

HEARTLAND ASPHALT SDS BOOK

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A: Employee Handbook

B: Hazardous Communication

C: Confined Space

D: PERS Contract Number and Asphalt Cement First Aid



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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.

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.

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



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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



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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.



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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-H ₃ -C-H ₂ -C-H	Molecular Weight	54.09

Solvent Solubility**Soluble**

alcohol, ether

Section 10 - STABILITY AND REACTIVITY**Reactivity**

No reactivity hazard is expected.

Chemical Stability



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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

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

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



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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

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.

WHMIS Classification

AB

Component Analysis - Inventory

ETHYL ACETYLENE (107-00-6)

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	Yes	Yes	No	No	Yes	Yes	Yes	Yes	No

Section 16 - OTHER INFORMATION

NFPA Ratings

Health: 1 Fire: 4 Reactivity: 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

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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:**

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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)

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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.

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

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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.

(Contd. on page 4)

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acc. to OSHA HCS

Printing date 06/14/2017

Reviewed on 06/14/2017

Trade name: Asphalt Solutions Additive

(Contd. of page 3)

- **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
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628-63-7 pentyl acetate

PEL	Long-term value: 525 mg/m ³ , 100 ppm
REL	Long-term value: 525 mg/m ³ , 100 ppm
TLV	Short-term value: 532 mg/m ³ , 100 ppm Long-term value: 266 mg/m ³ , 50 ppm

121-33-5 VANILLIN

WEEL	Long-term value: 10 mg/m ³
------	---------------------------------------

- **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.

—US—

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Safety Data Sheet

acc. to OSHA HCS

Printing date 06/14/2017

Reviewed on 06/14/2017

Trade name: Asphalt Solutions Additive

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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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Trade name: Asphalt Solutions Additive

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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

- | | |
|---|----------------------|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADN, IMDG, IATA | <i>not regulated</i> |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT, ADN, IMDG, IATA | <i>not regulated</i> |

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

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



Bituminous Materials and Supply, LP

PG 46-34, PG 52-28, PG 52-34, PG 58-22, PG 58-28, PG 58-34, PG 64-22

SDS Number: BMS 101

Revision Date: 9/4/2015

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1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

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

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

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/m³ 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.
Eye Contact:	Never try to remove material with solvents. 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 accumulated 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:	<p>Eye and Face Protection: Safety glasses or chemical splash goggles should be worn with faceshield if splashing is anticipated.</p> <p>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.</p> <p>Respiratory Protection: Respiratory protection is not normally required under normal conditions and adequate ventilation. If high vapors are 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.</p> <p>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.</p> <p>Other Protection: Wear body-covering clothes to avoid prolonged or repeated exposure. Launder before reuse.</p>

PETROLEUM ASPHALT:

OSHA PEL:	Not established for this material.
ACGIH TLV:	0.5 mg/m ³ as benzene-extractable inhalable particulate (or equivalent method)
NIOSH REL:	5.0 mg/m ³ as a 15-minute ceiling limit measured as total particulates.

HYDROGEN SULFIDE:

ACGIH TLV:	1 ppm (1.4 mg/m ³) for 8 hours
ACGIH STEL:	5 ppm (7 mg/m ³) for 15 minutes

ANTISTRIP ADHESION PROMOTER, Proprietary:

OSHA PEL:	Not established for this material.
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9 PHYSICAL AND CHEMICAL PROPERTIES

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



Bituminous Materials and Supply, LP

PG 46-34, PG 52-28, PG 52-34, PG 58-22, PG 58-28, PG 58-34, PG 64-22

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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 Planning 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
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Telephone Numbers - 24 hour Emergency Assistance

Chemtrec (US)	800-424-9300 (CCN: 8586)
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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 (H ₂ S) may be present in trace quantities (by weight), but may accumulate to toxic concentrations such as in tank headspace. The presence of H ₂ S is highly variable, unpredictable and does not correlate with sulfur content. Studies with similar products have shown that 1 ppm H ₂ S by weight in liquid may produce 100 ppm or more H ₂ S 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	<p>Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.</p> <p>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.</p> <p>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.</p>
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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 (CO ₂).
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 (H ₂ S) 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 (H ₂ S) 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	<p>This description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information or Transport Compliance Specialist (CSO).</p> <p>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.</p> <p>BILL OF LADING - NON-BULK (U. S. DOT): Non-regulated by DOT</p>

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)
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Hydrogen sulfide	7783-06-4	100	500		
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SARA 311/312 Hazardous chemical

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



15. Regulatory information

US federal regulations

All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

A release of this material, as supplied, may be exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA - 40 CFR 302) by the petroleum exclusion. Releases may be reportable to the National Response Center (800-424-8802) under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5).

This material does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to comply may result in substantial civil and criminal penalties.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

HYDROGEN SULFIDE (CAS 7783-06-4)	1.0 %
POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2)	0.1 %

US CERCLA Hazardous Substances: Reportable quantity

HYDROGEN SULFIDE (CAS 7783-06-4)	100 LBS
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US EPCRA (SARA Title III) Section 304 - Extremely Hazardous Spill: Reportable quantity

HYDROGEN SULFIDE (CAS 7783-06-4)	100 LBS
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US. 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 - Yes
	Fire Hazard - No
	Pressure Hazard - No
	Reactivity Hazard - No

Other federal regulations

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

POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2)

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

HYDROGEN SULFIDE (CAS 7783-06-4)

US state regulations

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer. Proposition 65, CAL. HSC. §25249.5.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

PETROLEUM ASPHALT (CAS 8052-42-4) Listed: January 1, 1990

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

Issue date	03-24-2015
Revision date	11-11-2016
Version #	02

HMIS® ratings

Health: 2*
Flammability: 1
Physical hazard: 0
* Indicates chronic health hazard

NFPA ratings

Health: 2
Flammability: 1
Instability: 0

Disclaimer

THIS SDS HAS BEEN PREPARED TO COMPLY WITH FEDERAL REGULATIONS THAT ARE INTENDED TO QUICKLY PROVIDE USEFUL INFORMATION TO THE USER(S) OF THIS MATERIAL OR PRODUCT - IT IS NOT INTENDED TO SERVE AS A COMPREHENSIVE DISCUSSION OF ALL POSSIBLE RISKS OF HAZARDS, BUT RATHER PROVIDES INFORMATION GENERALLY ACCEPTED IN THE SCIENTIFIC COMMUNITY AS RELEVANT REGARDING THE POTENTIAL HAZARDS OF THIS PRODUCT. ADEQUATE TRAINING, INSTRUCTION, WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS. USERS SHOULD REVIEW THE INFORMATION IN THE SDS, AND SATISFY THEMSELVES AS TO ITS SUITABILITY AND COMPLETENESS, INCLUDING ENSURING THAT THIS IS THE MOST CURRENT SDS.

Revision information

Product and Company Identification: Alternate Trade Names
Hazard(s) identification: Response
Hazard(s) identification: Prevention
Composition / Information on Ingredients: Additional Components
First-aid measures: Most important symptoms/effects, acute and delayed
Handling and storage: Precautions for safe handling
Physical & Chemical Properties: Multiple Properties
Stability and reactivity: Reactivity
Toxicological information: Symptoms related to the physical, chemical and toxicological characteristics
Toxicological information: Toxicological information
Disposal considerations: Disposal instructions
Regulatory Information: United States
Regulatory information: US federal regulations
GHS: Classification

Completed by

Flint Hills Resources, LP - Operations EH&S

1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

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

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

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/m³ 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.



Bituminous Materials and Supply, LP

MC-30, MC-70, MC-250, MC-800, MC-3000

SDS Number: BMS-301

Revision Date: 12/17/2015

Page 3 of 6

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.
- Eye Contact:** Never try to remove material with solvents. 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:

- Outback 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 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.

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

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://incchem.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 Planning 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).

1 PRODUCT AND COMPANY IDENTIFICATION**Manufacturer**

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

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

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/m³ 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.



Bituminous Materials and Supply, LP

CM-300, HPCM-300

SDS Number: BMS-351

Revision Date: 9/8/2015

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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.
- Eye Contact:** Never try to remove material with solvents. 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 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.

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

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://incchem.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 Planning 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.



Bituminous Materials and Supply, LP

CM-300, HPCM-300

SDS Number: BMS-351

Revision Date: 9/8/2015

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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



Bituminous Materials and Supply, LP

CSS-1, CSS-1h, CRS-2

SDS Number: BMS-401

Revision Date: 6/1/2015

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1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

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

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

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/m³ 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.
Eye Contact:	Never try to remove material with solvents. 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 are 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	Odor:	Characteristic asphalt odor
Physical State:	Liquid	Solubility:	Completely
Spec Grav./Density:	0.96 - 1.05	Flash Point:	Not Applicable
Boiling Point:	212°F	Vapor Density:	>1.0
Flammability:	Aqueous, Non-Flammable	Bulk Density:	8.12 - 8.89 lb/gallon
Vapor Pressure:	1.9 E-9 psia	Auto-Ignition Temp:	>400°F
pH:	2 - 5	UFL/LFL:	Not Applicable
Molecular weight:	280		

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://incchem.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.



Bituminous Materials and Supply, LP

CSS-1, CSS-1h, CRS-2

SDS Number: BMS-401

Revision Date: 6/1/2015

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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%]

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



Bituminous Materials and Supply, LP

CRS-2P

SDS Number: BMS-404

Revision Date: 6/1/2015

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1 PRODUCT AND COMPANY IDENTIFICATION

Manufacturer

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

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

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/m³ 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.
Eye Contact:	Never try to remove material with solvents. 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:	<p>Foam, Carbon Dioxide, Dry Chemical, and water spray may all be suitable in extinguishing fires involving this product.</p>
Fire Fighting Instructions:	<p>Avoid water streams to prevent frothing. Use water spray to cool exposed surfaces.</p>

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.

POLYMER MODIFIER, Proprietary:

OSHA PEL: Not established for this material.

9

PHYSICAL AND CHEMICAL PROPERTIES

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

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://incchem.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.



Bituminous Materials and Supply, LP

CRS-2P

SDS Number: BMS-404

Revision Date: 6/1/2015

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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

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
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Telephone Numbers - 24 hour Emergency Assistance

Chemtrec (US)	800-424-9300 (CCN: 8586)
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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)
Environmental hazards	Aspiration hazard	Category 1
	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 (H ₂ S) may be present in trace quantities (by weight), but may accumulate to toxic concentrations such as in tank headspace. The presence of H ₂ S is highly variable, unpredictable and does not correlate with sulfur content. Studies with similar products have shown that 1 ppm H ₂ S by weight in liquid may produce 100 ppm or more H ₂ S 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 (CO ₂).
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 (H ₂ S) 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	<p>The product is immiscible with water and will spread on the water surface. Prevent product from entering drains.</p> <p>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.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>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.</p>
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	<p>Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).</p> <p>Before entering storage tanks and commencing any operation in a confined area, check the atmosphere for oxygen content, hydrogen sulfide (H₂S) and flammability.</p>

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.

CSS-1H

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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.
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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)		
<u>Acute</u>		
Inhalation		
Gas		
LC50	Rat	444 ppm, 4 Hours
Petroleum Asphalt (CAS 8052-42-4)		
<u>Acute</u>		
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	<p>This description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information or Transport Compliance Specialist (CSO).</p> <p>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.</p> <p>BILL OF LADING - NON-BULK (U. S. DOT): Non-regulated by DOT</p>

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.

ASPHALT/ASPHALT LIKE PRODUCTS: Asphalt fumes from heated material have been reported to cause eye, respiratory tract and skin irritation, as well as nausea and headaches. Symptoms may include coughing, wheezing and shortness of breath. An adverse effect on pulmonary function has not been conclusively demonstrated. Studies in humans to determine the potential long-term health effects of asphalt also have had inconsistent results. Epidemiological studies in European paving asphalt worker populations indicated a slight positive association between lung cancer mortality and exposure to asphalt fumes. A case-control examination of these data found no consistent evidence of an association between bitumen and lung cancer risk, possibly due to the confounding effects of potential exposure to coal tar cigarette smoking, and other substances. Additional studies of workers exposed to asphalt emissions during paving with straight-run asphalt showed mutagenic and genotoxic/cytogenetic effects in these workers.

Studies in experimental animals have not established a link between lung cancer and asphalt fume exposure. However, an increase in skin tumors was observed in lifetime studies of laboratory rodents exposed to extracts of asphalt (bitumen) as well as "cutbacks" of asphalt (asphalts that are diluted, dissolved or liquefied in hydrocarbon solvents).

An increased incidence of skin tumors was also observed in lifetime dermal bioassays of laboratory rodents exposed to distillates of fumes generated from roofing flux, an asphalt that is further processed or oxidized. These condensed fumes were collected from an oxidized roofing asphalt at high temperatures (>450 degrees F). Follow up studies suggest that the roofing asphalt distillates act as tumor initiators, involving a genotoxic mechanism. No increases in skin tumors were found in a lifetime study of rodents dermally exposed to distillates of fumes generated from paving asphalt.

The International Agency for Research on Cancer (IARC) recently determined that occupational exposures to oxidized asphalt and their emissions during roofing applications are "probably carcinogenic to humans" (Group 2A). They also determined that occupation exposures to hard asphalts and their emissions during mastic asphalt work and occupational exposures to straight-run asphalts and their emissions during paving operations are "possibly carcinogenic to humans" (Group 2B).

12. Ecological information

Ecotoxicity

Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
OIL DISTILLATES			
Aquatic			
Acute			
Algae	EC50	Pseudokirchnerella subcapitata	10 mg/l, 72 hr
Crustacea	EC50	Daphnia magna	68 mg/l, 48 hr
Fish	LC50	Oncorhynchus mykiss	21 mg/l, 96 hr
Chronic			
Crustacea	NOEC	Daphnia magna	0.2 mg/l, 21 d
Fish	NOEC	Oncorhynchus mykiss	0.08 mg/l, 14 d

Persistence and degradability

Not readily biodegradable.

Bioaccumulative potential

May bioaccumulate in aquatic organisms.

Mobility in soil

May partition into soil and water.

Other adverse effects

No other adverse effects expected.

13. Disposal considerations

Disposal instructions

This material, as supplied, when discarded or disposed of, is not a hazardous waste according to Federal Regulations (40 CFR 261).

The transportation, storage, treatment and disposal of waste material must be conducted in compliance with federal, state, and local regulations. Under RCRA it is the responsibility of the user of the material to determine, at the time of disposal, whether this material meets RCRA criteria for hazardous waste. For additional handling information and protection of employees, see Section 7 (Handling and Storage) and Section 8 (Exposure Controls/Personal Protection).

Hazardous waste code

The proper waste code must be evaluated at the time of disposal and should be determined by the user and waste disposal company.

Waste from residues / unused products	Dispose of this material in accordance with all applicable local and national regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with government regulations. Packaging may contain residue that can be hazardous.

14. Transport information

General information	<p>In accordance with US DOT, bulk and non-bulk shipments of this product, which are offered for transportation:</p> <p>*below 212 °F (100 °C), are not regulated.</p> <p>*above 212 °F (100 °C), are UN3257, Elevated Temperature Liquid, Flammable, NOS (Petroleum Distillates) 9, III</p> <p>*greater than the flash point, are UN3256, Elevated Temperature Liquid, Flammable, NOS (Petroleum Distillates) 3, III</p>
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 ship or vessel to determine the need for a MARPOL classification.

15. Regulatory information

US federal regulations	<p>All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.</p> <p>This material does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).</p> <p>Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to comply may result in substantial civil and criminal penalties.</p>
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US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

HYDROGEN SULFIDE (CAS 7783-06-4)	1.0 %
POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2)	0.1 %

US CERCLA Hazardous Substances: Reportable quantity

HYDROGEN SULFIDE (CAS 7783-06-4)	100 LBS
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US EPCRA (SARA Title III) Section 312 - Extremely Hazardous: Listed substance

HYDROGEN SULFIDE (CAS 7783-06-4)	Listed.
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US EPCRA (SARA Title III) Section 304 - Extremely Hazardous Spill: Reportable quantity

HYDROGEN SULFIDE (CAS 7783-06-4)	100 LBS
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US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	<p>Immediate Hazard - Yes</p> <p>Delayed Hazard - Yes</p> <p>Fire Hazard - No</p> <p>Pressure Hazard - No</p> <p>Reactivity Hazard - No</p>
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SARA 313 (TRI reporting)

Not regulated.

Other federal regulations	Please see Section 2 for OSHA hazard classification(s) for EPCRA Tier I/Tier II reporting.
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Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2)

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

HYDROGEN SULFIDE (CAS 7783-06-4)

US state regulations

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer. Proposition 65, CAL. HSC. §25249.5.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

PETROLEUM ASPHALT (CAS 8052-42-4) Listed: January 1, 1990

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


Revision date	05-08-2017
Version #	05
HMIS® ratings	Health: 2* Flammability: 0 Physical hazard: 0 * Indicates chronic health hazard
NFPA ratings	Health: 2 Flammability: 1 Instability: 0
Disclaimer	THIS SDS HAS BEEN PREPARED TO COMPLY WITH FEDERAL REGULATIONS THAT ARE INTENDED TO QUICKLY PROVIDE USEFUL INFORMATION TO THE USER(S) OF THIS MATERIAL OR PRODUCT - IT IS NOT INTENDED TO SERVE AS A COMPREHENSIVE DISCUSSION OF ALL POSSIBLE RISKS OF HAZARDS, BUT RATHER PROVIDES INFORMATION GENERALLY ACCEPTED IN THE SCIENTIFIC COMMUNITY AS RELEVANT REGARDING THE POTENTIAL HAZARDS OF THIS PRODUCT. ADEQUATE TRAINING, INSTRUCTION, WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS. USERS SHOULD REVIEW THE INFORMATION IN THE SDS, AND SATISFY THEMSELVES AS TO ITS SUITABILITY AND COMPLETENESS, INCLUDING ENSURING THAT THIS IS THE MOST CURRENT SDS.
Revision information	Product and Company Identification: Synonyms Physical & Chemical Properties: Multiple Properties Regulatory Information: United States
Completed by	Flint Hills Resources, LP - Operations EH&S

SAFETY DATA SHEET

1. Identification

Product identifier	MEDIUM CURING CUTBACK ASPHALT
Other means of identification	
SDS number	9567
Synonyms	CRP-2 * MAC-5 (DUBUQUE) * MC ASPHALT * MC CUTBACK * MC-70 * MC-250 * MC-500 * MC-800 * MC-3000 * PG 58-28 W/CUTTER
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	
Manufacturer	Flint Hills Resources Pine Bend, LLC P.O. Box 2917 Wichita, KS 67201-2917 United States
Telephone numbers – 24 hour emergency assistance	
Chemtrec	800-424-9300
Telephone numbers – general assistance	
8-5 (M-F, CST) MSDS Assistance	316-828-7988
Email:	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 (liver, thymus, bone marrow)
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 cancer. May cause drowsiness or dizziness. 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.

Keep away from flames and hot surfaces-No smoking. Do not breathe mist or vapor. 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 skin irritation 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.

If exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse. In case of fire: Use water spray, dry chemical, carbon dioxide or fire-fighting foam to extinguish. Specific treatment (see first aid instructions on this label). Collect spillage.

Storage

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

Disposal

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

Hazard(s) not otherwise classified (HNOC)

Not classified.

Supplemental information

Up to 95% of the mixture consists of component(s) of unknown long-term hazards to the aquatic environment.

Supplemental information**Precautionary statement(s)****Hazard statement**

Contains or releases hydrogen sulfide, an extremely flammable and toxic gas. Gas may evolve from this material and accumulate in confined spaces.

When it is heated, this material may cause thermal burns.

Prevention

Use personal protective equipment as required.

3. Composition/information on ingredients**Mixtures**

Chemical name	Common name and synonyms	CAS number	%
ASPHALT BINDER		Mixture	45 - 95
OIL DISTILLATES		Proprietary	5 - 55

Additional components	Common name and synonyms	CAS number	%
Chemical name			
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
HYDROGEN SULFIDE		7783-06-4	≤ 0.1
POLYCYCLIC AROMATIC COMPOUNDS		130498-29-2	< 0.1

Composition comments

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

Asphalt materials can contain hydrogen sulfide, because it is naturally occurring in crude oil from which asphalt is derived. Hydrogen sulfide can also be present as a byproduct of asphalt processing.

Asphalt component may contain antistrip, vulcanizing agent, and polymer modifier.

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 to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR).

Skin contact

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

If hot material gets on skin, immediately flush affected area with large amounts of cool water. Do not attempt to remove the material from the skin, or to remove contaminated clothing. Get immediate medical attention.

For cold material, immediately wash skin with plenty of soap and water after removing contaminated clothing and shoes. Get medical attention if irritation persists.

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

Eye contact

If hot material comes in contact with eyes hold the eyelids apart and flush the eye with a large amount of cool water for at least 15 minutes. Get immediate medical attention.

Ingestion

If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty.

Never give anything by mouth to an unconscious person.

Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Most important symptoms/effects, acute and delayed

INHALATION:

Fumes, mists, or vapors from the heated material may be irritating to the respiratory tract. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

Contains hydrogen sulfide gas. Hydrogen sulfide can cause respiratory paralysis and death, depending on the concentration and duration of exposure. Do not rely on ability to smell vapors, since odor fatigue rapidly occurs. Effects of overexposure include irritation of the nose and throat, nausea, vomiting, diarrhea, abdominal pain and signs of nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination and fatigue), irregular heartbeats, pulmonary edema, weakness and convulsions.

SKIN:

Contact may cause reddening, itching and inflammation. Prolonged skin contact may defat the skin and cause drying, cracking and/or dermatitis. Skin contact may cause harmful effects in other parts of the body.

EYES:

May cause slight to mild eye irritation with tearing, redness, or a stinging or burning sensation. May cause temporary swelling of the eyes with blurred vision. Effects may become more serious with repeated or prolonged contact.

Vapors may cause eye irritation and sensitivity to light.

INGESTION:

Ingestion may cause gastrointestinal irritation and diarrhea.

Ingestion of large amounts may cause gastrointestinal blockage.

Indication of immediate medical attention and special treatment needed

INHALATION: Inhalation exposure can produce toxic effects. Treat intoxications as hydrogen sulfide exposures. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis.

SKIN: Hot material may cause skin burns. Immerse skin covered with hot material in cool water to limit tissue damage and prevent spread of liquid material. Consider leaving cooled material on skin unless contraindicated by contamination or potential for tattooing. If removal is necessary, mineral oil may be of assistance in minimizing skin loss when removing cool, hardened asphalt.

EYES: Hot material may cause burns to the eyes. Early ophthalmologic evaluation is recommended.

5. Fire-fighting measures

Suitable extinguishing media

Use water spray, dry chemical, carbon dioxide or fire-fighting foam for Class B fires to extinguish fire.

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Combustion may produce CO_x, SO_x, NO_x, reactive hydrocarbons, irritating vapors, and other decomposition products in the case of incomplete combustion.

Material will burn in a fire. Fires involving this product may release hydrogen sulfide.

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

Evacuate area and fight fire from a safe distance.

Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow, if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire. Always stay away from tanks engulfed in flame.

Exercise extreme care when using water spray on asphalt tank fires. When water is mixed with hot asphalt, steam may rapidly develop resulting in violent asphalt foaming and possible tank eruptions from increased pressure.

Firefighters must wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary people away; isolate hazard area and deny entry. For spills in confined areas, ensure adequate ventilation. For spills outdoors, stay upwind. IF TANK, RAILCAR OR TANK TRUCK IS INVOLVED IN A FIRE, isolate for 800 meters (1/2 mile) in all directions. Evacuate area endangered by release as required. Wear appropriate personal protective equipment. See Exposure Controls/Personal Protection (Section 8).

Methods and materials for containment and cleaning up

Keep unnecessary people away. Isolate area for at least 50 meters (164 feet) in all directions to preserve public safety. For large spills, if downwind consider initial evacuation for at least 300 meters (1000 feet).

For spills on land, scrape up spilled material for disposal. For large spills, dike ahead of spill to contain. For spills on water, contain as much as possible with booms and begin recovery as soon as possible.

Use a vapor suppressing foam to reduce vapors. Do not touch or walk through spilled material. Stop leak when safe to do so.

See Exposure Controls/Personal Protection (Section 8).

Environmental precautions

Prevent entry into water ways, sewers, basements or confined areas. Notify local authorities and National Response Center, if required.

7. Handling and storage

Precautions for safe handling

Avoid contact with strong oxidizing agents. Prevent small spills to minimize slip hazard or release to the environment. Do not cut, grind, drill, weld (or introduce any other ignition source) on empty containers or reuse containers unless adequate precautions are taken. Avoid extreme temperatures to minimize product degradation.

Avoid personal contact with this material. Always observe good personal hygiene measures, such as removing contaminated clothing and protective equipment, washing after handling the material and before entering public areas. Restrict eating, drinking and smoking to designated areas to prevent personal chemical contamination. Routinely wash work clothing and protective equipment to remove contaminants. Do not breathe fumes, vapor or gas. Heated material can cause thermal burns. See Section 8 of the SDS for Personal Protective Equipment.

**Conditions for safe storage,
including any incompatibilities**

Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizing agents. Empty containers may contain material residue. Do not reuse without adequate precautions.

Hydrogen sulfide can build up in the head space of storage vessels containing this material. Use appropriate respiratory protection to prevent exposure. See Exposure Controls/Personal Protection (Section 8).

When entering a storage vessel that has previously contained this material it is recommended that the atmosphere be monitored for the presence of hydrogen sulfide. See Occupational exposure limits (Section 8) for exposure limits.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Additional components	Type	Value
XYLENE (CAS 1330-20-7)	TWA	100 ppm
ETHYLBENZENE (CAS 100-41-4)	PEL	100 ppm

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

Additional components	Type	Value	Form
TOLUENE (CAS 108-88-3)	Ceiling	300 ppm	
POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2)	TWA	200 ppm	Coal tar pitch volatiles (benzene soluble fraction)
	TWA	0.2 mg/m3	
HYDROGEN SULFIDE (CAS 7783-06-4)	Ceiling	20 ppm	

US. ACGIH Threshold Limit Values

Additional components	Type	Value	Form
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 fraction (as benzene-soluble aerosol)
POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2)	TWA	0.2 mg/m3	Coal tar pitch volatiles (benzene soluble fraction)
HYDROGEN SULFIDE (CAS 7783-06-4)	STEL	5 ppm	
	TWA	1 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Additional components	Type	Value	Form
TOLUENE (CAS 108-88-3)	STEL	150 ppm	
XYLENE (CAS 1330-20-7)	TWA	100 ppm	
	STEL	150 ppm	
ETHYLBENZENE (CAS 100-41-4)	TWA	100 ppm	
	STEL	125 ppm	
1,2,4-TRIMETHYLBENZENE (CAS 95-63-6)	TWA	100 ppm	
	TWA	25 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Additional components	Type	Value	Form
PETROLEUM ASPHALT (CAS 8052-42-4)	Ceiling	5 mg/m3	Fume.
HYDROGEN SULFIDE (CAS 7783-06-4)	Ceiling	10 ppm	

Biological limit values**ACGIH Biological Exposure Indices**

Additional components	Value	Determinant	Specimen	Sampling Time
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.

Appropriate engineering controls

Consider the following when employing engineering controls and selecting personal protective equipment: potential hazards of the material, applicable exposure limits, job activities, and other substances in the work place.

Ventilation and other forms of engineering controls are the preferred means for controlling exposures below occupational exposure limits and guidelines.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Keep away from eyes. Eye contact can be avoided by using chemical safety glasses, goggles and/or face shield. Have eye washing facilities readily available where eye contact can occur.

Skin protection**Hand protection**

Avoid skin contact with this material. Use chemical resistant gloves when handling this material. Contact the glove manufacturer for specific advice on glove selection regarding permeability and breakthrough times for your use conditions. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

When handling hot material, use heat resistant gloves.

Other

Avoid skin contact with this material. Additional protective clothing may be necessary.

Respiratory protection

The use of air purifying respirators is not recommended where hydrogen sulfide levels may exceed exposure limits. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. See OSHA 29 CFR 1910.134 for more information regarding respiratory protection and Assigned Protection Factors (APFs).

Thermal hazards

Contact with hot material can cause thermal burns which may result in permanent damage. Wear appropriate thermal protective clothing. Additional protection may be necessary to prevent skin contact including use of apron, arm covers, face shield, or boots.

9. Physical and chemical properties**Appearance****Physical state**

Liquid.

Form

Viscous

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 °F (> 60.56 °C) Pensky-Martens Closed Cup (ASTM D93)

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	Not available
Relative density	0.8 - 1.2 at 60/60 °F (15.6/15.6 °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 at 140 °F (60 °C)

10. Stability and reactivity

Reactivity	See statements below.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Not anticipated under normal conditions.
Conditions to avoid	Avoid overheating, emissions generation, unventilated areas, heat, open flames.
Incompatible materials	Incompatible with strong oxidizing agents. See precautions under Handling & Storage (Section 7).
Hazardous decomposition products	Not anticipated under normal conditions.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Likely route of exposure
Skin contact	Likely route of exposure
Eye contact	Likely route of exposure
Ingestion	Likely route of exposure

Symptoms related to the physical, chemical and toxicological characteristics

INHALATION:

Fumes, mists, or vapors from the heated material may be irritating to the respiratory tract. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

Contains hydrogen sulfide gas. Hydrogen sulfide can cause respiratory paralysis and death, depending on the concentration and duration of exposure. Do not rely on ability to smell vapors, since odor fatigue rapidly occurs. Effects of overexposure include irritation of the nose and throat, nausea, vomiting, diarrhea, abdominal pain and signs of nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination and fatigue), irregular heartbeats, pulmonary edema, weakness and convulsions.

SKIN:

Contact may cause reddening, itching and inflammation. Prolonged skin contact may defat the skin and cause drying, cracking and/or dermatitis. Skin contact may cause harmful effects in other parts of the body.

EYES:

May cause slight to mild eye irritation with tearing, redness, or a stinging or burning sensation. May cause temporary swelling of the eyes with blurred vision. Effects may become more serious with repeated or prolonged contact.

Vapors may cause eye irritation and sensitivity to light.

INGESTION:

Ingestion may cause gastrointestinal irritation and diarrhea.

Ingestion of large amounts may cause gastrointestinal blockage.

Information on toxicological effects

Acute toxicity

Not classified.

Components

Species

Test Results

OIL DISTILLATES

Acute

Inhalation

Mist

LC50

Rat

4.1 mg/l

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Not classified.

Respiratory or skin sensitization

Respiratory sensitization

Not classified.

Skin sensitization

Not classified.

Germ cell mutagenicity

Not classified.

Carcinogenicity

May cause cancer.

ACGIH Carcinogens

ASPHALT (BITUMEN) FUME, AS BENZENE-SOLUBLE AEROSOL, INHALABLE FRACTION (CAS 8052-42-4)
ETHYL BENZENE (CAS 100-41-4)

A4 Not classifiable as a human carcinogen.

A3 Confirmed animal carcinogen with unknown relevance to humans.

TOLUENE (CAS 108-88-3)

A4 Not classifiable as a human carcinogen.

XYLENE (O, M AND P ISOMERS) (CAS 1330-20-7)

A4 Not classifiable as a human carcinogen.

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.

US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure	May cause damage to organs (liver, thymus, bone marrow) through prolonged or repeated exposure.
Aspiration hazard	Not classified.
Toxicological data	<p>1,2,4-TRIMETHYLBENZENE: Inhalation exposure to an aromatic hydrocarbon solvent mixture which contained approximately 40% 1,2,4-trimethylbenzene resulted in developmental effects in rats at maternally toxic doses. In another inhalation study in rats on 1,2,4-trimethylbenzene, fetal body weight was reduced at inhalation levels of 2950 mg/m³, but there was no evidence of embryolethal or teratogenic effects. No effects were observed at the 1470 mg/m³ level.</p> <p>ETHYLBENZENE: Findings from National Toxicology Program (NTP) lifetime inhalation studies in rats showed an increased incidence of renal tumors in male rats (tubular carcinomas) and female rats (tubular adenomas) only at the highest exposure level (750 ppm). At this exposure level the incidence of tumors also was elevated in male mice (alveolar and bronchiolar carcinomas) and female mice (hepatocellular carcinomas). IARC has classified ethyl benzene as "possibly carcinogenic to humans" (Group 2B). Studies in laboratory animals report some evidence of renal malformations, resorptions, and developmental delays following high levels of maternal exposure to ethylbenzene. However, a two generation reproduction study conducted by NIOSH found no adverse effects on reproductive performance or developmental landmarks. Ototoxicity (hearing loss) in rats was reported following exposure levels as low as 300 ppm for 5 days. In contrast, guinea pigs showed no hearing loss after exposure to much higher ethyl benzene levels (2500 ppm, 5 days). There are other studies in laboratory animals that indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland. The relevance of these findings to humans is not clear at this time.</p> <p>HYDROGEN SULFIDE: Hydrogen sulfide causes rapid death due to metabolic asphyxiation. It has an unpleasant "rotten egg" odor that diminishes with increased exposure and is not a reliable indicator for warning of exposure. Eye irritation may occur at levels above 4 ppm. Olfactory fatigue occurs rapidly at levels of 50 ppm or higher. Respiratory effects include irritation with possible pulmonary edema at levels above 50 ppm. At 500 ppm immediate loss of consciousness and death can occur. NIOSH has determined that 100 ppm hydrogen sulfide is immediately dangerous to life and health (IDLH).</p> <p>POLYCYCLIC AROMATIC HYDROCARBONS (PAHs): Cancer is the most significant endpoint for PAHs. Certain PAHs are weak carcinogens which become carcinogenic after undergoing metabolism. Chronic or repeated exposure increases the likelihood of tumor initiation. Increased incidence of tumors of the skin, bladder, lung and gastrointestinal tract have been described in individuals overexposed to certain PAHs. Overexposure to PAHs has also been associated with photosensitivity and eye irritation. Inhalation overexposure of PAHs has been associated with respiratory tract irritation, cough, and bronchitis. Dermal overexposure has been associated with precancerous lesions, erythema, dermal burns, photosensitivity, acneiform lesions and irritation. Oral overexposure to PAHs has been associated with precancerous growths of the mouth (leukoplakia). Mild nephrotoxicity, congestion and renal cortical hemorrhages and elevated liver function tests, changes in the immune system and other effects have been observed in rats exposed to high levels of PAHs by ingestion.</p> <p>TOLUENE: Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Several studies of workers suggest that chronic exposure may be related to small increases in spontaneous abortions and changes in some gonadotropic hormones. Abuse of toluene at high concentrations (e.g., glue sniffing and solvent abuse) has been associated with adverse effects on the liver, kidney and nervous system, and can cause CNS depression, cardiac arrhythmias, and death. Studies of workers indicate long-term exposure may be related to impaired color vision and hearing. Some studies suggest that these may be related to neurobehavioral and cognitive changes. Some of the same adverse effects have been observed in laboratory animals following repeated exposure to high levels of toluene. Studies in rodents indicate some changes in reproductive organs following high levels of exposure, but no significant effects on mating performance or reproduction. Other findings include small increases in minor skeletal and visceral malformations and developmental delays following very high levels of maternal exposure. The relevance of these findings to humans is not clear at this time.</p>

XYLENES, ALL ISOMERS: Acute effects of xylene may be increased by the use of alcoholic beverages. Evidence of liver and kidney impairment were reported in workers recovering from a gross overexposure. Prolonged or repeated exposure to xylene was reported to cause impaired neurological function in workers exposed to solvents (including xylene). Studies in rats have shown evidence of impaired hearing following prolonged exposure to high concentrations of paraxylene. Studies in laboratory animals also suggest some changes in reproductive organs following high levels of exposure but no significant effects on reproduction were observed. Developmental toxicity studies in laboratory animals indicate skeletal and visceral malformations, developmental delays, and increased fetal resorptions following extremely high levels of maternal exposure. The relevance of these observations to humans is not clear at this time. In addition, adverse effects on the liver, kidney, bone marrow (changes in blood cell parameters) were observed in laboratory animals following high levels of exposure. The relevance of these observations to humans is not clear at this time.

PROPRIETARY PROCESS OILS: Long-term repeated (lifetime) skin exposure also has been reported to result in an increase in skin tumors in laboratory rodents. The International Agency for Research on Cancer (IARC) has concluded that there is sufficient evidence of carcinogenicity in experimental animals for these types of oils (Group 1B).

ASPHALT/ASPHALT LIKE PRODUCTS: Asphalt fumes from heated material have been reported to cause eye, respiratory tract and skin irritation, as well as nausea and headaches. Symptoms may include coughing, wheezing and shortness of breath. An adverse effect on pulmonary function has not been conclusively demonstrated. Studies in humans to determine the potential long-term health effects of asphalt also have had inconsistent results. Epidemiological studies in European paving asphalt worker populations indicated a slight positive association between lung cancer mortality and exposure to asphalt fumes. A case-control examination of these data found no consistent evidence of an association between bitumen and lung cancer risk, possibly due to the confounding effects of potential exposure to coal tar cigarette smoking, and other substances. Additional studies of workers exposed to asphalt emissions during paving with straight-run asphalt showed mutagenic and genotoxic/cytogenetic effects in these workers.

Studies in experimental animals have not established a link between lung cancer and asphalt fume exposure. However, an increase in skin tumors was observed in lifetime studies of laboratory rodents exposed to extracts of asphalt (bitumen) as well as "cutbacks" of asphalt (asphalts that are diluted, dissolved or liquefied in hydrocarbon solvents).

An increased incidence of skin tumors was also observed in lifetime dermal bioassays of laboratory rodents exposed to distillates of fumes generated from roofing flux, an asphalt that is further processed or oxidized. These condensed fumes were collected from an oxidized roofing asphalt at high temperatures (>450 degrees F). Follow up studies suggest that the roofing asphalt distillates act as tumor initiators, involving a genotoxic mechanism. No increases in skin tumors were found in a lifetime study of rodents dermally exposed to distillates of fumes generated from paving asphalt.

The International Agency for Research on Cancer (IARC) recently determined that occupational exposures to oxidized asphalt and their emissions during roofing applications are "probably carcinogenic to humans" (Group 2A). They also determined that occupation exposures to hard asphalts and their emissions during mastic asphalt work and occupational exposures to straight-run asphalts and their emissions during paving operations are "possibly carcinogenic to humans" (Group 2B).

