better balancing family needs with workplace requirements.

The FMLA policy allows eligible employees to take unpaid leave of absence for birth, adoption, or placement of a foster child; for the care of spouse, son, daughter or parent who has a serious health condition; or because the employee is unable to perform the functions of his/her position due to a serious health condition.

There are specific leave guidelines provided for a FMLA leave of absence, which include job restoration and continuation of health benefits, as well as notification, medical certification, and leave entitlement procedures.

In the event you experience one of the above qualifying events, please contact your supervisor and /or officer of the company as soon as possible. When it is possible, advance notice for a request for FMLA is required. Specific procedures for the FMLA Policy may be obtained from the corporate office.

OTHER LEAVE OF ABSENCE

It is also the policy of Heartland Asphalt, Inc. to run any accrued Paid Time Off (PTO) concurrently during an approved leave of absence, whether or not the leave qualifies for FMLA. In cases of requested leave which does not qualify for FMLA, it will remain the prerogative of the Company President whether to grant or deny such leave.

GENERAL POLICY

WORKERS COMPENSATION

All employees are expected to exercise every caution and observe safety rules to avoid personal injury and property damage incidents.

Employees should report suspected safety hazards to their supervisor immediately.

If you are injured on the job, you may be entitled to workers compensation benefits, as stipulated by state law.

Workers compensation, paid for entirely by Heartland Asphalt, Inc. provides for medical, surgical, and hospital treatment as well as compensation for lost time in accordance with state requirements.

Our policy and practices related to an employee who is injured on the job include, but are not limited to, the following guidelines:

1. An incident report should be filed immediately. Contact your supervisor, the superintendent, or safety director for information and assistance.

2. It is our intent that all employees who sustain injuries are to be treated with dignity and respect.

3. We will strive to provide practical medical care in order to speed recovery and return to work.

4. The rapid and efficient return of the employee to his/ her job is the goal of the recovery effort.

ALL INCIDENTS OR INJURIES, NO MATTER HOW MINOR, MUST BE REPORTED IMMEDIATELY TO YOUR SUPERVISOR.

SMOKING

Heartland Asphalt, Inc. encourages a safe and healthy work environment and intends to follow state and federal law. Therefore, the company has adopted the following policy and guidelines:

1. Smoking is prohibited in the offices and on work sites, except in designated areas.

2. Work Sites

Designated Smoking Areas	To be determined by the Superintendent and current law.
No Smoking Areas	To include areas where there are flammable materials, welding activities, fuel or any other area where smoking materials would be unsafe and/or create a potential hazard and prohibited by state and federal law.

3. Corporate Office — Designated Smoking Areas Only in compliance with state and federal law.

PERSONNEL POLICY

JOB TRAINING

New Employee Orientation

Safety orientation of the new employee is the job of everyone, from the Supervisor, who sees to orderly indoctrination, to fellow workers who look after him/her during the first days on the job. The orientation procedure will have two objectives:

1. Employee protection: To import information necessary to the individual's safety.

2. Employee involvement: To make him/her an active member of the safety team.

Topics Covered

Every effort shall be made to develop a safety-orientated state of mind in each employee early in employment. This program will include the following:

1. Company safety philosophy
2. Company safety program
3. Appropriate safety rules and regulations
4. Personal protective equipment needs
5. Injury reporting and medical treatment
6. Location and use of emergency equipment
7. Employee participation in the company safety program

Medical and First Aid Training

The health and safety of employees must receive top priority. Because professional medical help is seldom immediately available, it is imperative that emergency treatment be available when an injury occurs.

The basic objective of this occupational health program is the following:

1. To protect employees against health hazards in there work environment.
2. To facilitate job placement and to ensure the suitability of individuals according to their physical capacities, mental abilities, and emotional make-up without danger to their health and safety or that of their fellow employees.
3. To assure adequate medical care and rehabilitation of those injured or made ill on the job.
4. To encourage personal health.

First Aid

First aid can be defined as temporary aid and comfort to avert further complications in an emergency until professional medical attention can be obtained. Each work group should have at least one person trained in first aid.

PERSONNEL POLICY

NON-SOLICITATION POLICY

Heartland Asphalt, Inc. prohibits any third party from soliciting its employees for any reason at any time on company property, or any job site, or otherwise during working hours.

Employees are prohibited from engaging in solicitation of any sort, including the distribution of literature during working time; this policy applies to either the employee who is doing the solicitation or the employee who is being solicited.

ATTENDANCE AND PUNCTUALITY

It is essential for the success of Heartland Asphalt, Inc. that we provide quality service to our customers and meet or exceed their product and service expectations. Regular and prompt attendance at work is required of all employees to accomplish these goals.

Employees are expected to report for work on time, on a regular basis. Absences and/or tardiness are disruptive, expensive, and can place an unfair burden on Heartland Asphalt, Inc., other employees, and supervisors.

Good attendance is expected of all employees.

If an employee must be absent or tardy, he/she should notify his/her supervisor as far in advance as possible, but no later than one hour before the normal starting time.

The employee must personally notify their supervisor unless they are physically unable to call due to an emergency, in which case another person may provide notification as soon as possible. If you are unable to contact your supervisor, call the Mason City office at 1-641-424-1733.

Excessive absences/tardy incidents may result in discipline up to and including termination.

COMPLAINT PROCEDURE

Heartland Asphalt, Inc. strives to provide a pleasant, harmonious working environment. We strongly endorse an "open door" policy in handling any work-related problems or concerns you may have.

Please feel free to discuss with your supervisor anything that may be troubling you. Even if an issue seems "minor", it should be discussed in the hope it can be resolved before becoming a major issue. Usually, your supervisor is the closest to the problem situation, and therefore, is in the best position to resolve it.

Keep in mind that a problem, large or small, can best be resolved when it is presented in a professional, calm manner. Politely inform your supervisor of your specific concern and ask for a time to talk with him/her about it.

If you believe you have not cleared the matter up satisfactorily with your supervisor, you may take it to the superintendent or an officer of the company.

But, we hope you would agree that normally the best place to start is with your own supervisor.

PERSONNEL POLICY

CONFIDENTIALITY

During the course of your work, the following situations may occur:

1. You may have access to information of a technical or business nature relating to the company's business, customers, vendors, suppliers or co-workers.

2. You may have the opportunity to create ideas, products, services, technical systems or modifications to work processes within the company; all of which remain the property of the company during and after your employment.

It is one of your most serious responsibilities to in no way reveal any such information at any time, and use it only in performance of your duties. Do not discuss information related to company business and its' operations with anyone other than persons directly involved with the work situation, and then only when necessary.

Violation of this policy will result in discipline, up to and including termination.

Upon termination of employment for any reason, you are required to promptly surrender to the company all correspondence, written memoranda, diagrams, technical plans, records, notebooks (and all copies thereof) relating in any way to the company, whether prepared by you, another employee or by authorized agents of the company as well as all company issued work supplies paid for by Heartland Asphalt, Inc.

MILITARY RESERVES

If you are a member of the National Guard or a Reserve Unit, you will be allowed up to ten unpaid workdays per year for training in accordance with company policy.

If you enter full-time military service, you are eligible for unpaid military leave. You have the right to return to your job or an equivalent job at the same level of seniority status and pay with Heartland Asphalt, Inc. within 90 days of receiving an honorable discharge. All employee and dependent benefits will cease at the onset of active duty, but will be reinstated immediately upon your return to work. You have the right to continue your coverage pursuant to Iowa Code Chapter 509B. You will be given a service credit for the periods of military service for vesting and benefit accrual purposes.

It is the employee's responsibility to provide the company with a copy of the duty orders, and to report military leave of absence in writing to their supervisor.

PERSONNEL POLICY

YOUR CONDUCT

It is not necessary to establish harsh, restrictive guidelines for behavior if each of us uses good judgment, discretion and professionalism in our dealings with each other.

The offenses listed below are not intended to be all-inclusive, but are merely illustrative of unacceptable conduct. There are other types of situations and/or conduct that could result in disciplinary action. Heartland Asphalt, Inc. reserves the right to exercise judgment in determining other behavior that might be subject to discipline.

Violation of Absenteeism Policy
Violation of Tardiness Policy
Refusal to Obey Job Orders
Safety Violations: Working Unsafe
Leaving Regularly Assigned Work Location
Weapons on Company Property
Profane or Abusive Language
Threatening, Fighting
Violation of Alcohol and Drug Policy
Careless Workmanship
Misuse or Sabotage of Company Property
Distributing Literature or Posting of Notices on Company Property
Falsification of Records
Removing or Revealing Confidential Information
Restricting Output
Horseplay
Poor Housekeeping, cleanliness and sanitation
Loafing
Theft
Violation of our Harassment Policies including Sexual Harassment or Non-Discrimination Policy
Negligent disregard of Duty or any act that would tend to embarrass or harm Heartland Asphalt, Inc.

Other violations of company policies may also result in discipline. The company reserves the right to impose whatever sanction, including termination of employment, it seems appropriate. Discipline may occur in one or a combination of the following:

* Verbal Warning
* Written Warning
* Up to 5 Days Suspension
* Termination

As a reminder, Heartland Asphalt, Inc. retains the right to end the employment relationship at will at any time for any reason and is not required to follow any disciplinary procedure.

SAFETY STATEMENT

It is the intent of this Company to strive to provide a safe and healthy place of employment for all our employees, free of all recognized hazards which could result in injury or death, or which could be harmful to the health of the employees. It is further our intention and policy to comply with all state, local, and federal laws and regulations which pertain to safety and health in employment and to use such laws and regulations as our guide for implementation and enforcement of our policy.

Only under such circumstances can the association between employee and employer be mutually profitable and harmonious. It is our desire and intention to provide a safe workplace, safe equipment, proper materials, and to establish and insist on safe methods and practices at all times.

Employees are expected to use the SAFETY equipment provided. Rules of conduct and rules of SAFETY shall be observed. SAFETY equipment must not be destroyed or abused.

The joint cooperation of employees and management in the observance of this policy will provide safe working conditions and incident-free performance to our mutual advantage.

We consider the SAFETY of our personnel to be of first importance, and we ask your full cooperation in making this policy effective.

SAFETY POLICY - LOSS CONTROL RESPONSIBILITIES

MANAGEMENT (As it pertains to Safety)

Management's interest, leadership, and support are required for this program to be effective.

The success of the program depends on management action as follows:

1. Look at incidents as operating loss problems and treat them the same as any other operating loss problem.

2. Delegate to supervisors the responsibility for controlling conditions that cause loss and make sure that responsibility is understood and accepted.

3. Establish systematic methods to determine and eliminate loss producing conditions, both actual and potential, and procedures to monitor performance.

SAFETY POLICY - LOSS CONTROL RESPONSIBILITIES

SAFETY/LOSS CONTROL DIRECTOR

The safety/loss control director's responsibilities include:

1. Providing guidance for the overall program.

2. Advising top management on matters concerning incident prevention, problems, and objectives.

3. Acting as a consultant in safety and loss control for all levels of supervision.

4. Initiating and, when appropriate, conducting training programs for all levels of supervision.

5. Issuing, where necessary, general policies to be followed in maintaining and upgrading the loss control program.

6. Establishing incident reporting procedures including periodic reports to supervisor, measuring the effectiveness of loss control activities.

7. Providing pertinent information to supervisor in order to help them in their daily loss control functions and responsibilities.

8. Review all incident investigation reports for thoroughness.

9. Assist in the investigation of incidents.

SUPERVISOR RESPONSIBILITY (As it pertains to Safety)

1. Supervisor at all levels must strive to ensure that their personnel are fully qualified to safely perform the job assigned, that facilities and equipment are safe to use, and that hazards are promptly identified, reported, and eliminated. Each individual has a personal responsibility for the prevention of mishaps. However, the supervisor by virtue of this position has the overall responsibility for incident prevention within his activity.

2. Supervisors should be continually alert for indications of improper attitudes that could result in employees becoming involved in an incident.

3. Each supervisor must try to know his employees well enough to recognize an adverse personality change resulting from on or off the job emotional or physical stress. Care must be taken to prevent an emotionally or physically strained individual from being assigned to a critical task requiring a high degree of skill or concentration and from performing a potentially hazardous job.

4. The supervisor is in the best position to evaluate each of his subordinates' potential for causing an incident. He is supporting management and the loss control program when he undertakes to change unsafe attitudes or actions of the employees.

5. Supervisors must ensure that appropriate incident prevention information is communicated to the proper people. Meetings to discuss safety and incident prevention shall be held with employees.
Documentation of safety tailgate meetings between foreman and employees shall be submitted in writing to the supervisor.

SAFETY POLICY - LOSS CONTROL RESPONSIBILITIES

INCIDENT INVESTIGATING AND REPORTING

General
An incident is thought to be a breakdown of the loss control program. However, responsible investigation and reporting is part of any loss control program. Though incident investigation may appear to be an after-the-fact activity, the primary purpose of such an investigation is to determine the cause in hopes of preventing a recurrence of a similar incident. An investigation is not conducted to point fingers. Incidents are prevented only when their causes are found and eliminated. All incidents, no matter how minor, should be reported to the supervisor.

Responsibilities
All supervisors must strive to:

1. Promptly notify the company President and the Safety/Loss Control Director whenever an incident occurs.

2. Assure that proper treatment is given to any injured employees.

3. Conduct a thorough investigation of incidents and complete all required reports.

Incident Investigations
In all cases in which an employee is injured, the immediate supervisor will perform an in-depth investigation.