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Components	Species	Test Results
OIL DISTILLATES		
Aquatic		
<i>Chronic</i>		
Fish	NOEL	1.2 mg/l 0.05 mg/l
Persistence and degradability	Not readily biodegradable.	
Bioaccumulative potential	Not classified in terms of bioaccumulation in aquatic organisms.	
Mobility in soil	May partition into soil and water.	
Other adverse effects	No other adverse effects expected.	

13. Disposal considerations

Disposal instructions	This material, as supplied, when discarded or disposed of, may be a hazardous waste according to Federal regulations (40 CFR 261). The transportation, storage, treatment and disposal of waste material must be conducted in compliance with federal, state, and local regulations. Under RCRA it is the responsibility of the user of the material to determine, at the time of disposal, whether this material meets RCRA criteria for hazardous waste. For additional handling information and protection of employees, see Section 7 (Handling and Storage) and Section 8 (Exposure Controls/Personal Protection).
Hazardous waste code	The proper waste code must be evaluated at the time of disposal and should be determined by the user and waste disposal company.
Waste from residues / unused products	Dispose of this material in accordance with all applicable local and national regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with government regulations. Packaging may contain residue that can be hazardous.

14. Transport information

General information	Due to the possible variances of this material, shipping classification has not been predetermined. The shipping classification must be evaluated at the time of shipment. Please consult 49 CFR 171 - 180 for specific shipping information or Transportation Compliance System Owner (CSO). The proper shipping name must be determined by analysis or specific generator's knowledge regarding variances of this product. 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
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 ship or vessel to determine the need for a MARPOL classification.

15. Regulatory information

US federal regulations	All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory. This material may contain toxic chemical(s) in excess of the applicable de minimis concentration that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372). This information must be included in all SDSs that are copied and distributed for this material. Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to comply may result in substantial civil and criminal penalties.
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US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

1,2,4-TRIMETHYLBENZENE (CAS 95-63-6)	1.0 %
ETHYLBENZENE (CAS 100-41-4)	0.1 %
HYDROGEN SULFIDE (CAS 7783-06-4)	1.0 %
POLYCYCLIC AROMATIC COMPOUNDS (CAS 130498-29-2)	0.1 %
TOLUENE (CAS 108-88-3)	1.0 %
XYLENE (CAS 1330-20-7)	1.0 %

US CERCLA Hazardous Substances: Reportable quantity

ETHYLBENZENE (CAS 100-41-4)	1000 LBS
HYDROGEN SULFIDE (CAS 7783-06-4)	100 LBS
TOLUENE (CAS 108-88-3)	1000 LBS
XYLENE (CAS 1330-20-7)	100 LBS

US EPCRA (SARA Title III) Section 304 - Extremely Hazardous Spill: Reportable quantity

HYDROGEN SULFIDE (CAS 7783-06-4)	100 LBS
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US. 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 - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

Other federal regulations

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

ETHYLBENZENE (CAS 100-41-4)
POLYCYCLIC AROMATIC COMPOUNDS (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)

US state regulations

US. California Proposition 65

WARNING: This product contains one or more chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Proposition 65, CAL. HSC. §25249.5.

US - 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

US - California Proposition 65 - CRT: Listed date/Developmental toxin

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

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

Issue date 03-12-2015
Revision date 11-29-2016
Version # 05
HMIS® ratings Health: 2*
Flammability: 2
Physical hazard: 0
* Indicates chronic health hazard
NFPA ratings Health: 2
Flammability: 2
Instability: 0

Disclaimer THIS SDS HAS BEEN PREPARED TO COMPLY WITH FEDERAL REGULATIONS THAT ARE INTENDED TO QUICKLY PROVIDE USEFUL INFORMATION TO THE USER(S) OF THIS MATERIAL OR PRODUCT - IT IS NOT INTENDED TO SERVE AS A COMPREHENSIVE DISCUSSION OF ALL POSSIBLE RISKS OF HAZARDS, BUT RATHER PROVIDES INFORMATION GENERALLY ACCEPTED IN THE SCIENTIFIC COMMUNITY AS RELEVANT REGARDING THE POTENTIAL HAZARDS OF THIS PRODUCT. ADEQUATE TRAINING, INSTRUCTION, WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS. USERS SHOULD REVIEW THE INFORMATION IN THE SDS, AND SATISFY THEMSELVES AS TO ITS SUITABILITY AND COMPLETENESS, INCLUDING ENSURING THAT THIS IS THE MOST CURRENT SDS.

Revision information This document has undergone significant changes and should be reviewed in its entirety.
Completed by Flint Hills Resources, LP - Operations EH&S



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

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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-methylpyrazole, 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 occurred.

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 products 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.

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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 °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

ethylene glycol (107-21-1)

USA ACGIH	ACGIH Ceiling (mg/m ³)	100.00 mg/m ³
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

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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] <i>ASTM D56</i>
Auto-ignition temperature	: 400 °C (752 °F) [100% Ethylene Glycol] <i>Literature</i>
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
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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.

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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)

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

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.

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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

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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	

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15.2. International regulations

CANADA

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

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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:

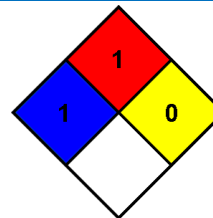
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation, Category 2A
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
STOT SE 3	Specific 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

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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.



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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 & Coolant

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
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 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) : 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. Rinse Mouth
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

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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 2-ethylhexanoate	(CAS No) 3164-85-0	< 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. If not breathing, give artificial respiration. Allow the victim to rest. If breathing is difficult, give oxygen. Seek immediate medical advice.
First-aid measures after skin contact	: 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. Remove contaminated clothing.
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. 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. Do NOT induce vomiting. Call a POISON CENTER or 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-methylpyrazole, 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 occurred.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

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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 °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

ethylene glycol (107-21-1)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
ACGIH	Remark (ACGIH)	Upper Respiratory Tract (URT) & Eye irritant
OSHA	Not applicable	

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

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Color	: Slightly yellow to green
Odor	: Mild
Odor threshold	: No data available
pH	: 8
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] <i>ASTM D56</i>
Auto-ignition temperature	: 400 °C (752 °F) [100% Ethylene Glycol] <i>Literature</i>
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	: 1.07
Density	: 1.07 kg/l (8.9 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 %
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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

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

Carbon dioxide. Carbon monoxide. Fume. Aldehydes. Ethers. alcohols.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Oral: Harmful if swallowed.
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denatonium benzoate (3734-33-6)	
LD50 oral rat	584.00 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 2,000.00 mg/kg (Rabbit; Literature study)
ATE US (oral)	584.00 mg/kg bodyweight
ethylene glycol (107-21-1)	
LD50 oral rat	> 5,000.00 mg/kg (Rat; Literature study)
ATE US (oral)	500.00 mg/kg bodyweight

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diethylene glycol (111-46-6)	
LD50 dermal rabbit	11,890.00 mg/kg (Rabbit)
ATE US (oral)	500.00 mg/kg bodyweight
ATE US (dermal)	11,890.00 mg/kg bodyweight

Skin corrosion/irritation	: Not classified pH: 8.00
Serious eye damage/irritation	: Not classified pH: 8.00
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). 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. 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	> 1,000.00 mg/l (LC50; 96 h; Salmo gairdneri)
EC50 Daphnia 1	13.00 mg/l (EC50; 48 h; Daphnia magna)
ethylene glycol (107-21-1)	
EC50 Daphnia 1	> 10,000.00 mg/l (EC50; 24 h)
LC50 fish 2	40,761.00 mg/l (LC50; 96 h; Salmo gairdneri)
diethylene glycol (111-46-6)	
LC50 fish 1	> 5,000.00 mg/l (LC50; 24 h)
EC50 Daphnia 1	> 10,000.00 mg/l (EC50; 24 h)

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.
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

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diethylene glycol (111-46-6)

Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in 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)	0.02

12.3. Bioaccumulative potential

denatonium benzoate (3734-33-6)

BCF fish 1	1.4 - 3.6 (BCF; BCFBAF v3.00)
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 (BCF; 72 h)
BCF other aquatic organisms 1	0.21 - 0.6 (BCF)
BCF other aquatic organisms 2	190.00 (BCF; 24 h)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

diethylene glycol (111-46-6)

BCF fish 1	100.00 (BCF; Other; 3 days; Leuciscus melanotus; Static system; Fresh water; Experimental value)
Log Pow	-1.98 (Calculated; Other)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

ethylene glycol (107-21-1)

Surface tension	0.05 N/m (20 °C / 68 °F)
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diethylene glycol (111-46-6)

Surface tension	0.05 N/m
Log Koc	Koc, SRC PCKOCWIN v1.66; 1; Calculated value; log Koc; SRC PCKOCWIN v1.66; 0; Calculated value

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

Department of Transportation (DOT)

In accordance with DOT	
Transport document description	: UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III
UN-No.(DOT)	: UN3082
Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s.
Class (DOT)	: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

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



Packing group (DOT) : III - Minor Danger
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 : Non Bulk: Not regulated by the US D.O.T. (in quantities under 5,000 lbs in any one inner package).

TDG

Refer to current TDG Canada for further Canadian regulations

Transport by sea

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

Air transport

Proper Shipping Name (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

Full Force Long Life 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 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	Immediate (acute) health hazard Delayed (chronic) health hazard 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	
potassium 2-ethylhexanoate (3164-85-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

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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]

No additional information available

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

Not classified

National regulations

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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

California Proposition 65 - This product contains, or may contain, substance(s) known to the state of California to cause cancer, developmental toxicity and/or reproductive toxicity

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	Non-significant risk level (NSRL)
No	Yes	No	No	

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

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

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NFPA health hazard

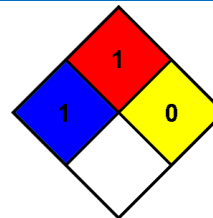
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

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 - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 °F (93 °C). (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

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.



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

1.1. Product identifier

Product form : Mixture
Product name : Full Force Concentrate Antifreeze & Coolant

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
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
STOT RE 2 H373

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) : H302 - Harmful if swallowed
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

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3.2. Mixture

Name	Product identifier	% by wt	GHS-US classification
ethylene glycol	(CAS No) 107-21-1	90 - 97	Acute Tox. 4 (Oral), H302
diethylene glycol	(CAS No) 111-46-6	< 5	Acute Tox. 4 (Oral), H302 STOT RE 2, H373
water	(CAS No) 7732-18-5	< 4	Not classified
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.
- 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. 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 or 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.
- 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-methylpyrazole, 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 occurred.

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

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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 -18 °C (0 °F). Do not cut, drill, weld, use a blowtorch on, etc. containers even when empty. Do not store near food, foodstuffs, drugs or potable water supplies.

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)		
ACGIH	ACGIH TWA (mg/m³)	10 mg/m³
ACGIH	Remark (ACGIH)	Upper Respiratory Tract (URT) & Eye irritant
OSHA	Not applicable	

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

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Color	: Green
Odor	: Mild
Odor threshold	: No data available
pH 50% water solution	: 10.5 - 11
Relative evaporation rate (butylacetate=1)	: Nil
Freezing point	: -18 °C (0 °F)
Boiling point	: 158 °C (317 °F)
Flash point	: 116 °C (241 °F) [100% Ethylene Glycol] <i>ASTM D56</i>
Auto-ignition temperature	: 400 °C (752 °F) [100% Ethylene Glycol] <i>Literature</i>
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	: 1.12
Density	: 1.12 kg/l (9.3 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	: No data available
Oxidizing properties	: No data available
Explosive limits	: 3.2 - 15.3 vol %

9.2. Other information

VOC content	: 0.00 %
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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

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

Carbon dioxide. Carbon monoxide. Fume. Ethers. Aldehydes. alcohols.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Oral: Harmful if swallowed.
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ethylene glycol (107-21-1)	
LD50 oral rat	> 5,000.00 mg/kg (Rat; Literature study)
ATE US (oral)	500.00 mg/kg bodyweight
diethylene glycol (111-46-6)	
LD50 dermal rabbit	11,890.00 mg/kg (Rabbit)
ATE US (oral)	500.00 mg/kg bodyweight
ATE US (dermal)	11,890.00 mg/kg bodyweight

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denatonium benzoate (3734-33-6)	
LD50 oral rat	584.00 mg/kg (Rat; Literature study)
LD50 dermal rabbit	> 2,000.00 mg/kg (Rabbit; Literature study)
ATE US (oral)	584.00 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 : Not classified

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).
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. 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

ethylene glycol (107-21-1)	
EC50 Daphnia 1	> 10,000.00 mg/l (EC50; 24 h)
LC50 fish 2	40,761.00 mg/l (LC50; 96 h; Salmo gairdneri)
diethylene glycol (111-46-6)	
LC50 fish 1	> 5,000.00 mg/l (LC50; 24 h)
EC50 Daphnia 1	> 10,000.00 mg/l (EC50; 24 h)
denatonium benzoate (3734-33-6)	
LC50 fish 1	> 1,000.00 mg/l (LC50; 96 h; Salmo gairdneri)
EC50 Daphnia 1	13.00 mg/l (EC50; 48 h; Daphnia magna)

12.2. Persistence and degradability

ethylene glycol (107-21-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil.
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	Readily biodegradable in water. Biodegradable in the soil. Highly mobile in 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)	0.02

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denatonium benzoate (3734-33-6)

Persistence and degradability	Biodegradability in water: no data available. No (test) data on mobility of the substance available.
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12.3. Bioaccumulative potential

ethylene glycol (107-21-1)

BCF fish 1	10.00 (BCF; 72 h)
BCF other aquatic organisms 1	0.21 - 0.6 (BCF)
BCF other aquatic organisms 2	190.00 (BCF; 24 h)
Log Pow	-1.34 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

diethylene glycol (111-46-6)

BCF fish 1	100.00 (BCF; Other; 3 days; Leuciscus melanotus; Static system; Fresh water; Experimental value)
Log Pow	-1.98 (Calculated; Other)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

denatonium benzoate (3734-33-6)

BCF fish 1	1.4 - 3.6 (BCF; BCFBAF v3.00)
Log Pow	1.78 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

ethylene glycol (107-21-1)

Surface tension	0.05 N/m (20 °C / 68 °F)
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diethylene glycol (111-46-6)

Surface tension	0.05 N/m
Log Koc	Koc, SRC PCKOCWIN v1.66; 1; Calculated value; log Koc; SRC PCKOCWIN v1.66; 0; Calculated value

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

Department of Transportation (DOT)

In accordance with DOT	
Transport document description	: UN3082 Environmentally hazardous substances, liquid, n.o.s., 9, III
UN-No.(DOT)	: UN3082
Proper Shipping Name (DOT)	: Environmentally hazardous substances, liquid, n.o.s.
Class (DOT)	: 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Hazard labels (DOT)	: 9 - Class 9 (Miscellaneous dangerous materials)



Packing group (DOT)	: III - Minor Danger
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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	: Non Bulk: Not regulated by the US D.O.T. (in quantities under 5,000 lbs in any one inner package).

TDG

Refer to current TDG Canada for further Canadian regulations

Transport by sea

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

Air transport

Proper Shipping Name (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

Full Force Concentrate Antifreeze & Coolant	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
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	Immediate (acute) health hazard Delayed (chronic) health hazard 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	
denatonium benzoate (3734-33-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

WHMIS Classification



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

EU-Regulations

No additional information available

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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]

Not classified

National regulations

Full Force Concentrate 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

California Proposition 65 - This product contains, or may contain, substance(s) known to the state of California to cause cancer, developmental toxicity and/or reproductive toxicity

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	Non-significant risk level (NSRL)
No	Yes	No	No	

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

Full text of H-statements:

H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure

NFPA health hazard

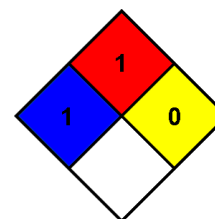
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

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 - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 °F (93 °C). (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

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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.

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 (HNO C)	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 (CO ₂). 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".
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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)		
<u>Acute</u>		
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

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	<p>P101 - If medical advice is needed, have product container or label at hand</p> <p>P102 - Keep out of reach of children</p> <p>P103 - Read label before use.</p>
Prevention	<p>P201 - Obtain special instructions before use</p> <p>P202 - Do not handle until all safety precautions have been read and understood</p> <p>P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P240 - Ground/bond container and receiving equipment</p> <p>P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment</p> <p>P242 - Use only non-sparking tools</p> <p>P243 - Take precautionary measures against static discharge</p> <p>P261 - Avoid breathing dust/fume/gas/mist/vapors/spray</p> <p>P264 - Wash hands thoroughly after handling</p> <p>P271 - Use only outdoors or in a well-ventilated area</p> <p>P280 - Wear protective gloves/protective clothing and eye/face protection</p>
Response	
General	<p>P312 - Call a POISON CENTER or doctor if you feel unwell</p> <p>P321 - Specific treatment (see supplemental first aid instructions on this label)</p> <p>P308 + P313 - IF exposed or concerned: Get medical advice/attention</p>
Skin	<p>P302 + P352 - IF ON SKIN: Wash with plenty of soap and water</p> <p>P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower</p> <p>P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention</p> <p>P362 - Take off contaminated clothing and wash before reuse</p>
Inhalation	<p>P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing</p> <p>P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell</p>
Ingestion	<p>P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician</p> <p>P331 - Do NOT induce vomiting</p>
Fire	<p>P370 + P378 - In case of fire: Use appropriate method to extinguish</p>
Storage	<p>P403 + P235 - Store in a well-ventilated place. Keep cool</p> <p>P405 - Store locked up</p>
Disposal	<p>P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable</p>
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/m ³ TWA	10 ppm TWA Skin	15 ppm STEL 75 mg/m ³ STEL 10 ppm TWA 50 mg/m ³ 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/m ³ TWA
1,2,4 Trimethyl Benzene	-	25 ppm TWA	25 ppm TWA 125 mg/m ³ 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 and Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
Isopar M Fluid	-	200 mg/m ³ TWA	-	-	-	-	-	-	-	-
Naphtha (petroleum), heavy aromatic	-	-	-	-	-	-	-	-	-	-
Naphthalene	15 ppm STEL 79 mg/m ³ STEL 10 ppm TWA 52 mg/m ³ TWA	15 ppm STEL 10 ppm TWA	10 ppm TWA	15 ppm STEL 79 mg/m ³ STEL 10 ppm TWA 52 mg/m ³ TWA	10 ppm TWA	10 ppm TWA	10 ppm TWA	10 ppm TWA	15 ppm STEV 79 mg/m ³ STEV 10 ppm TWA 52 mg/m ³ TWA	15 ppm STEL 0.6 mg/m ³ STEL 10 ppm TWA 0.2 mg/m ³ TWA
Nonionic Surfactant	-	-	-	-	-	-	-	-	-	-
Ethylene oxide	1 ppm TWA 1.8 mg/m ³ TWA	1 ppm STEL 0.1 ppm TWA	1 ppm TWA	1 ppm TWA 1.8 mg/m ³ TWA	1 ppm TWA	1 ppm TWA	10 ppm STEL 18 mg/m ³ STEL 1 ppm TWA 1.8 mg/m ³ TWA 1 ppm TWA	1 ppm TWA	1 ppm TWA 1.8 mg/m ³ TWA	2 ppm STEL 1 ppm TWA
1,2,4 Trimethyl Benzene	25 ppm TWA 123 mg/m ³ TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA 123 mg/m ³ TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA	25 ppm TWA 123 mg/m ³ TWA	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/m ³ (Rat) 4 h	> 2 mL/kg (Rabbit)	> 5000 mg/kg (Rat)
Naphthalene	> 340 mg/m ³ (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/m ³ (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 Organization)
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

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Version Number: 1.02
Supersedes Date: 02/04/15

SECTION 1: Identification

1.1. Product identifier

3M™ High Power Brake Cleaner, PN 08880

Product Identification Numbers

ID Number	UPC	ID Number	UPC
60-4550-8249-9		60-4550-8252-3	

1.2. Recommended use and restrictions on use

Recommended use

Automotive

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Automotive Aftermarket
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

The label elements below were prepared in accordance with OSHA Hazard Communication Standard, 29 CFR 1910.1200. This information may be different from the actual product label information for labels regulated by other agencies.

2.1. Hazard classification

Flammable Aerosol: Category 1.
Gas Under Pressure: Liquefied gas.
Acute Toxicity (oral): Category 4.
Serious Eye Damage/Irritation: Category 2B.
Skin Corrosion/Irritation: Category 2.
Aspiration Hazard: Category 1.
Reproductive Toxicity: Category 2.
Carcinogenicity: Category 2.
Specific Target Organ Toxicity (single exposure): Category 1.

Specific Target Organ Toxicity (single exposure): Category 3.
Specific Target Organ Toxicity (repeated exposure): Category 1.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Gas cylinder | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Extremely flammable aerosol.

Contains gas under pressure; may explode if heated.

Harmful if swallowed.

Causes eye irritation.

Causes skin irritation.

May be fatal if swallowed and enters airways.

May cause drowsiness or dizziness.

Suspected of damaging fertility or the unborn child.

Suspected of causing cancer.

Causes damage to organs:

cardiovascular system |

sensory organs |

Causes damage to organs through prolonged or repeated exposure:

nervous system |

May cause damage to organs through prolonged or repeated exposure:

sensory organs |

Precautionary Statements

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 dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

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 eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Rinse mouth.

Do NOT induce vomiting.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Specific treatment (see Notes to Physician on this label).

Call a POISON CENTER or doctor/physician if you feel unwell.

Storage:

Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.

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

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.

This product contains methanol. If there is a reasonable suspicion of methanol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management.

15% of the mixture consists of ingredients of unknown acute oral toxicity.

15% of the mixture consists of ingredients of unknown acute dermal toxicity.

15% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Heptane, branched, cyclic and linear	426260-76-6	30 - 60 Trade Secret *
Propane	74-98-6	10 - 30 Trade Secret *
Xylene	1330-20-7	10 - 30 Trade Secret *
Ethylbenzene	100-41-4	1 - 10 Trade Secret *
Methyl Alcohol	67-56-1	5 - 10 Trade Secret *

*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:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:

Do not induce vomiting. Get immediate 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

This product contains methanol. If there is a reasonable suspicion of methanol poisoning, intravenous (IV) administration with either fomepizole (preferred) or ethanol (if fomepizole is unavailable) should be considered as part of the medical management. 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

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products**Substance**

Carbon monoxide

Carbon dioxide

Toxic Vapor, Gas, Particulate

Condition

During Combustion

During Combustion

During Combustion

5.3. Special protective actions for fire-fighters

Water may not effectively extinguish fire; however, it should be used to keep fire-exposed containers and surfaces cool and prevent explosive rupture.

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. Use only non-sparking tools. 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. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. 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

For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

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. Cover spill area with a fire-extinguishing foam. An appropriate aqueous film forming foam (AFFF) is recommended. 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 using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities.

Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Seal the container. 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

For industrial or professional use only. Do not use in a confined area with minimal air exchange. 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. 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. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Protect from sunlight. Store in a well-ventilated place. Store away from heat. Store away from acids. Store away from oxidizing agents.

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
Ethylbenzene	100-41-4	ACGIH	TWA:20 ppm	A3: Confirmed animal carcin.
Ethylbenzene	100-41-4	OSHA	TWA:435 mg/m3(100 ppm)	
Xylene	1330-20-7	ACGIH	TWA:100 ppm;STEL:150 ppm	A4: Not class. as human carcin
Xylene	1330-20-7	OSHA	TWA:435 mg/m3(100 ppm)	
Methyl Alcohol	67-56-1	ACGIH	TWA:200 ppm;STEL:250 ppm	SKIN
Methyl Alcohol	67-56-1	OSHA	TWA:260 mg/m3(200 ppm)	
Propane	74-98-6	ACGIH	Limit value not established:	simple asphyxiant
Propane	74-98-6	OSHA	TWA:1800 mg/m3(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

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:

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: Fluoroelastomer

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 air-purifying respirator suitable for organic vapors

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Aerosol
Odor, Color, Grade:	Clear colorless; Solvent odor
Odor threshold	No Data Available
pH	Not Applicable
Melting point	No Data Available
Boiling Point	No Data Available
Flash Point	>= -156 °F
Evaporation rate	No Data Available
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	No Data Available
Flammable Limits(UEL)	No Data Available
Vapor Pressure	40 psi [@ 70 °F]
Vapor Density	>= 1.0 [Ref Std: AIR=1]
Density	0.699 g/ml
Specific Gravity	0.699 [Ref Std: WATER=1]
Solubility in Water	Nil
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	No Data Available
Hazardous Air Pollutants	34.72 % weight [Test Method: Calculated]
Volatile Organic Compounds	699 g/l [Test Method: calculated SCAQMD rule 443.1]
Volatile Organic Compounds	100 % weight [Test Method: calculated per CARB title 2]
Percent volatile	100 % weight
VOC Less H2O & Exempt Solvents	699 g/l [Test Method: calculated SCAQMD rule 443.1]

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

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

Strong acids

Strong oxidizing agents

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:

May be harmful if inhaled.

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:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

May cause additional health effects (see below).

Eye Contact:

Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:

Harmful if swallowed. Chemical (Aspiration) Pneumonitis: Signs/symptoms may include coughing, gasping, choking,

burning of the mouth, difficulty breathing, bluish colored skin (cyanosis), and may be fatal.

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

May cause blindness.

Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Prolonged or repeated exposure may cause target organ effects:

Auditory Effects: Signs/symptoms may include hearing impairment, balance dysfunction and ringing in the ears.

Neurological Effects: Signs/symptoms may include personality changes, lack of coordination, sensory loss, tingling or numbness of the extremities, weakness, tremors, and/or changes in blood pressure and heart rate.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Carcinogenicity:

Contains a chemical or chemicals which can cause cancer.

Ingredient	CAS No.	Class Description	Regulation
Ethylbenzene	100-41-4	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

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	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE ₂₀ - 50 mg/l
Overall product	Ingestion		No data available; calculated ATE ₃₀₀ - 2,000 mg/kg
Heptane, branched, cyclic and linear	Dermal	Rabbit	LD ₅₀ > 2,000 mg/kg
Heptane, branched, cyclic and linear	Inhalation-Vapor (4 hours)	Rat	LC ₅₀ > 73.5 mg/l
Heptane, branched, cyclic and linear	Ingestion	Rat	LD ₅₀ > 5,000 mg/kg
Xylene	Dermal	Rabbit	LD ₅₀ > 4,200 mg/kg
Xylene	Inhalation-Vapor (4 hours)	Rat	LC ₅₀ 29 mg/l
Xylene	Ingestion	Rat	LD ₅₀ 3,523 mg/kg
Propane	Inhalation-Gas (4 hours)	Rat	LC ₅₀ > 200,000 ppm
Methyl Alcohol	Dermal		LD ₅₀ estimated to be 1,000 - 2,000 mg/kg

Methyl Alcohol	Inhalation-Vapor		LC50 estimated to be 10 - 20 mg/l
Methyl Alcohol	Ingestion		LD50 estimated to be 50 - 300 mg/kg
Ethylbenzene	Dermal	Rabbit	LD50 15,433 mg/kg
Ethylbenzene	Inhalation-Vapor (4 hours)	Rat	LC50 17.4 mg/l
Ethylbenzene	Ingestion	Rat	LD50 4,769 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Heptane, branched, cyclic and linear	Rabbit	Mild irritant
Xylene	Rabbit	Mild irritant
Propane	Rabbit	Minimal irritation
Methyl Alcohol	Rabbit	Mild irritant
Ethylbenzene	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Heptane, branched, cyclic and linear	Rabbit	Mild irritant
Xylene	Rabbit	Mild irritant
Propane	Rabbit	Mild irritant
Methyl Alcohol	Rabbit	Moderate irritant
Ethylbenzene	Rabbit	Moderate irritant

Skin Sensitization

Name	Species	Value
Methyl Alcohol	Guinea pig	Not classified
Ethylbenzene	Human	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
Xylene	In Vitro	Not mutagenic
Xylene	In vivo	Not mutagenic
Propane	In Vitro	Not mutagenic
Methyl Alcohol	In Vitro	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	In vivo	Some positive data exist, but the data are not sufficient for classification
Ethylbenzene	In vivo	Not mutagenic
Ethylbenzene	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Xylene	Dermal	Rat	Not carcinogenic
Xylene	Ingestion	Multiple animal species	Not carcinogenic
Xylene	Inhalation	Human	Some positive data exist, but the data are not sufficient for classification
Methyl Alcohol	Inhalation	Multiple animal species	Not carcinogenic

Ethylbenzene	Inhalation	Multiple animal species	Carcinogenic
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Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Xylene	Inhalation	Not classified for female reproduction	Human	NOAEL Not available	occupational exposure
Xylene	Ingestion	Not classified for development	Mouse	NOAEL Not available	during organogenesis
Xylene	Inhalation	Not classified for development	Multiple animal species	NOAEL Not available	during gestation
Methyl Alcohol	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,600 mg/kg/day	21 days
Methyl Alcohol	Ingestion	Toxic to development	Mouse	LOAEL 4,000 mg/kg/day	during organogenesis
Methyl Alcohol	Inhalation	Toxic to development	Mouse	NOAEL 1.3 mg/l	during organogenesis
Ethylbenzene	Inhalation	Not classified for development	Rat	NOAEL 4.3 mg/l	prematuring & during gestation

Lactation

Name	Route	Species	Value
Xylene	Ingestion	Mouse	Not classified for effects on or via lactation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Heptane, branched, cyclic and linear	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL not available	
Xylene	Inhalation	auditory system	Causes damage to organs	Rat	LOAEL 6.3 mg/l	8 hours
Xylene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Xylene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	
Xylene	Inhalation	eyes	Not classified	Rat	NOAEL 3.5 mg/l	not available
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	eyes	Not classified	Rat	NOAEL 250 mg/kg	not applicable
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	Not classified	Human	NOAEL Not available	

Methyl Alcohol	Inhalation	blindness	Causes damage to organs	Human	NOAEL Not available	occupational exposure
Methyl Alcohol	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Methyl Alcohol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 hours
Methyl Alcohol	Ingestion	blindness	Causes damage to organs	Human	NOAEL Not available	poisoning and/or abuse
Methyl Alcohol	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Ethylbenzene	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Ethylbenzene	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Ethylbenzene	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgement	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Xylene	Inhalation	nervous system	Causes damage to organs through prolonged or repeated exposure	Rat	LOAEL 0.4 mg/l	4 weeks
Xylene	Inhalation	auditory system	May cause damage to organs through prolonged or repeated exposure	Rat	LOAEL 7.8 mg/l	5 days
Xylene	Inhalation	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Inhalation	heart endocrine system hematopoietic system muscles kidney and/or bladder respiratory system	Not classified	Multiple animal species	NOAEL 3.5 mg/l	13 weeks
Xylene	Ingestion	auditory system	Not classified	Rat	NOAEL 900 mg/kg/day	2 weeks
Xylene	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 1,500 mg/kg/day	90 days
Xylene	Ingestion	liver	Not classified	Multiple animal species	NOAEL Not available	
Xylene	Ingestion	heart skin endocrine system bone, teeth, nails, and/or hair hematopoietic system immune system nervous system respiratory system	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Methyl Alcohol	Inhalation	liver	Not classified	Rat	NOAEL 6.55 mg/l	4 weeks
Methyl Alcohol	Inhalation	respiratory system	Not classified	Rat	NOAEL 13.1 mg/l	6 weeks
Methyl Alcohol	Ingestion	liver nervous system	Not classified	Rat	NOAEL 2,500 mg/kg/day	90 days
Ethylbenzene	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.1 mg/l	2 years
Ethylbenzene	Inhalation	liver	Some positive data exist, but the	Mouse	NOAEL 1.1	103 weeks

			data are not sufficient for classification		mg/l	
Ethylbenzene	Inhalation	hematopoietic system	Not classified	Rat	NOAEL 3.4 mg/l	28 days
Ethylbenzene	Inhalation	auditory system	Not classified	Rat	NOAEL 2.4 mg/l	5 days
Ethylbenzene	Inhalation	endocrine system	Not classified	Mouse	NOAEL 3.3 mg/l	103 weeks
Ethylbenzene	Inhalation	bone, teeth, nails, and/or hair muscles	Not classified	Multiple animal species	NOAEL 4.2 mg/l	90 days
Ethylbenzene	Inhalation	heart immune system respiratory system	Not classified	Multiple animal species	NOAEL 3.3 mg/l	2 years
Ethylbenzene	Ingestion	liver kidney and/or bladder	Not classified	Rat	NOAEL 680 mg/kg/day	6 months

Aspiration Hazard

Name	Value
Heptane, branched, cyclic and linear	Aspiration hazard
Xylene	Aspiration hazard
Ethylbenzene	Aspiration hazard

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.

Incinerate in a permitted waste incineration 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.

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**

Flammable (gases, aerosols, liquids, or solids)

Gas under pressure

Health Hazards

Acute toxicity

Aspiration Hazard

Carcinogenicity

Reproductive toxicity

Serious eye damage or eye irritation

Skin Corrosion or Irritation

Specific target organ toxicity (single or repeated exposure)

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):**Ingredient****C.A.S. No****% by Wt**

Methyl Alcohol

67-56-1

Trade Secret 5 - 10

Ethylbenzene

100-41-4

Trade Secret 1 - 10

Xylene

1330-20-7

Trade Secret 10 - 30

Xylene (Benzene, dimethyl-)

1330-20-7

10 - 30

15.2. State Regulations

Contact 3M for more information.

California Proposition 65**Ingredient****C.A.S. No.****Classification**

Ethylbenzene

100-41-4

Carcinogen

Methyl Alcohol

67-56-1

Developmental Toxin

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

WARNING: This product contains a chemical known to the State of California to cause cancer.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

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:** 2 **Flammability:** 4 **Instability:** 0 **Special Hazards:** None**Aerosol Storage Code:** 3

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.

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Issue Date: 12/27/17

Version Number: 1.02
Supersedes Date: 02/04/15

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SAFETY DATA SHEET

Revision Date 21-Oct-2015

Version 2

1. IDENTIFICATION

Product identifier

Product Name SA9 BATTERY PROTECTOR & SEALER 5 OZ AE

Other means of identification

Product Code 80370

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Battery Sealant

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

ITW Permatex
6875 Parkland Blvd.
Solon, OH 44139 USA

Distributor

ITW Permatex Canada
35 Brownridge Road, Unit 1
Halton Hills, ON Canada L7G 0C6
Telephone: (800) 924-6994

Company Phone Number 1-87-Permatex

(877) 376-2839

24 Hour Emergency Phone Number Chem-Tel: 800-255-3924

International Emergency:

00+1+ 813-248-0585

Contract Number: MIS0003453

E-mail address mail@permatex.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Liquefied gas

Label elements

Emergency Overview

Danger

Causes skin irritation
Causes serious eye irritation
May cause drowsiness or dizziness
May be fatal if swallowed and enters airways
Extremely flammable aerosol

Contains gas under pressure; may explode if heated



Appearance Purple

Physical state Liquid Flammable Aerosol

Odor Solvent

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
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

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
Specific treatment (see supplemental first aid instructions on this label)

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 occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

Precautionary Statements - Storage

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOX)

Not applicable

Other Information

- Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

substance(s)

Chemical Name	CAS No	Weight-%	Trade Secret
ACETONE	67-64-1	15-35	*
XYLENE	1330-20-7	10 - 30	*
PROPANE	74-98-6	15-30	*
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	5-25	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice	Get medical advice/attention if you feel unwell.
Eye contact	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.
Skin contact	IF ON SKIN: Wash skin with soap and water. If skin irritation persists, call a physician. Wash contaminated clothing before reuse.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, call a physician.
Ingestion	IF SWALLOWED: Call a physician or poison control center immediately. Do NOT induce vomiting.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	See section 2 for more information.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Carbon dioxide (CO₂), Dry chemical, Foam

Unsuitable extinguishing media

None.

Specific hazards arising from the chemical

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.

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

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	Ensure adequate ventilation, especially in confined areas. Avoid contact with eyes and skin. Use personal protective equipment as required.
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Environmental precautions

Environmental precautions	Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological Information.
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Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal.
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	Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing. Wash thoroughly after handling. Wash contaminated clothing before reuse. Use personal protective equipment as required. Contents under pressure. Do not puncture or incinerate cans.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).
Incompatible materials	Strong oxidizing agents, Strong bases, Strong acids

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
ACETONE 67-64-1	STEL: 750 ppm TWA: 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	STEL: 150 ppm TWA: 100 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	-
PROPANE 74-98-6	TWA: 1000 ppm	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

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).
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Appropriate engineering controls

Engineering Controls	Showers Eyewash stations Ventilation systems
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Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear protective natural rubber, nitrile rubber, Neoprene™ or PVC gloves.
Respiratory protection	Use NIOSH-approved air-purifying respirator with organic vapor cartridge or canister, as appropriate.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid; Flammable Aerosol
Appearance	Purple
Odor	Solvent
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	< -18 °C / < 0 °F	Gives a flame projection at full valve opening or flashback at any degree of valve opening Butyl acetate = 1
Evaporation rate	> 1	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	>1	Air = 1
Relative density	0.85	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	45%
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Heat, flames and sparks. Temperatures >50 °C / 122 °F.

Incompatible materials

Strong oxidizing agents, Strong bases, Strong acids

Hazardous Decomposition Products

Carbon oxides

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation	May cause drowsiness or dizziness.
Eye contact	Contact with eyes may cause irritation. May cause redness and tearing of the eyes.
Skin contact	May cause skin irritation and/or dermatitis.
Ingestion	Potential for aspiration if swallowed. Aspiration may cause pulmonary edema and pneumonitis.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
ACETONE 67-64-1	= 5800 mg/kg (Rat)	-	= 50100 mg/m ³ (Rat) 8 h
XYLENE 1330-20-7	= 3500 mg/kg (Rat)	> 1700 mg/kg (Rabbit) > 4350 mg/kg (Rabbit)	= 29.08 mg/L (Rat) 4 h = 5000 ppm (Rat) 4 h
PROPANE 74-98-6	-	-	= 658 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

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
XYLENE 1330-20-7	-	Group 3	-	-

ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Group 2B - Possibly Carcinogenic to Humans

Not classifiable as a human carcinogen

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

X - Present

Target Organ Effects Central nervous system, Eyes, Respiratory system, Skin.