This investigation will be reduced to writing using an appropriate form such as Exhibit D established for such purposes. This properly completed form will be sent to the safety/loss control director for review and corrective action.

Corrective Action
Actions suggested by the investigator must be evaluated and, if warranted, initiated. The safety/loss control director will monitor actions required and, if appropriate, will conduct a follow-up investigation to ensure corrective action has been taken to prevent recurrences.

SAFETY POLICY - LOSS CONTROL RESPONSIBILITIES

SUPERVISOR INCIDENT INVESTIGATION CHECKLIST

Each incident shall be physically investigated. Reports, which are completed through discussion with the injured employee, will be returned for follow-up investigation. General items of consideration for incident investigation are as follows:

1. Always conduct the investigation at the site - not in the office.

2. Prompt investigation is always important.

3. Discuss the incident with the individual, try to put the injured employee at ease, and stress the fact that the investigation is not to find fault but to gain facts in order that similar incidents can be prevented.

4. Discuss the incident with witnesses, again stressing the points mentioned above.

5. Consider the following:

    a. What was the injured employee doing prior to and at the time of the incident?
    b. Was this in pursuit of his regular duties?
    c. Was the employee properly instructed as to the manner in which to perform his duties?
    d. Did he do the work in accordance with instructions?
    e. Does this employee have any special working arrangements provided for by this employer?
    f. Did any of the other employees contribute to the incident?
    g. Was the equipment or machinery the injured was using in good condition?
    h. Was it properly guarded?
    i. Was it suited for the purpose for which it was used?
    j. Was ample and sufficiently lighted workspace provided?
    k. Is there a safer way in which this work could be done?
    l. Was the injured in good health when reporting for work on the day of the incident?
    m. Why did the unsafe act or condition exist?

HEARTLAND ASPHALT, INC.

SAFETY POLICY - LOSS CONTROL RESPONSIBILITIES

BASIC SAFETY RULES

1. Personal Employee Conduct on the Job
    a. Be alert, report or remove any unsafe condition immediately in your area.
    b. Report any injury immediately, including those of minor nature to your supervisor or foreman.
    c. Lift correctly - Use your legs to take the strain, not your back. Let proper equipment lift heavy loads.
    d. Wear clothes suited to the job. No dangling, torn or loose clothing, loose jewelry, or unkempt hair that would restrict vision.
    e. Horseplay or unsafe acts will be grounds for disciplinary action up to and including dismissal.
    f. Use of or under the influence of, alcoholic beverages or drugs on the job may be reason for discipline up to and including dismissal.

2. Personal Protective Equipment
    a. Head - Hardhats must be worn in areas designated as “Hard Hat Areas.”

b. Eye - Safety goggles or glasses shall be worn when sledging, hammering, chipping, welding, cutting, grinding, or other operations when eye injuries may result.
c. Breathing - approved respirators are to be used in painting, sandblasting, use of toxic material or when other conditions warrant.
d. Ear - Earmuffs or approved earplugs will be worn on all high noise level jobs as directed by supervisory personnel. Cotton wadding or other unapproved protection will not be used.
e. Hands - Appropriate gloves will be worn when welding, cutting, sandblasting, or other times as required by the type of work being done.
f. Feet - Safety shoes and rubber footwear will be used where it is required.
g. Visibility – Safety Vests will be worn at all times on the job site. Approved vests shall have reflective strips in accordance with State DOT requirements and be approved by the safety director.

3. Sanitation
   a. Fresh, cooled drinking water will be provided in a safe container with disposable cups.
   b. Suitable receptacles will be provided for disposal of used water cups and lunch waste, such as wrappers, bags, cans, etc.
   c. All employees will use furnished or designated toilet facilities provided on the job.

4. Housekeeping & Waste Management
   a. All employees are responsible for good housekeeping. Trash, scrap, and waste materials shall be disposed of regularly and taken into consideration before the work begins. Other material will be stored in neat stacks for proper disposal.
   b. Flammable material will be stored separately in a safe and orderly manner.
   c. Job waste shall be disposed of using latex/neoprene gloves provided by Company, in Heartland or publically accessible waste receptacles.
   d. Scrap materials and waste generated on the job should be recycled when possible. Left over waste materials will be disposed of in Heartland Asphalt dumpsters.
   e. Cardboard waste generated by the Shop and Office will be broken down and recycled in the blue container located in the Shop.

5. Small Tools and Equipment
   a. Hand tools (hammers, chisels, punches and others) will be kept dressed to prevent injury from flying particles.
   b. Power tools shall not be operated at any time without the appropriate guards in place and be run by authorized-trained personnel only.
   c. Only trained authorized personnel shall use air-operated tools, welding equipment or other special type power tools.

6. Heavy Equipment
   a. Equipment operators will be responsible to make sure safety equipment is in place and in working order. Equipment that is defective will be reported to supervisors immediately.
   b. Unnecessary abuse or clowning with equipment will lead to dismissal.
   c. No employee will be allowed to ride with operator on any equipment that is not furnished with passenger seats. Non-employees shall not be allowed access to or be allowed to ride on any equipment.
   d. Properly authorized or trained personnel shall operate all equipment; operations of equipment by unauthorized personnel shall lead to dismissal.
   e. Seat belts must be worn when driving and/or riding in a company vehicle and equipment, this includes all projects and plant sites.

7. General
   a. Tampering with or use of safety or fire fighting equipment by unauthorized personnel shall be reason for immediate dismissal.

8. Ladder Safety
   a. Ladders used by Company's employees must meet OSHA/ANSI specifications.
   b. Load limits for ladders must not be exceeded.
   c. Ladders must only be used for the purposes for which they were designed.
   d. Ladders must be inspected periodically.
   e. Defective ladders must be tagged and/or removed from service.
   f. The upper supports of ladders used to access elevated work areas must extend at least 3 feet above the elevated surface.

g. Extension ladders shall be placed against the top support at a 4:1 incline.

Falls from portable ladders (step, straight, combination and extension) are one of the leading causes of occupational fatalities and injuries.

- Read and follow all labels/markings on the ladder.
- Avoid electrical hazards! – Look for overhead power lines before handling a ladder. Avoid using a metal ladder near power lines or exposed energized electrical equipment.
- Always inspect the ladder prior to using it. If the ladder is damaged, it must be removed from service and tagged until repaired or discarded.
- Always maintain a 3-point (two hands and a foot, or two feet and a hand) contact on the ladder when climbing. Keep your body near the middle of the step and always face the ladder while climbing (see diagram).
- Only use ladders and appropriate accessories (ladder levelers, jacks or hooks) for their designed purposes.
- Ladders must be free of any slippery material on the rungs, steps or feet and ensure the worker is wearing slip-resistant footwear.
- Do not use a self-supporting ladder (e.g., step ladder) as a single ladder or in a partially closed position.
- Do not use the top step/rung of a ladder as a step/rung unless it was designed for that purpose.
- Use a ladder only on a stable and level surface, unless it has been secured (top or bottom) to prevent displacement.
- Do not place a ladder on boxes, barrels or other unstable bases to obtain additional height.
- An extension or straight ladder used to access an elevated surface must extend at least 3 feet above the point of support. Do not stand on the three top rungs of a straight, single or extension ladder.
- The proper angle for setting up a ladder is to place its base a quarter of the working length of the ladder from the wall or other vertical surface.
- A ladder placed in any location where it can be displaced by other work activities must be secured to prevent displacement or a barricade must be erected to keep traffic away from the ladder.
- Be sure that all locks on an extension ladder are properly engaged.
- Do not exceed the maximum load rating of a ladder. Be aware of the ladder's load rating and of the weight it is supporting, including the weight of any tools or equipment.

Factors contributing to falls from ladders include haste, sudden movement, lack of attention, the condition of the ladder (worn or damaged), the user's age or physical condition, or both, and the user's footwear.

- Although the user's weight or size typically does not increase the likelihood of a fall, improper climbing posture creates user clumsiness and may cause falls. Reduce your chances of falling during the climb by:
- wearing slip-resistant shoes with heavy soles to prevent foot fatigue;
- cleaning the soles of shoes to maximize traction;
- using towlines, a tool belt or an assistant to convey materials so that the climbers hands are free when climbing;
- climbing slowly and deliberately while avoiding sudden movements;
- never attempting to move a ladder while standing on it;
- keeping the center of your belt buckle (stomach) between the ladder side rails when climbing and while working. Do not overreach or lean while working so that you don't fall off the ladder sideways or pull the ladder over sideways while standing on it.

Heartland Asphalt, Inc.
Fleet Safety Program

INCIDENTAL FLEET SAFETY POLICY

1. **Policy:** Many employees operate company owned, leased, rental or personal vehicles as part of their jobs. Employees are expected to operate vehicles safely to prevent incidents, which may result in injuries and property loss. It is the policy of Heartland Asphalt, Inc. to provide and maintain a safe working environment to protect our employees and the citizens of the communities where we conduct business from an injury and property loss. The company considers the use of Vehicles and Equipment part of the environment. The company is committed to promoting a high level of safety awareness and responsible driving behavior in its employees. Our efforts and the commitment of employees will prevent vehicle/equipment incidents and reduce personal injury and property claims. This program requires the full cooperation of each driver to operate their vehicle/equipment safely and to adhere to the responsibilities outlined in the Incidental Fleet Safety Program. Elements of this program include:

A. Assigning responsibilities at all levels of employment.

B. Vehicle/equipment use and insurance requirements.

C. Employee drivers license checks and identification of high-risk drivers.

D. Incident reporting and investigation.

E. Vehicle/equipment selection and maintenance.

F. Safety regulations.

2. **Any employee violating this policy will be the subject of disciplinary action and/or termination.**

ORGANIZATION AND RESPONSIBILITIES

1. **George Jessen,** the company president, is responsible for directing an aggressive vehicle & equipment safety program.

2. **Supervisors will:**

A. Investigate and report all incidents or damage involving a company motor vehicle or equipment. Forward all incident reports to the Safety Director and the President.

3. **Drivers will:**

A. Always operate a motor vehicle/equipment in a safe manner.

B. Maintain a valid driver's license as required by job description and minimum insurance requirements on personal vehicles and equipment used in company business.

C. Maintain assigned vehicles and equipment according to established maintenance standards.

VEHICLE & EQUIPMENT USE

1. **Company Owned Vehicles and Equipment**

A. The President must authorize who is allowed to operate vehicles and equipment.

Anyone operating a vehicle or equipment owned or rented by Heartland Asphalt, Inc. must have the proper license, authorization and skill to operate that vehicle or equipment.

2. **Rental Vehicles and Equipment:**

A. The President must pre-approve rentals or leases of vehicles or equipment.

3. **Personal Vehicles on Company Business**

A. Prior to use, the President must approve all personal vehicles and equipment on company business.

4. Unauthorized Use of Vehicles and Equipment; Assigned drivers and other authorized employees will not allow an unauthorized individual to operate a company vehicle or equipment. No Exceptions! Disciplinary action may be taken. Additionally, if unauthorized use results in an incident, the responsible employee will be required to make restitution for the damages.

DRIVER AND OPERATOR SELECTION

1. General statement: A good driving record is a condition of employment at Heartland Asphalt, Inc.

2. Driver and Operator Evaluation, Employees will be evaluated and selected based on their driving/operating ability. To evaluate employees as drivers and/or operators, the President will:

A. Review past driving performance and work experience through previous employers' reference checks. All new employees and current employees recently assigned to driving/operating duties will be required to complete an Orientation Driving skills test.
B. Review the employee's Motor Vehicle Record (MVR) annually (more frequent if reasons warrant).
C. Ensure the employee has a valid driver's license and a MVR is obtained as soon as possible.
D. Ensure the employee is qualified to operate the type of vehicle/equipment he/she will drive.
E. Review current and previous incident reports and safety violation reports.

3. Driver Performance. The following criteria were established to identify possible high-risk drivers/operators. A driver/operator could be unacceptable if the driver/operator's incident/violation history in the past 3 years includes one of the following violations:

1. Driving under the influence of alcohol or drugs (DWI).
2. Hit and run.
3. Failure to report an incident.
4. Negligent homicide arising out of the use of a motor vehicle.
5. Operating during a period of suspension or revocation.
6. Using a motor vehicle for the commission of a felony.
7. Operating a motor vehicle without the owner's authority.
8. Permitting an unlicensed person to drive.
9. Reckless driving or operating of equipment.

A. The following violations or incidents could identify a driver/operator as unacceptable if two or more incidents occur:
   1. Reckless driving or operating of equipment.
   2. Speeding.
   3. Safety violation.

4. Driver/Operator Participation in Repair Costs: If a vehicle or piece of equipment is involved in an incident that is determined preventable, driver/operator (unless fault is another party) will forfeit all or a portion of any yearend bonus.

5. Post Incident Drug & Alcohol Testing: All incidents which include personal injury or property damage will be reviewed by the President to determine if a post incident drug & alcohol test should be given to the responsible party. Further discipline can include but is not limited to 1 to 5 days suspension without pay.

6. Preventable/Non-Preventable Incidents: The following definitions relate to motor vehicle or equipment incidents:

A. The determination of preventability of an incident is the function of the President.

7. Payment of Violations: All Fees, fines, and other costs relating to violations of a driver are the responsibility of the operator unless approved by the President for company reimbursement.

EMPLOYEE INCIDENT REPORTING PROCEDURE

Employees will take the following actions when there are injuries to persons and/or damage to other vehicles or property:

1. Secure the names and addresses of drivers and occupants of any vehicles involved, their operator's license numbers, insurance company names and policy numbers, as well as the names and addresses of injured persons and witnesses. Record this information on the Incident Report form. **Do not discuss fault with, or sign anything for anyone except an authorized representative of Heartland Asphalt, Inc., a police officer, or other law enforcement agency.**

2. Immediately notify the President. If any injuries were involved and the Safety Director is not available, contact your supervisor immediately.

3. Not reporting an incident. An employee found not reporting an incident or property damage will be in violation of this policy and will be disciplined by the President. If damage is found on a vehicle/equipment and no incident report has been filed, the last person responsible for the vehicle/equipment will be in violation of this policy. Therefore, it is important that all drivers/operators do a pre-trip inspection before starting to operate their equipment/vehicle.

VEHICLE & EQUIPMENT SELECTION, INSPECTION & MAINTENANCE

1. Introduction, Proper selection and maintenance of vehicles/equipment are important aspects of this program. Reduced operational costs and incidents from vehicle/equipment defects are the direct result of a well-implemented maintenance policy.

2. Vehicle/Equipment Selection, Selection of vehicle/equipment begins with understanding the wrong vehicle/equipment can result in excessive breakdowns, create hazards to personnel, incur costly delays and contribute to poor service and customer complaints. The company will purchase vehicle/equipment designed for their intended use.

3. Vehicle/Equipment Inspection, The employee responsible for the vehicle/equipment will inspect the vehicle/equipment daily before using the vehicle/equipment and forward the report to the Shop Manager.

4. Vehicle/Equipment Maintenance, Vehicle/equipment maintenance can take the form of three distinct programs: preventive maintenance, demand maintenance and crisis maintenance. While all three types have their role in the Incidental Fleet Safety Program, the most cost effective control is preventive maintenance. The groundwork for a good preventive maintenance program starts with management. A review of manufacturer's specifications and recommendations for periodic preventive maintenance should be integrated with the actual experience of the vehicles/equipment.

A. Preventive maintenance (PM) is performed on a mileage or time basis. Typical PM includes oil/filter changes, lubrication, tightening belts and components, engine tune-ups, brake work, tire rotation, hose inspection/replacement and radiator maintenance.
B. Demand maintenance is performed only when the need arises. Some vehicle/equipment parts are replaced only when they actually fail. These include light bulbs, window glass, gauges, wiring, airlines, etc. Other "demand maintenance" items involve vehicle/equipment components that are worn based on information from the vehicle/equipment condition report. These include tires, engines, transmissions, universal joints, bushings, batteries, etc. Since these situations are identified through periodic vehicle/equipment inspection, they can actually be classified within the PM program.
C. Crisis maintenance involves a vehicle/equipment breakdown while on the road. While situations of this type may happen regardless of the quality of the PM program, it is an expensive alternative to not having an effective preventive maintenance program at all. Crisis maintenance situations should be minimized through proper PM procedures.

5. Record keeping. This company's vehicle/equipment selection, inspection and maintenance program is only as good as its record keeping procedures. Employees will forward all vehicle/equipment maintenance records for maintenance performed each quarter as an attachment to the Motor Vehicle Safety form.

DRIVER/OPERATOR SAFETY REGULATIONS

1. Safety Belts. The driver/operator and all occupants are required to wear safety belts when the vehicle/equipment is in operation or while riding in a vehicle/equipment. The driver/operator is responsible for ensuring passengers wear their safety belts. Children under four years of age or under 40-pounds in weight must be secured in a USDOT approved child safety seat.

2. Impaired Driving, The driver/operator must not operate a vehicle/equipment at any time when his/her ability to do so is impaired, affected, influenced by alcohol, illegal drugs, prescribed or over-the-counter medication, illness, fatigue or injury.

3. Vehicle/Equipment Condition, Drivers/operators are responsible for ensuring the vehicle/equipment is maintained in safe driving/operating condition. Drivers/operators of daily rentals should check for obvious defects before leaving the rental office/lot and, if necessary, request another vehicle/equipment if the employee deems the first vehicle/equipment unsafe.

4. Cellular Telephones, The following procedures apply to employee driving/operating on company business who wish to use cellular telephones in the vehicle/equipment.

A. The President may deny cell phone privileges to an individual to provide for a safe work environment.
B. No Texting or viewing of information on a handheld electronic device while operating a company vehicle or equipment.
C. No use of a handheld electrical device while backing up or while engaged in major maneuvers or heavy traffic.
D. No use of a handheld electrical device while operation of equipment, included but not limited to, cell phones, beepers, radios, IPods and MP3 players.
E. All employees are reminded that attention to the work environment on a continual basis with minimal distractions will help insure the highest level of safety for all concerned.

F. Federal rulemaking restricts drivers of Commercial Motor Vehicles from holding a mobile phone to conduct a voice communication and from dialing or answering a mobile phone if that action requires more than pressing one single button.

G. Mobile phones may still be used while driving, but technology such as blue tooth or a headset is required. In addition, reaching for a mobile phone in a manner that requires the driver to maneuver so that he/she is no longer in a seated position, properly restrained by a seat belt, is prohibited.

H. Heartland Asphalt, Inc. reserves the right to administer and monitor all electronic devices that are owned by the company. Employees assigned to manage these devices shall only use them for a business purpose and know that all individual keystrokes, text, email, content and internet use can and will be tracked. It is imperative that each manager of a company owned electronic device also limit the use of these devices to themselves or the company system administrator and secure them from being lost or stolen. In the case of a device being lost or stolen, the manager of the device shall contact the President of the company immediately to minimize the risk associated to the device involved.

TRUCK & EQUIPMENT DEPARTMENT POLICIES

Outlined below are the rules and regulations, which govern the Heartland Asphalt, Inc. truck & equipment department. Violations of these regulations may result in discipline up to and including termination. Please read them carefully so you know what is required of you from your driver-laborer position. Heartland Asphalt, Inc. uses different types and models of trucks. Please ask your foreman for proper operating procedures if you have questions or are unclear.

I. WORK RULES
   a. Be on time for your job and report to your foreman in person.

   b. Influence of drugs or alcoholic beverages in violation of company policy will not be tolerated.

   c. You are required to wear a hard hat when not in your truck and at the plant.

   d. Wear appropriate clothing, you may have to work outside.

   e. Careless work negligence and/or unsafe work may result in discipline up to and including dismissal.

II. TRUCK & EQUIPMENT CARE AND PREPARATION - DRIVER/LABORER/OPERATOR
   a. Before starting engine, go over the following checklist:
      1. Check water level in radiator
      2. Check oil level in engine
      3. Bump check tires

4. Give overall visual check of unit
5. Check communication device.

b. Both transmission and power steering must not be filled when cold. Run 1 or 2 seconds and then check levels.
   1. There are 2 oils to remember for trucks:
      Dexnon II - transmission and power steering
      #200 - engine (except Mack, which uses #300)

c. Drain air tanks each night.

d. Keep your unit clean at all times.
   1. Wipe your cab down at the end of each day and clean interior.
   2. Clean and check lights, especially signal, brake and headlights.

e. Check battery water levels once per week.

f. Drivers must change their own tires. If you do not know how, the mechanic will help you the first time only.

g. Report to mechanic promptly if your unit is not operating properly.

h. Fill out all forms entirely and completely.

i. Your job is a driver/laborer position and when not needed to drive, you may be assigned to help someone else on the project.

TRUCK & EQUIPMENT DEPARTMENT POLICIES

III. DRIVING PROCEDURES

A. General Guidelines
1. Seatbelt use is MANDATORY. Under no circumstances should you operate your vehicle without your safety belt.
2. No tailgating.
3. No carelessness or fast driving.
4. No unnecessary stops. If a stop is necessary, or if you are not in your truck, make sure your unit is out of all other traffic.
5. Watch your fuel. Fill before your gauge gets too low. Always make sure you have enough so if you see there is no truck under the pugmill or silo you can make another round before fueling.
6. Leave your engine running when hauling Hot Mix.
7. Disengage PTO as soon as box is unloaded.
8. Check tailgates to make sure they are latched. Do this while waiting to load, not on the grade or haul road since they may unlatch returning to the plant.
9. No unauthorized riders permitted.
10. Drivers & riders must be in cab.
11. Loaded trucks have the right of way.
12. Always look & check mirrors before backing up.
13. Stay in truck when waiting at pavers, leaving enough room for other trucks to operate safely.
14. When leaving the plant site and going on to a county or state road, you must stop before entering the road. This is a state law.
15. Drive defensively, always watching the other drivers.

B. Truck Operation
1. Some trucks are different than others. If you have any questions, ask your foreman.
2. Don't over wind Rpm’s on downgrades; use brakes to help slow down.
3. Shift transmissions when required; even selectomatic transmissions.
4. Use your clutch; it’s there for a reason.
5. If you get stuck, get help. Don’t rock truck excessively.

IV. MATERIAL HAULING - QUARRY & PLANT

A. We are assigned haul roads. These are the only roads we are permitted to use. You must use only these roads at all times.
B. Make sure lights are clean and in working order.
C. No overloading permitted on public roads.
D. Tarp loads when required or requested & roll back tarp after truck is empty before returning to plant.

V. WATER TRUCK DRIVERS

A. Check & change oil in pump engine once per week.
B. Never run pump when tank is out of water.
C. Clean & check lights daily.

VI. BOX CLEANING

A. No large hammers to be used in dump boxes.
B. Never block open tailgate.
C. Always use safety stands to immobilize the box when working under it.
D. Take care mounting & dismounting - No jumping.
E. Spray box with release agent before loading.
F. No use of diesel to clean boxes during haul hours.

TRUCK & EQUIPMENT DEPARTMENT POLICIES

VII. TRUCK TRACTORS

A. Check truck over: tires, oil levels, lights, flags & warnings devices, etc. Report any mechanical problems.
B. Secure loads properly. If you don't know how, get help or ask. Check chains and binders after the first few miles.
C. Watch fuel levels.
D. Watch and check clearances.
E. Obey traffic laws and adhere to good driving practices.
F. Make sure to obtain proper oversized permits from D.O.T.

VIII. MISCELLANEOUS

A. You are required to wear a hard hat at the plant/quarry/pit when not in your truck.
B. Wear appropriate clothing, you may have to work outside.

DRUG AND ALCOHOL POLICIES

Drug Free Work Place Policy

As a federal contractor, the company is subject to the Drug Free Workplace Act of 1988. To fulfill our obligations under the Act and more importantly, to provide our employees with a safe, drug free environment, YOU ARE HEREBY NOTIFIED that it is a violation of the policy of the company for an employee to unlawfully manufacture, distribute, dispense, possess or use on or in the workplace any narcotic drug, hallucinogenic drug, amphetamine, barbiturate, marijuana or any other controlled substance, as defined in Schedules I and V of Section 202 of the Controlled Substances Act (21 U.S.C. 812) and as further defined by regulation at 21 CFR 1300.11 through 1300.15.

"Workplace" is defined to mean the site for the performance of any work done in connection with a federal contract. That includes any place where work on a federal contract is performed, including a company place of business, company vehicle or any other company-approved vehicle.

Drug and Alcohol Control Policy

The Company has a vital interest in maintaining safe, healthful, and efficient working conditions for its employees. Being under the influence of a drug or alcohol on the job may pose serious safety and health risks not only to the user, but to all those who work with or otherwise come in contact with the user. The possession, use, or sale of an illegal drug or alcohol on the job may pose unacceptable risks for safe, healthful and efficient operations.

The Company recognizes that its own health and future are dependent upon the physical and psychological health of its employees. Accordingly, it is the intent of the company to maintain a safe, healthful, and efficient working environment for all of its employees and to protect company property, equipment, and operations.

The Company's stance against alcohol and drug use in the workplace is not a "moral" issue; rather it is an issue that affects our health, our safety, and our pocketbooks. Studies show that drugs and alcohol use in the workplace may be the single greatest factor responsible for industrial incidents and injuries, declining productivity, employee theft, and low employee morale.

DRUG AND ALCOHOL POLICIES

Federal law requires that on federal projects we maintain a DRUG FREE workplace and to report employees convicted of workplace related drug offenses. Employees violating any of the provisions will be considered for termination. U.S.D.O.T. regulations require that we implement a drug-screening program to compliment our current driver qualification system. Pursuant to these regulations, the company has implemented four types of drug testing for drivers: (1) Applicants (2) Periodic or Random (3) Reasonable Cause Testing, and (4) Post Incident Testing (partial implementation). When judicially permissible, it is the intention of the company to implement random and additional post incident drug testing of drivers, pursuant to the regulations.

The Company strongly encourages and assists employees in their efforts to deal with chemical dependency. The company has established a drug awareness program to inform employees of the dangers of drug abuse and our policy of maintaining a drug-free workplace. We have also, as required, established an Employee Assistance Program (EAP) for drivers, supervisors and company officials. The program consists of education and training of personnel on the effects and consequences of controlled substance use and how to recognize signs of substance abuse. All drivers, supervisors and designated company officials are required to attend at least one hour of training under the program.

Because of the numerous workplace locations we work in, we can not adequately publish a list of available chemical dependency counseling, treatment, or rehabilitation agencies. However, for purposes of drug screening the company does locate such resources throughout the state and information can be obtained from the personnel director. Employees can contact the safety/loss manager for assistance.
With these basic objectives in mind, the company has established the following policy with regard to the use, possession, or sale of alcohol or drugs:

1. Using or being under the influence of a legal drug (such as "over-the-counter" and prescription drugs) while performing company business, or while in or about a company facility or work site, is prohibited to the extent such use may affect the safety of yourself or others. Use common sense and, when in doubt about the effects of a certain drug, consult your physician and let us know about any adverse side effects. Employees are expected to follow the instructions on all medications. We request that you let us know any time you are taking prescription medications. Failure to do so may subject the offending employee to disciplinary action, up to and including discharge.