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	7132 mg/kg
ATEmix (dermal)	5971 mg/kg
ATEmix (inhalation-gas)	2432615 mg/l
ATEmix (inhalation-dust/mist)	7.5 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

15 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
ACETONE 67-64-1	-	4.74 - 6.33: 96 h Oncorhynchus mykiss mg/L LC50 6210 - 8120: 96 h Pimephales promelas mg/L LC50 static 8300: 96 h Lepomis macrochirus mg/L LC50	10294 - 17704: 48 h Daphnia magna mg/L EC50 Static 12600 - 12700: 48 h Daphnia magna mg/L EC50
XYLENE 1330-20-7	-	13.4: 96 h Pimephales promelas mg/L LC50 flow-through 2.661 - 4.093: 96 h Oncorhynchus mykiss mg/L LC50 static 13.5 - 17.3: 96 h Oncorhynchus mykiss mg/L LC50 13.1 - 16.5: 96 h Lepomis macrochirus mg/L LC50 flow-through 19: 96 h Lepomis macrochirus mg/L LC50 7.711 - 9.591: 96 h Lepomis macrochirus mg/L LC50 static 23.53 - 29.97: 96 h Pimephales promelas mg/L LC50 static 780: 96 h Cyprinus carpio mg/L LC50 semi-static 780: 96 h Cyprinus carpio mg/L LC50 30.26 - 40.75: 96 h Poecilia reticulata mg/L LC50 static	3.82: 48 h water flea mg/L EC50 0.6: 48 h Gammarus lacustris mg/L LC50
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT 64742-47-8	-	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	4720: 96 h Den-dronereides heteropoda mg/L LC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility

No information available.

Chemical Name	Partition coefficient
ACETONE 67-64-1	-0.24
XYLENE 1330-20-7	2.77 - 3.15
PROPANE 74-98-6	2.3

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Disposal of wastes**

This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).

Contaminated packaging

Do not reuse container.

US EPA Waste Number

D001

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
ACETONE 67-64-1	-	Included in waste stream: F039	-	U002
XYLENE 1330-20-7	-	Included in waste stream: F039	-	U239

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
ACETONE 67-64-1	Ignitable
XYLENE 1330-20-7	Toxic Ignitable

14. TRANSPORT INFORMATION

DOT

UN/ID no 1950
Proper shipping name: Aerosols, Limited Quantity (LQ)
Hazard Class 2.1
Emergency Response Guide Number 126

IATA

UN/ID no ID 8000
Proper shipping name: Consumer commodity
Hazard Class 9
ERG Code 9L

IMDG

UN/ID no 1950
Proper shipping name: Aerosols, Limited Quantity (LQ)
Hazard Class 2.1
EmS-No F-D, S-U

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - 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

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

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	Yes
Sudden release of pressure hazard	No
Reactive Hazard	No

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

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	CERCLA/SARA RQ	Reportable Quantity (RQ)
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

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
ACETONE 67-64-1	X	X	X
XYLENE 1330-20-7	X	X	X
PROPANE 74-98-6	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

WHMIS Hazard Class

A Compressed gases, B5 - Flammable aerosol, D2B - Toxic materials

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	Health hazards 2	Flammability 3	Instability 0	-
HMIS	Health hazards 2	Flammability 3	Physical hazards 0	Personal protection B

NFPA (National Fire Protection Association)
HMIS (Hazardous Material Information System)

Revision Date 21-Oct-2015

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

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*

Safety Data Sheet

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

Safety Data Sheet

Material Name: USED OIL

SDS ID: 81451

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

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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 respirators may be needed dependent upon anticipated use and

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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: >200°F (>93°C) (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.

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* * * 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)

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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)

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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)

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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 below 1.0 WT%. (Not Available)

454 kg 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); 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.

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* * * 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, Type L, 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 CORROSION/IRRITATION – Category 1 SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1 SKIN SENSITIZATION – Category 1 CARCINOGENICITY/INHALATION – Category 1A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] – Category 3

GHS label elements

Hazard pictograms:



Signal word:

Hazard statements:

Danger
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 thoroughly 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

Disposal:	safety. Store in a well ventilated area. Keep container tightly closed. Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazards not otherwise classified (HNOC):	None known
Supplemental Information:	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	A-B	1305-78-8
Quartz	C-D	14808-60-7
Hexavalent chromium*	E-F	18450-29-9
Portland cement also contains gypsum, limestone and magnesium oxide in various concentrations. However, because these components are not classifiable as a hazard under Title 29 Code of Federal Regulations 1910.1200, they are not required to be listed in this section.		
Gypsum	G-H	13397-24-5
Limestone	I-J	1317-65-3
Magnesium oxide	K-L	1309-48-4

Any concentration shown as a range is to protect confidentiality or is due to process variation.

*Hexavalent chromium is included due to dermal sensitivity associated with the component.

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

Ingestion: 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. 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

**For emergency responders:
Environmental precautions:**

breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For personal protective clothing requirements, please see 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 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

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
-----------------	-----------------

Cement, portland, chemicals	<p>ACGIH TLV (United States, 3/2012) TWA: 1 mg/m³ 8 hours. Form: Respirable fraction</p> <p>NIOSH REL (United States, 6/2009) TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total</p> <p>OSHA PEL (United States, 6/2010) TWA: 5mg/m³. 8 hours. Form: Respirable fraction TWA: 15 mg/m³. 8 hours. Form: Total dust</p>
Calcium oxide	<p>ACGIH TLV (United States, 3/2012) TWA: 2 mg/m³ 8 hours</p> <p>NIOSH REL (United States, 6/2009) TWA: 2mg/m³ 10 hours.</p> <p>OSHA PEL (United States, 6/2010) TWA: 5 mg/m³ 8 hours.</p>
Limestone	<p>NIOSH REL (United States, 6/2009) TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total</p> <p>OSHA PEL (United States, 6/2010) TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust</p>
Magnesium oxide	<p>ACGIH TLV (United States, 3/2012) TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL (United States, 6/2010) TWA: 15 mg/m³ 8 hours. Form: Total particulates</p>
Quartz	<p>ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m³ 8 hours. Form: Respirable fraction</p> <p>NIOSH REL (United States, 6/2009) TWA: 0.05 mg/m³ 10 hours. Form: Respirable dust</p> <p>OSHA PEL Z-3 (United States, 9/2005) TWA: 10 mg/m³ divided by % SiO₂ + 2: Respirable TWA: 30 mg/m³ divided by % SiO₂ + 2: Total</p>
Calcium sulfate (gypsum)	<p>ACGIH TLV (United States, 3/2012) TWA: 10 mg/m³ 8 hours. Form: Respirable fraction</p> <p>NIOSH REL (United States, 6/2009) TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust</p> <p>OSHA PEL Z-1 (United States, 2/2006) TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust</p>

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.

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	-
Quartz	-	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
Quartz	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 chronic health effects:

Potential delayed effects: No known significant effects or critical hazards.

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
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.
Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

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

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	A-B	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.

Section 16. Other Information

Date of issue: 06/01/2015
Version: 06/01/2015
Revised Section(s): N/Ap

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.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Lehigh Hanson, except that the product shall conform to contracted specifications. The information provided herein was believed by the Lehigh Hanson to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

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

1. Identification

Product number DA6851
Product name **OGLE**
Company information LAWSON PRODUCTS, INC.
 8770 W. BRYN MAWR AVE. sui.900
 CHICAGO, IL 60631 1-866-529-7664 www.lawsonproducts.com
 Emergency Phone: 1-888-426-4851
Version # 01
Recommended use cleaner

2. Hazard(s) identification

Physical hazards Gases under pressure Liquefied gas
Health hazards Not classified.
Environmental hazards Not classified.
OSHA defined hazards Not classified.

Label elements



Signal word Warning
Hazard statement Contains gas under pressure; may explode if heated.
Precautionary statement
 Prevention Observe good industrial hygiene practices.
 Response Wash hands after handling.
 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) None known.
Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
2-Butoxyethanol		111-76-2	2.5 - 10
Ethyl Alcohol		64-17-5	2.5 - 10
Butane		106-97-8	1 - 2.5
Propane		74-98-6	1 - 2.5
Other components below reportable levels			90 - 100

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Get medical attention if symptoms persist.
Skin contact Get medical attention if irritation develops and persists.
Eye contact Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Continue rinsing. Get medical attention if irritation develops and persists.
Ingestion Rinse mouth.

Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
5. Fire-fighting measures	
Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
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. 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: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. 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.
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. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. 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. See Section 8 of the SDS for Personal Protective Equipment. 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. 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. Isolate area until gas has dispersed. Prevent entry into waterways, sewer, basements or confined areas. 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 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. Ground and bond containers when transferring material. Do not re-use empty containers. Do not get in eyes, on skin, or on 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. 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. Keep containers tightly closed in a dry, cool and well-ventilated place. Refrigeration recommended. 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
2-Butoxyethanol (CAS 111-76-2)	PEL	240 mg/m3
Ethyl Alcohol (CAS 64-17-5)	PEL	50 ppm 1900 mg/m3 1000 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm
Butane (CAS 106-97-8)	STEL	1000 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	24 mg/m3
Butane (CAS 106-97-8)	TWA	5 ppm 1900 mg/m3 800 ppm
Ethyl Alcohol (CAS 64-17-5)	TWA	1900 mg/m3 1000 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
2-Butoxyethanol (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatinine in urine	*

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

Exposure guidelines

US - California OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

2-Butoxyethanol (CAS 111-76-2) Skin designation applies.

US - Tennessee OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

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

2-Butoxyethanol (CAS 111-76-2) 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.

Individual protection measures, such as personal protective equipment

Eye/face protection If contact is likely, safety glasses with side shields are recommended.

Hand protection For prolonged or repeated skin contact use suitable protective gloves.

Skin protection

Other Wear suitable protective clothing.

Respiratory protection	If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator. 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.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	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	Clear.
Physical state	Gas.
Form	Aerosol. Liquefied gas.
Color	Light yellow.
Odor	Characteristic.
Odor threshold	Not available.
pH	9.1 - 10.1 estimated
Melting point/freezing point	Not available.
Initial boiling point and boiling range	212 °F (100 °C) estimated
Flash point	-156.0 °F (-104.4 °C) Propellant estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
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	80 - 100 psig @70F 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	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Aerosol spray enclosed space	
Deflagration density	> 2.52 g/cm3 Tested
Aerosol spray ignition distance	< 15 cm Tested estimated
Specific gravity	0.977 - 0.997

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. 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.

SDS.US

Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard.
Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
	2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.
Eye contact	Direct contact with eyes may cause temporary irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	May be harmful if swallowed. May be harmful in contact with skin. May be harmful if inhaled. Expected to be a low hazard for usual industrial or commercial handling by trained personnel.
-----------------------	--

Components	Species	Test Results
2-Butoxyethanol (CAS 111-76-2)		
Acute		
Dermal		
LD50	Guinea pig	230 ml/kg, 24 Hours
		7.3 ml/kg, 4 Days
	Rabbit	450 ml/kg, 24 Hours
		435 mg/kg, 24 Hours
	Rat	0.63 ml/kg
		> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rabbit	400 ppm, 7 Hours
	Rat	450 ppm, 4 Hours
Oral		
LD100	Rabbit	695 mg/kg
LD50	Dog	> 695 mg/kg
	Guinea pig	1200 mg/kg
	Rat	530 - 2800 mg/kg
Butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	1237 mg/l, 120 Minutes
		52 %, 120 Minutes
	Rat	1355 mg/l
Ethyl Alcohol (CAS 64-17-5)		
Acute		
Inhalation		
LC50	Cat	85.41 mg/l, 4.5 Hours
		43.68 mg/l, 6 Hours
	Mouse	> 60000 ppm
		79.43 mg/l, 134 Minutes
	Rat	> 115.9 mg/l, 4 Hours

Components	Species	Test Results
		51.3 mg/l, 6 Hours
<i>Oral</i> LD50	Monkey	6000 mg/kg
	Mouse	10500 ml/kg
	Rat	1187 - 2769 mg/kg
		7800 ml/kg

Propane (CAS 74-98-6)

Acute

Inhalation

LC50

Mouse

1237 mg/l, 120 Minutes

52 %, 120 Minutes

Rat

1355 mg/l

658 mg/l/4h

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation May be irritating to the skin. Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation. May be irritating to eyes.

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

2-Butoxyethanol (CAS 111-76-2)

3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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 an aspiration hazard. Not likely, due to the form of the product.

Chronic effects Prolonged inhalation may be harmful. May be harmful if absorbed through skin.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

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.

Product	Species		Test Results
19 OZ DRUMMOND OGLE GLASS CLEANER (CAS Mixture)			
Aquatic			
Crustacea	EC50	Daphnia	13838.1602 mg/l, 48 hours estimated
Components	Species		Test Results
2-Butoxyethanol (CAS 111-76-2)			
Aquatic			
Fish	LC50	Inland silverside (Menidia beryllina)	1250 mg/l, 96 hours

Components		Species	Test Results
Ethyl Alcohol (CAS 64-17-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	7700 - 11200 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100.1 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 No data available.

Partition coefficient n-octanol / water (log Kow)

2-Butoxyethanol	0.83
Butane	2.89
Ethyl Alcohol	-0.31
Propane	2.36

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 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 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 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
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Label(s)	2.2
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
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, non-flammable
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Label(s)	2.2
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	2L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Allowed.

Cargo aircraft only Allowed.

Packaging Exceptions LTD QTY

IMDG

UN number UN1950

UN proper shipping name AEROSOLS

Transport hazard class(es)

Class 2.2

Subsidiary risk -

Label(s) 2.2

Packing group Not applicable.

Environmental hazards

Marine pollutant No.

EmS Not available.

Special precautions for user 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



15. Regulatory information

US federal regulations

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

All components are on the U.S. EPA TSCA Inventory List.

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 listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - Yes
Reactivity Hazard - No

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)

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

2-Butoxyethanol (CAS 111-76-2)

Butane (CAS 106-97-8)

Ethyl Alcohol (CAS 64-17-5)

Propane (CAS 74-98-6)

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

2-Butoxyethanol (CAS 111-76-2)

Butane (CAS 106-97-8)

Ethyl Alcohol (CAS 64-17-5)

Propane (CAS 74-98-6)

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

2-Butoxyethanol (CAS 111-76-2)

Butane (CAS 106-97-8)

Ethyl Alcohol (CAS 64-17-5)

Propane (CAS 74-98-6)

US. Rhode Island RTK

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. 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.

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)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No

Country(s) or region	Inventory name	On inventory (yes/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 07-02-2015

Version # 01

References EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

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.

Prepared by: Regulatory Affairs department

Issuing date 24-Mar-2015

Revision Date 24-Mar-2015

Version 1.01

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name PRIZM

**Recommended use of the chemical
and restrictions on use**

Product code DA6881

Product Type Extremely flammable aerosol
Synonyms None

Supplier's details

Recommended Use Penetrating lubricant with PTFE.
Uses advised against No information available

Manufactured For:
Drummond, A Lawson Brand
Lawson Products, Inc.
8770 W. Bryn Mawr Avenue-Suite 900
Chicago, IL 60631-3515
773-304-5050

Emergency telephone number
Company Emergency Phone 888-426-4851
Number

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable aerosols	Category 1
Gases under pressure	Compressed Gas

GHS Label elements, including precautionary statements

Emergency Overview

DANGER

Hazard Statements

Causes skin irritation
May cause respiratory irritation. May cause drowsiness or dizziness
May be fatal if swallowed and enters airways
Extremely flammable aerosol
Contains gas under pressure; may explode if heated



Appearance Hazy

Physical state Aerosol

Odor Light Vanilla Scent

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves
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
Do not spray on an open flame or other ignition source
Pressurized container: Do not pierce or burn, even after use

Precautionary Statements - Response

Specific treatment (see first aid on this label)
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None

Other information

2.66E-06% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %*
PROPANE/ISOBUTANE/N-BUTANE	68476-86-8	30-40
NAPHTHENIC OIL, SEVERLY HYDROT	64742-52-5	20-30
HEPTANE	64742-49-0	10-20
POLYMERIC VISCOSITY MODIFIER	MIXTURE	10-20
PETROLATUM	8009-03-8	1-10
HYDROTREATED HEAVY NAPHTHENIC	64742-48-9	0.1-1

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures for different exposure routes**

Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. Call a physician if irritation persists.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. 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.

Most important symptoms/effects, acute and delayed**Main Symptoms** Causes skin irritation. May cause respiratory irritation. Harmful if swallowed.**Indication of immediate medical attention and special treatment needed, if necessary****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 Decomposition by contact with water may generate vapors which can be ignited by heat or open flame.**Specific hazards arising from the chemical**

No information available.

Explosion Data**Sensitivity to Mechanical Impact** none.**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**

Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can. Avoid skin contact. Use with adequate ventilation. Keep container away from heat, flames, and all other sources of ignition. Keep can away from all sources of electricity such as electric motors and batteries. Do not spray on hot surfaces.

Environmental precautions**Environmental precautions**

No special environmental precautions required. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Methods and materials for containment and cleaning up**Methods for Containment**

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling**Advice on safe handling**

Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can.

Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible products

None known based on information supplied.

Aerosol Level

3

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure Guidelines**

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	74-98-6: TWA: 1000 ppm 106-97-8: STEL: 1000 ppm 75-28-5: STEL: 1000 ppm	74-98-6: TWA: 1000 ppm TWA: 1800 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m ³ 106-97-8: (vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m ³	74-98-6: IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m ³ 106-97-8: TWA: 800 ppm TWA: 1900 mg/m ³ 75-28-5: TWA: 800 ppm TWA: 1900 mg/m ³

HEPTANE 64742-49-0	TLV: 400 ppm STEL: 500 ppm	TWA: 500 ppm	-
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ACGIH: (American Conference of Governmental Industrial Hygienists)

OSHA: (Occupational Safety & Health Administration)

Exposure controls

Engineering Measures

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face 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, 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.

Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical and chemical properties**

Physical state	Aerosol	Odor	Light Vanilla Scent
Appearance	Hazy	Odor Threshold	No information available
Color	amber		

<u>Property</u>	<u>Values</u>	<u>Remarks • Methods</u>
pH	No information available	not applicable
Melting/freezing point	No information available	
Boiling point/boiling range	No information available	
Flash Point	-97 °C / -142 °F	Based on propellant
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
upper flammability limit	No information available	
lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific Gravity	0.750	
Water solubility	Practically insoluble	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	Not applicable
Decomposition temperature	No information available	
Viscosity	No information available	
Explosive properties	No information available	

Other information

VOC Content(%) 49.84

10. STABILITY AND REACTIVITY**Reactivity**

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to Avoid

Extremes of temperature and 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**Product Information**

Inhalation	Vapors may irritate throat and respiratory system. May cause drowsiness and dizziness based on components. May cause irritation of respiratory tract. Avoid breathing vapors or mists.
Eye contact	May cause slight irritation. Avoid contact with eyes.
Skin contact	Irritating to skin. Repeated exposure may cause skin dryness or cracking. Prolonged skin contact may defat the skin and produce dermatitis. Avoid contact with skin.
Ingestion	Harmful if swallowed. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
HEPTANE 64742-49-0	> 5000 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 73680 ppm (Rat) 4 h
PETROLATUM 8009-03-8	-	= 3600 mg/kg (Rabbit)	-
HYDROTREATED HEAVY NAPHTHENIC 64742-48-9	> 5000 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization None known.
Germ Cell Mutagenicity None known.
Carcinogenicity The table below indicates whether each agency has evaluated a listed ingredient as a carcinogen.

ACGIH: (American Conference of Governmental Industrial Hygienists)
 A2 - Suspected Human Carcinogen
 IARC: (International Agency for Research on Cancer)
 Group 1 - Carcinogenic to Humans
 OSHA: (Occupational Safety & Health Administration)
 X - Present

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.
Specific target organ systemic toxicity (single exposure) May cause respiratory irritation. May cause drowsiness and dizziness.

Specific target organ systemic toxicity (repeated exposure)	No information available.
Neurological effects	Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.
Aspiration hazard	May be fatal if swallowed and enters airways.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity	2.66E-06% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .	
ATEmix (oral)	3196 mg/kg
ATEmix (dermal)	5688 mg/kg
ATEmix (inhalation-vapor)	127 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	-	-	-	-
NAPHTHENIC OIL, SEVERLY HYDROT 64742-52-5	-	5000 mg/L LC50 Oncorhynchus mykiss 96h	-	1000 mg/L EC50 Daphnia magna 48h
HYDROTREATED HEAVY NAPHTHENIC 64742-48-9	-	2200 mg/L LC50 Pimephales promelas 96h	-	-

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	log Pow
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	2.8

Other adverse effects	No information available
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13. DISPOSAL CONSIDERATIONS**Waste treatment**

Waste Disposal Methods	Dispose of contents/container in accordance with local regulation. This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
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Contaminated packaging	Do not re-use empty containers.
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14. TRANSPORT INFORMATION

DOT Ground	CONSUMER COMMODITY ORM-D or LIMITED QUANTITY
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IATA UN1950, AEROSOLS, FLAMMABLE, 2.1, LTD. QTY.

IMDG UN1950, AEROSOLS, 2.1, LTD. QTY.

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
PROPANE/ISOBUTANE/N-BUTANE	X	X	X	Not listed	X	X	X	X
NAPHTHENIC OIL, SEVERLY HYDROT	X	X	X	X	X	X	X	X
HEPTANE	X	X	X	X	X	X	X	X
PETROLATUM	X	X	X	X	X	X	X	X
HYDROTREATED HEAVY NAPHTHENIC	X	X	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 Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

CHINA - 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

U.S. Federal Regulations

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.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	no

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). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any known Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any chemicals subject to state reporting regulations that are not already listed elsewhere in this document.

EPA Pesticide Registration Number Not applicable

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**16. OTHER INFORMATION**

<u>NFPA</u>	Health Hazard 2	Flammability 4	Instability 0	Physical and chemical hazards -
<u>HMIS</u>	Health Hazard 2	Flammability 4	Physical Hazard 1	Personal protection B

Prepared By Regulatory Affairs
Issuing date 24-Mar-2015
Revision Date 24-Mar-2015

Revision Note
No information available

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet

Safety Data Sheet

acc. to OSHA HCS



Printing date 10/06/2015

Reviewed on 10/06/2015

1 Identification

- **Product identifier**
- **Trade name:** White Wax Cure J9A
- **Article number:** 83-69165
- **Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
- **Application of the substance / the mixture**
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Dayton® Superior
4226 Kansas Avenue
Kansas City, KS 66106
Tel.: (866) 329-8724
- **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.
Muta. 1B H340 May cause genetic defects.
Carc. 1B H350 May cause cancer.
- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**


 GHS07 GHS08
- **Signal word** Danger
- **Hazard-determining components of labeling:**
titanium dioxide
Stoddard solvent
Distilled Tall Oil Fatty Acids
- **Hazard statements**
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
- **Precautionary statements**
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves.
Specific treatment (see on this label).
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/06/2015

Reviewed on 10/06/2015

Trade name: White Wax Cure J9A

(Contd. of page 1)

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
PHYSICAL HAZARD	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	≤ 2.5%
61790-12-3	Distilled Tall Oil Fatty Acids	≤ 2.5%
8052-41-3	Stoddard solvent	≤ 1%

- **Additional information:** For the wording of the listed risk 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 receive 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.

US
(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/06/2015

Reviewed on 10/06/2015

Trade name: White Wax Cure J9A

(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:**
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.
Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
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:** Keep respiratory protective device available.
- **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:** Keep receptacle tightly sealed.
- **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: White Wax Cure J9A

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· **Control parameters**· **Components with limit values that require monitoring at the workplace:****8052-41-3 Stoddard solvent**PEL Long-term value: 2900 mg/m³, 500 ppmREL Long-term value: 350 mg/m³
Ceiling limit value: 1800* mg/m³
*15-minTLV Long-term value: 525 mg/m³, 100 ppm· **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.

Store protective clothing separately.

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

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· **Odour 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.· **Ignition temperature:****Decomposition temperature:** Not determined.

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· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20 °C (68 °F):	23 hPa (17 mm Hg)
· Density at 20 °C (68 °F):	0.993 g/cm ³ (8.287 lbs/gal)
· Relative density	Not determined.
· Vapour 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:	0.4 %
Water:	73.8 %
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.

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The product can cause inheritable damage.

· **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 (SiO ₂)	1
67-63-0	isopropanol	3
111-42-2	2,2'-iminodiethanol	2B
79-10-7	acrylic acid	3

· **NTP (National Toxicology Program)**

14808-60-7	Quartz (SiO ₂)	K
------------	----------------------------	---

· **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.

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Trade name: White Wax Cure J9A

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14 Transport information

· UN-Number	
· DOT, ADR, ADN, IMDG, IATA	Not Regulated
· UN proper shipping name	
· DOT, ADR, ADN, IMDG, IATA	Not Regulated
· 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":	-

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	≤0.01%
111-42-2	2,2'-iminodiethanol	≤0.01%
79-10-7	acrylic acid	≤0.01%

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.		
-----------------------------	--	--

· **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	

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Trade name: White Wax Cure J9A

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· **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.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

13463-67-7	titanium dioxide	A4
1332-58-7	Kaolin	A4
14808-60-7	Quartz (SiO ₂)	A2
67-63-0	isopropanol	A4
111-42-2	2,2'-iminodiethanol	A3
79-10-7	acrylic acid	A4

· **MAK (German Maximum Workplace Concentration)**

13463-67-7	titanium dioxide	3A
14808-60-7	Quartz (SiO ₂)	1
111-42-2	2,2'-iminodiethanol	3B

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

13463-67-7	titanium dioxide
14808-60-7	Quartz (SiO ₂)

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

titanium dioxide

Stoddard solvent

Distilled Tall Oil Fatty Acids

· **Hazard statements**

May cause an allergic skin reaction.

May cause genetic defects.

May cause cancer.

· **Precautionary statements**

Avoid breathing dust/fume/gas/mist/vapors/spray

Wear protective gloves.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

Store locked up.

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Trade name: White Wax Cure J9A

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

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· **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** 10/06/2015 / 415

· **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

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)

Skin Sens. 1: Sensitisation - Skin, Hazard Category 1

Muta. 1B: Germ cell mutagenicity, Hazard Category 1B

Carc. 1B: Carcinogenicity, Hazard Category 1B

US

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 above 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) :



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, 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.

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.

“Providing valuable products from valuable people to valuable customers.”

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Safety Data Sheet

Issue Date: 18-Jul-2006

Revision Date: 18-Jul-2014

Version 1

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	5-15

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.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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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.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
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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

Color

Clear, pale pink or pale blue

Odor

Mild citrus

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.

<u>DOT</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	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

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	1	0	0	Not determined
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Personal Protection
	1	0	0	Not determined

Issue Date: 18-Jul-2006
Revision Date: 18-Jul-2014
Revision Note: New format

Disclaimer

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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.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
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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
Appearance
Color

Solid containing liquid
Liquid absorbed onto a towelette
Colorless

Odor
Odor Threshold

Mild alcohol odor
No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
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/NDL - 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****HMIS****Health Hazards****Flammability****Physical Hazards****Personal Protection**

2

3

Not determined

Not determined

2

3

0

B- Safety Glasses,
Gloves

Issue Date: 30-Jan-2009
Revision Date: 24-Nov-2014
Revision Note: New format

Disclaimer

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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.

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>WT. %</u>
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.



SAFETY DATA SHEET

Product: MARC 41-S HEAVY-DUTY INDUSTRIAL SOLVENT
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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

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>TLV</u>
2-Butoxyethanol	111-76-2	20 ppm
Sodium Metasilicate	6834-92-0	3mg/m ³

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.



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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 (H ₂ O = 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.



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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
Fire Hazard: No
Sudden Release of Pressure Hazard: No

Delayed (Chronic) Health Hazard: No
Reactive 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

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/m ³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 500 mg/m ³ 10 hours. TWA: 200 ppm 10 hours. OSHA PEL (United States, 2/2013). TWA: 500 mg/m ³ 8 hours. TWA: 200 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). STEL: 625 mg/m ³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 500 mg/m ³ 8 hours. TWA: 200 ppm 8 hours. AIHA WEEL (United States, 10/2011). TWA: 2 ppm 8 hours.
1,2-epoxybutane	

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	-
1,2-epoxybutane	LD50 Oral	Rat	1870 mg/kg	-
	LC50 Inhalation Vapor	Rat	6300 mg/m ³	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	0.2	-	low
1,2-epoxybutane	0.68	-	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	 2.1
Packing group	-	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.	No.

Section 14. Transport information

Additional information	Reportable quantity	-	-	Tunnel code (E)	-	-
	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.					

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.)

Health	2
Flammability	1
Physical hazards	1

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

Product Name: NO. 2 DIESEL FUEL
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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

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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.

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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, H332, H373, H401, H412
NAPHTHALENE	91-20-3	0.1 - 1%	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
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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.

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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.

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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.) in or around any fueling operation or storage area 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

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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:

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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 °C): 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

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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 available.	Irritating to the skin. 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	Not expected to be a respiratory sensitizer.

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for material.	
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

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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

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 -- 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

Product Name: NO. 2 DIESEL FUEL
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Aquatic - Chronic Toxicity	72 hour(s)	Pseudokirchneriella subcapitata	NOELR 1 - 10 mg/l: data for similar materials
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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.

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LAND (TDG)

Proper Shipping Name: GAS OIL
 Hazard Class & Division: 3
 UN Number: 1202
 Packing Group: III

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%

Product Name: NO. 2 DIESEL FUEL

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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:

Section 05: Fire Fighting Measures - Fire Fighting Instruction information was modified.

Section 05: Fire Fighting Measures - Unusual Fire Hazards information was modified.

Section 10: Conditions to Avoid information was modified.

Section 14: DOT Footnote 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.

Product Name: NO. 2 DIESEL FUEL

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Section 16: HCode Key information was modified.

Section 16: Standard phrases for California Proposition 65 information was modified.

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

Section 1. Identification

CHS Inc. Transportation Emergency (CHEMTREC) : 1-800-424-9300
P.O. Box 64089 Technical Information : 1-651-355-8443
Mail station 525 SDS Information : 1-651-355-8445
St. Paul, MN 55164-0089

Product name : Ruby Fieldmaster Premium Diesel (D-Grade) SDS no. : 0144-M3A0
Common name : Premium Diesel Fuel, D-grade, Premium Diesel Revision date : 11/15/2013
Chemical name : Petroleum Distillate Chemical formula : Mixture
Chemical family : A mixture of paraffinic, olefinic, naphthenic and aromatic hydrocarbons.

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

Not available.

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 3
CARCINOGENICITY - Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Flammable liquid and vapor.
Suspected of causing cancer.

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.

Hazardous Material Information System (U.S.A.) Health : 1 * Flammability : 2 Physical hazards : 0

National Fire Protection Association (U.S.A.) Health : 1 Flammability : 2 Instability : 0

Section 3. Composition/information on ingredients

Substance/mixture : Substance
Chemical name : Petroleum Distillate
Other means of identification : Premium Diesel Fuel, D-grade, Premium Diesel

Ingredient name	%	CAS number
Fuels, diesel, No 2	60 - 100	68476-34-6

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** : If material comes in contact with the eyes, immediately wash the eyes with large amounts of water for 15 minutes, occasionally lifting the lower and upper lids. Get medical attention.
- Inhalation** : If person breathes in large amounts of material, move the exposed person to fresh air at once. If breathing has stopped, perform artificial respiration. Keep the person warm and at rest. Get medical attention as soon as possible.
- Skin contact** : If the material comes in contact with the skin, wash the contaminated skin with soap and water promptly. If the material penetrates through clothing, remove the clothing and wash the skin with soap and water promptly. If irritation persists after washing, get medical attention immediately.
- Ingestion** : If material has been swallowed, do not induce vomiting. Get medical attention immediately.

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** : Adverse symptoms may include the following: pain or irritation, watering, redness.
- Inhalation** : Adverse symptoms may include the following: respiratory tract irritation, coughing.
- Skin contact** : Adverse symptoms may include the following: irritation, redness.
- 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. 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 water spray to cool fire exposed surfaces and to protect personnel. Foam, dry chemical or water spray (fog) to extinguish fire.
- Unsuitable extinguishing media** : Do not use water jet or water-based fire extinguishers.
- Specific hazards arising from the chemical** : Vapors are heavier than air and may travel along the ground to a source of ignition (pilot light, heater, electric motor) some distance away. Containers, drums (even empty) can explode when heat (welding, cutting, etc.) is applied.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
- Special protective actions for fire-fighters** : Water may be ineffective on flames, but should be used to keep fire-exposed containers cool. Water or foam sprayed into container of hot burning product could cause frothing and endanger fire fighters. Large fires, such as tank fires, should be fought with caution. If possible, pump the contents from the tank and keep adjoining structures cool with water. Avoid spreading burning liquid with water used for cooling purposes. Do not flush down public sewers. Avoid inhalation of vapors. Firefighters should wear self-contained breathing apparatus.
- 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** : Keep unnecessary and unprotected personnel from entering. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Methods and materials for containment and cleaning up

- Spill** : Contain with dikes or absorbent to prevent migration to sewers/streams. Take up small spill with dry chemical absorbent; large spills may require pump or vacuum prior to absorbent. May require excavation of severely contaminated soil.

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 breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
- 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.
- Conditions for safe storage, including any incompatibilities** : Do not store above the following temperature: 113°C (235.4°F). Odorous and toxic fumes may form from the decomposition of this product if stored at excessive temperatures for extended periods of time. Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Fuels, diesel, No 2	ACGIH TLV (United States, 3/2012). Absorbed through skin. TWA: 100 mg/m ³ , (measured as total hydrocarbons) 8 hours. Form: Inhalable fraction and vapor

- Appropriate engineering controls** : Use only with adequate ventilation.
- 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. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Recommended: Splash goggles and a face shield, where splash hazard exists.
- Skin protection**
- Hand protection** : 4 - 8 hours (breakthrough time): Nitrile gloves.
- Body protection** : Recommended: Long sleeved coveralls.
- Other skin protection** : Recommended: Impervious boots.
- Respiratory protection** : If ventilation is inadequate, use a NIOSH-certified respirator with an organic vapor cartridge and P95 particulate filter.

Section 9. Physical and chemical properties

Appearance	Relative density : 0.835
Physical state : Liquid. [May contain dye]	Evaporation rate : >1 (Butyl acetate = 1)
Color : Light green to yellow.	Solubility : Insoluble in the following materials: cold water and hot water.
Odor : Mild hydrocarbon.	Solubility in water : Insoluble
Odor threshold : Not available.	Partition coefficient: n-octanol/water : Not available.
pH : Not available.	Auto-ignition temperature : >256.66°C (>494°F)
Melting point : Not available.	Decomposition temperature : Not available.
Boiling point : 171.11 to 343.33°C (340 to 650°F)	SADT : Not available.
Flash point : Closed cup: 60°C (140°F) [Pensky-Martens.]	Viscosity : Not available.
Flammability : Not available.	Vapor pressure : <6.7 kPa (<50 mm Hg) (68°F)
Lower and upper explosive (flammable) limits : Lower: 0.6% Upper: 7.5%	Vapor density : >1 [Air = 1]

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	: 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.
Incompatible materials	: Reactive or incompatible with the following materials: Strong oxidizing agents.
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

Skin : There is no data available.

Eyes : There is no data available.

Respiratory : There is no data available.

Sensitization

Skin : There is no data available.

Respiratory : There is no data available.

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.

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Fuels, diesel, No 2	>3.3	-	low

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 : 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.

Section 14. Transport information

DOT IDENTIFICATION NUMBER NA1993 **DOT proper shipping name** COMBUSTIBLE LIQUID, N.O.S. (Fuels, diesel, No 2)
DOT Hazard Class(es) Combustible liquid. **PG** III **DOT EMER. RESPONSE GUIDE NO.** 128

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption:** All components are listed or exempted.
United States inventory (TSCA 8b): All components are listed or exempted.

Clean Air Act Section 602 Class I Substances : Not listed **DEA List I Chemicals (Precursor Chemicals)** : Not listed
Clean Air Act Section 602 Class II Substances : Not listed **DEA List II Chemicals (Essential Chemicals)** : Not listed
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire 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
Fuels, diesel, No 2	60 - 100	Yes.	No.	No.	No.	Yes.

SARA 313 : This product (does/not) contain toxic chemicals subject to the reporting requirements of SARA Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

Product name	CAS number	%
Not applicable.		

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 : None of the components are listed.
Pennsylvania : None of the components are listed.
California Prop. 65 : No products were found.

Section 16. Other information

Revision date : 11/15/2013 **Supersedes** : 09/14/2004
Revised Section(s) : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16. **Prepared by** : KMK Regulatory Services Inc.

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)



SECTION 1: Identification

Product Identifier **Super-D® EC Engine Oil**
Other means of identification Kendall Super-D® EC Engine Oil SAE 10W-30
Kendall Super-D® EC Engine Oil SAE 15W-40

SDS Number **830033**
Relevant identified uses Heavy Duty Diesel Engine Oil
Uses advised against All others
24 Hour Emergency Phone Number CHEMTREC 1-800-424-9300
CANUTEC 613-996-6666
CHEMTREC Mexico 01-800-681-9531

Manufacturer/Supplier Phillips 66 Lubricants P.O. Box 4428 Houston, TX 77210	SDS Information Phone: 800-762-0942 Email: SDS@P66.com URL: www.Phillips66.com	Customer Service U.S.: 800-368-7128 or International: 1-832-765-2500 Technical Information 1-877-445-9198
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SECTION 2: Hazard identification

Classified Hazards H412 -- Hazardous to the aquatic environment, chronic toxicity -- Category 3	Other Hazards None known
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Label Elements

Harmful to aquatic life with long lasting effects

Avoid release to the environment; Dispose of contents/container to an approved waste disposal plant

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration ¹
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	<78
Zinc alkyldithiophosphate	84605-29-8	1.6 - 1.7
Phenol, dodecyl-, branched (tetrapropenylphenol)	121158-58-5	0.16 - 0.17

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.