2. The unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance by any employee is strictly prohibited while performing company business, or while in or about a company facility or work site, and constitutes grounds for immediate discharge.

3. The employee must notify the company of any drug conviction, if the violation occurred within 5 days. The company, in turn must notify the contracting authority or owner within 10 days following notice of any employee's drug conviction.

4. CONSUMPTION OF ALCOHOL on the premises of Heartland Asphalt, Inc. is prohibited at any time, except for express business social events on the premises that have been approved in advance by the superintendent or an officer of the company.

5. An employee will be subject to discipline, up to and including termination, if he or she reports to work under the influence of alcohol, or unlawful controlled substance or a controlled substance without medical prescription.

6. You are hereby notified that you will be asked to certify in writing that you are aware of our policy and that you agree that you will not violate any of the provisions.

DRUG AND ALCOHOL CONTROL PROCEDURES FOR EMPLOYEES SUBJECT TO U.S.D.O.T. REGULATIONS

U.S.D.O.T. Regulations require that we implement a drug and alcohol-screening program to complement our current driver qualifications system. Pursuant to these regulations, the company has implemented four types of drug testing for drivers: (1) post conditional job offer (2) random (3) reasonable cause testing, and (4) post-incident testing (partial implementation) and three types of alcohol testing for drivers (1) random, (2) reasonable cause testing and, (3) post incident testing for drivers (partial implementation).

The company strongly encourages and assists employees subject to U.S.D.O.T. regulations in their efforts to deal with chemical dependency. The company has established a drug and alcohol awareness program to inform employees subject to U.S.D.O.T. regulations of the dangers of drug and alcohol abuse and our policy of maintaining a drug and alcohol free workplace. We have also, as required, established an Employee Assistance Program (EAP) for drivers subject to U.S.D.O.T. regulations, supervisors and company officials. The program and consequences of controlled substance use and how to recognize signs of substance or alcohol abuse. All drivers subject to U.S.D.O.T. regulations, supervisors and designated company officials are required to attend at least one hour of training under the program.

Because of the numerous locations in which we work, we can not adequately publish a list of available chemical or alcohol dependency counseling, treatment, or rehabilitation agencies. However, for purposes of drug and alcohol screening the company does locate such resources throughout the state and information can be obtained from the personnel director. Employees can contact the safety director for assistance.

With these basic objectives in mind, the company has established the following policy with regard to the use, possession, or sale of alcohol or drugs:

DRUG AND ALCOHOL POLICY

Purpose

It is the policy of Heartland Asphalt, Inc. ("the Company") that its drivers be free of substance and alcohol abuse. Consequently, the use of illegal drugs by drivers is prohibited. Further, drivers shall not use alcohol or engage in "prohibited conduct" as defined herein. The overall goal of this policy is to ensure a drug and alcohol free transportation environment and to reduce incidents, injuries and fatalities.

Consequences of Policy Violation

Any driver who becomes unqualified or engages in prohibited conduct as set forth herein may be subject to disciplinary action up to and including termination of employment.

Prohibited Conduct

The following shall be considered "prohibited conduct" for purposes of this policy:

No driver shall report for duty or remain on duty while having an alcohol concentration of .04 or greater.
No driver shall be on duty or operate a commercial motor vehicle while the driver possesses alcohol.
No driver shall use alcohol while performing safety-sensitive functions.
No driver shall perform safety-sensitive functions within (4) hours after using alcohol.
No driver required to take a post-incident alcohol test shall use alcohol for eight (8) hours following the incident or until he/she undergoes a post-incident test, whichever occurs first.

DRUG AND ALCOHOL POLICY

DRUG AND ALCOHOL POLICY CONT'D

No driver shall refuse to submit to a post-incident, random, reasonable suspicion, return-to-duty, or follow-up alcohol or drug test.

No driver shall report for duty or remain on duty when the driver uses any controlled substance, except when use is pursuant to the instructions of a physician who has advised the driver that the substance does not adversely affect the driver's ability to operate a commercial motor vehicle.

If a driver engages in prohibited conduct, the driver is not qualified to drive a commercial motor vehicle and shall be immediately removed from service. The Company may, in its discretion, at the request of the driver, keep the driver's position open while such driver attempts to become re-qualified. The Company may also take disciplinary action against the driver up to and including termination.

Refusal to Test

Refusal to submit to the types of drug and alcohol tests employed by the Company will be grounds for refusal to hire driver/applicant and to terminate employment of existing drivers. A refusal to test is defined to be conduct that would obstruct the proper administration of a test. Refusing to sign step two of the alcohol form is considered a refusal to test. A delay in providing a urine, breath or saliva specimen could be considered refusal. If a driver cannot provide a sufficient quantity of urine or breath he/she will be evaluated by a physician of the company's choice. If the physician cannot find a legitimate medical explanation for the inability to provide a specimen (either breath or urine), it will be considered a refusal to test. In that circumstance the driver has violated one of prohibitions of the regulations.

Types of Test

Pursuant to regulations promulgated by the Department of Transportation (DOT), the company has implemented six circumstances for drug and alcohol testing: (1) pre-employment (drug testing only); (2) post-incident testing; (3) random testing; (4) reasonable suspicion testing; (5) return to duty testing; and (6) follow-up testing.

Pre-Employment Testing

All applicants for driving positions must submit to urine drug tests. A driver/applicant is not required to submit to a urine drug test if (1) the Company can verify that the driver has participated in a valid drug testing program within the preceding thirty (30) days; (2) while participating in that program, was either tested within the past six (6) months or participated in a random selection program for the previous twelve (12) months; and (3) no prior employer has knowledge that the driver violated any part of the regulations within the last six (6) months.

Random Testing

The Company conducts random drug and alcohol testing. The Company or its agents will submit all drivers' names to a random selection system. The random selection system provides an equal chance for each driver to be selected each time random selection occurs. Random selections will be reasonably spread throughout the year. The Company will drug test, at a minimum .50 percent of the average number of driver positions in each calendar year or at the rate established by the Department of Transportation for the given year. The Company will select, at a minimum .25 percent of the average number of driver positions in each calendar year for random alcohol testing, or a the rate established by the DOT for the given year. Random selection, by it very nature, may result in drivers being selected in successive selections or more than once a calendar year. Alternatively, some drivers may not be selected in a calendar year.

DRUG AND ALCOHOL POLICY

Random Testing Cont'd

If a driver is selected at random, for either drug or alcohol testing, a Company official will notify the driver. Once notified, every action the driver takes must lead to a collection. If the driver engages in conduct that does not lead to a collection as soon as possible after notification, such conduct may be considered a refusal to test.

Post Incident Testing

The driver must submit to drug and alcohol testing any time he/she is involved in an incident where (1) a fatality is involved; or (2) the driver receives a citation for a moving violation arising from the incident, and any party involved requires immediate treatment for an injury away from the incident scene, or if any vehicle involved incurs "disabling damage" (i.e., must be towed away). Following any incident, the driver must contact the Company as soon as possible. The driver shall follow the instructions from the Company or its representative.

Any time a post-incident or alcohol test is required, it must be performed as soon as possible following the incident. If no alcohol test can be made within eight (8) hours, attempts to perform an alcohol test shall cease. If no urine collection can be obtained for the purposes of post-incident drug testing within thirty-two (32) hours, attempts to make such collection shall cease.

In the event that federal, state, or local officials conduct breath or blood test for the use of alcohol and/or urine tests for the use of controlled substances following an incident, these test may meet the requirements of this section, provided the test conform to applicable federal, state, or local requirements. The Company may request testing documentation from such agencies, and may ask the employee to sign a release allowing the Company to obtain such test results. In the event a driver is so seriously injured that the driver can not provide a sample of urine, breath, or saliva at the time of the incident, the driver may provide necessary authorization for the Company to obtain hospital records or other documents that would indicate the presence of controlled substances or alcohol in the driver's system at the time of the incident.

Reasonable Suspicion Testing

Reasonable suspicion for requiring a driver to submit to drug and/or alcohol testing shall be deemed to exist when a driver manifests physical or behavioral symptoms or reactions commonly attributed to the use of controlled substances or alcohol. Such driver conduct must be witnessed by at least one supervisor trained in compliance with Section 382.603. Should a supervisor observe such symptoms or reaction, the driver must submit to testing. The driver shall be driven to the nearest testing center for drug/alcohol screening. Driver may return to duty only after Negative test results are received from the Medical Review Officer. Discretion rests with the Company President regarding payment for lost working hours in between reasonable suspicion testing and return to work following a completely Negative test result.

Substance Abuse Evaluation, Return to Duty, and Follow-Up Testing

Any driver who engages in prohibited conduct shall be provided with the names, addresses and telephone numbers of qualified substance abuse professionals (SAPS). If the driver desires to become re-qualified, the driver must be evaluated by a SAP and submit to any treatment the SAP prescribes. Following evaluation and treatment, if any, in order to become re-qualified, the driver must submit to and successfully complete a return-to-duty drug and/or alcohol test. Such driver is also subject to follow-up testing. Follow-up testing is separate from and in addition to the Company's reasonable suspicion, post-incident, and random testing procedures. The schedule for follow-up testing shall be unannounced and in accordance with the instructions of the SAP. Follow-up testing may continue for a period of up to sixty (60) months following the driver's return to duty. No fewer than six (6) tests shall be performed in the first twelve (12) months of follow-up testing. The costs of any SAP evaluation or prescribed treatment shall be borne by the driver. The Company does not guarantee or promise a position to the driver should he/she regain qualified status.

DRUG AND ALCOHOL POLICY

Authorization for Previous Test Records

Within 14 days of performing a safety-sensitive function, DOT regulations require that the Company obtain certain drug and alcohol testing records from the driver's previous employer(s) for the previous two years. The Company will verify that no prior employer of the driver has records indicating a violation of any DOT rule pertaining to controlled substance or alcohol use within the previous two (2) years. As a condition of employment, the driver shall provide the Company with a written authorization for all previous employers with in the past two years to release such drug and alcohol testing records as the regulations require.

Drug Urinalysis

Drug testing will be performed through urinalysis. Urinalysis will test for the presence of drug and/or metabolites of the following controlled substances: (1) marijuana; (2) cocaine; (3) opiates; (4) amphetamines; and (5) phencyclidine (PCP).

The urinalysis procedure starts with the collection of a urine specimen. Urine specimens will be submitted to a SAMHSA-certified laboratory for testing. As part of the collection process, the specimen provided will be split into two vials. In the event that the primary specimen tests positive, a confirmation test of that specimen will be performed before being reported by the laboratory to the MRO as a positive.

All laboratory results will be reported to a Medical Review Officer (MRO) designated by the Company. Negative test results shall be reported by the MRO to the Company. Before reporting a positive test result to the Company, the MRO will attempt to contact the driver to discuss the test result. If the MRO is unable to contact the driver directly, the MRO will contact the Company management official designated in advance by the Company, who shall, in turn, contact the driver and direct the driver to contact the MRO. Upon being so directed, the driver shall contact the MRO immediately or, if after the MRO's business hours and the MRO is unavailable, at the start of the MRO's next business day. In the MRO's sole discretion, a determination will be made as to whether a result is negative or positive. If, after failing to contact the MRO after 5 days, or if the driver cannot be contacted at all within 30 days, the MRO may verify the test as positive. After any positive verification the driver may petition the MRO to reopen the case for consideration.

Pursuant to DOT regulations, individual test results for drivers/applicants and drivers will be released to the Company and will be kept strictly confidential unless consent for the release of the test results have been obtained. Any individual who has submitted to drug testing in compliance with this policy is entitled to receive the results of such testing upon timely written request.

An individual testing positive may make a request of the MRO to have secondary vial tested. The secondary vial must be tested by a different SAMHSA - certified lab than tested the primary specimen. The individual making the request for a test of the second specimen must pay all costs associated with the test. The request for testing of a secondary specimen is timely if it is made to the MRO within 72 hours of the individual being notified by the Company of a positive test result.

Alcohol Tests

The Company will perform alcohol testing using a device that is on the National Highway Traffic Safety Administration's (NHTSA) Conforming Products List (CPL) and meets the DOT's testing requirements. This may be a breath testing device or a saliva-based testing device, and may be provided through a vendor or agent. The device will be operated by a technician who is certified and trained on the specific device he or she will be operating. The driver shall report to the alcohol testing site as notified by the Company. The driver shall follow all instructions given by the alcohol technician.

DRUG AND ALCOHOL POLICY

Alcohol Tests (cont'd)

Any initial test indicating a blood alcohol concentration (BAC) of .02 or greater will be confirmed on an evidential breath testing device (EBT) operated by a breath alcohol technician (BAT). The confirmation test will be performed no sooner than 15 minutes and no later than 30 minutes following the completion of the initial test. In the event the confirmation test indicates a BAC of .02 to .0399, the driver shall be removed from duty for 24 hours or until his/her next scheduled on-duty time, whichever is longer. Drivers with tests indicating a BAC of .04 or greater are considered to have engaged in prohibited conduct, which may result in disciplinary action up to and including termination. All alcohol tests shall be performed just prior to, during, or just after duty.

Training

The Company shall ensure supervisors designated to determine whether or not reasonable suspicion exists to require a driver to undergo testing under Section 382.307 receive at least 60 minutes of training on recognizing alcohol misuse, and receive at least 60 minutes of training on recognizing controlled substance use. The training shall cover the physical, behavioral, speech, and performance indicators of probable alcohol misuse and use of controlled substances.

Educational Materials

The Company shall provide educational materials that explain the requirements of Section 382.601, consequences of violating the regulations, and the employer's policies and procedures with the respect to meeting these requirements. The materials supplied to drivers may include information on additional employer policies with respect to the use of possession of alcohol or controlled substances, for example, the consequences for a driver found to have a specified alcohol or controlled substance level based on the employer's authority independent on Section 382.601. The Company shall ensure each driver is required to sign a statement certifying that her/she has received a copy of these materials described in Section 382.601.

This policy in not intended nor should it be construed as a contract between the Company and the employee. This policy may be change at any time at the sole discretion of the Company.

Workplace Use, Possession, or Sale of Drugs or Alcohol

Using, being under the influence of, or possessing alcohol while performing company business or while in or about a company facility or work site, will subject the offending employee to disciplinary action, up to and including discharge.

HAZARD COMMUNICATION PROGRAM

PURPOSE
Communicate Heartland Asphalt, Inc. Hazard Communication Program to all company personnel.

OBJECTIVES
1. To safeguard our employees' health by providing a management guide for compliance.
2. To provide our employees with the necessary information concerning health and physical hazards of the chemical materials in use at our work sites.
3. To comply with Iowa Code chapters 88 and 455 D, and OSHA Title 29 CFR 1910.1200(HCS).

SCOPE
This compliance program will provide the means for the transmission of the information necessary to apprise employees of the chemical products which are hazardous and to which they may be exposed. It will include the following:

A. Listing of the chemical products which will be handled, used, or stored on job site location or company property.
B. Assure that appropriate identifying labels are on containers of hazardous chemical being used and handled.
C. Safety Data Sheets (SDS's) will be required and procured for all hazardous chemicals which employees of this company will encounter, and the master SDS's will be available at the company headquarters office, and a copy will be available (where designated) at the job site for all those chemicals to which employees could be exposed at **that job site.**
D. Employees will be trained to recognize and interpret labels, warnings, color, coding, and signs affixed to containers that they might handle, in order to avoid and/or make less severe potential hazards.
E. Proper use of Safety Data Sheets will be covered in a safety training meeting, and indoctrination to availability, and methods to acquire or view at that job site will be covered.
F. This written Hazard Communication Program will be available upon request to employees, their designated representative(s), emergency responders, and interested members of the community for that job site, as provided for in the Iowa Code 530-130(455D).

I. CHEMICALS (HAZARDOUS) LISTS

A. A list of all hazardous chemicals used, or transported, or stored at jobsites or on company property will be made available, maintained, updated in a timely fashion to reflect the hazardous chemicals actually in use at that job site activity.

B. Provide a company procedure and/or policy to insure compliance with the hazardous chemicals list regulations. These shall include:

1. Inclusion on the purchase order form of a notice that purchase of a potentially hazardous material is conditional upon receipt.
2. Inclusion on the purchase order form of a notice that all hazardous chemicals must be properly labeled.
3. A system at company headquarters to verify that items 1) and 2) above have been met by suppliers, especially when hazardous chemicals are shipped and delivered directly to a Job site.

HAZARD COMMUNICATION PROGRAM

II. LABELING

All containers of hazardous materials regardless of size must be labeled or tagged.

1. Original labels on containers containing hazardous chemicals are not to be removed.
2. If a different material is placed in the container, the label for the hazardous material must be changed to reflect the true contents in the container.

Container labels should include the following:

a. Name of substance in the container.
b. Appropriate hazard warnings.
c. Name and address of the manufacturer or distributor.
d. Exceptions to this rule are made only for very small containers filled by the person using the material, which must then be used/emptied by that person during the same shift. Such containers need not be labeled.

III. TRAINING

A. Workers to be Trained

1. All employees routinely exposed to hazardous materials through use, handling, transportation, or other exposure shall be trained for the materials in use in their workplace.
2. Orientation training for all employees who are newly hired, assigned, or transferred to a department where he will be routinely exposed to hazardous materials, or to a different set of hazardous materials shall be trained for the materials in use in their workplace.
3. Contractor's employees exposed to material on the work site.

B. Training Components

1. Explanation of Right-To-Know Law.
   a. Employee rights & responsibilities.
2. Introduction to the written Hazard Communication Program.
3. Hazard Determination.
4. Availability and Interpretation of SDS's.
5. Labeling and place carding procedures.
6. Physical and health hazards of chemicals in workplace.
   * Flammable materials
   * Corrosive materials
   * Explosives
   * Toxic Materials
   * Oxidizers
   * Cryogen
   * Adhesives
   * Lubricants
   * Irritants
   * Sensitizes
7. Protective procedures (methods, observations).
8. Protective equipment.
9. Procedures for non-routine tasks.

C. Employees shall be retrained annually.

HAZARD COMMUNICATION PROGRAM

IV. EMERGENCY RESPONSE

In addition to the place carding noted in other parts of this program, we shall submit a list of hazardous material which are present in significant amounts to the local fire department per Tier II requirements**.**

V. RECORDS

A. Location and Maintenance of Hazardous Substances List.
B. Location and Maintenance of SDS's.

C. Employee Training Records.

VI. RESPONSIBILITY

A. The manager of safety and health is responsible for updating SDS's, coordinating training and revising those standards to assure compliance with the "Right to Know" Laws.
B. Foreman and superintendents will be held accountable for enforcing the established work rules for employees to ensure chemicals are being handled and used properly to eliminate or reduce exposures.
C. Every employee will accept responsibility for safely performing his/her work in line with established work practices and precautions outlined on hazardous materials labels.

HCS Pictograms and Hazards

Health Hazard	**Flame**	**Exclamation Mark**
• Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity	• Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides	• Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non Mandatory)
Gas Cylinder	**Corrosion**	**Exploding Bomb**
• Gases under Pressure	• Skin Corrosion/ burns • Eye Damage • Corrosive to Metals	• Explosives • Self-Reactives • Organic Peroxides
Flame over Circle	**Environment (Non Mandatory)**	**Skull and Crossbones**
• Oxidizers	• Aquatic Toxicity	• Acute Toxicity (fatal or toxic)

DAILY POLICIES

Payment of Drug Testing & Physicals

All Drug testing required by U.S.D.O.T. will be paid for by the company. The Pre - Employment Physical, Plant personnel required by OSHA to have an annual hearing test and Personnel required to have an annual physical in order to use respirators will also be paid for by the company. All other costs associated with acquiring and maintaining driver's licenses will be the responsibility of the employee.

Expense Sheet

From time to time as your supervisor directs; your job may require you to purchase items or stay over night to attend curtain functions required for your employment. All expenses which are to be reimbursed by the company must be approved by your supervisor prior to the event so as to avoid unauthorized expenditures and unnecessary costs to you. Using attached form A1 all expenses which are to be reimbursed to an employee must be listed, an explanation with receipt (original only) stating the place, date and amount spent. These expenses must be approved by the General Manager and/or Controller before payment is made.

Lodging, mileage or miscellaneous expenses will be reimbursed if done for the betterment of the company and pre - approved by the general manager.

Types of Employees

12 Month - Work the entire calendar year and shall work approximately 40 hours or more per week.
Full Time - An employee shall be considered full - time after their temporary training period has ended and are hired to complete a continuous construction season.
Flaggers and Internship employees – Class V, not otherwise classified.

Full Time Employee benefits are as follows:
401k participation
Single health & dental insurance coverage paid by the company.
Family health & dental insurance coverage at the employee's expense.
Health Savings accounts plan.

These Benefits are explained in more detail in the pages that follow.

Flaggers and Internship employees are not eligible for Health Insurance and 401k plans or any other benefits unless approved by management or mandated by State or Federal law.

401k Plan

A full time employee is eligible for the 401k plan the first day work commences. A booklet which details the plan will be given to you when you become eligible. Please refer to this booklet for further information.

DAILY POLICIES

A booklet which details the plan will be given to you when you become eligible. Please refer to this booklet for further information.

Single Medical Insurance
A 12 Month & Full Time employee is eligible for single medical insurance coverage paid by the company. This company follows all federal mandates for employers our size and complies with COBRA regulations. A booklet, which details the coverage, will be given to you when you become eligible. Please refer to this booklet for further information. You may also purchase family coverage under the same plan. Please ask the office personnel for more information.

Family Medical Insurance
A Full Time Employee at their own expense purchase family coverage. This company follows all federal mandates for employers our size and complies with COBRA regulations. A booklet, which details the coverage, will be given to you when you become eligible. Please refer to this booklet for further information. Please ask the office personnel for more information.

Absent - Planned
If you find that you are unable to work as your supervisor directs, you must contact your supervisor one week before the day you are absent. All absences which are not reported to the supervisor in this manor which are not considered by your supervisor as an emergency or immediate sickness shall require the supervisor to issue an employee warning and possible termination.

Absent from work - Emergency or sickness
If you find that you are unable to work as your supervisor directs, you must contact your supervisor 12 hours before the start of the work day or as they direct. All absences which are not reported to the supervisor in this manor shall require the supervisor to issue an employee warning and possible termination.

Vacation
One week of unpaid vacation is available on a first call priority after March first of each year and should be requested by filling out the Request for Time Off form and sending it into the Mason City office for approval. The management of Heartland Asphalt, Inc. reserves the right to approve or deny any or all such vacations.

Travel Policies
Certain job sites will require overnight lodging during the work week. It is the policy of Heartland Asphalt, Inc. to book double occupancy rooms for overnight accommodations at job sites past a 90 minute radius of the Mason City office. Only members of the same sex will be paired up in said rooms. Heartland Asphalt will arrange for payment of such lodging expenses. Exceptions to this policy must be approved in advance by Company President, George Jessen. See Travel Time policy for details of pay regarding commute time to and from job sites.

DAILY POLICIES

Auto Deposit Payroll Procedures

Auto deposit of payroll checks is an easy way to decrease the time it takes to deposit money from your check to your bank account. This procedure eliminates your need to wait for your payroll check to come in the mail and the time it takes to deposit your check (if the bank is open when you are able to deposit the check).

Payroll checks will be mailed on Tuesday of each week following the previous payroll week. On the day payroll checks are mailed, an auto deposit will be made. Depending on your bank's procedures for auto deposit (wire transfer), it can be available as early as the next day for your use in the account(s) you designate. A payroll stub like you are currently receiving will be mailed to you at your current payroll address. This will allow you to verify (if needed) the amount deposited in your account and serve as your record of payroll.

Tests make for a two-week period showed that Heartland Asphalt, Inc.'s bank made the deposit on Tuesday night and those deposits were available for the employee's use in their account on Wednesday (next day). As you can see, this not only is much faster than conventional methods of payroll check deposit, it is also much easier.

Another advantage is that you may choose to put all of your money in a checking or savings account or two checking or two savings account or a combination. For example if an employee had a bank checking account which they wanted 85% of their earnings deposited and 15% into a credit union savings account, they need to simply fill out the authorization form with this information and include a copy of both deposit slips. One account is simply stated as 100% of the deposit.

Heartland Asphalt, Inc. and the bank honor holidays. On the week these holidays are observed transactions may not be posted on the normal day. For example, Labor Day is observed on a Monday and pushes the payroll back one day. Your deposit will also be pushed back a day due to processing time needed to complete the payroll.

If you are changing your account number(s) or the percentage going to an account, a new authorization form will need to be completed and returned to the payroll department.

If for some reason you change your bank account number or bank and don't notify us of the change, our bank will notify us that the account was closed or changed. We will then contact you and ask you to fill out another authorization form and write a check to you for the payroll that was not deposited.

DAILY POLICIES

Work day

Starting time shall be determined by individual foreman and is approx. 6:00 am and ending time shall be approx. 6:00 p.m. You are required to bring your mid - day meal and snacks with you and the supervisor will determine your lunch break.

The workweek starts on a Sunday and ends on Saturday the same week. Although this is a typical workweek all working hours shall be determined by your supervisor.

On scheduled workdays, you shall report to the designated workplace on time in the usual manner. When you show up at the correct location and if it is raining and the supervisor determines that you will not be working that day, you will be paid for two hours of "Show – Up/Travel" time. If rain is very likely for the next workday you maybe instructed to call in to your supervisor, the plant or office in which case if we do not work, then no time will be paid.

If you are told to call in at 6:00 am and it is raining and you are told to check back at 8:00am, you may be told to report at 10:00 and/or 11:00 am and your crew is expected to work the rest of the day. When you actually start working is your starting time for that day.

Paving Crew call in procedure – If there is an 80% or higher chance of rain for the next workday, please use the following procedures:

If normal start is 6:00 am

Laydown foreman will be communicating with plant & weather

service between 5:00 am & 6:30 am

Laydown foreman will call crew at 6:30 am and report one of three options: 1) Report at ????? am 2) We are on hold and will call back at ????? 3) No work today, call or report at ????? tomorrow.

Meanwhile, the plant will communicate a similar message to the company drivers and hired trucks.

Note: If you are unable to contact your supervisor at their home residence or mobile telephone number, call the plant supervisor.