830033 - Super-D® EC Engine Oil
Issue Date: 14-Aug-2015

Page 1/7
Status: FINAL

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 firefighters: 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: Wash thoroughly after handling. Keep away from flames and hot surfaces. 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

Chemical Name	ACGIH	OSHA	Other
Distillates, petroleum, hydrotreated heavy paraffinic	TWA: 5mg/m ³ STEL: 10 mg/m ³ as Oil Mist, if Generated	TWA: 5mg/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 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

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

Flash Point: > 392 °F / > 200 °C

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): 0.871 - 0.879 @ 60°F (15.6°C)

Bulk Density: 7.27 - 7.34 lbs/gal

Percent Volatile: Negligible
Flammability (solid, gas): Not applicable
Solubility in Water: Negligible

Viscosity: 11.4 - 15.6 cSt @ 100°C; 80 - 125 cSt @ 40°C
Pour Point: -38 °F / -39 °C

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)

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

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.

Phenol, dodecyl-, branched (tetrapropenylphenol)

Reproductive Toxicity: This product contains low levels of phenol, (tetrapropenyl) derivatives. Rats given high, repeated daily doses of phenol, (tetrapropenyl) derivatives by oral intubation experienced adverse reproductive effects. Pregnant rats given high, repeated daily doses of phenol, (tetrapropenyl) derivatives by oral intubation gave birth to pups with cleft palate and skeletal malformations at dose levels that caused maternal toxicity. Follow-up studies of phenol, (tetrapropenyl) derivatives in finished lubricating fluids demonstrated a no-observed effect level of 1.78 wt%.

SECTION 12: Ecological information

GHS Classification:

H412 -- Hazardous to the aquatic environment, chronic toxicity -- Category 3

Harmful to aquatic life with long lasting effects.

Toxicity: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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)

Acute Health Hazard: No
Chronic Health Hazard: No
Fire Hazard: No
Pressure Hazard: No
Reactive Hazard: No

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:

Chemical Name	Concentration ¹	de minimis
Zinc Compound(s)	1.6 - 1.7	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 Hazard Classification

Canada:

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (SOR/2015-17) and the SDS contains all the information required by the Regulations.

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.

U.S. Export Control Classification Number: EAR99

SECTION 16: Other information

Issue Date:	Previous Issue Date:	SDS Number	Status:
14-Aug-2015	None	830033	FINAL

Revised Sections or Basis for Revision:

New SDS

Precautionary Statements:

P273 - Avoid release to the environment

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; 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	1016-06, 1016-09, 1025-06, 1025-09, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 11080-06
1:1,000 Treatment Ratio	1000, 1128-04, 1060-01
1:1,500 Treatment Ratio	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

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	1:400 Treatment Ratio	1:1000 Treatment Ratio	1:1500 Treatment Ratio
Health Hazard Criteria	Category	Category	Category
Respiratory Sensitization:	NC	NC	NC
Skin Sensitization:	NC	NC	NC
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. Harmful if swallowed. 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 - 75
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

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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	2 - 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 (CO₂) 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

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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	1016-06, 1016-09, 1025-06, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 11041-04, 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	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:

	CAS #	OSHA	ACGIH	NIOSH				Note
		PEL	TLV	STEL	REL	STEL	IDLH	
Ethylbenzene	100-41-4	100 ppm	20 ppm	not est.	100 ppm	125 ppm	800 ppm (LEL)	n/a

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	CAS #	OSHA	ACGIH	NIOSH				Note
		PEL	TLV	STEL	REL	STEL	IDLH	
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 Alkoxyate	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)	111°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

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	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

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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

REPRODUCTIVE 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.

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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, 1025-09, 1025-12, 1080-06, 11016-06, 11016-09, 11025-06, 11025-12, 1080-06
1:1,000 Treatment Ratio	1128-04
1:1,500 Treatment Ratio	1050-02, 1055-01

The following part numbers are regulated by DOT:

1:1,000 Treatment Ratio	1060-01, 1000
1:1,500 Treatment Ratio	1260-01

PROPER SHIPPING NAME: Combustible Liquid, N.O.S., (Petroleum Distillates) Marine Pollutant (2-Ethylhexyl Nitrate & 1,3,5-trimethylbenzene) RQ (Xylene, Naphthalene)

HAZARD CLASS: Combustible Liquid

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I.D. NUMBER: NA 1993
PACKING GROUP: III
PLACARDING: Combustible Liquid
MARINE POLLUTANT: Yes
PRODUCT RQ: 100 lbs. (45.45 kg) – Xylene, Naphthalene

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: November 3, 2016

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

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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

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: QUICK PEEL GEL

Product Code: DA7501

SUPPLIER NAME: Lawson Products, Inc.

ADDRESS : 8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
773-304-5050

EMERGENCY PHONE : 888-426-4851

Product Use: Multi-purpose solvent cleaner

2. HAZARDS IDENTIFICATION

CLASSIFICATION

Flammable aerosol	1
Gas under pressure	Liquefied gas
Skin Corrosion/Irritation	3
Eye Damage/Irritation	2B
Aspiration hazard	1



SIGNAL WORD: **Danger**

Hazard Statements

Extremely flammable aerosol
Contains gas under pressure; may explode if heated
May be fatal if swallowed and enters airways
Causes mild skin irritation
Causes eye irritation

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
Wash hands thoroughly after handling
Do NOT induce vomiting
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse continuously 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 eye irritation persists: Get medical advice/attention
Store locked up
Protect from sunlight. Store in a well ventilated place
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Percent
D-LIMONENE	5989-27-5	57.00
n-BUTYL ALCOHOL	71-36-3	26.80
PROPANE	74-98-6	15.00

4. FIRST AID MEASURES

INHALATION: Remove to fresh air. Administer oxygen if needed. Apply artificial respiration if breathing has stopped. Get medical attention.

EYE CONTACT: Wash immediately with large volumes of fresh water for at least 15 minutes. Get medical attention.

SKIN CONTACT: Wipe off with a towel. Wash with soap and water. Get medical attention if irritation persists.

INGESTION: Not a likely route of exposure.

Most important symptoms/effects, acute and delayed: Repeated exposure may cause skin dryness or cracking. May cause drowsiness or dizziness.

Indication of immediate medical attention and special treatment needed: None known.

5. FIRE FIGHTING MEASURES

Suitable and unsuitable extinguishing media: Foam, Alcohol foam, CO₂, Dry chemical, Water fog. Water spray may be ineffective.

Specific hazards arising from the chemical: Closed containers may explode from internal pressure build-up when exposed to extreme heat and discharge contents. Liquid content of container will support combustion. Overexposure to decomposition products may cause a health hazard. Symptoms may not be readily apparent. Obtain medical attention. Hazardous decomposition products include carbon dioxide, carbon monoxide, and other toxic fumes.

Special equipment and precautions for fire-fighters: Water may be used to cool containers to prevent pressure build-up and explosion when exposed to extreme heat. Wear goggles and use self-contained breathing apparatus. If water is used, fog nozzles are preferred.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Avoid breathing vapors. Ventilate area. Remove all sources of ignition.

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 (burn) cans. Do not stick pins, nails, or any other sharp objects 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 and use in cool, dry, well-ventilated areas.
Do not store above 120 F.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
D-LIMONENE 5989-27-5	No data available.	No data available.	
n-BUTYL ALCOHOL 71-36-3	TWA: 100 ppm (skin)	TWA: 50 ppm (skin)	
PROPANE 74-98-6	Not established	TWA: 1000 ppm	

Appropriate engineering controls: Ventilation should be sufficient to prevent inhalation of any vapors. General dilution and/or local exhaust ventilation in volume to keep PEL/TLV of most hazardous ingredient below acceptable limit and IEL below stated limit.

Individual protection measures:

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 vapor. In confined areas, use an approved air line respirator or hood. Self-contained breathing apparatus is required for vapor concentrations above PEL/TLV limits.

Protective gloves: None under normal use. Use solvent-resistant for prolonged or repeated contact.

Eye protection: None under normal use. However, use of safety glasses with splash guards or full face shield should be used if indicated.

Other protective clothing or equipment: None under normal use. However, use of solvent-resistant aprons or other clothing is recommended. Eye washes and safety showers in the workplace are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Range 118 to 176 °C	% Volume Volatile 0.00
Specific Gravity (SG) 0.757	Lbs VOC/Gallon Less Water 0.00

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions of use.

Chemical stability: Stable under normal storage and handling conditions.

Possibility of hazardous reactions: None known.

Incompatible materials:

Hazardous decomposition products:

11. TOXICOLOGICAL INFORMATION

Long-term toxicological studies have not been conducted for this product.

12. ECOLOGICAL INFORMATION

Long-term ecological studies have not been conducted for this product.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of this document for hazard cautionary information.

14. TRANSPORT INFORMATION

By land: DOT Proper Shipping Name: None required per 49 CFR 173.306(i) for products that conform to the Limited Quantity provisions. Commodity shipping description: Cleaning Compound, NOI

By water: DOT & IMDG Proper Shipping Name: UN1950, Aerosols, 2.1, LTD QTY

By air: DOT & IATA Proper Shipping Name: UN1950, Aerosols, flammable, 2.1, LTD QTY (packing instruction Y203 applies)

15. REGULATORY INFORMATION

All ingredients are either listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

Date revised: 2015-06-29

Revision 0

Date Printed: 2015-06-29

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. BECAUSE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL, WE ASSUME NO RESPONSIBILITY FOR ITS USE.

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 PDF print date: 06.04.2016
 Super Diesel Additive 300 mL
 Art.: 2002

Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

Super Diesel Additive 300 mL
Art.: 2002

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

Relevant identified uses of the substance or mixture:

Additives

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

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LIQUI MOLY GmbH, Jerg-Wieland-Str. 4, 89081 Ulm-Lehr, Germany
 Phone: (+49) 0731-1420-0, Fax: (+49) 0731-1420-88

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number

Emergency information services / official advisory body:

Telephone number of the company in case of emergencies:

+49 (0) 700 / 24 112 112 (LMR)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Asp. Tox.	1	H304-May be fatal if swallowed and enters airways.
Aquatic Chronic	3	H412-Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labeling according to Regulation (EC) 1272/2008 (CLP)



Danger

H304-May be fatal if swallowed and enters airways. H412-Harmful to aquatic life with long lasting effects.

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P101-If medical advice is needed, have product container or label at hand. P102-Keep out of reach of children.
 P260-Do not breathe vapours.
 P301+P310+P331-IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. P314-Get medical advice/attention if you feel unwell.
 P405-Store locked up.
 P501-Dispose of contents/container to special waste collection point.

EUH044-Risk of explosion if heated under confinement.
 EUH066-Repeated exposure may cause skin dryness or cracking.

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics

2.3 Other hazards

The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006.

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006.

SECTION 3: Composition/information on ingredients

3.1 Substance

n.a.

3.2 Mixture

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	
Registration number (REACH)	01-2119457273-39-XXXX
Index	---
EINECS, ELINCS, NLP	918-481-9 (REACH-IT List-No.)
CAS	---
content %	60-80
Classification according to Regulation (EC) 1272/2008 (CLP)	Asp. Tox. 1, H304
2-Ethylhexylnitrate	
Registration number (REACH)	01-2119539586-27-XXXX
Index	---
EINECS, ELINCS, NLP	248-363-6
CAS	27247-96-7
content %	10-<25
Classification according to Regulation (EC) 1272/2008 (CLP)	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 2, H411

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.

The substances named in this section are given with their actual, appropriate classification!

For substances that are listed in appendix VI, table 3.1/3.2 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

If, for example, the note P is applied for a hydrocarbon then this has already been taken into account for the classification named here.

Quote: "Note P - The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (EINECS No 200-753-7)."

Article 4 of the regulation (EC) no. 1272/2008 (CLP regulation) was also observed and taken into account for the classification named here.

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation

Remove person from danger area.

Supply person with fresh air and consult doctor according to symptoms.

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Medical supervision necessary due to possibility of delayed reaction.

Skin contact

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

Protective hand cream recommended.

Eye contact

Remove contact lenses.

Wash thoroughly for several minutes using copious water. Seek medical help if necessary.

Ingestion

Rinse the mouth thoroughly with water.

Do not induce vomiting - give copious water to drink. Consult doctor immediately.

Danger of aspiration

In case of vomiting, keep head low so that the stomach content does not reach the lungs.

4.2 Most important symptoms and effects, both acute and delayed

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.

In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

4.3 Indication of any immediate medical attention and special treatment needed

Gastric lavage (stomach washing) only under endotracheal intubation.

Subsequent observation for pneumonia and pulmonary oedema.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

CO₂

Extinction powder

Foam

Water jet spray

Unsuitable extinguishing media

High volume water jet

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:

Oxides of carbon

Oxides of nitrogen

Hydrocarbons

Toxic gases

Dangerous vapours heavier than air.

Danger of explosion

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes.

Protective respirator with independent air supply.

According to size of fire

Full protection, if necessary.

Cool container at risk with water.

Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure sufficient supply of air.

Avoid inhalation, and contact with eyes or skin.

If applicable, caution - risk of slipping.

6.2 Environmental precautions

If leakage occurs, dam up.

Resolve leaks if this possible without risk.

Prevent from entering drainage system.

Prevent surface and ground-water infiltration, as well as ground penetration.

Prevent penetration into drains, cellars, working pits or other places in which accumulation could be hazardous.

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If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent) and dispose of according to Section 13.
 Ensure sufficient ventilation.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure sufficient ventilation.
 Keep away from sources of ignition - Do not smoke.
 Do not heat to temperatures close to flash point.
 Avoid long lasting or intensive contact with skin.
 Do not carry cleaning cloths soaked in product in trouser pockets.
 Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
 Observe directions on label and instructions for use.
 Use working methods according to operating instructions.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
 Wash hands before breaks and at end of work.
 Keep away from food, drink and animal feedingstuffs.
 Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
 Store product closed and only in original packing.
 Not to be stored in gangways or stair wells.
 Solvent resistant floor
 Do not store with oxidizing agents.
 Do not store with flammable or self-igniting materials.
 Store in a well ventilated place.
 Protect from direct sunlight and warming.

7.3 Specific end use(s)

No information available at present.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limit (WEL) of the total hydrocarbon solvent content of the mixture (RCP method according to EH40):
 800 mg/m³

Chemical Name	Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics	Content %:60-80
WEL-TWA: 800 mg/m ³	WEL-STEL: ---	---
Monitoring procedures:	- Draeger - Hydrocarbons 2/a (81 03 581) - Draeger - Hydrocarbons 0,1%/c (81 03 571) - Compur - KITA-187 S (551 174)	
BMGV: ---	Other information: (WEL acc. to RCP-method, EH40)	

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
 ** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

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2-Ethylhexylnitrate						
Area of application	Exposure route / Environmental compartment	Effect on health	Descriptor	Value	Unit	Note
	Environment - freshwater		PNEC	0,8	µg/l	
	Environment - marine		PNEC	0,08	µg/l	
	Environment - sediment		PNEC	0,00074	mg/kg dw	
	Environment - soil		PNEC	0,00019 1	mg/kg dw	
Consumer	Human - dermal	Long term, systemic effects	DNEL	0,52	mg/kg bw/day	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	0,087	mg/m3	
Consumer	Human - oral	Long term, systemic effects	DNEL	0,025	mg/kg bw/day	
Consumer	Human - dermal	Long term, local effects	DNEL	0,022	mg/cm2	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	1	mg/kg bw/day	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	0,35	mg/m3	
Workers / employees	Human - dermal	Long term, local effects	DNEL	0,044	mg/cm2	

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.

8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:
Tight fitting protective goggles (EN 166) with side protection, with danger of projections.

Skin protection - Hand protection:
Chemical resistant protective gloves (EN 374).
If applicable
Protective nitrile gloves (EN 374)
Protective Viton® / fluoroelastomer gloves (EN 374)
Minimum layer thickness in mm:
0,5
Permeation time (penetration time) in minutes:
>= 240

The breakthrough times determined in accordance with EN 374 Part 3 were not obtained under practical conditions.
The recommended maximum wearing time is 50% of breakthrough time.
Protective hand cream recommended.

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection:
If OES or MEL is exceeded.
Gas mask filter A (EN 14387), code colour brown
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
Not applicable

Additional information on hand protection - No tests have been performed.

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In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
 Selection of materials derived from glove manufacturer's indications.
 Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
 Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
 In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
 The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls

No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	Clear
Colour:	Light brown
Odour:	Characteristic
Odour threshold:	Not determined
pH-value:	n.a.
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	145 °C
Flash point:	63 °C
Evaporation rate:	Not determined
Flammability (solid, gas):	Not determined
Lower explosive limit:	0,7 Vol-% (Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics)
Upper explosive limit:	6 Vol-% (Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics)
Vapour pressure:	Not determined
Vapour density (air = 1):	Not determined
Density:	0,842 g/ml (15°C)
Bulk density:	Not determined
Solubility(ies):	Not determined
Water solubility:	Insoluble
Partition coefficient (n-octanol/water):	5,5-7,2 (Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics)
Partition coefficient (n-octanol/water):	3,7-5,2
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	<7 mm ² /s (40°C)
Explosive properties:	Not determined
Oxidising properties:	Not determined

9.2 Other information

Miscibility:	Not determined
Fat solubility / solvent:	Not determined
Conductivity:	Not determined
Surface tension:	Not determined
Solvents content:	Not determined

SECTION 10: Stability and reactivity

10.1 Reactivity

Not to be expected

10.2 Chemical stability

Stable with proper storage and handling.

10.3 Possibility of hazardous reactions

No dangerous reactions are known.

10.4 Conditions to avoid

Open flame, ignition sources

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10.5 Incompatible materials

Avoid contact with strong oxidizing agents.

Avoid contact with other chemicals.

10.6 Hazardous decomposition products

No decomposition when used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Possibly more information on health effects, see Section 2.1 (classification).

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Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by dermal route:	ATE	>2000	mg/kg			calculated value
Acute toxicity, by inhalation:	ATE	>5	mg/l/4h			calculated value, Aerosol
Acute toxicity, by inhalation:	ATE	>20	mg/l/4h			calculated value, Vapours
Skin corrosion/irritation:						n.d.a.
Serious eye damage/irritation:						n.d.a.
Respiratory or skin sensitisation:						n.d.a.
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.
Aspiration hazard:						n.d.a.
Symptoms:						n.d.a.
Other information:						Classification according to calculation procedure.

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:	LD50	>5000	mg/kg	Rat		
Acute toxicity, by dermal route:	LD50	>5000	mg/kg	Rabbit		
Acute toxicity, by inhalation:	LC50	>4951	mg/m3	Rat		Vapours
Aspiration hazard:						Yes
Other information:						Repeated exposure may cause skin dryness or cracking.

2-Ethylhexylnitrate

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						Experiences on persons., Harmful
Acute toxicity, by oral route:	LD50	>9640	mg/kg	Rat		
Acute toxicity, by dermal route:						Experiences on persons., Harmful
Acute toxicity, by dermal route:	LDLo	4820	mg/kg	Rabbit		
Acute toxicity, by inhalation:						Experiences on persons., Harmful
Acute toxicity, by inhalation:	LCLo	>4,6	mg/l/1h	Rat		Mist
Skin corrosion/irritation:				Rabbit	OECD 404 (Acute Dermal Irritation/Corrosion)	Not irritant, Repeated exposure may cause skin dryness or cracking.
Serious eye damage/irritation:				Rabbit	OECD 405 (Acute Eye Irritation/Corrosion)	Mild irritant

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Respiratory or skin sensitisation:					OECD 406 (Skin Sensitisation)	Not sensitizing
Germ cell mutagenicity:				Salmonella typhimurium	OECD 476 (In Vitro Mammalian Cell Gene Mutation Test)	Negative
Reproductive toxicity:	NOAEL	100	mg/kg		OECD 421 (Reproduction/Developmental Toxicity Screening Test)	
Reproductive toxicity:	NOAEL	20	mg/kg bw/d			Negative
Reproductive toxicity:	NOAEL	20	mg/kg bw/d		OECD 421 (Reproduction/Developmental Toxicity Screening Test)	

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

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Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to daphnia:							n.d.a.
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and degradability:							n.d.a.
12.3. Bioaccumulative potential:							n.d.a.
12.4. Mobility in soil:							n.d.a.
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Other adverse effects:							n.d.a.
Other information:							According to the recipe, contains no AOX.

Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, < 2% aromatics

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LL50	96h	>1000	mg/l	Oncorhynchus mykiss	OECD 203 (Fish, Acute Toxicity Test)	
12.1. Toxicity to daphnia:	EL50	48h	>1000	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EL50	72h	>1000	mg/l	Pseudokirchneriella subcapitata	OECD 201 (Alga, Growth Inhibition Test)	
Other organisms:	EL50	48h	>1000	mg/l	Tetrahymena pyriformis		

2-Ethylhexylnitrate

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	1,88	mg/l	Brachydanio rerio		
12.1. Toxicity to daphnia:	EC50	48h	>12,6	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	72h	>12,6	mg/l			
12.2. Persistence and degradability:		28d	0	%			Not readily biodegradable

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12.2. Persistence and degradability:		15d				A notable biological accumulation potential has to be expected (LogPow > 3).
12.3. Bioaccumulative potential:	BCF		1332			
12.3. Bioaccumulative potential:	Log Pow		3,74-5,24			
12.3. Bioaccumulative potential:	Log Pow		3,74-5,24			A notable biological accumulation potential has to be expected (LogPow > 3).
12.4. Mobility in soil:	Log Koc		3,8			
12.5. Results of PBT and vPvB assessment						No PBT substance, No vPvB substance
Other information:	AOX		0	%		No
Water solubility:						Slight

SECTION 13: Disposal considerations

13.1 Waste treatment methods

For the substance / mixture / residual amounts

Soaked polluted cloths, paper or other organic materials represent a fire hazard and should be controlled, collected and disposed of.
EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product.
Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)
07 07 04 other organic solvents, washing liquids and mother liquors

Recommendation:
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
Implement substance recycling.
E.g. suitable incineration plant.

For contaminated packing material

Pay attention to local and national official regulations.
Empty container completely.
Uncontaminated packaging can be recycled.
Dispose of packaging that cannot be cleaned in the same manner as the substance.

SECTION 14: Transport information

General statements

14.1. UN number: n.a.

Transport by road/by rail (ADR/RID)

14.2. UN proper shipping name: n.a.
14.3. Transport hazard class(es): n.a.
14.4. Packing group: n.a.
Classification code: n.a.
LQ (ADR 2015): n.a.
14.5. Environmental hazards: Not applicable
Tunnel restriction code:

Transport by sea (IMDG-code)

14.2. UN proper shipping name: n.a.
14.3. Transport hazard class(es): n.a.
14.4. Packing group: n.a.
Marine Pollutant: n.a.
14.5. Environmental hazards: Not applicable

Transport by air (IATA)

14.2. UN proper shipping name:

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14.3. Transport hazard class(es): n.a.
 14.4. Packing group: n.a.
 14.5. Environmental hazards: Not applicable

14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Non-dangerous material according to Transport Regulations.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

For classification and labelling see Section 2.

Observe restrictions:

Comply with trade association/occupational health regulations.

Observe law on protection of expectant mothers (German regulation).

Observe youth employment law (German regulation).

Directive 2010/75/EU (VOC): ~ 95 %

15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

SECTION 16: Other information

Revised sections: 3

These details refer to the product as it is delivered.

Employee instruction/training in handling hazardous materials is required.

Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation (EC) No. 1272/2008 (CLP)	Evaluation method used
Asp. Tox. 1, H304	Classification according to calculation procedure.
Aquatic Chronic 3, H412	Classification according to calculation procedure.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

H411 Toxic to aquatic life with long lasting effects.

Asp. Tox. — Aspiration hazard

Aquatic Chronic — Hazardous to the aquatic environment - chronic

Acute Tox. — Acute toxicity - oral

Acute Tox. — Acute toxicity - dermal

Acute Tox. — Acute toxicity - inhalation

Any abbreviations and acronyms used in this document:

AC Article Categories

acc., acc. to according, according to

ACGIH American Conference of Governmental Industrial Hygienists

ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)

AOEL Acceptable Operator Exposure Level

AOX Adsorbable organic halogen compounds

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approx. approximately

Art., Art. no. Article number

ATE Acute Toxicity Estimate according to Regulation (EC) 1272/2008 (CLP)

BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)

BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)

BCF Bioconcentration factor

BGV Berufsgenossenschaftliche Vorschrift (= Accident Prevention Regulation)

BHT Butylhydroxytoluol (= 2,6-Di-t-butyl-4-methyl-phenol)

BMGV Biological monitoring guidance value (EH40, UK)

BOD Biochemical oxygen demand

BSEF Bromine Science and Environmental Forum

bw body weight

CAS Chemical Abstracts Service

CEC Coordinating European Council for the Development of Performance Tests for Fuels, Lubricants and Other Fluids

CESIO Comité Européen des Agents de Surface et de leurs Intermédiaires Organiques

CIPAC Collaborative International Pesticides Analytical Council

CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)

CMR carcinogenic, mutagenic, reproductive toxic

COD Chemical oxygen demand

CTFA Cosmetic, Toiletry, and Fragrance Association

DMEL Derived Minimum Effect Level

DNEL Derived No Effect Level

DOC Dissolved organic carbon

DT50 Dwell Time - 50% reduction of start concentration

DVS Deutscher Verband für Schweißen und verwandte Verfahren e.V. (= German Association for Welding and Allied Processes)

dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance

EC European Community

ECHA European Chemicals Agency

EEA European Economic Area

EEC European Economic Community

EINECS European Inventory of Existing Commercial Chemical Substances

ELINCS European List of Notified Chemical Substances

EN European Norms

EPA United States Environmental Protection Agency (United States of America)

ERC Environmental Release Categories

ES Exposure scenario

etc. et cetera

EU European Union

EWC European Waste Catalogue

Fax. Fax number

gen. general

GHS Globally Harmonized System of Classification and Labelling of Chemicals

GWP Global warming potential

HET-CAM Hen's Egg Test - Chorionallantoic Membrane

HGWP Halocarbon Global Warming Potential

IARC International Agency for Research on Cancer

IATA International Air Transport Association

IBC Intermediate Bulk Container

IBC (Code) International Bulk Chemical (Code)

IC Inhibitory concentration

IMDG-code International Maritime Code for Dangerous Goods

incl. including, inclusive

IUCLID International Uniform Chemical Information Database

LC lethal concentration

LC50 lethal concentration 50 percent kill

LCLo lowest published lethal concentration

LD Lethal Dose of a chemical

LD50 Lethal Dose, 50% kill

LDLo Lethal Dose Low

LOAEL Lowest Observed Adverse Effect Level

LOEC Lowest Observed Effect Concentration

LOEL Lowest Observed Effect Level

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LQ Limited Quantities
 MARPOL International Convention for the Prevention of Marine Pollution from Ships
 n.a. not applicable
 n.av. not available
 n.c. not checked
 n.d.a. no data available
 NIOSH National Institute of Occupational Safety and Health (United States of America)
 NOAEC No Observed Adverse Effective Concentration
 NOAEL No Observed Adverse Effect Level
 NOEC No Observed Effect Concentration
 NOEL No Observed Effect Level
 ODP Ozone Depletion Potential
 OECD Organisation for Economic Co-operation and Development
 org. organic
 PAH polycyclic aromatic hydrocarbon
 PBT persistent, bioaccumulative and toxic
 PC Chemical product category
 PE Polyethylene
 PNEC Predicted No Effect Concentration
 POCP Photochemical ozone creation potential
 ppm parts per million
 PROC Process category
 PTFE Polytetrafluorethylene
 REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
 REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
 RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
 SADT Self-Accelerating Decomposition Temperature
 SAR Structure Activity Relationship
 SU Sector of use
 SVHC Substances of Very High Concern
 Tel. Telephone
 ThOD Theoretical oxygen demand
 TOC Total organic carbon
 TRGS Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances)
 UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
 VbF Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria))
 VOC Volatile organic compounds
 vPvB very persistent and very bioaccumulative
 WEL-TWA, WEL-STEL WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period), WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period) (EH40, UK).
 WHO World Health Organization
 wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
 No responsibility.

These statements were made by:

Chemical Check GmbH, Chemical Check Platz 1-7, D-32839 Steinheim, Tel.: +49 5233 94 17 0, Fax: +49 5233 94 17 90

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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 MSDS apply to each of the following products and part numbers.

PART NUMBERS:

8016-09, 8025-09, 8025-12, 8080-06, 8050-02, 8055-01, 8260-01 18016-09, 18025-12, 18080-06

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)

Health Hazard Criteria	Category
Acute Toxicity, Oral:	NC
Acute Toxicity, Dermal:	NC
Acute Toxicity, Inhalation, Vapors:	NC
Skin Corrosion/Irritation:	2
Serious Eye Damage/Eye Irritation:	2
Respiratory Sensitization:	NC
Skin Sensitization:	NC
Germ Cell Mutagenicity:	NC

Revised: January 12, 2017
Supersedes: September 28, 2015
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Health Hazard Criteria	Category
Carcinogenicity:	NC
Reproductive Toxicity:	NC
Specific Target Organ Toxicity, Single Exposure:	3
Specific Target Organ Toxicity, Repeated or Prolonged Exposure:	NC
Aspiration Hazard:	1

Physical Properties Criteria	Category
Explosives:	NC
Flammable Gases:	NC
Flammable Aerosols:	NC
Oxidizing Gases:	NC
Gases Under Pressure:	NC
Flammable Liquids:	3
Flammable Solids:	NC
Self-Reactive Chemicals:	NC
Pyrophoric Liquids:	NC
Pyrophoric Solids:	NC
Self-Heating Chemicals:	NC
Chemicals Which, in Contact with Water, Emit Flammable Gases:	NC
Oxidizing Liquids:	NC
Oxidizing Solids:	NC
Organic Peroxides:	NC
Corrosive to Metals:	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**

Hazard Statement(s): Flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes skin and serious eye irritation. May cause respiratory irritation.

Symbols:



Precautionary Statement(s): 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 - 30

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 AND EXPLOSION HAZARD DATA

EXTINGUISHING MEDIA: Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO₂) 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:

	CAS #	OSHA	ACGIH		NIOSH			Note
		PEL	TLV	STEL	REL	STEL	IDLH	
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
2-Butanol	78-92-2	150 ppm	100 ppm	not est.	100 ppm	150 ppm	2,000 ppm	n/a
N-Butanol	71-36-3	100 ppm	20 ppm	not est.	not est.	not est.	1,400 ppm (LEL)	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: 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

Appearance	Liquid, straw yellow
Odor	Strong solvent
Odor Threshold	Not available
pH	Not applicable
Melting point/Freezing point	Not available
Initial Boiling Point and Boiling Range	187.7°F (86.5°C)
Flash Point	74°F (TCC) 23°C
Evaporation Rate	Not available
Flammability	Not available
Upper / lower Flammability or Explosive Limits	Not available

Vapor Pressure	Not available
Vapor Density	Not available
Relative Density/Specific Gravity (at 60°F)	0.8400
Solubility	Not available
Partition Coefficient; n-octanol / water	Not available
Auto-ignition Temperature	Not available
Decomposition temperature	Not available
Viscosity	Not available
Pour Point	<-159°F (-106°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	Does not meet criteria

SENSITIZATION: No information available.

MUTAGENICITY: No information available.

CARCINOGENICITY LISTINGS – the following chemicals are listed as indicated:

Chemical	List
Cumene	IARC, NTP
Ethylbenzene	IARC

REPRODUCTIVE 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 classified as Limited Quantities:

8016-09, 8025-09, 8025-12, 8080-06, 18016-09, 18025-12, 18080-06

The following part numbers are regulated by DOT:

8050-02, 8055-01, 8260-01

PROPER SHIPPING NAME: Flammable Liquid, N.O.S., (Aliphatic Hydroxy Hydrocarbons)

HAZARD CLASS: 3

I.D. NUMBER: UN 1993

PACKING GROUP: III

PLACARDING: Flammable Liquid

Air shipment is not recommended.

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
78-92-2	sec Butyl alcohol	25.0
71-36-3	n-Butyl alcohol	25.0

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: January 12, 2017

Revised: January 12, 2017

Supersedes: September 28, 2015

POWER SERVICE DIESEL 9•1•1

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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.

1. Identification:**Product Identity:** 256 Century Q RTU**Recommended Use:** Disinfectant Cleaner**Producer / Distributor**Multi-Clean
600 Cardigan Road
Shoreview, MN 55126**Telephone Number for Information:** 651-481-1900**Emergency Telephone Number:** 800-255-3924**2. Hazard Identification:****Classification:****Health Class****Physical Class****Environment Class****Label****Symbols****Signal Word****Hazard Statements:**

Product Classified as Non-Hazardous

Precautionary Statements:

Read label before use.

3. Composition/Information on Ingredients**Ingredient****CAS Number****Percent by Weight**

Water

7732-18-5

60 - 100

4. First-Aid Measures:**Ingestion:** If Swallowed: If the person can swallow, give several glasses of water. Obtain medical attention.**Eye Contact:** Flush eyes with running water for at least 15 minutes. If irritation persists, obtain medical attention.**Skin Contact:** If irritation develops, discontinue Use. Rinse with cool water.**Inhalation:** Move to fresh air.**5. Fire Fighting Measures:****Suitable Extinguishing Media:** Not Applicable**Special Fire Fighting Procedures:** Not Applicable**Unusual Fire and Explosion Hazards** Not Applicable**6. Accidental Release Measures:**

Dike and contain spill with inert material (sand, earth, etc.). Collect spill with a mop, absorbent material (example: floor-dry) or vacuum. Thoroughly rinse affected area with water.

7. Handling and Storage:**Handling:** Keep from freezing. Keep out of reach of children.**Storage:** Normal care for storage.**8. Exposure Controls / Personal Protection:****Exposure Limits:****Ingredients**

None Listed

CAS Number

XXXX

Osha PEL

XXX

ACGIH TLV

XXX

Exposure Controls:**Engineering Controls:** Normal good ventilation is sufficient**Personal Protective Equipment:****Eye Protection:** Approved Safety Goggles or Glasses**Skin Protection:** Not Required**Respiratory Protection:** Not Required

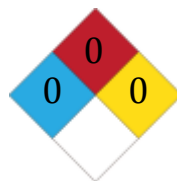
9. Physical and Chemical Properties:**Physical State:** Liquid**Appearance:** Pink**Odor:** None**Solubility:** Complete**Evaporation Rate:** NA**Vapor Pressure (MM HG):** NA**Vapor Density (Air = 1):** > 1**pH:** 7 - 8**Specific Gravity (H₂O = 1):** 1.01**Flammability:** None**Flash Point:** None**Boiling Point:** > 212° F (100°C)**%volatile:** > 90%**10. Stability and Reactivity:****Chemical Stability:** Stable**Possibility of Hazardous Reactions:** None are known**Incompatibility (Materials to Avoid):** None are known**Hazardous Decomposition or By-products:** None**Hazardous Polymerization:** Will not Occur**Conditions to Avoid:** None are known**11. Toxicological Information:****Signs and Symptoms of Overexposure:** May cause irritation to Eyes on direct contact**Acute Effects:****Eye Contact:** May cause irritation on contact**Skin Contact:** None Known**Inhalation:** None Known**Ingestion:** May be harmful if swallowed**Target Organ Effects:** None Known**Chronic Effects:** None Known**Acute Toxicity Values:****Oral LD₅₀** = > 5000 mg/kg**Dermal LD₅₀** = > 5000 mg/kg**Inhalation (Vapor) LC₅₀** = Vapors Considered Non**12. Ecological Information:****Persistence and Degradability:** Product is Readily Biodegradable**Bio Accumulative Potential:** Not Available**Mobility in Soil:** Not Available**Aquatic Toxicity:** Not Available**13. Disposal Considerations:**

Material that cannot be used during normal use should be disposed of in accordance with all applicable local, state and federal regulations. Waste from normal cleaning procedures may be disposed of in a sanitary sewer depending on the materials and/or contaminants being cleaned as well as local, state and federal sewer regulations.

14. Transportation Information:**UN Number:** None**Shipping Name:** Cleaning Compound, Liquid**Transport Hazard Class:** None**Packing Group:** None**Marine Pollutant:** NO**15. Regulatory Information:****TSCA Status:** All ingredients listed**Clean Water Act:** None of the chemicals in this product are listed under the CWA**Clean Air Act:** None of the chemicals in this product are listed under the CAA**CERCLA Reportable Quantity:** None**SARA Title III Information:****Section 302 Extremely Hazardous Chemicals:** None Listed**Section 311 / 312 Hazard Category:** None**Section 313 Toxic Chemicals:** None Listed**State Regulations:** None**International Regulations:** None

16. Other Information:**Prepared By:** Eric Scholl**Telephone Number:** 651-481-1900**Revision Date:** 7/7/2015**Supersedes:** 12/10/2014

The information contained herein is based on data considered accurate; however no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. The company assumes no responsibility for personal injury or property damage to vendees, users, or third parties caused by the material. Such vendees or users assume all risks associated with the use of the material.



Health	0
Flammability	0
Physical hazards	0

SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Product identifier used on the label: ES364 Neutral Disinfectant

Other means of Identification: ES364

Recommended use of the chemical and restrictions on use: For professional use only.

Manufacturer/Supplier:

Charlotte Products Ltd.

Address:

2060 Fisher Dr.

Peterborough, ON K9J 6X6

Telephone: 705-740-2880

Fax: 705-745-1239

24 Hr. Emergency Tel. #: Infotrac 1-800-535-5053 (North America), 011-1-352-323-3500 (International)

SECTION 2 - HAZARDS IDENTIFICATION

Classification of the chemical:

Eye Damage/Irritation 1

Skin Corrosion/Irritation 1B

Acute Toxicity Inhalation 2

Acute Toxicity Dermal 3

Acute Toxicity Oral 4

Label elements:

Signal Word: Danger

Hazard statement(s)

H314	Causes severe skin burns and eye damage
H330	Fatal if inhaled
H311	Toxic in contact with skin
H302	Harmful if swallowed

Precautionary statement(s)

P264	Wash exposed areas thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P280	Wear protective gloves/protective clothing/eye protection/face protection
P301+312+331	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353	IF ON SKIN (or hair): Immediately take off all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310	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/doctor.
P362	Take off contaminated clothing and wash before reuse.
P405	Store locked up
P501	Dispose of contents/container in accordance with local regulation

Hazard pictogram(s)



Other hazards not otherwise classified: None Known

Unknown Acute Toxicity: 9.25%

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name, Common Name & Synonyms:	CAS #	Concentration %
Diocetyl Dimethyl Ammonium Chloride	5538-94-3	5-10
Alkyl (C ₁₂ 67%, C ₁₄ 25%, C ₁₆ 7%, C ₁₈ 1%) Dimethyl Benzyl Ammonium Chloride	68391-01-5	1-5
N-Coco-N,N,N-trimethylammonium Chloride	61789-18-2	5-10

**** If the chemical name/CAS # is "proprietary" and/or the weight % is shown as a range, this information had been withheld as a trade secret.**

SECTION 4 - FIRST-AID MEASURES

Description of first aid measures:

If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor/physician.

If on skin (or hair): Immediately take off all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor/physician.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician.

Most Important symptoms and effects, both acute and delayed: Causes severe skin burns and eye damage, fatal if inhaled, toxic if in contact with skin and harmful if swallowed

Indication of any immediate medical attention and special treatment needed: Treat symptomatically, probable mucosal damage may contraindicate the use of gastric lavage.

SECTION 5 - FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable extinguishing media: Water spray, dry powder or foam.

Unsuitable extinguishing media: Not determined

Special hazards arising from the substance or mixture: None known

Flammability classification: Not flammable

Hazardous combustion products: Carbon oxides, oxides of phosphorus other unidentified organic compounds.

Special protective equipment and precautions for firefighters:

Protective equipment for fire-fighters: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures: Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from firefighting to enter drains or water courses. Dike for water control.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Methods and material for containment and cleaning up: Do not allow material to contaminate ground water system. If necessary, dike well ahead of the spill to prevent runoff into drains, sewers, or any natural waterway or drinking supply. Ventilate the area. Prevent further leakage or spillage if safe to do so. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Contaminated absorbent material may pose the same hazards as the spilled product. Contact the proper local authorities.

Special spill response procedures: In case of a transportation accident, contact Infotrac 1-800-535-5053 (North America), 011-1-352-323-3500 (International). If a spill/release in the US in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

SECTION 7 - HANDLING AND STORAGE

Precautions for safe handling: Handle in accordance with good industrial hygiene and safety practice. Use protective equipment recommended in section 8. Avoid contact with skin, eyes or clothing. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands, and any exposed skin thoroughly after handling.

Conditions for safe storage: Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up. Keep out of reach of children.

Incompatible materials: Fluorine, strong oxidizing or reducing agents, bases, sulfur trioxide, phosphorus pentoxide. Do not mix with other chemicals or cleaners.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits:					
		ACGIH TLV		OSHA PEL	
Chemical Name	CAS #	TWA	STEL	PEL	STEL
Diethyl Dimethyl Ammonium Chloride	5538-94-3				
Alkyl (C ₁₂ 67%, C ₁₄ 25%, C ₁₆ 7%, C ₁₈ 1%) Dimethyl Benzyl Ammonium Chloride	68391-01-5				
N-Coco-N,N,N-trimethylammonium Chloride	61789-18-2				

Exposure controls:

Ventilation and engineering measures: Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection: In the case of vapor formation use a respirator with an approved filter. If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134). Advice should be sought from respiratory protection specialists.

Skin protection: Wear chemical resistant gloves. Where extensive exposure to product is possible, use resistant coveralls, apron and boots to prevent contact. The suitability for a specific workplace should be discussed with the producers of the protective regimes.

Eye face protection: Wear eye/face protection. Wear as appropriate tightly fitting safety goggles; Safety glasses with side-shields.

Other protective equipment: Ensure that eyewash stations and safety showers are close to the workstation location. Other equipment may be required depending on workplace standards.

General hygiene considerations: Do not breathe vapors or spray mist. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash exposed areas thoroughly after handling. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear Green Liquid

Odor: Lemon

Odor threshold: No applicable information available

pH: 7.0-8.5

Melting/Freezing point: No applicable information available

Initial boiling point and boiling range: No applicable information available

Flash point: >99 °C

Flashpoint (Method): No applicable information available

Evaporation rate (BuAe = 1): Similar to water

Flammability (solid, gas): Not flammable

Lower flammable limit (% by vol.): Not Flammable

Upper flammable limit (% by vol.): Not Flammable

Vapor pressure: No applicable information available

Vapor density: No applicable information available

Relative density: 0.989-0.999

Solubility in water: Soluble

Other solubility(ies): No applicable information available

Partition coefficient: No applicable information available

Auto ignition temperature: No applicable information available

Decomposition temperature: No applicable information available

Viscosity, kinematic: 2.024 mm²/s@ 25° C

Volatile organic Compounds (%VOC's): No applicable information available

Other physical/chemical comments: No applicable information available

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Not normally reactive

Chemical stability: Stable

Possibility of hazardous reactions: No hazardous polymerization

Conditions to avoid: Keep out of reach of children. Do not use in areas without adequate ventilation. Avoid contact with incompatible materials.

Incompatible materials: Fluorine, strong oxidizing or reducing agents, bases, sulfur trioxide, phosphorus pentoxide. Do not mix with other chemicals or cleaners.

Hazardous decomposition products: None known. Refer to 'Hazardous Combustion Products' in Section 5

SECTION 11 - TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry - inhalation: Avoid breathing vapors or mists

Routes of entry - skin & eye: Avoid contact with skin or eyes

Routes of entry - Ingestion: Do not taste or swallow

Potential Health Effects:

Signs and symptoms of short term (acute) exposure:

Symptoms: Please see section 4 of this SDS sheet for symptoms.

Potential Chronic Health Effects:

Mutagenicity: Not expected to be mutagenic in humans.

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.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive effects: No applicable information available

Sensitization to material: No applicable information available

Specific target organ effects: No data available to indicate product or components will have specific target organ effects.

Medical conditions aggravated by overexposure: Pre-existing skin, eye or respiratory conditions

Toxicological data:

See the following table for individual ingredient acute toxicity data.

Chemical name	CAS #	LD ₅₀	LD ₅₀	LC ₅₀
		(Oral, rat)	(Dermal. Rat)	(Inhal., rat)
Dioctyl Dimethyl Ammonium Chloride	5538-94-3	1140 mg/kg	> 250 mg/kg	< 0.59 mg/l
Alkyl (C ₁₂ 67%, C ₁₄ 25%, C ₁₆ 7%, C ₁₈ 1%) Dimethyl Benzyl Ammonium Chloride	68391-01-5			
N-Coco-N,N,N-trimethylammonium Chloride	61789-18-2			

*All empty cells no applicable information available

Other important toxicological hazards: None reported.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: No applicable information available

Persistence and degradability: No applicable information available

Bioaccumulation potential: No applicable information available.

Mobility in soil: No applicable information available.

Other Adverse Environmental effects:

Ozone-Depletion Potential:

Regulation:

US. EPA Clean Air Act (CAA) Section 602 Ozone-Depleting Substances (40 CFR 82, Subpt. A, App A & B)

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).

SECTION 13 - DISPOSAL CONSIDERATIONS

Handling for disposal: Handle in accordance with good industrial hygiene and safety practice. Refer to protective measures listed in sections 7 and 8. Empty containers retain residue (liquid and/or vapor) and can be dangerous.

Methods of disposal: Dispose in accordance with all applicable federal, state, provincial and local regulations. Contact your local, state, provincial or federal environmental agency for specific rules.

RCRA: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste UN defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14 - TRANSPORTATION INFORMATION

Special Shipping Information: Keep from freezing.

DOT

UN number: 1903

Proper shipping name: Disinfectants, liquid, corrosive n.o.s. (Cocoalkyltrimethylammoniumchloride)

Transport hazard class: 8

Packing group: III

Labels: 8

Emergency Response Guidebook Number: 153

Environmental hazards: no

TDG

UN number: 1760

Proper shipping name: CORROSIVE LIQUID, N.O.S. (Cocoalkyltrimethylammoniumchloride)

Transport hazard class: 8

Packing group: III

Labels: 8

Environmental hazards: no

Special precautions for user: none

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15 - REGULATORY INFORMATION

TSCA list

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals.

Signal word: DANGER!

Hazard statements: Corrosive. Causes skin burns.

EPA No.: 6836-366-67205

CERCLA Reportable Quantity

Components	Cas No.	Component RQ (lbs)	Calculated product RQ (lbs)
Edetic acid	60-00-4	5000	*

*: 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 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.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMII Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Components	Cas No.	Component RQ (lbs)
Edetic acid	60-00-4	5000

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Components	Cas No.	Concentration
Edetic acid	60-00-4	

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Components	Cas No.
Edetic acid	60-00-4

Pennsylvania Right To Know

Components	Cas No.
N-Coco-N,N,N-trimethylammonium Chloride	61789-18-2
Alkyl (C ₁₂ 67%, C ₁₄ 25%, C ₁₆ 7%, C ₁₈ 1%) Dimethyl Benzyl Ammonium Chloride	68391-01-5
Dioctyl Dimethyl Ammonium Chloride	5538-94-3
Tetrasodium ethylenediaminetetraacetate	64-02-8
Edetic acid	60-00-4

New Jersey Right To Know

Components	Cas No.
N-Coco-N,N,N-trimethylammonium Chloride	61789-18-2
Alkyl (C ₁₂ 67%, C ₁₄ 25%, C ₁₆ 7%, C ₁₈ 1%) Dimethyl Benzyl Ammonium Chloride	68391-01-5
Dioctyl Dimethyl Ammonium Chloride	5538-94-3
Tetrasodium ethylenediaminetetraacetate	64-02-8
Edetic acid	60-00-4

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16 - OTHER INFORMATION

Legend:

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
DOT: Department of Transportation
ECOTOX: U.S. EPA Ecotoxicology Database
EINECS: European Inventory of Existing Commercial chemical Substances
EPA: Environmental Protection Agency
HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IUCLID: International Uniform Chemical Information Database
LC: Lethal Concentration
LD: Lethal Dose
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OECD: Organization for Economic Co operation and Development
OSHA: Occupational Safety and Health Administration
PEL: Permissible exposure limit
RCRA: Resource Conservation and Recovery Act
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Prepared By: Charlotte Technical Services Group

Tel: (705) 740 2880

DISCLAIMER

Information for this material safety data sheet was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of this supplier, it is assumed that users of this material have been fully trained accordingly to the mandatory requirements of GHS. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of, or reliance on, any information contained within this form.

END OF DOCUMENT



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.

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>% by WT.</u>
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 (CO₂). 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



SAFETY DATA SHEET

Product: **MARC 126 CITRUS TYPHOON**

Form R04132

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

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>CARCINOGEN:</u>	<u>EXPOSURE LIMITS:</u>
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.



SAFETY DATA SHEET

Product: **MARC 126 CITRUS TYPHOON**

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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/cm³

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



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Product: **MARC 126 CITRUS TYPHOON**

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Alcohols, C9-11, ethoxylated (CAS 68439-46-3)

Acute

Dermal

LD50

Rabbit

Rat

Test Results

2000 mg/kg, 24 Hours

> 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



SAFETY DATA SHEET

Product: **MARC 126 CITRUS TYPHOON**

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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

Page 1 of 2

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: 11/9/2017
Product Use: Expansion Joint in Concrete Construction

SECTION 2: HAZARDS IDENTIFICATION/EXPOSURE LIMITS

HMIS

 Health 	1	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.
 Flammability 	1	
 Reactivity 	0	
 Personal Protection 		

SECTION 3: HAZARDS 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

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 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.

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

Chemical Name:	OSHA				ACGIH			
	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

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/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

SECTION 10: STABILITY/REACTIVITY

STABILITY: Stable. **HAZARDOUS POLYMERIZATION:** Will not occur.
CONDITIONS AND MATERIALS TO AVOID: None recognized.
HAZARDOUS DECOMPOSITION PRODUCTS: None recognized.

SAFETY DATA SHEET

Date of Preparation: 11/09/17		Page 2 of 2	1103360
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 SOIL MOBILITY: N/E		DEGRADABILITY: N/E OTHER ADVERSE EFFECTS: None Recognized BIOACCUMULATIVE POTENTIAL: N/E	
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.			
SECTION 15: REGULATORY INFORMATION			
OTHER REGULATORY CONSIDERATIONS: None recognized.			
SECTION 16: OTHER INFORMATION			
PREPARATION DATE: 11/9/2017 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.



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 Synthetic Blend 5W30 Motor Oil

CAS Number: Mixture
Recommended Use: Motor Oil
Created Date: 7/29/2016
Preparation/Revision Date: 7/29/2016
Emergency Phone Number: 1-800-424-9300 (CHEMTREC)
SDS CODE: 14004

SECTION 2

HAZARD IDENTIFICATION

Appearance: Amber
Odor: Petroleum
Classification: This material is not considered to be hazardous according to the Globally Harmonized System of Classification and Labelling Chemicals (GHS), Fifth 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

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: 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: 222°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/m ³ (PEL)	*10 mg/m ³	*5 mg/m ³ (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:	Amber
Odor:	Petroleum
Odor threshold:	Not determined.
pH:	Not applicable.
Melting/Freezing point:	Not determined.
Initial boiling point:	Not determined.
Boiling range:	Not determined.
Flash point:	222°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:	Not determined.
Partition Coefficient:	Not determined.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.
Viscosity:	64 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

Other:

Not determined.

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:

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Revisions / Comments:

None.

Product Name: MOBIL DELVAC 1 ESP 5W-40
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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

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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.

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SECTION 5	FIRE FIGHTING MEASURES
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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
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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

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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/m ³		N/A	OSHA Z1
CALCIUM HYDROXIDE	Total dust.	TWA	15 mg/m ³		N/A	OSHA Z1
CALCIUM HYDROXIDE		TWA	5 mg/m ³		N/A	ACGIH
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m ³		N/A	OSHA Z1
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m ³		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.

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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
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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

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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

<u>Hazard Class</u>	<u>Conclusion / Remarks</u>
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.

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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--

Product Name: MOBIL DELVAC 1 ESP 5W-40

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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.

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

Product Name: MOBIL DELVAC 1 ESP 5W-40
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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
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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

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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
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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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PPEC: A

DGN: 7082597XUS (1024783)

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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/m ³ (PEL)	*10 mg/m ³	*5 mg/m ³ (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:

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Safety Data Sheet
Lube Tech Endurance Extra Premium HD 15w40
Revision Date: 1/25/17

Revisions / Comments: None.

Internal use only: V15

**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 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.

Health	1
Flammability	0
Reactivity	0
Personal Protection	

SECTION 3 - HAZARDS COMPONENTS

<u>Chemical Name:</u>	<u>CAS Number</u>	<u>% by Weight</u>	<u>SARA 313</u>	<u>Vapor Pressure (mm Hg@20 °C)</u>	<u>LEL @ 24 °C</u>
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

<u>Chemical Name:</u>	<u>OSHA</u>				<u>ACGIH</u>			
	<u>PEL</u>	<u>PEL/Ceiling</u>	<u>PEL/STEL</u>	<u>Skin</u>	<u>TLV</u>	<u>TLV/Ceiling</u>	<u>TLV/STEL</u>	<u>Skin</u>
Petroleum Asphalt	5 mg/m ³ *	N/E	N/E	No	0.5 mg/m ³ *	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 - TRANSPORTATION INFORMATION

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.

1. Identification

Product identifier	Eyesaline Eyewash or Sterile Eyesaline
Other means of identification	
Product code	32-ST1050, 32-ST2050, 32-000440, 32-000445, 32-000451, 32-000452, 32-000454, 32-000455, 32-000456, 32-000457, 32-000460, 32-000461, 32-000462, 32-000465, 32-000494, 32-000497, 32-000498
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:	1-800-873-5242
Contact Person	hsptechsupport@honeywell.com
E-mail:	msds@chemtrec.com
Emergency phone 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 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

Water. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

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.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For industrial use, wear appropriate personal protective equipment (See Section 8).

Methods and materials for containment and cleaning up

Stop leak if you can do so safely. Absorb spill with appropriate sand, clay or other inert sorbent material, then place in appropriate waste container.

Large Spills: Flush area with water. Treat runoff per applicable environmental regulations pertaining to drains, water courses and ground water, diking if required.

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 container closed. Store away from incompatible materials. Do not allow material to freeze. Keep at temperature not exceeding 43°C / 110°F.

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 required.

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.

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 (93.33 °C)
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
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	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.

10. Stability and reactivity

Reactivity	Stable at normal conditions.
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	May cause discomfort if swallowed.
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Information on toxicological effects

Acute toxicity	No adverse effects due to eye or skin contact are expected.
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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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.

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.

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 Dispose in accordance with all applicable regulations. Do not allow runoff to sewer, waterway or ground.

Hazardous waste code 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 hazardous according to OSHA 29CFR 1910.1200. One or more components are not listed on TSCA.

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

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

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

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

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.

US. California Proposition 65

Not Listed.

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
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** -**Version #** 01**Further information** The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.**NFPA ratings**

List of abbreviations

References

ACGIH
EPA: Acquire database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
ESIS (European chemical Substances Information System)
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

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, CO₂ 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, CO₂).

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. Do 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	<u>ACGIH</u>		<u>OSHA</u>		
	<u>(TWA)</u>	<u>(STEL)</u>	<u>(TWA)</u>	<u>(STEL)</u>	
	200 ppm	400 ppm	400 ppm; 980 mg/m ³	500 ppm; 1225 mg/m ³	

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°C

Boiling point: 83°C

Flash point: 11°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 at 20°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)				
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Federal, State & International Regulations-Part 1

Ingredient (CAS#)	SARA 302		SARA 313	
	RQ	TPQ	List Chemical	Category
Isopropanol (67-63-0)	No	No	Yes	No

Federal, State & International Regulations-Part 2

Ingredient (CAS#)	RCRA		TSCA
	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.

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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, 201520503550, 510198-00, 970166
Intended Use: Gear 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

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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, H413
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

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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;

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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.

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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
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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 °C): 0.91

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

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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
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	May cause mild, short-lasting discomfort to eyes. Based on

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data for material.	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 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 available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Product Name: MOBILUBE HD 85W-140

Revision Date: 21 Dec 2016

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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

Product Name: MOBILUBE HD 85W-140
Revision Date: 21 Dec 2016
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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
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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, 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 HAZARD CATEGORIES: 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
HYDROTREATED RESIDUAL OIL	64742-57-0	17, 18

--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

Product Name: MOBILUBE HD 85W-140

Revision Date: 21 Dec 2016

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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
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
H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Section 07: Handling and Storage - Handling information was modified.

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, republication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2005540XUS (1024560)

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Product Name: MOBILGREASE XHP 222 SPECIAL
Revision Date: 29 Sep 2015
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SAFETY DATA SHEET

SECTION 1	PRODUCT AND COMPANY IDENTIFICATION
-----------	------------------------------------

PRODUCT

Product Name: MOBILGREASE XHP 222 SPECIAL
Product Description: Base Oil and Additives
Product Code: 2015A0202531, 530550-00, 97G870
Intended Use: Grease

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 <http://www.exxon.com>, <http://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.

Product Name: MOBILGREASE XHP 222 SPECIAL

Revision Date: 29 Sep 2015

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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
BENZENAMINE, N-PHENYL-, REACTION PRODUCTS WITH 2,4,4-TRIMETHYLPENTENE	68411-46-1	1 - < 5%	H402, H412
ZINC DITHIOPHOSPHATE	68649-42-3	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

Product Name: MOBILGREASE XHP 222 SPECIAL

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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.

Product Name: MOBILGREASE XHP 222 SPECIAL

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STORAGE

Do not store in open or unlabelled containers.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

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.

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Revision Date: 29 Sep 2015

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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: Dark Gray

Odor: Characteristic

Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.914

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: 220 cSt (220 mm²/sec) at 40 °C | >16 cSt (16 mm²/sec) at 100°C

Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D

Melting Point: >260°C (500°F)

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.

Product Name: MOBILGREASE XHP 222 SPECIAL
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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.

Middle distillates: Carcinogenic in animal tests. Lifetime skin painting tests produced tumors, but the mechanism is due to repeated cycles of skin damage and restorative hyperplasia. This mechanism is considered unlikely in humans where such prolonged skin irritation would not be tolerated. Did not cause mutations In Vitro. Inhalation of vapors did not result in reproductive or developmental effects in laboratory animals. Inhalation of high concentrations in animals resulted in respiratory tract irritation, lung changes and some reduction in lung function. Non-sensitizing in test animals.

Product Name: MOBILGREASE XHP 222 SPECIAL

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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.

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, corrosivity or reactivity and is not formulated with contaminants as determined

Product Name: MOBILGREASE XHP 222 SPECIAL

Revision Date: 29 Sep 2015

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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, ENCS, IECSC, KECI, PICCS, TSCA

Special Cases:

Inventory	Status
NDSL	Restrictions Apply

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ZINC DITHIOPHOSPHATE	68649-42-3	1 - < 2.5%

Product Name: MOBILGREASE XHP 222 SPECIAL

Revision Date: 29 Sep 2015

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The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
NAPHTHENIC ACIDS, ZINC SALTS	12001-85-3	15
ZINC DITHIOPHOSPHATE	68649-42-3	13, 15, 17, 19
ZINC NEODECANOATE	27253-29-8	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):

H315: Causes skin irritation; Skin Corr/Irritation, Cat 2

H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1

H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H402: Harmful to aquatic life; Acute Env Tox, Cat 3

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:

Revision Changes:

Section 01: Company Mailing Address information was modified.

Section 05: Hazardous Combustion Products information was modified.

Section 14: Marine Pollutant information was modified.

Section 09: Flammability (Solid, Gas) information was added.

Section 16: Revision Information - Implementation of GHS requirements phrase. information was deleted.

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Product Name: MOBILGREASE XHP 222 SPECIAL

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Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2006163XUS (550276)

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Product Name: MOBILGREASE HTS
Revision Date: 29 Sep 2015
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SAFETY DATA SHEET

SECTION 1	PRODUCT AND COMPANY IDENTIFICATION
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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. 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 <http://www.exxon.com>, <http://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.

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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
ZINC DITHIOPHOSPHATE	68649-42-3	< 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

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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

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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]	Inhalable fraction.	TWA	0.5 mg/m ³		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.

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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: [N/D 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.

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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
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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.

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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.

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, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

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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
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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
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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, IECSC, TSCA
Special Cases:

Inventory	Status
NDSL	Restrictions Apply

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
ZINC DITHIOPHOSPHATE	68649-42-3	< 2.5%

The following ingredients are cited on the lists below:

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Chemical Name	CAS Number	List Citations
ASPHALT (PETROLEUM)	8052-42-4	1, 13, 16, 17, 18
ZINC DITHIOPHOSPHATE	68649-42-3	13, 15, 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
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N/D = Not determined, N/A = Not applicable

KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):

H315: Causes skin irritation; Skin Corr/Irritation, Cat 2

H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1

H401: Toxic to aquatic life; Acute Env Tox, Cat 2

H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:

Section 01: Company Mailing Address information was modified.

Section 05: Hazardous Combustion Products information was modified.

Section 14: Marine Pollutant information was modified.

Section 09: Flammability (Solid, Gas) information was added.

Section 16: Revision Information - Implementation of GHS requirements phrase. information was deleted.

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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 Grease	
Other means of identification	Phillips 66 Megaplex® XD3 Grease #1 Phillips 66 Megaplex® XD3 Grease #2	
Code	LBPH778586	
Relevant identified uses	Lubricating Grease	
Uses advised against	All others	
24 Hour Emergency Phone Number	CHEMTREC 1-800-424-9300 CHEMTREC México 01-800-681-9531	
Manufacturer/Supplier	SDS Information	Customer Service
Phillips 66 Lubricants P.O. Box 4428 Houston, TX 77210	URL: www.Phillips66.com Phone: 800-762-0942 Email: SDS@P66.com	U.S.: 800-368-7128 or International: 1-832-765-2500 Technical Information 1-877-445-9198

SECTION 2: Hazard identification

Classified Hazards	Hazards Not Otherwise Classified (HNOC)
No classified hazards	PHNOC: None known HHNOC: None known

Label Elements

No classified hazards

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration ¹
Distillates, petroleum, solvent-dewaxed heavy paraffinic	64742-65-0	<70

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: 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: 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

Occupational exposure limits				
Chemical Name	ACGIH	OSHA	Mexico	Phillips 66
Distillates, petroleum, solvent-dewaxed 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.

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

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 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: Gray

Physical Form: Semi-Solid

Odor: Petroleum

Odor Threshold: No data

pH: Not applicable

Vapor Density (air=1): > 5

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: No data

Test Method: Not applicable

Initial Boiling Point/Range: No data

Vapor Pressure: <0.01 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): No data

Bulk Density: 7.9 lbs/gal

Viscosity: No data

Solubility in Water: Insoluble

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: Not 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, solvent-dewaxed 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)

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:

Chemical Name	Concentration ¹	de minimis
Zinc Compound(s)	1-2.0	1.0%

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:
28-Aug-2017	22-Jun-2016	LBPH778586	FINAL

Revised Sections or Basis for Revision:

Format change; Precautionary Statement(s) (Section 2); Composition (Section 3); Environmental hazards (Section 12)

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.

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.



Material Safety Data Sheet

Revision Date 19-Jun-2012

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product code 56854
Product name RED DUAL WALL HEAT SHRINK TUBING
Recommended Use Electrode
Supplier 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
Skin contact.

Potential health effects

Eyes Eye contact may cause mechanical irritation.
Skin May cause the following effects: . Skin burns.
Inhalation No adverse affects expected
Ingestion Toxic if swallowed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

While this material is not classified as hazardous under OSHA regulations, this MSDS contains valuable information critical to the safe handling and proper use of this product. This MSDS should be retained and available for employees and other users of this product.

4. FIRST AID MEASURES

Eye contact Flush with plenty of water for at least 10 minutes.

Skin contact No specific treatment is necessary since this material is not likely to be hazardous by skin contact
Ingestion Seek medical attention.
Inhalation If fumes from reactions are inhaled, move to fresh air immediately. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flash point °C Not Applicable
Flash point °F Not Applicable
Method Not Applicable

Autoignition temperature °C Not Applicable
Autoignition temperature °F Not Applicable

Flammability Limits (% in Air)
Upper No data available
Lower No data available

Suitable extinguishing media
Water spray. Dry chemical powder. Foam. Carbon dioxide.

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

Methods for cleaning up
Collect and contain for disposal.

7. HANDLING AND STORAGE

Handling
Keep from excessive heat. Avoid breathing fumes.

Storage
Keep tightly closed in a dry and cool place.

Product code **56854**

Product name **RED DUAL
WALL HEAT SHRINK
TUBING**

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation and Environmental Controls

Provide general exhaust ventilation. Local: required.

Hygiene measures

General industrial hygiene practice

Respiratory protection

None required if adequate ventilation is provided.

Hand Protection

Protective gloves.

Eye protection

Use safety eyewear designed to protect against impact.

Skin and body protection

None necessary under normal conditions

Other Protective Clothing

Fire retardant clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	Solid
Color	Various
Odor	None
Odor Threshold	Not Applicable
pH	Not Applicable
Specific Gravity	1.35
Vapor pressure	Not Applicable
Vapor density	Not Applicable
Evaporation Rate	Not Applicable
Water solubility	No data available
VOC Content	0
Partition Coefficient (n-octanol/water)	Not Applicable
Boiling point/range °C	Not Applicable
Boiling point/range °F	Not Applicable
Melting point/range °C	Not Applicable
Melting point/range °F	Not Applicable
Flash point °C	Not Applicable
Flash point °F	Not Applicable

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Avoid extreme heat.

Incompatibility

Strong oxidizers.

Hazardous Decomposition Products

Carbon oxides. Sulfur. Nitrogen. Acetic acid. Antimony. Hydrogen halides. Acid aldehydes. Vinyl acetate.

Polymerization

Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Component Information

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 None Known.

Carcinogenic effects None known .

12. ECOLOGICAL INFORMATION

Ecotoxicity effects No information available

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products

Can be landfilled or incinerated, when in compliance with local regulations.

14. TRANSPORTATION INFORMATION

DOT

Not Regulated.

TDG

Not Regulated

15. REGULATORY INFORMATION

State Regulations

International Inventories

Product code **56854**

Product name **RED DUAL
WALL HEAT SHRINK
TUBING**

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

V. Shargorodsky, Regulatory Affairs
Engineer

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.

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

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Status: FINAL

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 @ 60°F (15.6°C)

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.

Product Name: MOBIL DTE 25
Revision Date: 28 Nov 2017
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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

Product Name: MOBIL DTE 25
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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.

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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;

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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/m ³		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
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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

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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	

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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

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SECTION 12	ECOLOGICAL INFORMATION
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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
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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

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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
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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
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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

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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
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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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Internal Use Only



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MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2007796XUS (1012764)

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Product Name: MOBILTRANS HD 10W
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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 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:

1Reactivity: 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		0.1 - < 1%	H317
HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM	64742-55-8	1 - < 5%	H304
TETRAPROPENYL PHENOL	121158-58-5	0.1 - < 1%	H314(1A), H360(1B)(F), H400(M factor 10), H410(M factor 10)
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.

Product Name: MOBILTRANS HD 10W
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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	NOTES	Source				
HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM	Mist.	TWA	5 mg/m3			
N/A OSHA Z1						
HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM	Mist.	TWA	5 mg/m3		N/A	ACGIH

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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: 42 cSt (42 mm²/sec) 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

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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 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.

Tetrapropenyl phenol (TPP). TPP was tested in a rat oral gavage one-generation reproductive toxicity study and a rat dietary two-generation reproductive toxicity study. Results from the one-generation study included reduced ovary weights and changes in male reproductive accessory organs. Results from the two-generation study included prolonged estrous cyclicity, reduced ovary weights, accelerated sexual maturation, decreased mean live litter size, decreased fertility rates, hypospermia, and reduced weights of male reproductive accessory organs. A classification threshold for reproductive effects of 1.5 wt% TPP was derived by the supplier based on the NOAEL (15 mg/kg/day) from the rat dietary two-generation study and was confirmed in supporting studies with other substances containing TPP as an impurity.

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.

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

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reduce the bioconcentration or limit bioavailability.

NOTE: One or more components of this material contain an impurity (branched alkylphenol) that is highly toxic to aquatic organisms. The components containing the impurity were tested by the supplier and found to be no more than minimally toxic to aquatic organisms.

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
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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 HAZARD CATEGORIES: 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	1, 4, 17, 18
ZINC ALKARYLDITHIOPHOSPHATE	11059-65-7	13, 15, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL
6 = TSCA 5a211 = CA P65
REPRO16 = 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

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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
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A
H360(1B)(F): May damage fertility; Repro Tox, Cat 1B (Fertility)
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
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
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 Contact Methods information was modified.
Section 08: Exposure Limits Table information was modified.
Section 11: Chronic Tox - Component information was modified.

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PPEC: A

DGN: 2005848XUS (548858)

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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/m ³ (PEL)	*10 mg/m ³	*5 mg/m ³ (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

Product Name: MOBILTHERM 603
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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 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 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: SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE; SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE

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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
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	0 - 100%	H304
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.

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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

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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
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3		N/A	ACGIH

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SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m ³		N/A	OSHA Z1
SOLVENT DEWAXED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m ³		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

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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.

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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

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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 available for the material, the components of the material, and similar materials.

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	EL0 100 mg/l: data for similar materials

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		subcapitata	
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, 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

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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 HAZARD CATEGORIES: Immediate Health.

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 Contact Methods information was modified.

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Section 01: Company Mailing Address information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 07: Handling and Storage - Storage Phrases information was modified.
Section 08: Exposure Limits Table information was modified.
Section 09: Viscosity information was modified.
Section 11: Carcinogen Test Comment information was modified.
Section 11: Carcinogen Test Data information was modified.
Section 11: Carcinogen Test Guideline information was added.
Section 11: Chronic Tox - Component information was deleted.
Section 11: Dermal Irritation Test Comment information was modified.
Section 11: Dermal Irritation Test Data information was modified.
Section 11: Dermal Lethality Test Comment information was modified.
Section 11: Dermal Lethality Test Data information was modified.
Section 11: Dermal Lethality Test Guideline information was added.
Section 11: Eye Irritation Test Comment information was modified.
Section 11: Eye Irritation Test Data information was modified.
Section 11: Eye Irritation Test Guideline information was added.
Section 11: Inhalation Lethality Test Comment information was modified.
Section 11: Inhalation Lethality Test Data information was modified.
Section 11: Inhalation Lethality Test Guideline information was added.
Section 11: Mutagen Test Comment information was modified.
Section 11: Mutagen Test Data information was modified.
Section 11: Mutagen Test Guideline information was added.
Section 11: Oral Lethality Test Comment information was modified.
Section 11: Oral Lethality Test Data information was modified.
Section 11: Oral Lethality Test Guideline information was added.
Section 11: Reproductive Test Comment information was modified.
Section 11: Reproductive Test Data information was modified.
Section 11: Reproductive Test Guideline information was added.
Section 11: Skin Irritation Test Guideline information was added.
Section 11: Skin Sensitization Test Comment information was modified.
Section 11: Skin Sensitization Test Data information was modified.
Section 11: Skin Sensitization Test Guideline information was added.
Section 11: Target Organ Toxicity - Repeat Test Comment information was modified.
Section 11: Target Organ Toxicity - Repeat Test Data information was modified.
Section 11: Target Organ Toxicity - Repeat Test Guideline information was added.
Section 12: Ecological data - Header information was added.
Section 12: Ecological Information - Bioaccumulation information was modified.
Section 12: Ecological Information - Biodegradation information was modified.
Section 12: Ecological Information - Mobility information was added.
Section 12: Ecological Information - Mobility information was modified.
Section 12: Environmental fate table in section 12 information was added.
Section 12: Environmental tox table in section 12 information was added.
Section 12: Test Results - Column Header information was added.
Section 15: CERCLA information was added.

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MHC: 2A, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2011262XUS (542494)

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BZ7946 CHERRY IHC PUMC n/PMP R04860 4/1G

Version 2.3

Revision Date 12/05/2017

Print Date 02/07/2018

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : BZ7946 CHERRY IHC PUMC n/PMP R04860 4/1G

Material number : 000000000001046473

Manufacturer or supplier's details

Company : Zep Inc.

Address : 350 Joe Frank Harris Parkway, SE
Emerson, GA 30137

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 : Hand Care

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Appearance	liquid
Colour	red
Odour	characteristic

GHS Classification

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration [%]
Distillates (petroleum), hydrotreated light	64742-47-8	>= 20 - < 30
Alcohols, C9-11, ethoxylated	68439-46-3	>= 5 - < 10
Fatty acids, tall-oil, reaction products with isopropanolamine	68440-26-6	>= 1 - < 5
Solvent naphtha (petroleum), heavy aliph.	64742-96-7	>= 1 - < 5
White mineral oil (petroleum)	8042-47-5	>= 1 - < 5

BZ7946 CHERRY IHC PUMC n/PMP R04860 4/1G

Version 2.3

Revision Date 12/05/2017

Print Date 02/07/2018

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 | : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician. |
| In case of skin contact | : This product is formulated for use on skin but should always be immediately washed off with plenty of water. Discontinue use if irritation and redness develop. If conditions persist for more than 72 hours, consult a physician. |
| In case of eye contact | : If eye irritation persists, consult a specialist.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If in eyes, rinse with water for 15 minutes. |
| If swallowed | : Keep respiratory tract clear.
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.
If symptoms persist, call a physician. |
| Most important symptoms and effects, both acute and delayed | : Effects may be delayed, symptoms may include minor eye or skin irritation.
Overexposure may cause mild eye or skin irritation. |
| Notes to physician | : Treat symptomatically. Symptoms may be delayed. |

SECTION 5. FIREFIGHTING MEASURES

- | | |
|--------------------------------------|---|
| Suitable extinguishing media | : Alcohol-resistant foam
Carbon dioxide (CO ₂)
Dry chemical
Water spray jet |
| 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 (CO ₂)
Carbon monoxide
Smoke |
| Specific extinguishing methods | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |

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- 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 : Material can create slippery conditions.
Use non-slip safety shoes in areas where spills or leaks can occur.
Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
Prevent product from entering drains.
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Avoid contact with eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Materials to avoid : No materials to be especially mentioned.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Distillates (petroleum), hydrotreated light	64742-47-8	TWA	500 ppm 2,000 mg/m ³	OSHA Z-1
		TWA	400 ppm 1,600 mg/m ³	OSHA P0

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		TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Mist)	5 mg/m3	OSHA P0
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
		PEL (particulate)	5 mg/m3	CAL PEL
White mineral oil (petroleum)	8042-47-5	TWA (Mist)	5 mg/m3	
		STEL (Mist)	10 mg/m3	
		TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA (Inhalable fraction)	5 mg/m3	ACGIH
		TWA (Mist)	5 mg/m3	OSHA P0
		TWA (Mist)	5 mg/m3	NIOSH REL
		ST (Mist)	10 mg/m3	NIOSH REL
		PEL (particulate)	5 mg/m3	CAL PEL

Engineering measures : Not applicable

Personal protective equipment

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

Remarks : No special protection is required.

Eye protection

: Eye protection is not required while washing with this product. In the workplace, the use of safety glasses is recommended to avoid eye exposure during the handling of containers or during spill clean-up.

Skin and body protection

: No special protection is required.

Hygiene measures

: Wash hands before breaks and at the end of workday.
When using do not eat or drink.
When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : red

Odour : characteristic

Odour Threshold : No data available

pH : 7 - 8

Melting point/freezing point : No data available

Boiling point : not determined

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Flash point	: > 93.3 °C Method: TCC
Evaporation rate	: 1
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: No data available
Relative vapour density	: No data available
Density	: 0.96 g/cm ³
Solubility(ies)	
Water solubility	: emulsifiable
Solubility in other solvents	: not determined
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: not determined
Thermal decomposition	: No data available
Viscosity	
Viscosity, kinematic	: 40 mm ² /s (40 °C)

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Stable
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No decomposition if stored and applied as directed.
Conditions to avoid	: No data available
Incompatible materials	: None.
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 may be delayed, symptoms may include minor eye or skin irritation.

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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.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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 oral toxicity : Acute toxicity estimate : > 5,000 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 5,000 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

Alcohols, C9-11, ethoxylated:

Acute oral toxicity : LD50 Oral Rat: 1,400 mg/kg

Skin corrosion/irritation**Product:**

Result: No skin irritation

Serious eye damage/eye irritation**Product:**

Result: No eye irritation

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

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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

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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

: The product should not be allowed to enter drains, water courses or the soil.
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.