All timecards must be filled out daily and signed by your supervisor and the employee before payment will be made. Please note that it is the responsibility of the employee to make sure that the time is job costed correctly and has been given to their supervisor for signature. If Timecards are not received in the office Monday following the pay period, the timeliness of the employee's check can not be guaranteed. All time cards received before 8:00 am Monday following the pay period will be processed and checks normally will be mailed on Tuesday night.

These policies and procedures are for guiding the employee and do not confirm nor imply a contract between employee and employer and may be changed at any time at the discretion of management.

These Policies Supersede any and all prior policies regarding the above mentioned and are effective as of the date above.

Heartland Asphalt, Inc. Travel Time Policy

Rev. March 26, 2020

Employees will go on the clock at their first job of the day or when they start operating a company truck for company use. They will go off the clock at the end of the workday at the location of their last project unless they are moving a company truck for the betterment of the company.

If an employee starts the day at a site outside the circle(s) of his/her travel home base (see Travel Home Base map), then the foreman will allow the employee 0.50 Hour of commute time per circle. (this is the total for the round trip whether it is one day or the week). This time counts whether the employee is driving his or her own vehicle or riding in the foreman's pickup. The time will be charged to the first job of the day as travel time.

Driving = You are the one driving the vehicle.
Riding = You are not driving, but are a passenger.

If driving a company vehicle for the betterment of the company, you will be paid for length of travel to and from the job.
If riding in your own vehicle or a company vehicle within your home base, you will not be paid for travel time.
If riding in your own vehicle or a company vehicle to a destination outside your home base, you will be paid as outlined above.
If driving your own vehicle to a destination outside your home base, you will be paid as outlined above.

On "Rain days" when the 2 hours of show up time is paid; it is intended that the travel time is included in the 2 hours.

Road Foreman procedure:
The foreman drives a company vehicle, they will get their travel time because they are planning their day, making phone calls as needed, and moving the truck for the betterment of the company.

Flaggers Clock in when told to report to project. Sign out when done on project.

Heartland Asphalt, Inc. Overnight Policy

Certain job sites will require overnight lodging during the work week.

- It is the policy of Heartland Asphalt, Inc. to book double occupancy rooms for overnight accommodations if the distance or "hours on duty" dictate.
- Only members of the same sex will be paired up in said rooms.
- Heartland Asphalt will arrange for payment of such lodging expenses.
- Exceptions to this policy must be approved in advance by Company President, George Jessen.
- For Overnight travel, employees will be paid travel time according to the Map & table for the start of the travel which is designed to cover the commute back to the Mason City base at the end of the work week or end of project.
- If the employee chooses to not stay overnight, then the additional commuting/traveling is on their own time and expense.

MAP OF TRAVEL TIME GOES HERE….

Waterloo
Cedar Falls
Mason City
Clear Lake
Algona
Fort Dodge
Webster City
Eagle Grove
Eldora
Iowa Falls
Waverly
Charles City
Osage
Estherville
Spencer

DAILY POLICIES

BEREAVEMENT

In the event of a death of a family member or friend, the following applies unless the employee declines to invoke the family leave act of 1993 and will be applied as follows:

1. Immediate Family Member: An immediate family member is defined as the employee's spouse, children and parents. If there is a death of an employee's immediate family, and the employee has notified their supervisor and/or the Mason City office, before taking time off, they may take time off between death and funeral or up to three days of leave and shall be paid for those days for an eight (8) hour day. An example of his policy is if the death is on Saturday and the funeral is Tuesday, the employee could take Monday and Tuesday off and return to work on Wednesday. The employee would be paid for Monday and Tuesday for a total of sixteen (16) hours.

2. Other Close Family Members: Included in this definition are the employee's spouse's parents, employee's grandparents, and the employee's siblings. If there is a death of any employee's "other close family member", and the employee has notified their supervisor and / or the Mason City office before taking time off, they may take three days of leave and shall be paid for the day of the funeral for an eight (8) hour day.

3. Other Family Members and Friends of the Employee: All other requests for grievance shall be for one day of unpaid time off for the day of the funeral if the employee has notified their supervisor and / or the Mason City office before taking time off.

JURY DUTY

Typically seasonal workers may defer their term of jury duty until the winter months. But, if you are selected for jury duty, and are not allowed to change the date you must serve, you must inform your supervisor of when and for how long the term of duty will run. When you are to report for jury duty on a daily basis, inform your supervisor or call the Mason City office as soon as possible. You will be allowed unpaid time off for that day and if additional days are required, call the Mason City office daily.

OPERATOR'S LICENSE PROCEDURES

All personnel are required to have a valid driver's license and the correct type of license to operate any vehicle of Heartland Asphalt, Inc. If you have questions on which vehicles you can operate, ask your supervisor.

Field personnel are encourage to obtain the licenses required to drive all the vehicles and equipment used by Heartland Asphalt, Inc. To help you achieve this goal, Heartland Asphalt, Inc. will provide a training session of a vehicle you need to drive for your test and try to arrange an appointment with you to take you to and from the testing site and back to the Mason City office. Please note that the time required studying, taking the test and completing the paperwork for your license should not be recorded on your timecard. Please see the controller with any questions.

These policies and procedures are for guiding the employee and do not confirm nor imply a contract between employee and employer and may be changed at any time at the discretion of management.

DAILY POLICIES

EYECARE AT THE JOB SITE

Annually Heartland Asphalt, Inc. will order and pay for one pair of OSHA approved clear and tinted safety glasses for all returning employees who work in the field or one pair of safety glasses which have interchangeable lens. This program is through Shopko Optical. These employees will be allowed to choose which pair of safety glasses they prefer from the receptionist at the office. Heartland will also order (if needed) one more pair of safety glasses during the construction year to replace scratched and / or broken glasses per employee. Simply return the safety glasses to the receptionist and explain why the glasses need to be replaced.

To be in compliance with OSHA regulations all eyewear must have stamped on the frame of the glasses and on the lens "Z87". This notifies the users that the frame and lens are approved by OSHA as protective eye wear.

Safety glasses will be worn at any time the employee is at risk: examples include but not limited to: using compressed air, hammering, using a grinder. If a field employee is not wearing their safety glasses, the foreman will give them a used pair to wear for the day. If no used safety glasses are available, the foreman will issue them a new pair from inventory and the field employee will be charged the cost of the safety glasses.

EMPLOYEE REFERRAL PROGRAM

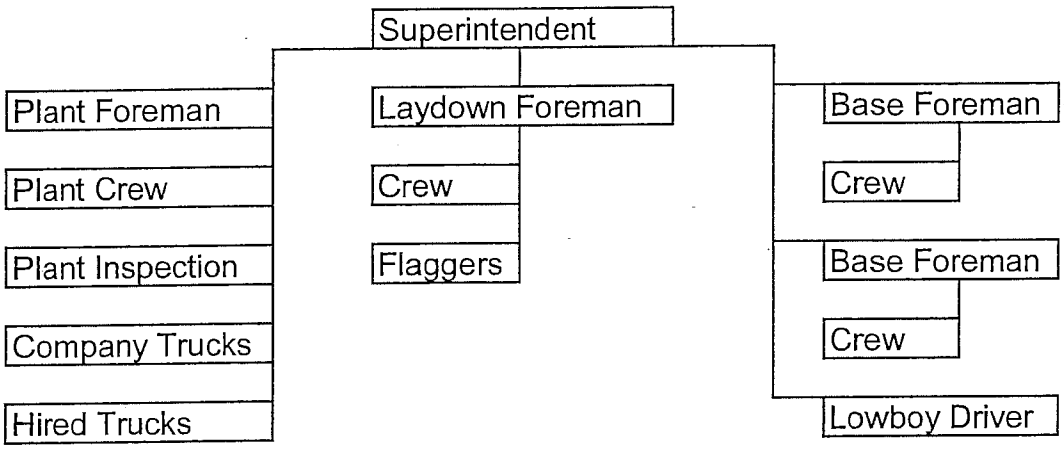
When a current Heartland Asphalt employee refers a person to work here at Heartland, there is a financial incentive given after durations of employment are met. The program offers a $200 incentive after the first 2 months of full-time employment, a $300 incentive if employed at season's end & 1,000 hours worked, and an additional $500 paid after 2 continuous seasons.

Driveways to Highways
HEARTLAND
ASPHALT, INC.

2601 South Federal Ave.
Mason City, IA 50401
Phone (641) 424-1733
Fax (641) 424-0334

Rain Day Crew Call-In Procedure

When there is a strong chance of rain the next work day the superintendents may ask the foreman and their respective crews to call in the next morning before reporting for work. Listed below is the basic calling chain of command, it may be modified as needed by the Superintendent.



The Superintendent will determine what time they will talk to the foreman. Usually between 5:00 a.m. and 5:30 a.m.

The Foremen will communicate with their crew, trucks, and flaggers as listed above at a predetermined time (usually around 5:30-6:00 a.m.). The foremen will communicate one of the following options:

1. Report at _____ (example 8:00 a.m.)
2. We are on hold and will communicate again at _____
3. No work today, call in or report at _____ tomorrow.

Heartland Asphalt Inc
Employee Expense Report
Invoice

Date: _____

Employee Name _____

Each Item Listed Requires a Receipt - Please attach receipt(s) to this form

Description	Equipment/ Job Number	Operation	Cost Type	Amount
Safety Incentive for Steel Toe Work Boots *95067400*				$ 25.00
Hazmat License *93064800*				$ 107.50
Ice *950709__*				
Equipment Repair Part for Equipment Number: *95067000*			03	
Equipment Repair Part for Equipment Number: *95067000*			03	
Tire Repair for Equipment Number: → *95068000*			13	
Unleaded Fuel For Equipment Number: → *95068500*			06	
Unleaded Fuel For Equipment Number: → *95068500*			06	
Diesel Fuel For Equipment Number: → *95068600*			04	
Diesel Fuel For Equipment Number: → *95068600*			04	
Travel & Lodging - List Job Number: → *06059000*				
Travel & Lodging - Schools *930660__*				
Meals - Schools *930662__*				
Other				
Total				

I hereby certify that the above expenditures represent cash spent for legitimate company business expenses only and includes no items of a personal nature.

_____ Employee Signature

_____ Approved By

Driveways to Highways
HEARTLAND ASPHALT, INC.
2601 South Federal Ave.
Mason City, IA 50401
Phone (641) 424-1733
Fax (641) 424-0334

Supervisor's Incident Investigation

Incident # _____
for office use

Employee Name:
Address:
City, State, Zip:
Date of Birth:

Other persons involved
Address:
Phone #

Date of Incident:	Time: AM/PM	Employee Began Work: AM/PM
Job # and Location of Incident:		Supervisors Name:
Address:		County:

Were the following agencies Contacted or used? If so write down on back of this page the details:
Law enforcement Ambulance EPA OSHA IDOT DNR

Name & Address of Medical Facility Used:	Name of Physician:	Treated in the Emergency Room? Y / N	Hospitalized Overnight? Y / N

What was the job situation and what was the employee doing when injured or exposed?

How did the incident or injury occur?

Describe the incident, injury or illness in detail (Indicate the part of body affected if applicable).

Was the incident caused by failure of any person to use safety equipment or observation? NO Yes (explain)

Name object or substance which directly injured the employee:

Has the Employee returned to work? Yes. No.

Corrective Action - What should be done to avoid this incident in the Future?

What action have you taken?

Type of Incident? 1)_____ is at fault. 2) System Failure. Explain.

Employee's Signature:	Date discussed at Safety meeting:	
Employee's Supervisor:	Date:	Reviewed By:
Investigated By:	Date:	Date:

1 .nated Cost of this Incident:_____

For Office Use Only

Incident Involves: 1-Lost time (personal injury) 2-Medical Facility used 3-Property Damage 4-Theft 6-Report only 7-DOT Violation 8-Animal 9-Utilit

Crew: 1-Mainline 2-Commercial 3-Base-E 4-Base-S 5-Base-N 6-Concrete 7-Plant-Port 8-Plant-Stn 9-Shop 10-Office 11-Milling 12-Quarry Lab-Lab

Location: 1-Office 2-Plant 3-Shop 4-Quarry 5-Job Site 6-Other

Abbreviated Description of Incident:

Payroll Operations Q & A 2013

Jobs, Plants, and Sites have specific operation codes
Plant Operation Numbers are Listed Beside Plant Locations on the timecard
Site Operations Numbers are Listed Beside Site Locations

Out taking shots - charge to the job & that you are working on at that time

	Job #	Oper #
Out taking shots/staking before it is a signed job	91	609
Going out prior to start of job to look at site		100
Cut Cores		440

Mobilization - Jobs Under 300 tons	Oper #
Paving Crews	445
Base Crews	130

Moving Equipment	Job #	Oper #
from plant to shop	95	660

Move Equipment End of Day	Job #	Oper #
plant"A" to plant "B"	Plant "B"	390
end of day from job to plant	Job	100
Milling Machine from job back to shop	Job	334

Moving Portable Plant	Oper #
Charge to plant location being moved to	390
unless otherwise specified	

Haul Millings	Oper #
From Milling Machine	333
To a Job	221
To a Plant/Quarry	185

Sites	Oper #
Load Millings at Plant	185

Locations	
Calibration,Plant Mixing & Operation	283
Clean Out Bins (truck drivers only)	180
Truck Driver for Plant Calibration	283
Loading Cold Mix	283

Foreman	Job #	Oper #
Call Crew on Rain Days about work schedule	93	612
Foreman/Sales Staff Meeting	91	609

Use as Assigned On Shaping Sheet	Oper #
HMA Hand Patch & Haul	442
HMA Paved Shoulder & Haul	449
HMA Shoulder Strengthening & Haul	450