SECTION 14. TRANSPORT INFORMATION

Transportation Regulation: 49 CFR (USA):

NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: IMDG (Vessel):

NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: IATA (Cargo Air):

NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: IATA (Passenger Air):

NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

Transportation Regulation: TDG (Canada):

NOT REGULATED AS DANGEROUS GOODS OR HAZARDOUS MATERIAL

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

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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**

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 : No SARA Hazards

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

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

DSL All components of this product are on the Canadian DSL
TSCA On TSCA Inventory

For information on the country notification status for other regions please contact the manufacturer's regulatory group.

Inventory Acronym and Validity Area Legend:

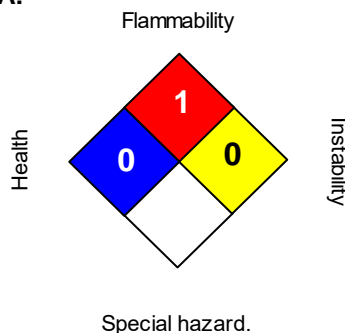
TSCA (USA), DSL (Canada), NDSL (Canada)

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SECTION 16. OTHER INFORMATION**Further information****NFPA:****HMIS III:**

HEALTH	0
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
 2 = Moderate, 3 = High
 4 = Extreme, * = Chronic

OSHA - GHS Label Information:

Not a hazardous substance or mixture.

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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.

SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, European Union CLP EC 1272/2008, REACH and the Global Harmonization Standard

1. SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

IDENTIFICATION of the SUBSTANCE or PREPARATION:

PRODUCT NAME: HALON 1211

CHEMICAL NAME: BROMOCHLORODIFLUOROMETHANE

OTHER MEANS OF IDENTIFICATION/SYNONYMS: R 12B1; BCF; Chlorodifluoromonobromomethane; Flugex 12B1; Fluorocarbon 1211; Freon 12B1; Halon 1211; Methane, bromochlorodifluoro-

RELEVANT PRODUCT USE: Fire Extinguishing Material

USES ADVISED AGAINST: Other than Relevant Use

COMPANY/UNDERTAKING IDENTIFICATION:

U.S. MANUFACTURER: H3R Clean Agents

ADDRESS: 103 H Street
Petaluma, CA 94952

PHONE: 1-800/249-4289 (8:00 a.m. to 4:30 p.m. PST)

FAX: 1-707/765-3395

EUROPEAN SUPPLIER/MANUFACTURER'S NAME:

ADDRESS:

BUSINESS PHONE:

WEB SITE: www.h3rcleanagents.com

EMERGENCY PHONE: CHEMTREC: 1-800-424-9300 (U.S./Canada/Puerto Rico) [24-hours]
CHEMTREC: +1-703-527-3887 (Outside North America) [24-hours]

DATE OF PREPARATION: September 21, 2006

DATE OF REVISION: August 28, 2015

This gas has been classified in accordance with the hazard criteria of the Canadian CPR and the SDS contains all the information required by the CPR. The compound is also classified per all applicable U.S. OSHA Hazcom, the European Union CLP EC 1272/2008 and the Global Harmonization Standard.

SECTION 2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: Classified in accordance with U.S. OSHA Hazcom, EU CLP 1272: 2008/2011 and the Global Harmonization Standard. This is a self-classification.

Classification: Gases Under Pressure/Liquefied Gas

Signal Word: Warning

Hazard Statement Code: H280

Precautionary Statement Codes: P410 + P403

Hazard Symbol/Pictogram: GHS04



See Section 16 for full classification information for this product.

EMERGENCY OVERVIEW: **Product Description:** Halon 1211 is a colorless, liquefied gas, with a sweet odor, shipped under pressure. **Health Hazards:** The main acute health hazard associated with releases of this gas is asphyxiation by displacement of oxygen. This gas is heavier than air and will sink into low areas, creating an asphyxiation hazard. The main chronic health hazard associated with releases of this gas is possible adverse effects to the central nervous system and possible cardiac sensitization and arrhythmias. Chronic skin exposure may cause dermatitis. **Flammability Hazards:** This gas is not flammable. **Reactivity Hazards:** This gas is not reactive. **Environmental Hazards:** Release of this product to the environment is not expected to cause environmental harm. **Emergency Response Considerations:** Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding. **WARNING**—If rescue personnel need to enter an area suspected of having a low level of Oxygen, they should be equipped with Self-Contained Breathing Apparatus (SCBA) and appropriate personal protective equipment.

SECTION 3. COMPOSITION and INFORMATION ON INGREDIENTS

Chemical Name	Chemical Formula	CAS #	EINECS #	% Composition	LABEL ELEMENTS GHS Under U.S. OSHA & EU Classification (1272/2008 EC) Hazard Statement Codes
Bromochlorodifluoromethane	CB ₂ ClF ₂	353-59-3	206-537-9	> 99%	SELF-CLASSIFICATION GHS under U.S. OSHA & EU CLP 1272/2008: Classification: Compressed Gas/Liquefied Gas Hazard Statement Codes: H280 Hazard Symbols/Pictograms: GHS04

See Section 16 for full product classification information.

SECTION 4. FIRST AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. Self-Contained Breathing Apparatus should be worn if the level of oxygen cannot be determined. Rescuers should be taken for medical attention, if necessary. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, if necessary.

SECTION 4. FIRST AID MEASURES (Continued)

DESCRIPTION OF FIRST AID MEASURES: Remove victim(s) to fresh air, as quickly as possible. Take copy of label and SDS to physician or other health professional with victim(s).

Inhalation Exposure: If inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect occurs after removal to fresh air.

Skin Exposure: If this gas contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 20 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention. Remove any clothing that may restrict circulation to any frozen area. Do not rub frozen parts as tissue damage may occur. As soon as practicable, place any affected area in warm water bath which has a temperature that does not exceed 105°F (40°C). NEVER USE HOT WATER. NEVER USE DRY HEAT. If area of frostbite is extensive, and if possible, remove clothing while showering with warm water. If warm water is not available, or is impractical to use, wrap the affected parts gently in blankets. Alternatively, if the fingers or hands are frostbitten, place the affected area of the body in the armpit. Encourage victim to gently exercise the affected part while being warmed. Frozen tissue is painless and appears waxy, with a possible yellow color. Frozen tissue will become swollen, painful and prone to infection when thawed. If the frozen part of the body has been thawed by the time medical attention has been obtained, cover the area with a dry sterile dressing and a large bulky protective covering.

Eye Exposure: If mechanical injury occurs, cover eye with bandage and seek appropriate medical attention. If rapid release has caused frostbite, cover injured eye; an ophthalmologist should be sought as soon as possible.

Ingestion: Ingestion is an unlikely route of exposure for this gas.

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: None are anticipated.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Administer oxygen, if necessary, and treat symptoms. This gas is an asphyxiant and can induce cardiac muscle sensitization to circulating epinephrine-like compounds. Do NOT give adrenalin or similar sympathomimetic drugs. Do NOT allow victim to exercise until 24 hours following specific exposures. Freeze burns of mucosal tissue can develop following specific exposures.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT: Not Applicable

AUTOIGNITION: Not Applicable

FLAMMABLE RANGE: Not Applicable

EXTINGUISHING MEDIA: This is a non-flammable gas; use fire-extinguishing media appropriate for the surrounding materials.

UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: This gas does not burn; however, containers, when involved in fire, may rupture or burst in the heat of the fire. Most cylinders have a pressure release device, which will vent contents if the cylinder is exposed to high temperatures. This gas is heavier than air, creating an asphyxiation hazard in low areas.

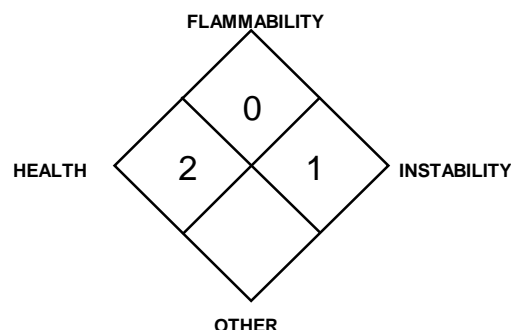
EXPLOSION SENSITIVITY TO MECHANICAL IMPACT: Not sensitive.

EXPLOSION SENSITIVITY TO STATIC DISCHARGE: Not sensitive.

HAZARDOUS COMBUSTION PRODUCTS: Combustion or decomposition products above 481.7°C (900°F) include hydrogen bromide, hydrogen chloride, hydrogen fluoride, free halogens, and small amounts of carbonyl halides. These by-products have a sharp irritating odor and are dangerous even in low concentrations and in sufficient concentrations can result in personal injury or death.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Move fire-exposed containers if it can be done without risk to firefighters. Use water spray to cool fire-exposed cylinders. Take care not to block pressure relief valves. Stay away from ends of tanks (but realize that shrapnel may travel in any direction). Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.

NFPA RATING



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

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: Evacuate immediate area. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Vapors from liquefied gas are initially heavier than air and spread along ground, creating an oxygen-deficient atmosphere in low-lying areas or confined spaces. Detection systems should be available to monitor for level of oxygen. The level of oxygen should be above 19.5% before personnel can be allowed in the area without SCBA.

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

All Releases: Minimum Personal Protective Equipment should be **Level B: Self-Contained Breathing Apparatus**. Note: chemically protective clothing may provide little or no thermal protection against the hazard of frostbite. The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection. If gas is leaking incidentally from the cylinder or its valve, contact your supplier.

All Releases: In the event of a release of this product, operator should close the gas source if possible to do so safely. Evacuate area in the event of a significant release. Locate and seal the source of the leaking gas. If leak is in user's gas handling equipment or system, close cylinder valve, and safely vent high pressure before attempting repairs. If leak is from the cylinder, cylinder valve or the valve pressure relief device (PRD), contact your supplier. If this does not stop the release (or if it is not possible to reach the valve), allow the gas to release in-place or remove it to a safe area and allow the gas to be released there. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666).

SECTION 6. ACCIDENTAL RELEASE MEASURES (Continued)

ENVIRONMENTAL PRECAUTIONS: All release to the environment should be avoided as this gas has an ozone depletion potential and a global warming potential. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Releases of Halon 1211 can create an oxygen-deficient atmosphere. Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations could occur without any significant warning symptoms, due to oxygen-deficiency. All work operations should be monitored in such a way that emergency personnel can be immediately contacted in the event of a release. Wearing contact lenses is not recommended when handling this gas.

Cylinder valves should be inspected regularly for physical damage or corrosion (apparent by discoloration or rust). Care should be taken to inspect the following valve locations for corrosion: neck (where valve inserts into cylinder); bonnet nut (where handle attaches to valve body). Close valve after each use and when empty.

Do not drag, roll, slide or drop cylinder. Use a suitable hand truck designed for cylinder movement. Never attempt to lift a cylinder by its cap. Secure cylinders at all times while in use. Use a pressure regulator to safely discharge product from cylinder. Use a check valve to prevent reverse flow into cylinder. Once cylinder has been connected to properly purged process, open cylinder valve slowly and carefully. If user experiences any difficulty operating cylinder valve, discontinue use and contact supplier. Never insert an object (e.g., wrench, screwdriver, etc.) into valve cap openings; doing so may damage valve, causing a leak to occur. Use an adjustable strap-wrench to remove over-tight or rusted caps.

Do not heat cylinders by any means to increase the discharge rate of product from the cylinder. Never apply flame or localized heat directly to any part of the cylinder. Cylinders should not be artificially cooled as certain types of steel undergo property changes when cryogenically cooled, thus making the cylinder unstable.

CONDITIONS FOR SAFE STORAGE: Always store and handle compressed gas cylinders in accordance with Compressed Gas Association, Inc. at www.cganet.com pamphlet CGA P-1, *Safe Handling of Compressed Gases in Containers*. Local regulations may require specific equipment for storage and use. Cylinders should be stored upright and be firmly secured to prevent falling or being knocked-over. Cylinders can be stored in the open, but in such cases, should be protected against extremes of weather and from the dampness of the ground to prevent rusting. Cylinders should be stored in dry, well-ventilated areas away from sources of heat, ignition and direct sunlight. Do not allow area where cylinders are stored to exceed 52°C (125°F). Store containers away from heavily trafficked areas and emergency exits. Isolate from other non compatible chemicals (refer to Section 10, Stability and Reactivity). Store away from process and production areas, away from elevators, building and room exits or main aisles leading to exits. Protect cylinders against physical damage. Full and empty cylinders should be segregated. Use a first-in, first-out inventory systems to prevent full containers from being stored for long periods of time. **NOTE:** Use only DOT or ASME code cylinders designed for compressed gas storage. Cylinders must not be recharged except by or with the consent of owner.

STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA: Use the proper CGA connections, DO NOT USE ADAPTERS.

PRODUCT USE: This product is used as a fire-extinguishing agent, refrigerant gas and as a cleaning agent.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Relieve pressure before attempting repairs.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Forced ventilation systems for the general work area should be provided. If appropriate, install automatic monitoring equipment to detect the level of oxygen.

Occupational/Workplace Exposure Limits/Guidelines:

Chemical Name	CAS #	OSHA PELs ppm	ACGIH TLVs ppm	NIOSH RELs ppm	NIOSH IDLH ppm	DFG MAKs ppm	AIHA WEELs ppm
Halon 1211	353-59-3	NE	NE	NE	NE	NE	NE

NE = Not Established

International Exposure Limits: Currently, the following international exposure limits are in place for Halon 1211 (specific country limits may become available or change-consult individual countries for most current information).

Russia: STEL = 1000 mg/m³, JUNE 1993

PERSONAL PROTECTIVE EQUIPMENT: The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132), equivalent standards of Canada (including CSA Standard Z94.4-02 and CSA Standard Z94.3-02), or standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand protection, and CR 13464:1999 for face/eye protection). Please reference applicable regulations and standards for relevant details.

Respiratory Protection: Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection if oxygen level is below 19.5%, or during emergency response to a release of this product. If necessary, use only respiratory protection authorized under appropriate regulations. In the U.S., oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

Eye Protection: Use approved safety goggles or safety glasses. If necessary, refer to appropriate regulations for further information.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued)

PERSONAL PROTECTIVE EQUIPMENT (continued):

Hand Protection: Wear leather gloves when handling cylinders of this gas. Otherwise, wear glove protection appropriate to the specific operation for which this gas is used. If necessary, refer to appropriate regulations.

Body Protection: Use body protection appropriate for task. Safety shoes are recommended when handling cylinders. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in appropriate country regulations and standards.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

	Halon 1211
Form	Liquefied gas under pressure
Color	Colorless
Odor	Sweet
Molecular Weight	165.36
Molecular Formula	CBrClF_2
Boiling Point @ 1 atm	-4°C (26°F)
Freezing/Melting Point @ 1 atm	-159.5°C (319.1°F)
Specific Gravity [Relative Density] (water = 1)	1.83
Solubility in Water :	Negligible
Vapor Pressure:	37.5 psi @ 70°F; 2,270 hPa @ 20°C
Vapor Density (air = 1)	5.7
Odor Threshold	Not determined

WARNING PROPERTIES FOR THIS GAS: The odor may be a warning of a release. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

SECTION 10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

CONDITIONS TO AVOID: Cylinders should not be exposed to temperatures in excess of 125°F (52°C).

MATERIALS WITH WHICH GAS IS INCOMPATIBLE: Metal halides. Contact with acids can evolve highly toxic hydrogen chloride.

HAZARDOUS DECOMPOSITION PRODUCTS: *Combustion:* Combustion or decomposition products above 900°F include hydrogen bromide, hydrogen chloride, hydrogen fluoride, free halogens, and small amounts of carbonyl halides. These by-products have a sharp irritating odor. *Hydrolysis:* None known.

POSSIBILITY OF HAZARDOUS REACTION OR POLYMERIZATION: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY, SYMPTOMS OF ACUTE EXPOSURE: **WARNING-**If rescue personnel need to enter an area in which a release of Halon 1211 has occurred, they should be equipped with Self-Contained Breathing Apparatus (SCBA) and appropriate personal protective equipment. High concentration of this gas will create an oxygen-deficient atmosphere, creating the risk of asphyxiation.

Eye Contact: Release of a high-pressure gas may result in airborne objects.

Ingestion: Ingestion of this gas is not a likely route of industrial exposure.

Inhalation: Inhalation of high concentrations of this gas may lead to heart arrhythmias. High concentrations of this gas can cause an oxygen-deficient environment. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. The skin of a victim may have a blue color. Under some circumstances of over-exposure, death may occur, due to the displacement of oxygen. The effects associated with various levels of oxygen are described on the following page.

CONCENTRATION of OXYGEN

20.9% Oxygen:
15–19% Oxygen:

12–15% Oxygen:

10–12% Oxygen:

8–10% Oxygen:

6–8% Oxygen:

4–6% Oxygen:

EXPOSURE SYMPTOM

Normal oxygen concentration in air.

Decreased ability to perform tasks. May impair coordination and may induce early symptoms in persons with heart, lung, or circulatory problems.

Breathing increases, especially in exertion. Pulse up. Impaired coordination, perception, and judgment.

Breathing further increases in rate and depth, poor coordination and judgment, lips slightly blue.

Mental failure, fainting, unconsciousness, ashen face, blueness of lips, nausea (upset stomach), and vomiting.

8 minutes, may be fatal in 50–100% of cases; 6 minutes, may be fatal in 25 to 50% of cases; 4–5 minutes, recovery with treatment.

Coma in 40 seconds, followed by convulsion, breathing failure, death.

WARNING: Exposure to atmospheres containing 8–10% or less oxygen will bring about unconsciousness without warning and so quickly that individuals cannot help or protect themselves. Lack of sufficient oxygen may cause serious injury or death.

Skin Contact: Transitory skin contact should not cause any adverse effects.

Other Acute Health Effects: Contact with rapidly expanding gases (which are released from under high pressure) may cause frostbite. Symptoms of frostbite include change in skin color to white or grayish-yellow. The pain caused by frostbite can quickly subside, masking the injury. In addition, the sudden release of a pressurized gas (such as may occur in the event of a valve failure), presents a severe hazard of mechanical injury.

Acute Exposure Target Organs: Respiratory system.

SECTION 11. TOXICOLOGICAL INFORMATION (Continued)

ROUTES OF ENTRY, SYMPTOMS OF CHRONIC EXPOSURE:

Inhalation: In animal tests, rats were exposed by inhalation for 21 days, dosed 6 hours per day, 5 days per week, at 3,300 ppm and no adverse effects of toxicological significance (NOAEL) were observed. At 10,000 ppm, there were signs of central nervous system depression. However, there were no signs of toxicity or histopathological changes observed and no potentiation of cardiac sensitization potential. Other animal testing resulted in cardiac sensitization at various concentrations for varying exposure times. Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may affect the heart and nervous system.

Skin Contact: Prolonged contact may cause dermatitis (dry, red, cracked skin) due to defatting of the skin.

Chronic Exposure Target Organs: Skin, cardiac system, central nervous system.

CARCINOGENIC POTENTIAL: Halon 1211 is not listed as a carcinogen or as a potential carcinogen on EPA, NIOSH, GERMAN MAK, OSHA, NTP, IARC, or CAL/OSHA Carcinogen lists.

TOXICITY DATA: There toxicology data are currently available for Halon 1211.

BROMOCHLORODIFLUOROMETHANE:

TCLo (Inhalation-Man) 4 pph/1 minute: Peripheral Nerve and Sensation: paresthesia; Behavioral: hallucinations, distorted perceptions; Cardiac: EKG changes not diagnostic of specified effects

TCLo (Inhalation-Human) 295,200 mg/m³/1 minute: Peripheral Nerve and Sensation: paresthesia

LC₅₀ (Inhalation-Rat) 20 pph/15 minutes: Behavioral: tremor, convulsions or effect on seizure threshold; Lungs, Thorax, or Respiration: respiratory depression

LC₅₀ (Inhalation-Rat) 2,140,000 mg/m³/5 minutes

LCLo (Inhalation-Dog) 5 pph/30 minutes: Behavioral: tremor, convulsions or effect on seizure threshold; Cardiac: other changes

LCLo (Inhalation-Guinea Pig) 30 pph/2 hours: Behavioral: convulsions or effect on seizure threshold

TCLo (Inhalation-Rat) 396,000 mg/m³/10 minutes: Behavioral: general anesthetic

TCLo (Inhalation-Rat) 210 µg/m³/4 hours/12 weeks-intermittent: Blood: pigmented or nucleated red blood cells, changes in erythrocyte (RBC) count, changes in platelet count

TCLo (Inhalation-Rat) 1 pph/6 hours/3 weeks-intermittent: Behavioral: somnolence (general depressed activity)

TCLo (Inhalation-Rat) 50,000 ppm: female 6-15 day(s) after conception: Reproductive: Maternal Effects: other effects

Mutation in Microorganisms (Bacteria-*Salmonella typhimurium*) 10 pph

ADDITIONAL TOXICOLOGICAL DATA:

Acute: Inhalation-Rat: At 50,000 ppm, no effects were noted. At 75,000 ppm, slightly accelerated respiration was noted. At 100,000 ppm, mild excitement was seen. At 200,000 ppm, within 1 to 2 minutes marked excitation and some convulsions were noted. At 60 to 90 minutes, 2 of the 4 animals died. A concentration of 300,000 ppm immediately gave rise to convulsions and narcosis and all animals died within 50 min. Inhalation-Dog: At 25,000 to 75,000 ppm for 3.5 hours, there was reversible myocardial lesions and fatty degeneration of the liver.

Chronic: A case of occupational rhabdomyolysis in an individual susceptible to malignant hyperthermia was described. A 43 year old male was found to have a serum creatine-kinase activity of 650 international units per liter, normal range 10 to 200 international units/liter, suggesting that he was susceptible to malignant hyperthermia. His susceptibility was confirmed by in vitro testing of a muscle specimen with halothane and caffeine. The subject was subsequently employed in a factory that made fire extinguishers where one of his jobs consisted of discharging Bromochlorodifluoromethane from fire extinguishers before refilling them. Although discharging was done in open air, some gas was commonly inhaled. Eighteen months after beginning this work, he was examined for complaints of malaise and stiffness and weakness in the forearms and hands. The symptoms progressively worsened during the week and improved the weekends. Serum creatine-kinase activity was 1056 IU/l on one Saturday and 544 IU/l the following Monday. Because of the similarity in structure between Bromochlorodifluoromethane and halothane, the effects of the former on contractions of a muscle specimen were examined. Bromochlorodifluoromethane induced contractions identical to those of halothane. The patient was advised to change jobs. After he did so his symptoms immediately improved. It was concluded that the patient's rhabdomyolysis is due to recurring exposures to Bromochlorodifluoromethane. They recommended that persons susceptible to malignant hyperthermia avoid exposure to similar halogenated hydrocarbons. Inhalation-Human: At 4 to 5% for 1 minute using face mask, subjects at 30 seconds became slightly dizzy and light-headed. Over the next few seconds, these symptoms rapidly increased in severity until at 1 minute the subjects felt as though they were about to lose consciousness and exposure was stopped. Paresthesia of the fingers and other parts of the body was sometimes noted towards the end of the experiment. Heart rate rose by approximately 30% during the early stages of exposure and remained at that level through the experiment. Depression of the T wave was consistently observed on the ECG tracings. The subjects recovered rapidly on cessation of exposure and felt perfectly normal again within 5 minutes. The heart rate and the ECG reverted to normal within 1 minute. There were no delayed after effects. Inhalation-Dog: At 5,000 to 100,000 ppm resulted in cardiac sensitization above 20,000 ppm and in 10 to 0.5 minutes, depending on concentration.

IRRITANCY OF PRODUCT: Not applicable.

SENSITIZATION OF PRODUCT: Halon 1211 is not a human skin or respiratory sensitizer, but has been shown to be a cardiac sensitizer in animal studies.

REPRODUCTIVE TOXICITY INFORMATION: Halon 1211 is not reported to cause mutagenic, embryotoxic, teratogenic or reproductive toxicity effects in humans. No animal data are available.

BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) have not been determined for Halon 1211.



HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
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FLAMMABILITY HAZARD	(RED)	0
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PHYSICAL HAZARD	(YELLOW)	0
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PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

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

SECTION 12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: Using a structure estimation method based on molecular connectivity indices, the Koc for Halon 1211 can be estimated to be about 49. According to a classification scheme, this estimated Koc value suggests that Halon 1211 is expected to have very high mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: Photodegradation: > 50% after 14 years. If released to air, a vapor pressure of 2.07×10^{-3} mm Hg at 25°C indicates Halon 1211 will exist solely in the gas phase in the ambient atmosphere. Gas phase Bromochlorodifluoromethane will slowly be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be greater than 44 years. Halon 1211 absorbs very little UV radiation above 290 nm and is not expected to photolyze at a significant rate in the ambient atmosphere. Volatilization from moist soil surfaces is expected to be an important fate process based upon an estimated Henry's Law constant of 9.4×10^{-2} atm-cu m/mole. Halon 1211 will volatilize rapidly from dry soil surfaces since it exists as a gas in the ambient environment. If released into water, Halon 1211 is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is expected to be an important fate process based upon this compound's estimated Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 1.3 hrs and 5.1 days, respectively. Given its high degree of halogenation, it is not expected to be an important degradation pathway for Halon 1211.

POTENTIAL TO BIOACCUMULATE: An estimated BCF of 5.8 was calculated for Halon 1211, using an estimated log Kow of 1.9 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is low.

ECOTOXICITY: There is currently no evidence of adverse effects from exposure to Halon 1211 on aquatic life. Immediate adverse effect on plants would be related to oxygen-deficient environments or frost from rapidly expanding gases.

OZONE-DEPLETION POTENTIAL: Halon 1211 is rated as 3 (compared to trichlorofluoromethane nominally 1). Halon 1211 is a Class I ozone depleting chemical (40 CFR Part 82). Halon 1211 may contribute to global warming.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

RESULTS OF PBT and vPvB ASSESSMENT: No data available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

SECTION 13. DISPOSAL CONSIDERATIONS

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

UNUSED PRODUCT / EMPTY CONTAINER: Do not dispose of residual product. Return used product in cylinders to H3R Clean Agents.

DISPOSAL INFORMATION: Relative to the environment, this material has an ozone depletion potential and a global warming potential. Refer to the regulations of the U.S. EPA or the State-specific regulations for proper waste disposal, regulations of Canada and its Provinces, or regulations of EU member states.

U.S. EPA WASTE NUMBER: Not applicable.

EUROPEAN (EWC) WASTE CODES: 16 05 04* gases in pressure containers (including halons) containing dangerous substances

SECTION 14. TRANSPORT INFORMATION

The following classification applies when this product is supplied as a fire extinguisher.

U.S. SHIPPING INFORMATION: This gas is classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

UN Identification Number:	UN 1044
U.S. DOT Proper Shipping Name:	Fire extinguisher with compressed or liquefied gas
Hazard Class Number and Description:	2.2 (Non-Flammable Gas)
U.S. DOT Shipping Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Packing Group:	Not Applicable
Placard (When required):	Class 2.2 (Non-Flammable Gas)

Special Shipping Information: Cylinders should be transported in a secure position in a well-ventilated truck (never transport in passenger compartment of a vehicle). Ensure cylinder valve is properly closed, valve outlet cap has been reinstalled, and valve protection cap is secured before shipping cylinder.

Caution: Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of Federal law (49 CFR 173.301).

ERG (Emergency Response Guidebook) #: 126

Special Provisions: T50 Portable tanks - Applies to various liquefied compressed gases: Consult the regulations for specific requirements Sec. 172.102 Special Provision Portable Tank Code T50.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is classified as Dangerous Goods, per regulations of Transport Canada. The use of the above U.S. DOT information from the U.S. 49 CFR regulations is allowed for shipments that originate in the U.S. For shipments via ground vehicle or rail that originate in Canada, the following information is applicable.

UN Identification Number:	UN 1044
Proper Shipping Name:	Fire extinguisher with compressed or liquefied gas
Hazard Class Number and Description:	2.2 (Non-Flammable Gas)
Packing Group:	Not Applicable

SECTION 14. TRANSPORT INFORMATION (Continued)
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The following classification applies when this product is supplied as a fire extinguisher.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS (continued):

Excepted Quantities:	E0
Hazard Shipping Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Special Provisions:	109
Explosive Limit & Limited Quantity Index:	0.125 L
ERAP Index:	None
Passenger Carrying Ship Index:	None
Passenger Carrying Road Or Rail Vehicle Index:	75

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This gas is classified as dangerous goods, per the International Air Transport Association.

UN Identification Number:	UN 1044
Proper Shipping Name/Description:	Fire extinguisher with compressed or liquefied gas
Hazard Class or Division:	2.2 (Non-Flammable Gas)
Hazard Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Packing Group:	None
Excepted Quantities:	E0
Passenger and Cargo Aircraft Packing Instruction:	213
Passenger and Cargo Aircraft Maximum Net Quantity per Pkg.:	75 Kg
Passenger and Cargo Aircraft Limited Quantity Packing Instruction:	Forbidden
Passenger and Cargo Aircraft Limited Quantity Maximum Net Quantity per Pkg.:	Forbidden
Cargo Aircraft Only Packing Instruction:	213
Cargo Aircraft Only Maximum Net Quantity per Pkg.:	150 Kg
Special Provisions:	A19
ERG CODE:	2L

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This gas is classified as dangerous goods, per the International Maritime Organization.

UN No.:	1044
Proper Shipping Name:	Fire extinguisher with compressed or liquefied gas
Hazard Class Number:	2.2
Packing Group:	None
Special Provisions:	None
Limited Quantities:	120 mL
Excepted Quantities:	E0
Packing:	Instructions: P200; Provisions: None
IBCs:	Instructions: None; Provisions: None
Tanks:	Instructions: None; Provisions: None
EmS:	F-C, S-V
Stowage Category:	Category A.

Marine Pollutant: This gas does not meet the criteria of a Marine Pollutant.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This gas is classified by the Economic Commission for Europe to be dangerous goods.

UN No.:	1044
Name and Description:	Fire extinguisher with compressed or liquefied gas
Class:	2
Classification Code:	6A
Packing Group:	None
Labels:	2.2
Special Provisions:	225, 594
Limited Quantities:	120 mL
Excepted Quantities:	E0
Packing Instructions:	P200
Special Packing Instructions:	PP91
Mixed Packing Provisions:	MP9
Portable Tank and Bulk Container:	Instructions: None; Special Provisions: None
Hazard Identification No.:	None

SECTION 14. TRANSPORT INFORMATION (Continued)

The following classification applies when this product is charged with nitrogen, carbon dioxide or air.

U.S. SHIPPING INFORMATION: This gas is classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101.

UN Identification Number:	UN 1058
U.S. DOT Proper Shipping Name:	Liquefied gas, non-flammable, charged with nitrogen, carbon dioxide or air
Hazard Class Number and Description:	2.2 (Non-Flammable Gas)
U.S. DOT Shipping Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Packing Group:	Not Applicable
Placard (When required):	Class 2.2 (Non-Flammable Gas)

Special Shipping Information: Cylinders should be transported in a secure position in a well-ventilated truck (never transport in passenger compartment of a vehicle). Ensure cylinder valve is properly closed, valve outlet cap has been reinstalled, and valve protection cap is secured before shipping cylinder.

Caution: Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of Federal law (49 CFR 173.301).

ERG (Emergency Response Guidebook) #: 126

Special Provisions: T50 Portable tanks - Applies to various liquefied compressed gases: Consult the regulations for specific requirements Sec. 172.102 Special Provision Portable Tank Code T50.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is classified as Dangerous Goods, per regulations of Transport Canada. The use of the above U.S. DOT information from the U.S. 49 CFR regulations is allowed for shipments that originate in the U.S. For shipments via ground vehicle or rail that originate in Canada, the following information is applicable.

UN Identification Number:	UN 1058
Proper Shipping Name:	Liquefied gas, non-flammable, charged with nitrogen, carbon dioxide or air
Hazard Class Number and Description:	2.2 (Non-Flammable Gas)
Packing Group:	Not Applicable
Excepted Quantities:	E1
Hazard Shipping Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Special Provisions:	38
Explosive Limit & Limited Quantity Index:	0.125 L
ERAP Index:	None
Passenger Carrying Ship Index:	None
Passenger Carrying Road Or Rail Vehicle Index:	75

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This gas is classified as dangerous goods, per the International Air Transport Association.

UN Identification Number:	UN 1058
Proper Shipping Name/Description:	Liquefied gas, non-flammable, charged with nitrogen, carbon dioxide or air
Hazard Class or Division:	2.2 (Non-Flammable Gas)
Hazard Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Packing Group:	None
Excepted Quantities:	E1
Passenger and Cargo Aircraft Packing Instruction:	213
Passenger and Cargo Aircraft Maximum Net Quantity per Pkg.:	75 Kg
Passenger and Cargo Aircraft Limited Quantity Packing Instruction:	Forbidden
Passenger and Cargo Aircraft Limited Quantity Maximum Net Quantity per Pkg.:	Forbidden
Cargo Aircraft Only Packing Instruction:	213
Cargo Aircraft Only Maximum Net Quantity per Pkg.:	150 Kg
Special Provisions:	A19
ERG CODE:	2L

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This gas is classified as dangerous goods, per the International Maritime Organization.

UN No.:	1058
Proper Shipping Name:	Liquefied gas, non-flammable, charged with nitrogen, carbon dioxide or air
Hazard Class Number:	2.2
Packing Group:	None
Special Provisions:	225
Limited Quantities:	120 mL
Excepted Quantities:	E1
Packing:	Instructions: P003; Provisions: None
IBCs:	Instructions: None; Provisions: None
Tanks:	Instructions: None; Provisions: None
EmS:	F-C, S-V
Stowage Category:	Category A.

Marine Pollutant: This gas does not meet the criteria of a Marine Pollutant.

SECTION 14. TRANSPORT INFORMATION (Continued)
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EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This gas is classified by the Economic Commission for Europe to be dangerous goods.

UN No.:	1058
Name and Description:	Liquefied gas, non-flammable, charged with nitrogen, carbon dioxide or air
Class:	2
Classification Code:	2A
Packing Group:	None
Labels:	2.2
Special Provisions:	662
Limited Quantities:	120 mL
Excepted Quantities:	E1
Packing Instructions:	P200
Special Packing Instructions:	None
Mixed Packing Provisions:	MP9
Portable Tank and Bulk Container:	Instructions: (M); Special Provisions: None
Hazard Identification No.:	None

The following shipping classification applies when the product is supplied in types of cylinders other than fire extinguishers:

U.S. SHIPPING INFORMATION:

UN Identification Number:	UN 1974
U.S. DOT Proper Shipping Name:	Chlorodifluorobromomethane or Refrigerant gas R12B1
Hazard Class Number and Description:	2.2 (Non-Flammable Gas)
U.S. DOT Shipping Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Packing Group:	Not Applicable
Placard (When required):	Class 2.2 (Non-Flammable Gas)
ERG (Emergency Response Guidebook) #:	126

Special Shipping Information: Cylinders should be transported in a secure position in a well-ventilated truck (never transport in passenger compartment of a vehicle). Ensure cylinder valve is properly closed, valve outlet cap has been reinstalled, and valve protection cap is secured before shipping cylinder.

Caution: Compressed gas cylinders shall not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with the owner's written consent is a violation of Federal law (49 CFR 173.301).

Special Provisions: T50 Portable tanks - Applies to various liquefied compressed gases: Consult the regulations for specific requirements Sec. 172.102 Special Provision Portable Tank Code T50.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS:

UN Identification Number:	UN 1974
Proper Shipping Name:	Chlorodifluorobromomethane or Refrigerant gas R12B1
Hazard Class Number and Description:	2.2 (Non-Flammable Gas)
Packing Group:	Not Applicable
Excepted Quantities:	E1
Hazard Shipping Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Special Provisions:	None
Explosive Limit & Limited Quantity Index:	0.125 L
ERAP Index:	None
Passenger Carrying Ship Index:	None
Passenger Carrying Road or Rail Vehicle Index:	75

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA):

UN Identification Number:	UN 1974
Proper Shipping Name/Description:	Chlorodifluorobromomethane or Refrigerant gas R12B1
Hazard Class or Division:	2.2 (Non-Flammable Gas)
Hazard Label(s) Required:	Class 2.2 (Non-Flammable Gas)
Packing Group:	None
Excepted Quantities:	E1
Passenger and Cargo Aircraft Packing Instruction:	200
Passenger and Cargo Aircraft Maximum Net Quantity per Pkg.:	75 kg
Passenger and Cargo Aircraft Limited Quantity Packing Instruction:	Forbidden
Passenger and Cargo Aircraft Limited Quantity Maximum Net Quantity per Pkg.:	Forbidden
Cargo Aircraft Only Packing Instruction:	200
Cargo Aircraft Only Maximum Net Quantity per Pkg.:	150 kg
Special Provisions:	None
ERG Code:	2L

SECTION 14. TRANSPORT INFORMATION (Continued)

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO):

UN No.:	1974
Proper Shipping Name:	Chlorodifluorobromomethane or Refrigerant gas R12B1
Hazard Class Number:	2.2
Packing Group:	None
Special Provisions:	None
Limited Quantities:	120 mL
Excepted Quantities:	E1
Packing:	Instructions: P200; Provisions: None
IBCs:	Instructions: None; Provisions: None
Tanks:	Instructions: T50; Provisions: None
EmS:	F-C, S-V
Stowage Category:	Category A.
Marine Pollutant:	This gas does not meet the criteria of a Marine Pollutant.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR):

UN NO.:	1974
Name and Description:	Chlorodifluorobromomethane or Refrigerant gas R12B1
Class:	2
Classification Code:	2A
Packing Group:	None
Labels:	2.2
Special Provisions:	None
Limited Quantities:	120 ML
Excepted Quantities:	E1
Packing Instructions:	P200
Special Packing Instructions:	None
Mixed Packing Provisions:	MP9
Portable Tank and Bulk Container:	Instructions: (M) T50; Special Provisions: None
Hazard Identification No.:	20

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This gas does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); this gas is not specifically listed in Annex III under MARPOL 73/78.