Operation # 446 is used for the Haul on all of the following

HMA Laydown	445
HMA Intersections/Ramps	447
HMA Base Widening	448

IDOT Office	Job #	Oper #
Field Office - job		109

Incident	Job #	Oper #
	93	615

Equipment Time

Pilot Car - Equipment Time needs to be reported on a Payroll Timecard

Please make sure em es are writing their equipment time on their timecard
Please make sure eq nt numbers are valid

2013 **HEARTLAND ASPHALT, INC.** Day:_____

Name: John Doe **Employee No:**_____ **Title:**_____ **Date:**_____

Job Number	Equip Repaired	Job Location	Oper No.	Employ Hours	Equip No.	Equip Hours	Equip No.	Equip Hours
93		Safety Meeting	614	0.25				
20090		Tripoli Plant	283	3	3206	3.5		
95	3206	Fix Loader	660	2				
74000		Cargill Parking Lot	445	4.75				
			TOTAL	10				

Approved *MK* IN 6:00 am OUT 4:00pm Signed *John Doe*

2013 JOB OPERATION NUMBERS

MOBILIZATION	100	MILLING		ASPHALT	
TRAVEL TIME	105	Test Milling	330	HMA Temp Wedges & Haul	335
		Big Mill	331	Test Mill Patch & Haul	336
TRAFFIC CONTROL		Mill, Clean & Unigrind	332	Fog Seal Shoulder Rumble Strips	339
Flagger & Pilot Car	150	Haul Millings	333	HMA Sample Haul / Cores	440
Set Up Signs & Cones	151	Milling Mobilization	334	HMA Laydown	445
				HMA Haul	446
MISCELLANEOUS					
Punch List Items/Warranty	110	ROCK BASE		ASPHALT PATCH	
Fabric	111	Placing Base Rock	220	HMA Patch Core Out	441
Fixture Adjustment	112	Haul Base Rock	221	HMA Patch & Haul	442
Sawcutting	113			HMA Paved Shoulder & Haul	449
Rout & Fill Cracks	117	SHOULDERING		HMA Shoulder Strength & Haul	450
Parking Bumpers	118	Place Shoulder Rock	551		
		Haul Shoulder Rock	552	CONCRETE	
EXCAVATION		Place Shoulder Dirt	553	Concrete Removal	114
Class 10 - Excavation & Haul	120	Haul Shoulder Dirt	554	PCC Misc	116
Class 13 - Widening & Haul	121			PCC Curb & Gutter	140
		SEAL COAT		PCC Sidewalk	141
PREPARATION		Prime	662	PCC Approaches	142
Backfilling	122	Chip Seal	663	PCC Street Patching	143
Rough Grading	128	Haul Seal Coat Rock	664	Detectable Warning Panel	144
Fine Grading	130			PCC Sidewalk Ramps	145
Clean/Sweep/Chop Weeds	132				

EQUIPMENT REPAIR	
Repair Labor	95660
Mill Teeth & Holders	95665
Shop Miscellaneous	95711

MISCELLANEOUS	
Safety Meeting	93614
Show Up Time	93612
School	93616

PLANT LOCATIONS		OPERATION NUMBERS	
Alden Plant	20420	Plant Mixing & Calibration	283
Riverview Plant	20100	Quality Control Personnel	284
Tripoli Plant	20090	Plant Repair	285
		Plant Move & Set	390
		CRS-2	184
		Tack Pickup	187

SITE LOCATIONS		OPERATION NUMBERS	
12th Street Dump Site	30900	Stockpile	180
S. Federal Shop Yard	30950	Process Recycle	185
Airport Pit	30200	Stripping	810
Alden Quarry	30420	Site Develop & Maintenance	815
Peter's Pit	30350	Washing & Screening Mob	851
Riverview Quarry	30100	Washing & Screening	852
Tripoli Quarry	30090	Crushing Mobilization	853
Waddington Pit	30400	Crushing	854
Wepking Pit	30300	Loading & Weighing	870
		Pumping & Dewatering	880

TOOL BOX SAFETY TALK

YOU ARE RESPONSIBLE

OSHA REGULATION #29 CFR 1926.2 (a) Contractor Requirements. (1) "...,that no contractor or sub subcontractor for any part of the contract work shall require any laborer or mechanic employed in the performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety. (b) (4) The employer shall permit only those employees qualified by training or experience to operate equipment and machinery.

Although OSHA does not cite employees for violations of their responsibilities, employees "shall comply with all occupational safety and health standards and all rules, regulations, and orders issued under the Act" that apply to them. Employee responsibilities and rights in states with their own occupational safety and health programs are generally similar for workers in states that are regulated by Federal OSHA.

An employee should:

- Read the OSHA poster at jobsite.
- Comply with all applicable OSHA standards.
- Follow all employer safety and health rules and regulations.
- Wear or use prescribed protective equipment while working.
- Report hazardous conditions to their supervisor.
- Report any job-related injury or illness to the employer, and seek treatment promptly.
- Cooperate with the OSHA compliance officer conducting an inspection.
- Exercise their rights under the Act in a responsible manner.

Under OSHA, employees have several rights, including the right to know about hazardous materials and the right to access their medical records. Although there is nothing in the OSHA regulations with gives an employee the right to refuse to perform an unsafe or unhealthful job assignment, OSHA's regulations, which have been upheld by the U.S. Supreme Court, provide that an employee may refuse to work when faced with an imminent danger of death or serious injury. The conditions necessary to justify a work refusal are very stringent. A work refusal should be an action taken only as a last resort.

Employees safety suggestions or observations: _____

_____

_____

Project: _____ Presenter: _____

Date: _____ Foreman: _____

Attended by:

_____

_____

_____

_____

_____

CDL TRAINING & LICENSING INFORMATION

1. You MUST complete the written testing process and have your certificates and a "CDL Driving Permit" before you come to us.

   General Knowledge, Air Brakes, Combination Vehicles
   We have a highlighted study manual available to assist with the written test portions of the process.

2. When we schedule an appointment for you to come to Mason City, we collect our fees and we send to you a packet of preparation materials. These materials will arrive about 3-5 business days before your appointment via UPS or USPS.
   We accept ALL major credit cards for advance payment.

REMEMBER, OUR SERVICE IS GUARANTEED!
If, for some unknown reason, you would not pass the first time, you come back and we prepare you again for free!

The Fees are: $225 for the Class A CDL. The highlighted study manual is available for use for an additional $25.

3. On your appointed day, you arrive at our building, just outside Mason City. In the comfort of our building we begin preparing you for the ever intimidating, "Pre-Trip Inspection" of the testing process. Our proven memory system, which is a combination of the pre-visit study guide and our "hands on training", will have you ready for the D.O.T in no time. We will however, ***take as much time as you need to feel confident and ready to proceed.***

4. We will then let you practice the "Skills" portion of the test process, using our automatic transmission, day cab tractor and 28' flatbed trailer, ***on the actual course you will be tested on***.

5. Finally, we will take you on the actual route you will drive with the D.O.T. This is to make you even more comfortable and confident.

6. When both you and our instructors think you are ready, we take you into the D.O.T. office to begin your testing. If we've done our job, you'll be successful and leaving with your new CDL License.

TO GET STARTED CALL TODAY:

800-282-2055

www.nlandcdl.com

NORTHLAND
CDL Training & Licensing

Mason City, IA

Acceptable PROOF OF IOWA RESIDENCY

Voter registration - Vehicle Registration - Vehicle Title
Military tax exemption or Homestead tax exemption on property (contact Assessor's Office)
Something from the school showing that they have a child enrolled in school
Welfare card
Employment:

- W-2 from Iowa Employer (indicating Iowa tax withholding)
- Payroll check stub (indicating Iowa tax withholding & Iowa address)
- Employer ID card – only if "Iowa Specific" (shows an Iowa address)
- Anything that shows Iowa income tax withheld

Resides in Iowa for 30 continuous days:

- Utility bill (showing service from at least 30 days ago & with Iowa address)
- Lease agreement or mortgage document (dated at least 30 days ago)
- Monthly bank statement (with activity from at least 30 days ago & Iowa address)

Appendix B

Hazardous Communication

HAZARD COMMUNICATION PROGRAM

PURPOSE

Communicate Heartland Asphalt, Inc. Hazard Communication Program to all company personnel.

OBJECTIVES

1. To safeguard our employees' health by providing a management guide for compliance.
2. To provide our employees with the necessary information concerning health and physical hazards of the chemical materials in use at our work sites.
3. To comply with Iowa Code chapters 88 and 455 D, and OSHA Title 29 CFR 1926.32(k).

SCOPE

This compliance program will provide the means for the transmission of the information necessary to apprise employees of the chemical products which are hazardous and to which they may be exposed. It will include the following:

A. Listing of the chemical products which will be handled, used, or stored on job site location or company property.
B. Assure that appropriate identifying labels are on containers of hazardous chemical being used and handled.
C. Material Safety Data Sheets (MSDS's) will be required and procured for all hazardous chemicals which employees of this company will encounter, and the master MSDS's will be available at the company headquarters office, and a copy will be available (where designated) at the job site for all those chemicals to which employees could be exposed at **that job site.**
D. Employees will be trained to recognize and interpret labels, warnings, color, coding, and signs affixed to containers that they might handle, in order to avoid and/or make less severe potential hazards.
E. Proper use of Material Safety Data Sheets will be covered in a safety training meeting, and indoctrination to availability, and locations at that job site will be covered.
F. This written Hazard Communication Program will be available upon request to employees, their designated representative(s), emergency responders, and interested members of the community for that job site, as provided for in the Iowa Code 530-130(455D).

I. CHEMICALS (HAZARDOUS) LISTS

A. A list of all hazardous chemicals used, or transported, or stored at jobsites or on company property will be made available, maintained, updated in a timely fashion to reflect the hazardous chemicals actually in use at that job site activity.

B. Provide a company procedure and/or policy to insure compliance with the hazardous chemicals list regulations. These shall include:

1. Inclusion on the purchase order form of a notice that purchase of a potentially hazardous material is conditional upon receipt.
2. Inclusion on the purchase order form of a notice that all hazardous chemicals must be properly labeled.
3. A system at company headquarters to verify that items 1) and 2) above have been met by suppliers, especially when hazardous chemicals are shipped and delivered directly to a Job site.

HAZARD COMMUNICATION PROGRAM

II. LABELING

All containers of hazardous materials regardless of size must be labeled or tagged.

1. Original labels on containers containing hazardous chemicals are not to be removed.
2. If a different material is placed in the container, the label for the hazardous material must be changed to reflect the true contents in the container.

Container labels should include the following:

a. Name of substance in the container.
b. Appropriate hazard warnings.
c. Name and address of the manufacturer or distributor.
d. Exceptions to this rule are made only for very small containers filled by the person using the material, which must then be used/emptied by that person during the same shift. Such containers need not be labeled.

III. TRAINING

A. Workers to be Trained

1. All employees routinely exposed to hazardous materials through use, handling, transportation, or other exposure shall be trained for the materials in use in their workplace.
2. Orientation training for all employees who are newly hired, assigned, or transferred to a department where he will be routinely exposed to hazardous materials, or to a different set of hazardous materials shall be trained for the materials in use in their workplace.
3. Contractor's employees exposed to material on the work site.

B. Training Components

1. Explanation of Right-To-Know Law.
   a. Employee rights & responsibilities.
2. Introduction to the written Hazard Communication Program.
3. Hazard Determination.
4. Availability and Interpretation of MSDS's.
5. Labeling and place carding procedures.
6. Physical and health hazards of chemicals in workplace.
   * Flammable materials
   * Corrosive materials
   * Explosives
   * Toxic Materials
   * Oxidizers
   * Cryogen
   * Adhesives
   * Lubricants
   * Irritants
   * Sensitizes
7. Protective procedures (methods, observations).
8. Protective equipment.
9. Procedures for non-routine tasks.

C. Employees shall be retrained annually.

HAZARD COMMUNICATION PROGRAM

IV. EMERGENCY RESPONSE

In addition to the place carding noted in other parts of this program, we shall submit a list of hazardous material which are present in significant amounts to the local fire department corresponding to each job site under their jurisdiction. This list shall be sent by **certified letter.**

The list shall be updated as the materials in use changes and construction at the job site progresses, and the fire chief or his representatives shall be informed of all hazardous chemicals remaining. Paragraph 455D.15 of the Law states: "The information shall be provided in sufficient specificity that the local fire department is informed of the nature of the hazardous chemicals, the hazards presented by the chemicals, and the appropriate response in dealing with an emergency involving the hazardous chemicals."

The local fire department shall make this information available only to other emergency response departments.

V. RECORDS

A. Location and Maintenance of Hazardous Substances List.
B. Location and Maintenance of MSDS's.
C. Employee Training Records.

VI. RESPONSIBILITY

A. The manager of safety and health is responsible for updating MSDS's, coordinating training and revising those standards to assure compliance with the "Right to Know" Laws.
B. Foreman and superintendents will be held accountable for enforcing the established work rules for employees to ensure chemicals are being handled and used properly to eliminate or reduce exposures.
C. Every employee will accept responsibility for safely performing his/her work in line with established work practices and precautions outlined on hazardous materials labels.

Appendix C

Confined Space

HEARTLAND ASPHALT, INC.
2601 South Federal Ave.
Mason City, IA 50401
Phone (641) 424-1733
Fax (641) 424-0334

Confined Space Program for Heartland Asphalt, Inc.

Procedures for Confined Space need to be used for the following work conditions:

1. Access and exit are difficult due to location or size of the work area.
2. Ventilation is insufficient to remove dangerous air contamination or to eliminate an oxygen deficiency.

The following 5 steps need to be addressed before work starts in a confined space.

1. **Identify the Space.** Confined or enclosed spaces include but are not limited to Storage Tanks, Underground utility vaults, boilers, sewers, pipelines, exhaust or ventilation ducts, pits, tubs, vessels, and manholes. Erect barriers to keep unauthorized personnel and bystanders away from the Confined space.

2. **Determine the Space.** A competent person must test the atmosphere for toxic, flammable or explosive gases inside the confined space. Testing must indicate a minimum of 19.5% oxygen in the atmosphere to provide for safe breathing.

3. **Ventilate the Space.** If initial test results are not within acceptable limits, ventilation of the space is necessary. When venting is done, hose size and placement, blower location and possible entry blockage must be considered.

4. **Re-test.** Before anyone enters the confined space, the competent person in charge should re-test the atmosphere to ensure that the venting as mentioned above has removed the hazard. Continue testing the atmosphere while employees are in the confined space.

5. **Follow All Entry & Emergency Procedures.** Check with your supervisor or company safety director to be certain that all safety procedures are in place before entry. Be sure that you have the proper personal protection equipment (PPE). Make sure that emergency equipment and phone numbers are accessible and that the observer (outside of the confined space is trained for emergency situations. The Competent person in charge will determine if a permit is required and if needed, complete the checklist, fill in the required data, sign and make sure that all procedures of the checklist that are needed, are in place.

Training for confined space.

Required for all personnel involved with confined space procedures.

1. Review and understand the above procedures.
2. Review and understand the videotape Confined Space.
3. Learn proper operation, care and maintenance of required confined space safety equipment.
4. PPE training.

Additional required training for Competent Person.

1. Competent Person Certification by Heartland Asphalt, Inc.
2. Training in identifying confined spaces.
3. Training in operation, care and maintenance of atmosphere monitoring equipment

Additional required training for Observer.

1. CPR & 1st Aid training.
2. Emergency situation training.

Entry Permit

_____ Confined Space _____ Hazardous Area

Permit valid for 8 hours only. All copies of permit will remain at job site until job is completed.

Site location and description_____

Purpose of Entry_____

Supervisor(s) in Charge of Crews Competent Person(s) Type of Crew

---

BOLD DENOTES MINIMUM REQUIRMENTS TO BE COMPLETED AND REVIEWED PRIOR TO ENTRY

Requirements completed	Date	Time
Lockout/De-energize/tryout		
Line(s) broken-capped-blanked		
Purge-flush and vent		
Ventilation		
Secure Area (Post & Flag)		
Breathing apparatus		
Resuscitator-Inhalator		
Standby safety personnel		

Requirements completed	Date	Time
Full body harness w/ D ring		
Emergency escape equip		
Lifelines		
Fire Extinguishers		
Lighting (Explosion proof)		
Protective Clothing		
Respirator(s) (Air purifying)		
Burning and welding permit		

Note: Items that do not apply enter N/A in the blank

** RECORD CONTINUOUS MONITORING RESULTS EVERY 2 HOURS**

Continuous Monitoring** Permissible Test(s) to be taken	Entry Level	Monitoring Results
Percent of Oxygen	19.5% to 23.5%	
Lower Flammable Limit	Under 10%	
Carbon Monoxide	+35 PPM	
Aromatic Hydrocarbon	+1 PPM *5 PPM	
Hydrogen Cyanide (Skin)	*4 PPM	
Hydrogen Sulfide	+10 PPM *15 PPM	
Sulfur Dioxide	+2 PPM *5 PPM	
Ammonia	*35 PPM	

* Short-term exposure limit:Employee can work in the area up to 15 minutes.

\+ 8 hour Time. Weighted Average:Employee can work in area 8 hours (longer if appropriate respiratory protection).

Remarks:

Gas Tester name & check#	Instruments(s) used	Model & /or type	Serial & or unit #

Safety standby person is required for all confined space work.

Safety stand by person(s)	Check #	Name of safety standby person(s)	Check#

All above conditions satisfied? Yes No After work is complete, return this form to the safety director.

_____

Signature of Supervisor authorizing Entry

Appendix D

PERS Contract and Asphalt Cement First Aid

HAZARDOUS MATERIAL

SHIPPING PAPER

UN1999
HOT, TARS, LIQUID
3
PG III

TOTAL QUANTITY	1 Cargo Tank

EMERGENCY CONTACT:

PERS 1-800-633-8253

HEARTLAND ASPHALT INC
2601 SOUTH FEDERAL AVENUE
MASON CITY, IA 50401

Expires 4/12/2017 Customer #: 2644-1

Date_____

Refer to the back of this card for
EMERGENCY RESPONSE INFORMATION / ERG - GUIDE 130

ATTENTION DOT and Law Enforcement Officers:
Call 1-800-633-8253 to verify authorized use of this emergency number.

Revised 01/11 RH

HAZARDOUS MATERIAL

SHIPPING PAPER

NA1993
DIESEL FUEL
COMBUSTIBLE LIQUID
PG III

TOTAL QUANTITY		Cargo Tank(s)

IMPORTANT: Prior to transportation enter the number of Cargo Tanks/Compartments.

EMERGENCY CONTACT:

PERS 1-800-633-8253

HEARTLAND ASPHALT INC
2601 SOUTH FEDERAL AVENUE
MASON CITY, IA 50401

Expires 4/12/2017 Customer #: 2644-1

Date_____

Refer to the back of this card for
EMERGENCY RESPONSE INFORMATION / ERG - GUIDE 128

ATTENTION DOT and Law Enforcement Officers:
Call 1-800-633-8253 to verify authorized use of this emergency number.

Revised 01/10 RH

HAZARDOUS MATERIAL

SHIPPING PAPER

UN1075
LIQUEFIED PETROLEUM GAS
2.1

TOTAL QUANTITY		Cylinder(s)

IMPORTANT: Prior to transportation enter the number of Cylinders.

EMERGENCY CONTACT:

PERS 1-800-633-8253

HEARTLAND ASPHALT INC
2601 SOUTH FEDERAL AVENUE
MASON CITY, IA 50401

Expires 4/12/2017 Customer #: 2644-1

Date_____

Refer to the back of this card for
EMERGENCY RESPONSE INFORMATION / ERG - GUIDE 115

ATTENTION DOT and Law Enforcement Officers:
Call 1-800-633-8253 to verify authorized use of this emergency number.

Revised 11/10 RH

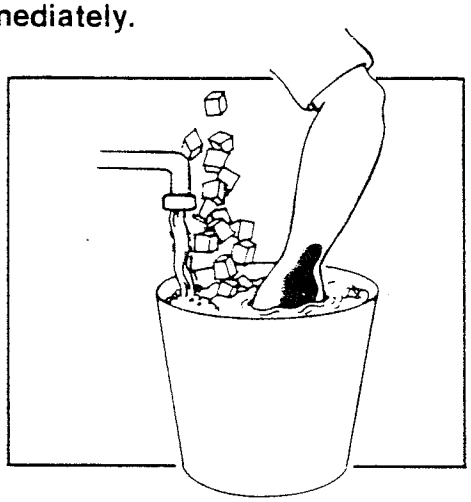
FIRST AID FOR MOLTEN ASPHALT CEMENT BURNS

In the event of a MOLTEN ASPHALT CEMENT BURN:

COOL the asphalt cement and affected parts of the body immediately.

Methods of cooling (in order of preference):

1. **Completely submerge affected area in ice water;**
2. **Completely submerge affected area in tap water;**
3. **Place affected area under running water.**



DO NOT DELAY

Use any available water, cooler than body temperature, while arranging for better cooling.

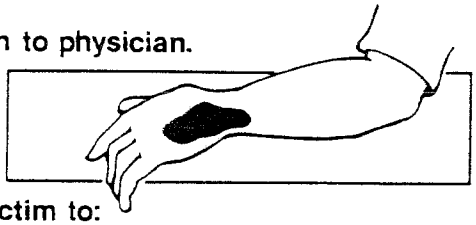
CAUTION: DO NOT apply ice directly to affected area.

LEAVE cooled asphalt cement on affected area.

Proceed with the following:

MINOR ASPHALT CEMENT BURNS—at first opportunity get victim to physician.

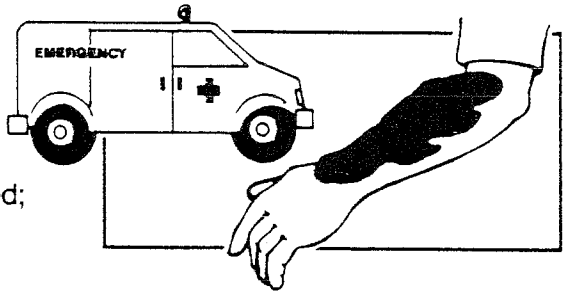
Includes:
Injury to small areas of fairly insensitive flesh involving a small quantity of asphalt cement.



SERIOUS ASPHALT CEMENT BURNS—as soon as possible get victim to:

Hospital _____
Clinic _____
Physician's Office _____

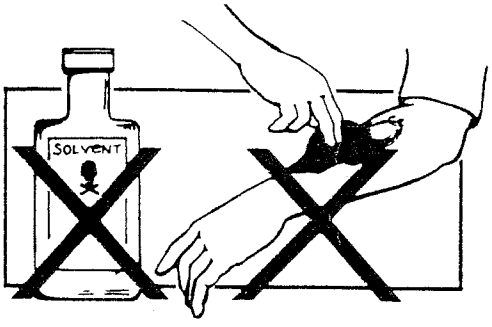
Includes:
Injury to the head, face or extremities;
Injury when large amounts of asphalt cement are involved;
Evidence of nausea or faintness.



TREATMENT FOR SHOCK

In the event shock occurs, do the following:

1. Keep victim lying down and quiet.
2. Keep victim covered with a blanket or something similar to keep body temperature at normal, 98°F (37°C).
3. Keep victim's head lower than feet to promote blood supply to head and chest.



DO NOT ATTEMPT TO REMOVE THE ASPHALT CEMENT with products containing solvents or ammonia.

Natural separation will occur in about 48–72 hours.

If necessary, for early removal, soak bandage in mineral oil and place over affected area for 2 to 3 hours.

BLAW-KNOX

INGERSOLL-RAND
CONSTRUCTION & MINING

GUIDE 128 Flammable Liquids (Non-Polar/Water-Immiscible) ERG 2012

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.
- Substance may be transported hot.
- For UN3166, if Lithium ion batteries are involved, also consult GUIDE 147.
- **If molten aluminum is involved, refer to GUIDE 169.**

HEALTH

- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire may produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.

Small Fire

- Dry chemical, CO2, water spray or regular foam.

Large Fire

- Water spray, fog or regular foam.
- **Do not use straight streams.**
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

GUIDE 130 Flammable Liquids (Non-Polar/Water-Immiscible/Noxious) ERG 2012

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.**
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Vapor explosion hazard indoors, outdoors or in sewers.
- Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.
- Runoff to sewer may create fire or explosion hazard.
- Containers may explode when heated.
- Many liquids are lighter than water.

HEALTH

- May cause toxic effects if inhaled or absorbed through skin.
- Inhalation or contact with material may irritate or burn skin and eyes.
- Fire will produce irritating, corrosive and/or toxic gases.
- Vapors may cause dizziness or suffocation.
- Runoff from fire control or dilution water may cause pollution.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first.**
- As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Keep out of low areas.
- Ventilate closed spaces before entering.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 300 meters (1000 feet).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

EMERGENCY RESPONSE

FIRE

CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.

Small Fire

- Dry chemical, CO2, water spray or regular foam.

Large Fire

- Water spray, fog or regular foam.
- **Do not use straight streams.**
- Move containers from fire area if you can do it without risk.

Fire involving Tanks or Car/Trailer Loads

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- Prevent entry into waterways, sewers, basements or confined areas.
- A vapor suppressing foam may be used to reduce vapors.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.

Large Spill

- Dike far ahead of liquid spill for later disposal.
- Water spray may reduce vapor; but may not prevent ignition in closed spaces.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
- Wash skin with soap and water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

GUIDE 115 Gases - Flammable (Including Refrigerated Liquids) ERG 2012

POTENTIAL HAZARDS

FIRE OR EXPLOSION

- **EXTREMELY FLAMMABLE.**
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground.

CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Methane (UN1971) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)

- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH

- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY

- **CALL EMERGENCY RESPONSE Telephone Number on Shipping Paper first.**
- As an immediate precautionary measure, isolate spill or leak area for at least 100 meters (330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind.
- Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Keep out of low areas.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Large Spill

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.

GUIDE 115 Gases - Flammable (Including Refrigerated Liquids) ERG 2012

EMERGENCY RESPONSE

FIRE

- **DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.**

CAUTION: Hydrogen (UN1049), Deuterium (UN1957) and Hydrogen, refrigerated liquid (UN1966) burn with an invisible flame. Hydrogen and Methane mixture, compressed (UN2034) may burn with an invisible flame.

Small Fire

- Dry chemical or CO_2.

Large Fire

- Water spray or fog.
- Move containers from fire area if you can do it without risk.

Fire involving Tanks

- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed.

CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

FIRST AID

- Move victim to fresh air.
- Call 911 or emergency medical service.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.
- Keep victim warm and quiet.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.