SECTION 15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS:

EPA - ENVIRONMENTAL PROTECTION AGENCY:

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (40 CFR Parts 117 and 302)
Reportable Quantity (RQ): Not Applicable

SARA TITLE III: Superfund Amendment and Reauthorization Act

Sections 302/304: Emergency Planning and Notification (40 CFR Part 355)

Extremely Hazardous Substances: Halon 1211 is not listed.

Threshold Planning Quantity (TPQ): Not Applicable

Reportable Quantity (RQ): Not Applicable

Sections 311/312: Hazardous Chemical Reporting (40 CFR Part 370)

IMMEDIATE HEALTH: No PRESSURE: Yes DELAYED HEALTH: No REACTIVITY: No FIRE: No

Section 313: Toxic Chemical Release Reporting (40 CFR 372)

Releases of Halon 1211 require reporting under Section 313.

CLEAN AIR ACT:

Section 112 (r): Risk Management Programs for Chemical Accidental Release (40 CFR Part 68)

Threshold Planning Quantity (TPQ): Not Applicable

TSCA: Toxic Substances Control Act

Halon 1211 is listed in the TSCA Inventory

OSHA - Occupational Safety and Health Administration:

29 CFR Part 1910.119: Process Safety Management of Highly Hazardous Chemicals.

Threshold Planning Quantity (TPQ): Not Applicable

Other U.S. Federal Regulations: Requirements under (40 CFR Part 82) may be applicable as Halon 1211 is designated as an ozone-depleting compound.

U.S. State Regulatory Information:

California Proposition 65: Halon 1211 is NOT listed on the California Proposition 65 lists.

SECTION 15. REGULATORY INFORMATION

CANADIAN FEDERAL REGULATIONS:

Canadian DSL Inventory Status: Halon 1211 is listed on the DSL Inventory.

Other Canadian Regulations: Halon 1211 is not on the CEPA Priorities Substances Lists.

Canadian WHMIS Classification and Symbols: Halon 1211 is categorized as a Controlled Product, Hazard Class A, as per the Controlled Product Regulations. **Class A:** Compressed Gas



EUROPEAN REGULATIONS:

Safety, Health, and Environmental Regulations/Legislation Specific for the Product: Currently, there is no specific legislation pertaining to this product.

Chemical Safety Assessment: No data available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

SECTION 16. OTHER INFORMATION

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION:

Classified in accordance with CLP Regulation (EC) 1272/2008.

Classification: Gas under Pressure/Liquefied Gas

Signal Word: Warning

Hazard Statement: H280: Contains gas under pressure; may explode if heated.

Prevention Statements:

Precautionary: None.

Response: None

Storage: P410 + P403: Protect from sunlight. Store in a well-ventilated place.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbol: GHS04

Information contained in this Safety Data Sheet is provided to our customers so they may comply with 29 CFR 1910.1200, Hazard Communication Standard, the Canadian WHMIS Standard, and the requirements of the European Union Directives. The intent of this Material Safety Data Sheet is to provide end users of this product with the health and physical hazards associated with possible exposure to this product. All statements, technical data and recommendations are based on readily available texts and data that H3R Clean Agents, believes to be reliable and accurate. H3R Clean Agents makes no warranties, guarantees or representations of any kind with respect to this product or this data. It is the responsibility of the user to obtain and use the most recent version of this MSDS.

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc. • PO Box 1961, Hilo, HI 96721 • 800/441-3365

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Bridging principles were used to classify this product.

REVISION DETAILS: August 2009: Review and up-date of MSDS to current Standards. August 2012: Review and up-date SDS, to include European CLP 1272: 2008 and Global Harmonization Standard Classification. August 2015: Review and up-date of SDS to most current standards. Addition of UN 1058 classification in Section 14.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens which have been shown to increase the mutant frequency in the progeny of exposed mammals. 3A: Substances which have been shown to induce genetic damage in germ cells of human or animals, or which produce mutagenic effects in somatic cells of mammals *in vivo* and have been shown to reach the germ cells in an active form. 3B: Substances which are suspected of being germ cell mutagens because of their genotoxic effects in mammalian somatic cell *in vivo*; in exceptional cases, substances for which there are no *in vivo* data, but which are clearly mutagenic *in vitro* and structurally related to known *in vivo* mutagens. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, a Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.) 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DFG MAK Pregnancy Risk Group Classification: **Group A:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. **Group B:** Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. **Group C:** There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. **Group D:** Classification in one of the groups A-C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

EXPOSURE LIMITS IN AIR (continued):

IDLH-Immediately Dangerous to Life and Health: This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

MAK: Federal Republic of Germany Maximum Concentration Values in the workplace.

NE: Not Established. When no exposure guidelines are established, an entry of NE is made for reference.

NIC: Notice of Intended Change.

NIOSH CEILING: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH's Recommended Exposure Limits.

PEL-Permissible Exposure Limit: OSHA's Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

SKIN: Used when there is a danger of cutaneous absorption.

STEL-Short Term Exposure Limit: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV-Threshold Limit Value: An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour.

TWA-Time Weighted Average: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD RATINGS: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

HEALTH HAZARD: 0 (Minimal Hazard): No significant health risk, irritation of skin or eyes not anticipated. *Skin Irritation:* Essentially non-irritating. PII or Draize = "0". *Eye Irritation:* Essentially non-irritating, or minimal effects which clear in < 24 hours [e.g. mechanical irritation]. Draize = "0". *Oral Toxicity LD₅₀ Rat:* < 5000 mg/kg. *Dermal Toxicity LD₅₀ Rat or Rabbit:* < 2000 mg/kg. *Inhalation Toxicity 4-hrs LC₅₀ Rat:* < 20 mg/L; **1 (Slight Hazard):** Minor reversible injury may occur; slightly or mildly irritating. *Skin Irritation:* Slightly or mildly irritating. *Eye Irritation:* Slightly or mildly irritating. *Oral Toxicity LD₅₀ Rat:* > 500-5000 mg/kg. *Dermal Toxicity LD₅₀ Rat or Rabbit:* > 1000-2000 mg/kg. *Inhalation Toxicity LC₅₀ 4-hrs Rat:* > 2-20 mg/L; **2 (Moderate Hazard):** Temporary or transitory injury may occur. *Skin Irritation:* Moderately irritating; primary irritant; sensitizer. PII or Draize > 0, < 5. *Eye Irritation:* Moderately to severely irritating and/or corrosive; reversible corneal opacity; corneal involvement or irritation clearing in 8-21 days. Draize > 0, ≤ 25. *Oral Toxicity LD₅₀ Rat:* > 50-500 mg/kg. *Dermal Toxicity LD₅₀ Rat or Rabbit:* > 200-1000 mg/kg. *Inhalation Toxicity LC₅₀ 4-hrs Rat:* > 0.5-2 mg/L; **3 (Serious Hazard):** Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. *Skin Irritation:* Severely irritating and/or corrosive; may destroy dermal tissue, cause skin burns, dermal necrosis. PII or Draize > 5-8 with destruction of tissue. *Eye Irritation:* Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Draize > 80 with effects irreversible in 21 days. *Oral Toxicity LD₅₀ Rat:* > 1-50 mg/kg. *Dermal Toxicity LD₅₀ Rat or Rabbit:* > 20-200 mg/kg. *Inhalation Toxicity LC₅₀ 4-hrs Rat:* > 0.05-0.5 mg/L; **4 (Severe Hazard):** Life-threatening; major or permanent damage may result from single or repeated exposure. *Skin Irritation:* Not appropriate. Do not rate as a "4", based on skin irritation alone. *Eye Irritation:* Not appropriate. Do not rate as a "4", based on eye irritation alone. *Oral Toxicity LD₅₀ Rat:* ≤ 1 mg/kg. *Dermal Toxicity LD₅₀ Rat or Rabbit:* ≤ 20 mg/kg. *Inhalation Toxicity LC₅₀ 4-hrs Rat:* ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: 0 (Minimal Hazard-Materials) that will not burn in air when exposure to a temperature of 815.5°C [1500°F] for a period of 5 minutes; **1 (Slight Hazard-Materials)** that must be pre-heated before ignition can occur. Material require considerable pre-heating, under all ambient temperature conditions before ignition and combustion can occur, including: Materials that will burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes or less; Liquids, solids and semisolids having a flash point at or above 93.3°C [200°F] (e.g. OSHA Class IIIB, or; Most ordinary combustible materials [e.g. wood, paper, etc.]; **2 (Moderate Hazard-Materials)** that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not, under normal conditions, form hazardous atmospheres in air, but under high ambient temperatures or moderate heating may release vapor in sufficient quantities to produce hazardous atmospheres in air, including: Liquids having a flash-point at or above 37.8°C [100°F]; Solid materials in the form of course dusts that may burn rapidly but that generally do not form explosive atmospheres; Solid materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp; Solids and semisolids that readily give off flammable vapors.); **3 (Serious Hazard- Liquids and solids)** that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions, including: Liquids having a flash point below 22.8°C [73°F] and having a boiling point at or above 38°C [100°F] and below 37.8°C [100°F] [e.g. OSHA Class IB and IC]; Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air [e.g., dusts of combustible solids, mists or droplets of flammable liquids]; Materials that burn extremely rapidly, usually by reason of self-contained oxygen [e.g. dry nitrocellulose and many organic peroxides]; **4 (Severe Hazard-Materials)** that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air, and which will burn readily, including: Flammable gases; Flammable cryogenic materials; Any liquid or gaseous material that is liquid while under pressure and has a flash point below 22.8°C [73°F] and a boiling point below 37.8°C [100°F] [e.g. OSHA Class IA; Material that ignite spontaneously when exposed to air at a temperature of 54.4°C [130°F] or below [e.g. pyrophoric].

PHYSICAL HAZARD: 0 (Water Reactivity): Materials that do not react with water. *Organic Peroxides:* Materials that are normally stable, even under fire conditions and will not react with water. *Explosives:* Substances that are Non-Explosive. *Unstable Compressed Gases:* No Rating. *Pyrophorics:* No Rating. *Oxidizers:* No "0" rating allowed. *Unstable Reactives:* Substances that will not polymerize, decompose, condense or self-react.; **1 (Water Reactivity):** Materials that change or decompose upon exposure to moisture. *Organic Peroxides:* Materials that are normally stable, but can become unstable at high temperatures and pressures. These materials may react with water, but will not release energy. *Explosives:* Division 1.5 & 1.6 substances that are very insensitive explosives or that do not have a mass explosion hazard. *Compressed Gases:* Pressure below OSHA definition. *Pyrophorics:* No Rating. *Oxidizers:* Packaging Group III; *Solids:* any material that in either concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:7 potassium bromate/cellulose mixture and the criteria for Packing Group I and II are not met. *Liquids:* any material that exhibits a mean pressure rise time less than or equal to the pressure rise time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. *Unstable Reactives:* Substances that may decompose, condense or self-react, but only under conditions of high temperature and/or pressure and have little or no potential to cause significant heat generation or explosive hazard. Substances that readily undergo hazardous polymerization in the absence of inhibitors.; **2 (Water Reactivity):** Materials that may react violently with water. *Organic Peroxides:* Materials that, in themselves, are normally unstable and will readily undergo violent chemical change, but will not detonate. These materials may also react violently with water. *Explosives:* Division 1.4 – Explosive substances where the explosive effect are largely confined to the package and no projection of fragments of appreciable size or range are expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package. *Compressed Gases:* Pressurized and meet OSHA definition but < 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group II *Solids:* any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 2:3 potassium bromate/cellulose mixture and the criteria for Packing Group I are not met.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

HAZARD RATINGS (continued):

PHYSICAL HAZARD (continued): 2 (continued): *Liquids:* any material that exhibits a mean pressure rise time less than or equal to the pressure rise of a 1:1 aqueous sodium chlorate solution (40%)/cellulose mixture and the criteria for Packing Group I are not met. *Unstable Reactives:* Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure, but have a low potential for significant heat generation or explosion. Substances that readily form peroxides upon exposure to air or oxygen at room temperature; **3 (Water Reactivity):** Materials that may form explosive reactions with water. *Organic Peroxides:* Materials that are capable of detonation or explosive reaction, but require a strong initiating source, or must be heated under confinement before initiation; or materials that react explosively with water. *Explosives:* Division 1.2 – Explosive substances that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but do not have a mass explosion hazard. *Compressed Gases:* Pressure ≥ 514.7 psi absolute at 21.1°C (70°F) [500 psig]. *Pyrophorics:* No Rating. *Oxidizers:* Packing Group I *Solids:* any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3:2 potassium bromate/cellulose mixture. *Liquids:* Any material that spontaneously ignites when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 perchloric acid (50%)/cellulose mixture.

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS

HEALTH HAZARD: 0 (materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials): Gases and vapors whose LC₅₀ for acute inhalation toxicity is greater than 10,000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is greater than 200 mg/L. Materials whose LD₅₀ for acute dermal toxicity is greater than 2000 mg/kg. Materials whose LD₅₀ for acute oral toxicity is greater than 2000 mg/kg. Materials that are essentially non-irritating to the respiratory tract, eyes and skin. **1 (materials that, under emergency conditions, can cause significant irritation):** Gases and vapors whose LC₅₀ for acute inhalation toxicity is greater than 5,000 ppm but less than or equal to 10,000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is greater than 10 mg/L but less than or equal to 200 mg/L. Materials whose LD₅₀ for acute dermal toxicity is greater than 1000 mg/kg but less than or equal to 2000 mg/kg. Materials whose LD₅₀ for acute oral toxicity is greater than 500 mg/kg but less than or equal to 2000 mg/kg. Materials that cause slight to moderate irritation to the respiratory tract, eyes and skin. **2 (materials that, under emergency conditions, can cause temporary incapacitation or residual injury):** Gases and vapors whose LC₅₀ for acute inhalation toxicity is greater than 3,000 ppm but less than or equal to 5,000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is greater than 2 mg/L but less than or equal to 10 mg/L. Materials whose LD₅₀ for acute dermal toxicity is greater than 200 mg/kg but less than or equal to 1000 mg/kg. Materials whose LD₅₀ for acute oral toxicity is greater than 50 mg/kg but less than or equal to 500 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 5000 ppm and that does not meet the criteria for either degree of hazard 3 or degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause severe tissue damage, depending on duration of exposure. Materials that are respiratory irritants. Materials that cause severe, but reversible irritation to the eyes or are lachrymators. Materials that are primary skin irritants or sensitizers. **3 (materials that, under emergency conditions, can cause serious or permanent injury):** Gases and vapors whose LC₅₀ for acute inhalation toxicity is greater than 1,000 ppm but less than or equal to 3,000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is greater than 0.5 mg/L but less than or equal to 2 mg/L. Materials whose LD₅₀ for acute dermal toxicity is greater than 40 mg/kg but less than or equal to 200 mg/kg. Materials whose LD₅₀ for acute oral toxicity is greater than 5 mg/kg but less than or equal to 50 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 3000 ppm and that does not meet the criteria for degree of hazard 4. Compressed liquefied gases with boiling points between -30°C (-22°F) and -55°C (-66.5°F) that cause frostbite and irreversible tissue damage. Materials that are respiratory irritants. Cryogenic gases that cause frostbite and irreversible tissue damage. Materials that are corrosive to the respiratory tract. Materials that are corrosive to the eyes or cause irreversible corneal opacity. Materials that are corrosive to the skin. **4 (materials that, under emergency conditions, can be lethal):** Gases and vapors whose LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm. Dusts and mists whose LC₅₀ for acute inhalation toxicity is less than or equal to 0.5 mg/L. Materials whose LD₅₀ for acute dermal toxicity is less than or equal to 40 mg/kg. Materials whose LD₅₀ for acute oral toxicity is less than or equal to 5 mg/kg. Any liquid whose saturated vapor concentration at 20°C (68°F) is equal to or greater than one-fifth its LC₅₀ for acute inhalation toxicity, if its LC₅₀ is less than or equal to 1000 ppm.

FLAMMABILITY HAZARD: 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand: Materials that will not burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. **1** Materials that must be preheated before ignition can occur. Materials in this degree require considerable preheating, under all ambient temperature conditions, before ignition and combustion can occur: Materials that will burn in air when exposed to a temperature of 816°C (1500°F) for a period of 5 minutes in accordance with Annex D. Liquids, solids and semisolids having a flash point at or above 93.4°C (200°F) (i.e. Class IIIB liquids). Liquids with a flash point greater than 35°C (95°F) that do not sustain combustion when tested using the *Method of Testing for Sustained Combustibility*, per 49 CFR 173, Appendix H or the UN *Recommendation on the Transport of Dangerous Goods, Model Regulations* (current edition) and the related *Manual of Tests and Criteria* (current edition). Liquids with a flash point greater than 35°C (95°F) in a water-miscible solution or dispersion with a water non-combustible liquid/solid content of more than 85 percent by weight. Liquids that have no fire point when tested by ASTM D 92 Standard Test Method for Flash and Fire Points by Cleveland Open Cup, up to a boiling point of the liquid or up to a temperature at which the sample being tested shows an obvious physical change. Combustible pellets with a representative diameter of greater than 2 mm (10 mesh).

DEFINITIONS OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

FLAMMABILITY HAZARD (continued): 1 (continued): Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. Most ordinary combustible materials. **2** Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Materials in this degree would not under normal conditions form hazardous atmospheres with air, but under high ambient temperatures or under moderate heating could release vapor in sufficient quantities to produce hazardous atmospheres with air: Liquids having a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids.) Solid materials in the form of powders or coarse dusts of representative diameter between 420 microns (40 mesh) and 2 mm (10 mesh) that burn rapidly but that generally do not form explosive mixtures in air. Solid materials in fibrous or shredded form that burn rapidly and create flash fire hazards, such as cotton, sisal and hemp. Solids and semisolids that readily give off flammable vapors. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **3** Liquids and solids that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily ignited under almost all conditions: Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (73°F) and below 37.8°C (100°F) (i.e. Class IB and IC liquids). Materials that, on account of their physical form or environmental conditions, can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with a representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. **4** Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily: Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5 percent by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. **1** Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. **2** Materials that readily undergo violent chemical change at elevated temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100W/mL. **3** Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. **4** Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures: Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the **National Fire Protection Association (NFPA)**. **Flash Point** - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. **Autoignition Temperature**: The minimum temperature required to initiate combustion in air with no other source of ignition. **LEL** - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. **UEL** - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD₅₀** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC₅₀** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDLo**, the lowest dose to cause a symptom and **TCLo** the lowest concentration to cause a symptom; **TDo**, **LDLo**, and **LDo**, or **TC**, **TCo**, **LCLo**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information: The sources are: **IARC** - the International Agency for Research on Cancer; **NTP** - the National Toxicology Program, **RTECS** - the Registry of Toxic Effects of Chemical Substances, **OSHA** and **CAL/OSHA**. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. **Other Information:** **BEI** - ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

REPRODUCTIVE TOXICITY INFORMATION:

A **mutagen** is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An **embryotoxin** is a chemical that causes damage to a developing embryo (i.e., within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A **teratogen** is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A **reproductive toxin** is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC is the effect concentration in water. **BCF** = Bioconcentration Factor, which is used to determine if a substance will concentrate in lifeforms which consume contaminated plant or animal matter. **TL_m** = median threshold limit; Coefficient of Oil/Water Distribution is represented by **log K_{ow}** or **log K_{oc}** and is used to assess a substance's behavior in the environment.

REGULATORY INFORMATION:

U.S. and CANADA:

ACGIH: American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits.

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively. Superfund Amendments and Reauthorization Act (**SARA**); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDSL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations. This section also includes information on the precautionary warnings which appear on the material's package label. **OSHA** - U.S. Occupational Safety and Health Administration.

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

<u>Chemical Name</u>	<u>Concentration (%)</u>	<u>CAS No.</u>
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

SAFETY DATA SHEET

ULINE ALL PURPOSE FOAMING SOAP

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.

<u>Ingredients</u>	<u>CAS-No.</u>	<u>Form of exposure</u>	<u>Permissible Concentration</u>	<u>Basis</u>
PROPYLENE GLYCOL	57-55-6	TWA	10 mg/m3	WEEL

SAFETY DATA SHEET

ULINE ALL PURPOSE FOAMING SOAP

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	Upper/lower flammability limits: N/A
Odor: Jasmine fragrance	Vapor pressure: N/A
Odor Threshold: No data available	Vapor density: N/A
ph: 6.5 typical	Relative density: No data available.
Melting point/freezing point: N/A	Solubility (ies): No data available.
Initial boiling and boiling range: N/A	Partition coefficient: n-octanol/water: No data available.
Flash point: N/A	Auto ignition temperature: N/A
Evaporation rate: <1	Decomposition temperature: No data available.
Flammability (solid, gas): 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.

SAFETY DATA SHEET

ULINE ALL PURPOSE FOAMING SOAP

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.

SAFETY DATA SHEET

ULINE ALL PURPOSE FOAMING SOAP

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 : No listed substance.

Extremely Hazardous Substances

SARA 302/304 Emergency : No listed substance.

Planning and Notification

SAFETY DATA SHEET

ULINE ALL PURPOSE FOAMING SOAP

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.

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

SAFETY DATA SHEET

HAND SANITIZER

Chemical Name
Denatured ethanol

CAS-No.
64-17-5

Concentration (%)
> 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.

SAFETY DATA SHEET

HAND SANITIZER

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/m ³	NIOSH REL
		TWA	1,000 ppm 1,900 mg/m ³	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

SAFETY DATA SHEET

HAND SANITIZER

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

SAFETY DATA SHEET

HAND SANITIZER

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.

SAFETY DATA SHEET

HAND SANITIZER

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.

SAFETY DATA SHEET

HAND SANITIZER

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) :

SAFETY DATA SHEET

HAND SANITIZER

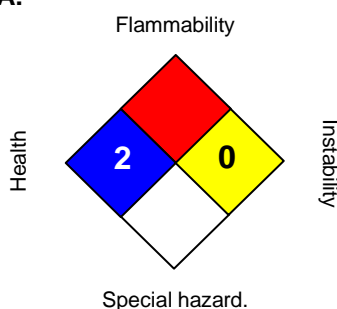
not determined

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.



SAFETY DATA SHEET

Product: MARC 246 CHERRY BLAST HAND CLEANER

Form R04132

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

<u>HAZARDOUS INGREDIENT</u>	<u>CAS NO.</u>	<u>WT. %</u>
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.



SAFETY DATA SHEET

Product: MARC 246 CHERRY BLAST HAND CLEANER

Form R04132

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.



SAFETY DATA SHEET

Product: MARC 246 CHERRY BLAST HAND CLEANER

Form R04132

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.



LAWSON Products

Issuing date 23-Mar-2015

Revision Date 23-Mar-2015

Version 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name TEF-GEL

**Recommended use of the chemical
and restrictions on use**

Product code 97673

Product Type Extremely flammable aerosol
Synonyms

Supplier's details

Recommended Use Gel Lubricant.
Uses advised against

Manufactured For:
Lawson Products, Inc
8770 W. Bryn Mawr Avenue - Suite 900
Chicago, IL 60631-3515
773-304-5050

Emergency telephone number
Chemical Emergency Phone 888-426-4851
Number

2. HAZARDS IDENTIFICATION

Classification

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

GHS Label elements, including precautionary statements

Emergency Overview

DANGER

Hazard Statements

Causes skin irritation
 Suspected of damaging fertility or the unborn child
 May cause respiratory irritation. May cause drowsiness or dizziness
 May cause damage to organs (Central Nervous System, Eyes, Peripheral Nervous System, Respiratory System, and Skin) through prolonged or repeated exposure.
 May be fatal if swallowed and enters airways
 Extremely flammable aerosol
 Contains gas under pressure; may explode if heated



Appearance Slightly Hazy

Physical state Aerosol

Odor Light Vanilla Scent

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Wear protective gloves/protective clothing/eye protection/face protection
 Wash face, hands and any exposed skin thoroughly after handling
 Do not breathe 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
 Do not spray on an open flame or other ignition source
 Pressurized container: Do not pierce or burn, even after use

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention
 Specific treatment (see first aid on this label)
 IF ON SKIN: Wash with plenty of soap and water.
 If skin irritation occurs: Get medical advice/attention
 Take off contaminated clothing and wash before reuse
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 Call a POISON CENTER or doctor/physician if you feel unwell
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Do NOT induce vomiting

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None

Other information

0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS # 64742-49-0, COMMERCIAL HEXANES, MAY BE SUBSTITUTED FOR CAS #110-54-3.

Synonyms

Chemical Name	CAS-No	Weight %*
HEXANE	64742-49-0	60-70
POLYMERIC VISCOSITY MODIFIER	MIXTURE	10-20
PROPANE/ISOBUTANE/N-BUTANE	68476-86-8	10-20
WHITE MINERAL OIL	8042-47-5	1-10

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures for different exposure routes**

Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If skin irritation persists, call a physician.
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.

Most important symptoms/effects, acute and delayed

Main Symptoms	Irritating to skin. Causes serious eye damage. Causes drowsiness or dizziness. Harmful or fatal if swallowed and enters airways.
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Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Decomposition by contact with water may generate vapors which can be ignited by heat or open flame.

Specific hazards arising from the chemical

No information available.

Explosion Data

Sensitivity to Mechanical Impact none.

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

Avoid contact with the skin and the eyes. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid dust formation. Take precautionary measures against static discharges. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Contents under pressure. Do not puncture or incinerate cans. Stop leak if you can do it without risk.

Environmental precautions

Environmental precautions

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

Methods for Containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling

Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible products

None known based on information supplied.

Aerosol Level

3

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
HEXANE 64742-49-0	TWA: 50 ppm Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 500 ppm TWA: 1800 mg/m ³ (vacated) TWA: 50 ppm (vacated) TWA: 180 mg/m ³	IDLH: 1100 ppm TWA: 50 ppm TWA: 180 mg/m ³
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	74-98-6: TWA: 1000 ppm 106-97-8: STEL: 1000 ppm 75-28-5: STEL: 1000 ppm	74-98-6: TWA: 1000 ppm TWA: 1800 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m ³ 106-97-8: (vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m ³	74-98-6: IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m ³ 106-97-8: TWA: 800 ppm TWA: 1900 mg/m ³ 75-28-5: TWA: 800 ppm TWA: 1900 mg/m ³

ACGIH: (American Conference of Governmental Industrial Hygienists)

OSHA: (Occupational Safety & Health Administration)

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Exposure controls**Engineering Measures**

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment**Eye/Face 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, 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.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical and chemical properties****Physical state**

Aerosol

Appearance

Slightly Hazy

Color

amber

Odor

Light Vanilla Scent

Odor Threshold

No information available

Property**Values****Remarks • Methods****pH**

No information available

not applicable

Melting/freezing point

No information available

Boiling point/boiling range

No information available

Flash Point

-97 °C / -143 °F

Evaporation rate

No information available

Flammability (solid, gas)

No information available

Flammability Limits in Air**upper flammability limit**

No information available

lower flammability limit

No information available

Vapor pressure

No information available

Vapor density

No information available

Specific Gravity	0.720	
Water solubility	Practically insoluble	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	Not applicable
Decomposition temperature	No information available	
Viscosity	No information available	
Explosive properties	No information available	

Other information

VOC Content(%) 78.76

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to Avoid

Extremes of temperature and 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**Product Information**

Inhalation	Vapors may irritate throat and respiratory system. May cause drowsiness and dizziness based on components. May cause irritation of respiratory tract. Avoid breathing vapors or mists.
Eye contact	May cause slight irritation. Avoid contact with eyes.
Skin contact	Irritating to skin. Repeated exposure may cause skin dryness or cracking. Prolonged skin contact may defat the skin and produce dermatitis. Avoid contact with skin.
Ingestion	Harmful if swallowed. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
HEXANE 64742-49-0	> 5000 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 73680 ppm (Rat) 4 h
WHITE MINERAL OIL 8042-47-5	> 5000 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Irritating to skin.
Sensitization	None known.
Germ Cell Mutagenicity	None known.
Carcinogenicity	There are no known carcinogenic chemicals in this product.
Reproductive toxicity	Product is or contains a chemical which is a known or suspected reproductive hazard.
Specific target organ systemic toxicity (single exposure)	May cause respiratory irritation. May cause drowsiness and dizziness.
Specific target organ systemic toxicity (repeated exposure)	May cause damage to organs through prolonged or repeated exposure.
Target Organ Effects	Central nervous system, Eyes, Peripheral Nervous System (PNS), Respiratory system, Skin.
Neurological effects	Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal.
Aspiration hazard	May be fatal if swallowed and enters airways.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity	0% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .	
ATEmix (oral)	3401 mg/kg
ATEmix (dermal)	7482 mg/kg

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	-	-	-	-
WHITE MINERAL OIL 8042-47-5	-	10000 mg/L LC50 Lepomis macrochirus 96h	-	-

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	log Pow
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	2.8
WHITE MINERAL OIL 8042-47-5	6

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment**

Waste Disposal Methods	This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261).
Contaminated packaging	Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Ground CONSUMER COMMODITY ORM-D
or
LIMITED QUANTITY

IATA UN1950, AEROSOLS, FLAMMABLE, 2.1, LTD. QTY.

IMDG UN1950, AEROSOLS, 2.1, LTD. QTY.

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
HEXANE	X	X	X	X	X	X	X	X
PROPANE/ISOBUTANE/N-BUTANE	X	X	X	Not listed	X	X	X	X
WHITE MINERAL OIL	X	X	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 Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

CHINA - 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

U.S. Federal Regulations

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.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	no

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). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any known Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

EPA Pesticide Registration Number Not applicable

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**16. OTHER INFORMATION**

NFPA	Health Hazard 2	Flammability 4	Instability 0	Physical and chemical hazards -
HMIS	Health Hazard 2*	Flammability 4	Physical Hazard 1	Personal protection B
<i>Chronic Hazard Star Legend</i>		<i>Chronic Health Hazard; Repeated or prolonged exposure may cause central nervous system damage</i>		

Prepared By Regulatory Affairs
Issuing date 23-Mar-2015
Revision Date 23-Mar-2015

Revision Note
No information available

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet



SAFETY DATA SHEET

LAWSON Products

1. Identification

Product number 1412524
Product identifier HEAVY DUTY CHAIN LUBRICANT
Revision date 06-11-2015
Version # 05
Supersedes date 06-10-2015
Recommended use Lubricant
Recommended restrictions None known.

2. Hazard(s) identification

Physical hazards Flammable aerosols Category 1
Gases under pressure Liquefied gas
Health hazards Aspiration hazard Category 1
Environmental hazards Not classified.
OSHA defined hazards Not classified.

Label elements



Signal word Danger

Hazard statement Contains gas under pressure; may explode if heated. Extremely flammable aerosol. May be fatal if swallowed and enters airways.

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.

Response If swallowed: Immediately call a poison center/doctor. If exposed or concerned: Get medical advice/attention. Do NOT induce vomiting. Collect spillage.

Storage Store locked up. Protect from sunlight. Store in a well-ventilated place. 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	%
Chlorinated Paraffin		63449-39-8	20 - 40
Butane		106-97-8	2.5 - 10
Distillates (Petroleum), Hydrotreated Light		64742-47-8	2.5 - 10
Propane		74-98-6	2.5 - 10
Solvent naphtha (petroleum), light aliph.		64742-89-8	2.5 - 10
n-Heptane		142-82-5	0.1 - 1
Octane		111-65-9	0.1 - 1
Other components below reportable levels			20 - 40

Product name: HEAVY DUTY CHAIN LUBRICANT

Product #: 1412524 Version #: 05 Revision date: 06-11-2015 Issue date: 03-25-2014

SDS US

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L-2

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Take off immediately all contaminated clothing. Rinse skin with water/shower. 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. 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. Direct contact with eyes may cause temporary irritation.
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	Take off all contaminated clothing immediately. 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 fog. 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	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. 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. Keep out of low areas. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. 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. 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. 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. 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.
Environmental precautions	Never return spills in original containers for re-use. 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

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. Use non-sparking tools and explosion-proof equipment. Do not re-use empty containers. Avoid breathing dust/fume/gas/mist/vapors/spray. 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 3 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 in a well-ventilated place. Refrigeration recommended. 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
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3 500 ppm
Octane (CAS 111-65-9)	PEL	2350 mg/m3 500 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm

ACGIH

Components	Type	Value
Solvent naphtha (petroleum), light aliph. (CAS 64742-89-8)	TWA	400 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Butane (CAS 106-97-8)	STEL	1000 ppm
n-Heptane (CAS 142-82-5)	STEL	500 ppm
	TWA	400 ppm
Octane (CAS 111-65-9)	TWA	300 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m3
		800 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3
	TWA	440 ppm
Octane (CAS 111-65-9)	TWA	350 mg/m3
		85 ppm
	Ceiling	1800 mg/m3
		385 ppm
Propane (CAS 74-98-6)	TWA	350 mg/m3
		75 ppm
		1800 mg/m3
		1000 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection

Face shield is recommended. Wear safety glasses with side shields (or goggles).

Hand protection

Wear appropriate chemical resistant gloves.

Skin protection	
Other	Wear suitable protective clothing.
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	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	Aerosol. Liquefied gas.
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	Not available.
Flash point	-156.0 °F (-104.4 °C) Propellant estimated
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	0.9 % estimated
Flammability limit - upper (%)	7.4 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	55 psig @70F estimated
Vapor density	Not available.
Relative density	0.905 g/cm3 estimated
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	517.45 °F (269.69 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Density	0.61 g/cm3 estimated
Heat of combustion	32.33 kJ/g estimated
Heat of combustion (NFPA 30B)	42.44 kJ/g estimated
Percent volatile	15.02 % estimated
Specific gravity	0.905 estimated
VOC (Weight %)	24.5 % 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	Keep away from heat, sparks and open flame. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Nitrates. Fluorine. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Inhalation	No adverse effects due to inhalation are expected.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Aspiration may cause pulmonary edema and pneumonitis. Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways. Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

Components	Species	Test Results
Butane (CAS 106-97-8)		
Acute		
<i>Inhalation</i>		
LC50	Mouse	1237 mg/l, 120 Minutes
		52 %, 120 Minutes
	Rat	1355 mg/l
Chlorinated Paraffin (CAS 63449-39-8)		
Acute		
<i>Oral</i>		
LD50	Mouse	> 23400 mg/kg
	Rat	> 11700 mg/kg
		> 10 ml/kg
<i>Other</i>		
LD50	Mouse	> 5000 mg/kg
	Rat	> 5000 mg/kg
n-Heptane (CAS 142-82-5)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
<i>Inhalation</i>		
LC50	Rat	> 29.29 mg/l, 4 Hours
Octane (CAS 111-65-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
<i>Inhalation</i>		
LC50	Rat	> 24.88 mg/l, 4 Hours
Propane (CAS 74-98-6)		
Acute		
<i>Inhalation</i>		
LC50	Mouse	1237 mg/l, 120 Minutes

Components	Species	Test Results
		52 %, 120 Minutes
	Rat	1355 mg/l
		658 mg/l/4h
Solvent naphtha (petroleum), light aliph. (CAS 64742-89-8)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 1900 mg/kg, 24 Hours
<i>Inhalation</i>		
LC50	Rat	> 5020 mg/m3, 4 Hours
		> 4980 mg/m3
		> 4980 mg/m3, 4 Hours
		> 4.96 mg/l, 4 Hours
<i>Oral</i>		
LD50	Rat	4820 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 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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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 May be fatal if swallowed and enters airways. Not an aspiration hazard.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Components	Species	Test Results
Chlorinated Paraffin (CAS 63449-39-8)		
Aquatic		
Fish	LC50	Bluegill (Lepomis macrochirus)
		> 0.1 mg/l, 96 hours
n-Heptane (CAS 142-82-5)		
Aquatic		
Fish	LC50	Mozambique tilapia (Tilapia mossambica)
		375 mg/l, 96 hours
Solvent naphtha (petroleum), light aliph. (CAS 64742-89-8)		
Aquatic		
Algae	IC50	Algae
		4700 mg/L, 72 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 No data available.

Partition coefficient n-octanol / water (log Kow)	
Butane	2.89
n-Heptane	4.66
Octane	5.18
Propane	2.36

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 Consult authorities before disposal. 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 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 applicable.
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

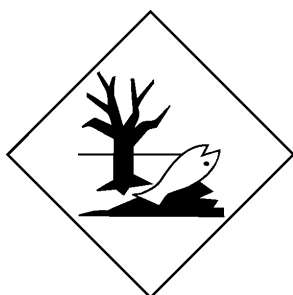
This product meets the exception requirements of section 173.306 as a limited quantity and may be shipped as a limited quantity. Until 12/31/2020, the "Consumer Commodity - ORM-D" marking may still be used in place of the new limited quantity diamond mark for packages of UN 1950 Aerosols. Limited quantities 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.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.
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.**Packaging Exceptions** LTD QTY**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** This substance/mixture is not intended to be transported in bulk.**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.
All components are on the U.S. EPA TSCA Inventory List.

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 listed.

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

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

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Benzene	71-43-2	0.01 - 0.1
Ethyl Benzene	100-41-4	0.01 - 0.1

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)
 Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations**US. Massachusetts RTK - Substance List**

Butane (CAS 106-97-8)
 n-Heptane (CAS 142-82-5)
 Octane (CAS 111-65-9)
 Propane (CAS 74-98-6)

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

Butane (CAS 106-97-8)
 n-Heptane (CAS 142-82-5)
 Octane (CAS 111-65-9)
 Propane (CAS 74-98-6)

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

Butane (CAS 106-97-8)
 n-Heptane (CAS 142-82-5)
 Octane (CAS 111-65-9)
 Propane (CAS 74-98-6)

US. Rhode Island RTK

Butane (CAS 106-97-8)
 Propane (CAS 74-98-6)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Benzene (CAS 71-43-2) Listed: February 27, 1987
 Ethyl Benzene (CAS 100-41-4) Listed: June 11, 2004

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Benzene (CAS 71-43-2) Listed: December 26, 1997
 Toluene (CAS 108-88-3) Listed: January 1, 1991

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Toluene (CAS 108-88-3) Listed: August 7, 2009

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Benzene (CAS 71-43-2)

Listed: December 26, 1997

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
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 03-25-2014

Revision date 06-11-2015

Version # 05

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 Composition / Information on Ingredients: Disclosure Overrides

Issuing date 06-Mar-2015

Revision Date 06-Mar-2015

Version 1.09

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name DUTY MASTER OPEN GEAR LUBRICANT

**Recommended use of the chemical
and restrictions on use**

Product code DA6250

Product Type Extremely flammable aerosol
Synonyms None

Supplier's details

Recommended Use Gear lubricant.
Uses advised against No information available

Manufactured For:
Drummond, A Lawson Brand
Lawson Products, Inc.
8770 W. Bryn Mawr Avenue-Suite 900
Chicago, IL 60631-3515
773-304-5050

Emergency telephone number
Emergency telephone 888-426-4851

2. HAZARDS IDENTIFICATION

Classification

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

GHS Label elements, including precautionary statements

Emergency Overview

DANGER

Hazard Statements

Causes skin irritation
 Causes serious eye irritation
 Suspected of causing cancer
 Suspected of damaging fertility or the unborn child
 May cause drowsiness or dizziness
 May cause damage to organs (central nervous system and respiratory system) through prolonged or repeated exposure.
 May be fatal if swallowed and enters airways
 Extremely flammable aerosol
 Contains gas under pressure; may explode if heated



Appearance opaque

Physical state Aerosol

Odor Solvent

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Wear protective gloves/protective clothing/eye protection/face protection
 Wash face, hands and any exposed skin thoroughly after handling
 Do not breathe 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
 Do not spray on an open flame or other ignition source
 Pressurized container: Do not pierce or burn, even after use

Precautionary Statements - Response

If exposed or concerned: 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.
 Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN: Wash with plenty of soap and water.
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None

Other information

• Toxic to aquatic life with long lasting effects

0.01219% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS # 110-54-3, HEXANE, MAY BE SUBSTITUTED FOR CAS # 64742-49-0, COMMERCIAL HEXANES.

Chemical Name	CAS-No	Weight %*
PETROLEUM BITUMEN	8052-42-4	50-60
HEXANE	110-54-3	20-30
PROPANE/ISOBUTANE/N-BUTANE	68476-86-8	10-20
NAPHTHENIC OIL, SEVERLY HYDROT	64742-52-5	1-10
MOLYBDENUM DISULFIDE	1317-33-5	<0.1

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures for different exposure routes**

General advice	Avoid contact with eyes, and clothing. Avoid breathing, vapors, mist, or gas.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek immediate medical attention/advice.
Skin contact	Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
Inhalation	Move to fresh air. If not breathing, give artificial respiration. If breathing has stopped, contact emergency medical services immediately.
Ingestion	Do NOT induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person. Risk of product entering the lungs on vomiting after ingestion.

Most important symptoms/effects, acute and delayed

Main Symptoms May cause skin irritation. Drowsiness. Dizziness. Difficulty breathing.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician 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 arising from the chemical

Flammable or extremely flammable aerosol. Container may burst in fire.

Explosion Data

Sensitivity to Mechanical Impact none.

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. Use shielding to protect fire-fighters from bursting containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Environmental precautions

Environmental precautions Report spills as required by local and federal regulations.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Contain liquid and collect with an inert, non-combustible material.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with eyes. Avoid breathing vapors or mists. Contents under pressure. Do not puncture or incinerate cans. Do not stick pin or any other sharp object into opening on top of can. Avoid skin contact. Use with adequate ventilation. Keep container away from heat, flames, and all other sources of ignition. Keep can 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

Technical measures/Storage conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible products Store away from strong oxidizers and acids.

Aerosol Level 3

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
PETROLEUM BITUMEN 8052-42-4	TWA: 0.5 mg/m ³ benzene soluble aerosol fume, inhalable fraction	-	Ceiling: 5 mg/m ³ fume 15 min
HEXANE 110-54-3	TWA: 50 ppm Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 500 ppm TWA: 1800 mg/m ³ (vacated) TWA: 50 ppm (vacated) TWA: 180 mg/m ³	IDLH: 1100 ppm TWA: 50 ppm TWA: 180 mg/m ³
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	74-98-6: TWA: 1000 ppm 106-97-8: STEL: 1000 ppm 75-28-5: STEL: 1000 ppm	74-98-6: TWA: 1000 ppm TWA: 1800 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m ³ 106-97-8: (vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m ³	74-98-6: IDLH: 2100 ppm TWA: 1000 ppm TWA: 1800 mg/m ³ 106-97-8: TWA: 800 ppm TWA: 1900 mg/m ³ 75-28-5: TWA: 800 ppm TWA: 1900 mg/m ³
MOLYBDENUM DISULFIDE 1317-33-5	TWA: 10 mg/m ³ Mo inhalable fraction TWA: 3 mg/m ³ Mo respirable fraction	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ Mo	IDLH: 5000 mg/m ³ Mo

ACGIH: (American Conference of Governmental Industrial Hygienists)

OSHA: (Occupational Safety & Health Administration)

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Exposure controls

Engineering Measures

Ventilation systems. Use adequate ventilation to keep the exposure levels below the OELs.

Individual protection measures, such as personal protective equipment

Eye/Face 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, 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.

Hygiene measures

Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and chemical properties

Physical state

Aerosol

Appearance

opaque

Color

dark brown

Odor

Solvent

Odor Threshold

No information available

Property

Values

Remarks • Methods

pH

No information available

not applicable

Melting/freezing point

No information available

Boiling point/boiling range

No information available

No information available

Flash Point	-96.4 °C / -141 °F	Based on propellant
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	No information available
Flammability Limits in Air		No data available
upper flammability limit	No information available	
lower flammability limit	No information available	
Vapor pressure	No information available	No information available
Vapor density	No information available	
Specific Gravity	0.775	No information available
Water solubility	Practically insoluble	
Partition coefficient: n-octanol/water	No information available	No information available
Autoignition temperature	No information available	Not applicable
Decomposition temperature	No information available	No information available
Viscosity	No information available	
Explosive properties	No information available	

Other information

VOC Content(%)	45.3
----------------	------

10. STABILITY AND REACTIVITY**Reactivity**

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to Avoid

Extremes of temperature and direct sunlight.

Incompatible Materials

Store away from strong oxidizers and acids.

Hazardous Decomposition Products

Carbon oxides.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Product Information	Product does not present an acute toxicity hazard based on known information
Inhalation	Exposure to high vapour concentrations may cause nervous systems effects such as headache, nausea, and dizziness.
Eye contact	Irritating to eyes.
Skin contact	Irritating to skin. Prolonged skin contact may defat the skin and produce dermatitis.
Ingestion	Not acutely toxic. Aspiration into the lungs during swallowing may cause serious lung damage which may be fatal.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
PETROLEUM BITUMEN 8052-42-4	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	-

HEXANE 110-54-3	-	= 3000 mg/kg (Rabbit)	= 48000 ppm (Rat) 4 h
MOLYBDENUM DISULFIDE 1317-33-5	-	-	> 2820 mg/m ³ (Rat) 4 h

Information on toxicological effects**Symptoms**

Symptoms of overexposure may be headache, dizziness, tiredness, nausea, and vomiting. May cause mild irritation. Irritating to skin. Prolonged or repeated exposure may cause 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**Skin corrosion/irritation**

Irritating to skin.

Eye damage/irritation

Irritating to eyes.

Sensitization

No information available.

Germ Cell Mutagenicity

No information available.

Carcinogenicity

The table below indicates whether each agency has evaluated a listed ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
PETROLEUM BITUMEN 8052-42-4	-	Group 2B	-	-

ACGIH: (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

OSHA: (Occupational Safety & Health Administration)

X - Present

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Specific target organ systemic toxicity (single exposure)

May cause drowsiness and dizziness.

Specific target organ systemic toxicity (repeated exposure)

Causes damage to organs through prolonged or repeated exposure.

Chronic toxicity

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.

Target Organ Effects

Eyes, Respiratory system, Skin, Central nervous system, Peripheral Nervous System (PNS).

Aspiration hazard

May be fatal if swallowed and enters airways.

Numerical measures of toxicity - Product Information**Unknown Acute Toxicity**

0.01219% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
HEXANE 110-54-3	-	2.1 - 2.98 mg/L LC50 Pimephales promelas 96h flow-through	-	-
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	-	-	-	-
NAPHTHENIC OIL, SEVERLY HYDROT 64742-52-5	-	5000 mg/L LC50 Oncorhynchus mykiss 96h	-	1000 mg/L EC50 Daphnia magna 48h

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	log Pow
PETROLEUM BITUMEN 8052-42-4	6
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	2.8

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment****Waste Disposal Methods**

Dispose of in accordance with federal, state, and local regulations.

Contaminated packaging

Do not re-use empty containers.

14. TRANSPORT INFORMATION**DOT Ground**CONSUMER COMMODITY ORM-D
or
LIMITED QUANTITY**IATA**

UN1950, AEROSOLS, FLAMMABLE, 2.1, LTD. QTY.

IMDG

UN1950, AEROSOLS, 2.1, LTD. QTY.

15. REGULATORY INFORMATION**International Inventories**

Chemical Name	TSCA	DSL/NDSL	EINECS/ELI NCS	ENCS	IECSC	KECL	PICCS	AICS
PETROLEUM BITUMEN	X	X	X	X	X	X	X	X
HEXANE	X	X	X	X	X	X	X	X
PROPANE/ISOBUTA NE/N-BUTANE	X	X	X	Not listed	X	X	X	X
NAPHTHENIC OIL, SEVERLY HYDROT	X	X	X	X	X	X	X	X
MOLYBDENUM DISULFIDE	X	X	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 Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances
CHINA - 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

U.S. 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	CAS-No	Weight %*	SARA 313 - Threshold Values %
HEXANE - 110-54-3	110-54-3	20-30	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	Yes
Reactive Hazard	no

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, 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 Substances RQs	RQ
HEXANE 110-54-3	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any known Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
PETROLEUM BITUMEN 8052-42-4	X	X	X
HEXANE 110-54-3	X	X	X
MOLYBDENUM DISULFIDE 1317-33-5		X	

EPA Pesticide Registration Number Not applicable

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

NFPA	Health Hazard 2	Flammability 4	Instability 0	Physical and chemical hazards -
HMIS	Health Hazard 2	Flammability 4	Physical Hazard 1	Personal protection B

Prepared By Regulatory Affairs
Issuing date 06-Mar-2015
Revision Date 06-Mar-2015
Revision Note

(M)SDS sections updated 1

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

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.

Date of issue/Date of revision : 01/22/2015

Date of previous issue :

No previous validation

Version : 1

1/12

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/m ³ 8 hours. Form: Inhalable fraction NIOSH REL (United States, 10/2013). TWA: 5 mg/m ³ 10 hours. Form: Mist STEL: 10 mg/m ³ 15 minutes. Form: Mist OSHA PEL (United States, 2/2013). TWA: 5 mg/m ³ 8 hours.
zinc oxide	NIOSH REL (United States, 10/2013). CEIL: 15 mg/m ³ Form: Dust TWA: 5 mg/m ³ 10 hours. Form: Dust and fumes STEL: 10 mg/m ³ 15 minutes. Form: Fume OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m ³ 8 hours. Form: Fume STEL: 10 mg/m ³ 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

Date of issue/Date of revision : 01/22/2015 **Date of previous issue** : No previous validation **Version** : 1 8/12

Section 12. Ecological information

zinc bis (dibutylidithiocarbamate)	Acute EC50 0.74 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 520 mg/l	Fish - Oncorhynchus mykiss	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	-	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Emergency schedules (EmS)</u> F-A, S-F</p> <p><u>Special provisions</u> 274, 335, 966, 967</p>	<p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Passenger and Cargo Aircraft</u> Quantity limitation: 400 kg Packaging instructions: 956</p> <p><u>Cargo Aircraft Only</u>Quantity limitation: 400 kg Packaging instructions: 956</p> <p><u>Limited Quantities - Passenger Aircraft</u>Quantity limitation: 30 kg Packaging instructions: Y956</p> <p><u>Special provisions</u> A97, A158, A179</p>
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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.)

Health	*	1
Flammability		1
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.)



Section 16. Other information

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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/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
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☑ 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.

**LAWSON** Products**SECTION I - IDENTIFICATION**

PRODUCT NAME: Lubri-Temp Multipurpose Anti Seize
PRODUCT CODE: 19921
PRODUCT USE: Lubricant
COMPANY NAME: Lawson Products, Inc.
COMPANY ADDRESS: 8770 W. Bryn Mawr Suite 900, Chicago, IL 60631
COMPANY PHONE: 773-304-5050
EMERGENCY PHONE: 888-426-4851

SECTION II – HAZARDS IDENTIFICATION

CLASSIFICATION: Does not present a hazard according to OSHA (29CFR 1910.1200)

HAZARD STATEMENT(S): N/A

This product contains the following percentage of chemicals of unknown toxicity: 0%

PRECAUTIONARY STATEMENTS: N/A

SYMBOL: N/A

HAZARDS NOT OTHERWISE CLASSIFIED: N/A

SECTION III – COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENT	CAS NUMBER	PERCENT
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	1-5%
Antimony Dialkylthiocarbamate	N/A	1-5%

SECTION IV - FIRST AID MEASURES

EYES: Immediately flush with water for 15 - 20 minutes while holding eyelids open. Seek medical attention if irritation persists.

INGESTION: Rinse mouth with water. Do not induce vomiting unless directed by medical authority. Seek medical attention if irritation persists.

INHALATION: Move to fresh air. Avoid breathing oil mists. If breathing is difficult, administer oxygen. If not breathing administer artificial respiration. Seek immediate medical attention.

SKIN: Immediately wash with soap and water for 15 minutes. Seek medical attention if irritation develops.

ACUTE HEALTH HAZARDS: None Known

CHRONIC HEALTH HAZARDS: None known

NOTE TO PHYSICIAN: There is no specific treatment regimen. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION V – FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Dry chemical or suitable for surrounding materials.

UNSUITABLE EXTINGUISHING MEDIA: Water spray/stream.

SPECIAL FIRE FIGHTING PROCEDURES: Wear full protective clothing and NIOSH approved SCBA with full facepiece operated in positive pressure or pressure demand. Use water mist to keep material cool in fire situations.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep away from oxygen generating materials.

HAZARDOUS COMBUSTION PRODUCTS: N/A

SECTION VI – ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: Refer to section VIII for proper Personal Protective Equipment.

Safety Data Sheet



LAWSON Products

SPILL: Clean up using cloth or absorbent material. dispose of product-containing wiping cloth or absorbent paper in suitable manner. place waste in proper containers for waste disposal.

WASTE DISPOSAL: Dispose of in accordance with federal, state, and local regulations. Do not reuse container and recycle or place in trash collection. Drums and pails should be offered for recycling.

RCRA STATUS: Product should be fully characterized prior to disposal (40 CFR 261).

SECTION VII – HANDLING AND STORAGE

HANDLING AND STORAGE: Store in a cool, dry area. Do not use or store near heat or open flames. Keep container tightly closed when not in use.

OTHER PRECAUTIONS: Keep out of the reach of children.

INCOMPATIBILITY: None Known

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

HAZARDOUS INGREDIENT	OSHA PEL	ACGIH TLV
Petroleum distillates, hydrotreated heavy naphthenic	5mg/m3 (oil mist)	5mg/m3 (oil mist)
Antimony Dialkyldithiocarbamate	N/A	N/A

ENGINEERING CONTROLS / VENTILATION: Ambient ventilation adequate.

RESPIRATORY PROTECTION: Not required with normal use.

PERSONAL PROTECTIVE EQUIPMENT: Safety glasses and chemical resistant gloves

ADDITIONAL MEASURES: Wash hands thoroughly with soap and water after use.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Grey-Aluminum paste

ODOR: Bland odor

ODOR THRESHOLD: N/D

BOILING POINT: Decomposes

FREEZING POINT: N/D

FLAMMABILITY: Not considered a flammable liquid by OSHA (29CFR 1910.1200)

FLASH POINT: N/D

AUTOIGNITION TEMPERATURE: N/D

LOWER FLAMMABILITY LIMIT: N/D

UPPER FLAMMABILITY LIMIT: N/D

VAPOR PRESSURE (mm Hg): N/A

VAPOR DENSITY (AIR=1): N/A

EVAPORATION RATE: < 1

SPECIFIC GRAVITY (H2O=1): 0.950

SOLIDS (%): N/A

SOLUBILITY IN WATER: 0%

PARTITION COEFFICIENT: n-OCTANOL/WATER (K_{ow}): N/D

VOLATILITY INCLUDING WATER (%): <1%

VOLATILE ORGANIC COMPOUNDS (VOC): 0%

DIELECTRIC STRENGTH (Volts): N/D

DECOMPOSITION TEMPERATURE: N/D

VISCOSITY: N/D

SECTION X – STABILITY AND REACTIVITY DATA

REACTIVITY: None Known

CHEMICAL STABILITY: Stable

**LAWSON** Products**CONDITIONS TO AVOID:** Excessive heat. Sources of ignition.**INCOMPATIBILITY:** None Known**HAZARDOUS DECOMPOSITION OR BY-PRODUCT:** None Known**POSSIBLE HAZARDOUS REACTIONS:** None Known**SECTION XI – TOXICOLOGICAL INFORMATION****TOXICOLOGICAL INFORMATION:** Not Established**ROUTES OF ENTRY:** Eyes, Ingestion, Skin**EYES:** May cause irritation with prolonged exposure.**INGESTION:** Causes gastrointestinal irritation, nausea, diarrhea, vomiting.**INHALATION:** Unlikely due to low vapor pressure. Mist may cause irritation to the respiratory tract, headache.**SKIN:** Causes irritation with prolonged contact.**MEDICAL CONDITION AGGRAVATED:** None known**ACUTE HEALTH HAZARDS:** None Known**CHRONIC HEALTH HAZARDS:** None known**CARCINOGENICITY:** OSHA: No ACGIH: No NTP: No IARC: No OTHER: N/A**SECTION XII – ECOLOGICAL INFORMATION****ECOLOGICAL INFORMATION:** Not Established**BIODEGRADABILITY:** Component or components of this product are not biodegradable.**BIOACCUMULATION:** Components in this mixture can bioaccumulate in aquatic organisms.**SOIL MOBILITY:** This product is not mobile in soil**OTHER ECOLOGICAL HAZARDS:** None Known**SECTION XIII – DISPOSAL CONSIDERATIONS****WASTE DISPOSAL:** Dispose of in accordance with federal, state, and local regulations. Do not reuse container and recycle or place in trash collection. Drums and pails should be offered for recycling.**RCRA STATUS:** Product should be fully characterized prior to disposal (40 CFR 261).**SECTION XIV - TRANSPORTATION INFORMATION****PROPER SHIPPING NAME:** Lubricating Oil Petroleum Base**HAZARD CLASS/DIVISION:** Not Regulated**UN/NA NUMBER:** N/A**PACKAGING GROUP:** None**AIR SHIPMENT****PROPER SHIPPING NAME:** Lubricating Oil Petroleum Base**HAZARD CLASS/DIVISION:** Not Regulated**UN/NA NUMBER:** N/A**SHIPPING BY WATER:****VESSEL (IMO/IMDG)****PROPER SHIPPING NAME:** Lubricating Oil Petroleum Base**HAZARD CLASS/DIVISION:** Not Regulated**UN/NA NUMBER:** N/A**ENVIRONMENTAL HAZARDS WATER:** N/A

**LAWSON** Products**SECTION XV - REGULATORY INFORMATION**

TSCA STATUS: All Chemicals are listed or exempt.

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): None

SARA 311/312 HAZARD CATEGORIES: None

SARA 313 REPORTABLE INGREDIENTS: None

STATE REGULATIONS: California Proposition 65: None

INTERNATIONAL REGULATIONS: All components are listed or exempted.

NFPA HEALTH: 1

HMIS HEALTH: 1

NFPA FLAMMABILITY: 1

HMIS FLAMMABILITY: 1

NFPA REACTIVITY: 1

HMIS REACTIVITY: 1

NFPA OTHER: None

HMIS PROTECTION: A

SECTION XVI - ADDITIONAL INFORMATION

PREPARATION BY: Regulatory Affairs

DATE PREPARED: 12/4/2012

REVISION DATE: 03/04/2015

N/A = Not Applicable; N/D = Not Determined

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**SAFETY DATA SHEET**

82288

Section 1. Identification

Product name : LAWSON KWIKUT Cutting Oil
Product code : 82288
Other means of identification : Not available.
Product type : Aerosol.
Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Manufacturer : Lawson Products, Inc.
8770 W. Bryn Mawr, Suite 900
Chicago, IL 60631-3515
773-304-5050

Emergency telephone number of the company : (888) 426-4851

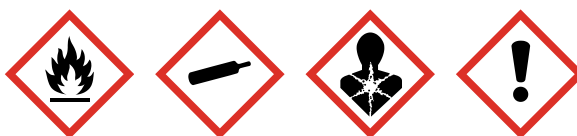
Section 2. Hazards identification

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
GASES UNDER PRESSURE - Compressed gas
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation and Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 51.8%

GHS label elements

Hazard pictograms :



Signal word :

Hazard statements : Danger
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
Causes serious eye irritation.
Causes skin irritation.
Suspected of damaging the unborn child.
May be fatal if swallowed and enters airways.
May cause respiratory irritation.
May cause drowsiness and dizziness.

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Section 2. Hazards identification

May cause damage to organs through prolonged or repeated exposure.

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** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. 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. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling.
- Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. 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. 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.
- Supplemental label elements** : DELAYED EFFECTS FROM LONG TERM OVEREXPOSURE. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY.
Please refer to the SDS for additional information. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.
- 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

Ingredient name	% by weight	CAS number
Heptane, Branched, Cyclic, Linear	40.0	426260-76-6
Heptane	18.0	142-82-5
Heavy Naphthenic Petroleum Oil	13.8	64742-52-5
Heavy Paraffinic Oil	13.5	64742-65-0
Propane	10.0	74-98-6
Toluene	2.0	108-88-3

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.
- 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.
- 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.
- 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting
reduced fetal weight
increase in fetal deaths
skeletal malformations

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.

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** : 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 create fire or explosion hazard. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- 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. 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.

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Section 6. Accidental release measures

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). Water polluting material. May be harmful to the environment if released in large quantities.

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. Use spark-proof tools and explosion-proof equipment. 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. 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 breathe vapor or mist. Do not swallow. Avoid breathing gas. 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 and material handling) equipment. Use only non-sparking tools. 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. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Heptane, Branched, Cyclic, Linear	ACGIH TLV (United States, 4/2014).
	TWA: 400 ppm 8 hours.
	TWA: 1640 mg/m ³ 8 hours.
	STEL: 500 ppm 15 minutes.
	STEL: 2050 mg/m ³ 15 minutes.
Heptane	ACGIH TLV (United States, 4/2014).
	TWA: 400 ppm 8 hours.
	TWA: 1640 mg/m ³ 8 hours.
	STEL: 500 ppm 15 minutes.
	STEL: 2050 mg/m ³ 15 minutes.
	NIOSH REL (United States, 10/2013).
	TWA: 85 ppm 10 hours.
	TWA: 350 mg/m ³ 10 hours.
	CEIL: 440 ppm 15 minutes.
	CEIL: 1800 mg/m ³ 15 minutes.
	OSHA PEL (United States, 2/2013).
	TWA: 500 ppm 8 hours.
	TWA: 2000 mg/m ³ 8 hours.
Heavy Naphthenic Petroleum Oil	ACGIH TLV (United States, 4/2014).
	TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction
	NIOSH REL (United States, 10/2013).
	TWA: 5 mg/m ³ 10 hours. Form: Mist
	STEL: 10 mg/m ³ 15 minutes. Form: Mist
	OSHA PEL (United States, 2/2013).
	TWA: 5 mg/m ³ 8 hours.
Heavy Paraffinic Oil	ACGIH TLV (United States, 4/2014).
	TWA: 5 mg/m ³ 8 hours. Form: Inhalable fraction
	NIOSH REL (United States, 10/2013).
	TWA: 5 mg/m ³ 10 hours. Form: Mist
	STEL: 10 mg/m ³ 15 minutes. Form: Mist
	OSHA PEL (United States, 2/2013).
	TWA: 5 mg/m ³ 8 hours.
Propane	NIOSH REL (United States, 10/2013).
	TWA: 1000 ppm 10 hours.
	TWA: 1800 mg/m ³ 10 hours.
	OSHA PEL (United States, 2/2013).
	TWA: 1000 ppm 8 hours.
	TWA: 1800 mg/m ³ 8 hours.
Toluene	OSHA PEL Z2 (United States, 2/2013).
	TWA: 200 ppm 8 hours.
	CEIL: 300 ppm
	AMP: 500 ppm 10 minutes.
	NIOSH REL (United States, 10/2013).
	TWA: 100 ppm 10 hours.
	TWA: 375 mg/m ³ 10 hours.
	STEL: 150 ppm 15 minutes.
	STEL: 560 mg/m ³ 15 minutes.
	ACGIH TLV (United States, 4/2014).
	TWA: 20 ppm 8 hours.

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.

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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: chemical splash goggles.

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. 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.

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.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not available.

Melting point : Not available.

Boiling point : Not available.

Flash point : Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]

Evaporation rate : 2 (butyl acetate = 1)

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Lower: 1%
Upper: 9.5%

Vapor pressure : 13.5 kPa (101.325 mm Hg) [at 20°C]

Vapor density : 1.55 [Air = 1]

Relative density : 0.71

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Section 9. Physical and chemical properties

Solubility	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
Viscosity	: Kinematic (room temperature): <0.07 cm ² /s (<7 cSt) Kinematic (40°C (104°F)): <0.07 cm ² /s (<7 cSt)

Aerosol product

Type of aerosol	: Spray
Heat of combustion	: 0.0000376 kJ/g

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
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Chemical stability	: The product is stable.
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Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
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Conditions to avoid	: Avoid all possible sources of ignition (spark or flame).
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Incompatible materials	: No specific data.
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Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
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Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Heptane	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
Heavy Naphthenic Petroleum	LC50 Inhalation Vapor	Rat	103 g/m ³	4 hours
Oil	LD50 Oral	Rat	>5000 mg/kg	-
Heavy Paraffinic Oil	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
Toluene	LC50 Inhalation Vapor	Rat	49 g/m ³	4 hours
	LD50 Oral	Rat	636 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Heavy Naphthenic Petroleum	Skin - Severe irritant	Rabbit	-	500 milligrams	-
Oil	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
Toluene	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
	Skin - Mild irritant	Pig	-	24 hours 250 microliters	-

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Section 11. Toxicological information

	Skin - Mild irritant	Rabbit	-	435 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Toluene	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Heptane, Branched, Cyclic, Linear	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Heptane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Heavy Naphthenic Petroleum Oil	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Heavy Paraffinic Oil	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Propane	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects
Toluene	Category 3	Not applicable.	Respiratory tract irritation and Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Heptane, Branched, Cyclic, Linear	Category 2	Not determined	Not determined
Heptane	Category 2	Not determined	Not determined
Heavy Naphthenic Petroleum Oil	Category 2	Not determined	Not determined
Heavy Paraffinic Oil	Category 2	Not determined	Not determined
Propane	Category 2	Not determined	Not determined
Toluene	Category 2	Not determined	Not determined

Aspiration hazard

Section 11. Toxicological information

Name	Result
Heptane	ASPIRATION HAZARD - Category 1
Propane	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact : Causes skin irritation.

Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

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Not available.

General	: May cause damage to organs through prolonged or repeated exposure.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
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

Route	ATE value
Oral	15476 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Heptane Toluene	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Toluene	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Heptane	-	552	high
Toluene	-	90	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	IATA	IMDG
UN number	UN1950	UN1950	UN1950	UN1950	UN1950
UN proper shipping name	AEROSOLS	AEROSOLS	AEROSOLS	AEROSOLS, flammable	AEROSOLS
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.
Additional information	<u>Special provisions</u> LIMITED QUANTITY	<u>Special provisions</u> LIMITED QUANTITY	<u>Special provisions</u> (ERG#126)	<u>Special provisions</u> LIMITED QUANTITY	<u>Emergency schedules (EmS)</u> LIMITED QUANTITY, F-D, S-U

Special precautions for user : Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. 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.

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 :

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State regulations

California Prop. 65

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	2
Flammability	4
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).

The customer is responsible for determining the PPE code for this material.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.

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.
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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**

Distillates Petroleum
Hydrotreated Light (CAS
64742-47-8)

Type

PEL

Value

5 mg/m3

Form

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

TWA

30000 ppm

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)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
Distillates Petroleum Hydrotreated Light (CAS 64742-47-8)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
<i>Vapor</i>		
LC50	Rat	> 4.5 mg/l, 4 Hours
Distillates Petroleum Hydrotreated Med (CAS 64742-46-7)		
<u>Acute</u>		
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)

Date Prepared/Revised: 7/29/2015 Version no.: 03 Supersedes: (1/6/2015)

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	265 Orange
250 Blue	256 Red	267 White
253 Yellow	257 Orange	270 Fluorescent Red
283 Red-Orange	258 Hi Vis Yellow	272 Fluorescent Orange
	259 Green	274 Fluorescent Green
	260 Purple	275 Fluorescent Red/Orange
		279 Fluorescent Pink

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 Industries Incorporated
Street address/P.O. Box:	1100 Mark Circle
Country ID/Postcode/Place:	Gardnerville, Nevada 89410
Telephone number:	001 (0) 1-775-782-0100
e-mail:	mailbox@aervoe.com
National contact:	Aervoe Industries Incorporated
For Product Information:	001 (0) 1-800-227-0196
Emergency telephone number:	001 (0) 1-800-424-9300 (CHEMTREC – 24 hrs)
	English Language Service

2. Hazards identification

Classifications

Physical Hazards: Aerosol - Category 1
Flam. Gas. 1
Press. Gas
Flam. Liq. 2

Health Hazards: Car 1B
Muta 1B
Asp Tox. 1



Safety Data Sheet (SDS)

Date Prepared/Revised: 7/29/2015 Version no.: 03 Supersedes: (1/6/2015)

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 50°C/122°F
P501 - Dispose of contents/container in accordance with local/regional/national/international regulation



Safety Data Sheet (SDS)

Date Prepared/Revised: 7/29/2015 Version no.: 03 Supersedes: (1/6/2015)

Symbols/Pictograms:



3. Composition / Information on Ingredients

Composition

Chemical	Synonyms	CAS Number	EINECS Number	Weight Percent	Hazard Category	H-Code
Hydrocarbon Propellant	LPG	68476-86-8	270-705-8	10-30%	Press. Gas Flam. Gas 1 Carc. 1B Muta. 1B	H220 H350 H340
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%	Carc. 1B Muta. 1B Asp. Tox. 1	H350 H340 H304
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



Safety Data Sheet (SDS)

Date Prepared/Revised: 7/29/2015 Version no.: 03 Supersedes: (1/6/2015)

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:



Safety Data Sheet (SDS)

Date Prepared/Revised: 7/29/2015 Version no.: 03 Supersedes: (1/6/2015)

- 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)



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Aliphatic Petroleum Distillates	64742-88-7	N/AV	N/AV	N/AV	N/AV
Aliphatic Petroleum Distillates	64742-89-8	N/AV	N/AV	N/AV	N/AV
Hydrocarbon Propellant	68476-86-8	N/AV	N/AV	N/AV	N/AV
Aliphatic Petroleum Distillates	8032-32-4	200ppm	300ppm	200ppm	N/AV
Hexane	110-54-3	50ppm	N/AV	500ppm	N/AV
Acetone	67-64-1	500ppm	750ppm	1000ppm	N/AV

***Values are based on the 2014 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)



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Eye irritation data:	(Acetone) LC50: 21000 ppm / 8 hr (rat) (Hexane) LD50: 2870 mg/kg (Rat-Oral) N/AV
Skin irritation/sensitization/absorption data:	N/AV
Reproductive toxicity data:	N/AV
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

* Petroleum distillates may contain chemical carcinogens in limited quantities (< 0.01%). These quantities are determined by the supplier/fraction/purity of the distillate during the manufacturing process. Chemicals that may be present within distillates are listed on California's prop 65 list such as ETHYLBENZENE, BENZENE, and TOLUENE.

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



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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.

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: This product may contain chemicals known to the state of California to cause cancer, birth defects or other reproductive harm.

16. Other Information



Safety Data Sheet (SDS)

Date Prepared/Revised: 7/29/2015 Version no.: 03 Supersedes: (1/6/2015)

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: 7-29-2015

Supersedes: (1/6/2015)

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)



SECTION 1: Identification

Product Identifier GT-1® High Performance Synthetic Blend Motor Oil with Liquid Titanium® Protection Additive

Other means of identification Kendall GT-1® High Performance Synthetic Blend Motor Oil with Liquid Titanium® Protection Additive SAE 0W-20
Kendall GT-1® High Performance Synthetic Blend Motor Oil with Liquid Titanium® Protection Additive SAE 5W-20
Kendall GT-1® High Performance Synthetic Blend Motor Oil with Liquid Titanium® Protection Additive SAE 5W-30
Kendall GT-1® High Performance Synthetic Blend Motor Oil with Liquid Titanium® Protection Additive SAE 10W-30
Kendall GT-1® High Performance Synthetic Blend Motor Oil with Liquid Titanium® Protection Additive SAE 10W-40

SDS Number 815899

Relevant identified uses Automotive Engine Oil

Uses advised against All others

24 Hour Emergency Phone Number CHEMTREC 1-800-424-9300
CANUTEC 613-996-6666
CHEMTREC Mexico 01-800-681-9531

Manufacturer/Supplier

Phillips 66 Lubricants
P.O. Box 4428
Houston, TX 77210

SDS Information

Phone: 800-762-0942
Email: SDS@P66.com
URL: www.Phillips66.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

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

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	>75
Other components not contributing to product hazard(s)	VARIOUS	<25

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.

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Status: FINAL

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.

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 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 firefighters: 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

Chemical Name	ACGIH	OSHA	Other
Distillates, petroleum, hydrotreated heavy paraffinic	TWA: 5mg/m ³ STEL: 10 mg/m ³ as Oil Mist, if Generated	TWA: 5mg/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 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

Additive

Issue Date: 09-Feb-2016

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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**Flash Point:** > 365 °F / > 185 °C**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 @ 60°F (15.6°C)**Bulk Density:** 7.0 - 7.5 lbs/gal**Viscosity:** 6.9 - 16.3 cSt @ 100°C; 38-110 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. 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)

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

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

Additive

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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)

Acute Health Hazard:	No
Chronic Health Hazard:	No
Fire Hazard:	No
Pressure Hazard:	No
Reactive Hazard:	No

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 Hazard Classification

Canada:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the Regulations.

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.

U.S. Export Control Classification Number: EAR99

SECTION 16: Other information

Issue Date:	Previous Issue Date:	SDS Number	Status:
09-Feb-2016	14-Apr-2015	815899	FINAL

Revised Sections or Basis for Revision:

Product Name / Synonyms (Section 1); Physical Properties (Section 9)

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; 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)

Issue Date: 09-Feb-2016

Status: FINAL

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 equipment.
- P241 – Use explosion-proof electrical, ventilating, and lighting equipment.
- P242 – Use only non-spraying tools.
- P243 – Take precautionary measures against static discharge.
- P261 – Avoid breathing dust, gas, mist, vapors or spray.
- P264 – Wash thoroughly after handling.
- P271 – Use only outdoors or in well-ventilated 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.
- P305+P340 – IF INHALED: 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.
- P312 – Call a POISON CENTER or doctor if you feel unwell.
- P321 – Specific treatment (see on this label).

Northland Norsolv

Safety Data Sheet

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

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 tightly closed.
P403+P235 – Store in well-ventilated place. Keep cool.
P405 – Store in secure manner.
P501 – Dispose of in accordance with local, regional and 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

Northland Norsolv

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according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

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 LIQUID. 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.

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according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

- 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/m ³)	200 mg/m ³ (Skin); Distillates, 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 self-contained 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.

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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 (108°F) 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

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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)

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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 Substances 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

Northland Norsolv

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according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

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.



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

DATE ISSUED

May 29, 2015

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)

GRAY IRON CASTINGS

MANUFACTURER'S NAME

EJ USA, Inc. and EJ Ardmore, Inc.

STREET ADDRESS

301 Spring Street

EMERGENCY TELEPHONE NO.

1-800-424-9300 (CHEMTREC)

MAILING ADDRESS

P.O. Box 439

TELEPHONE NO.

1-231-536-2261

CITY, STATE, ZIP CODE, COUNTRY

East Jordan, MI 49727, USA

FAX NO.

1-231-536-4496

E-MAIL ADDRESS/WEBSITE

www.ejco.com

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Solid casting; no restrictions

SECTION 2—HAZARD IDENTIFICATION

CLASSIFICATION

Castings are metallic articles that do not present hazards in their original form.

OTHER INFORMATION

1. Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.
2. Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Consult Sections 3 & 8 for further information.

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)	0.10–0.50	7440-47-3
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
Tin (Sn)	0.006–0.15	7440-31-5

SECTION 4—FIRST AID MEASURES**EYE CONTACT:** Not applicable**SKIN CONTACT:** No special requirements**INGESTION:** Not applicable**INHALATION:** Not applicable**SECTION 5—FIREFIGHTING MEASURES****FLAMMABLE PROPERTIES:** Not applicable**EXTINGUISHING MEDIA:** Not applicable**PROTECTION OF FIREFIGHTERS:** Not applicable**SECTION 6—ACCIDENTAL RELEASE MEASURES**

Not applicable

SECTION 7—HANDLING & STORAGE**RECOMMENDED STORAGE**

No special requirements

PROCEDURES FOR HANDLING

Proper hand and foot protection is recommended.

SECTION 8—EXPOSURE CONTROLS/ PERSONAL PROTECTION**ENGINEERING CONTROLS**

None Required. There are no health hazards from castings in solid form.

SUBSTANCE	ACGIH TLV mg/m³	OSHA PEL mg/m³
Carbon (C)	N/E	N/E
Chromium (Cr)	0.5	1
Copper (Cu)	1	1
Iron (Fe)	N/E	N/E
Manganese (Mn)	0.02 (R); 0.1 (I)	5 (C)
Nickel (Ni)	1.5 (I)	1
Silicon (Si)		
Total dust	N/E	15
Respirable dust	N/E	5
Tin (Sn)	2	2

SUPPLEMENTAL INFORMATION

Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.

Fumes from hot processes may contain other compounds with different exposure limits than those listed above. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Exposure limits for the most common contaminants are offered as reference. Please consult a competent person for guidance on exposure assessment and controls.

In particular, Hexavalent Chromium is an OSHA Expanded Health Standard; refer to OSHA 29 CFR 1910.1026-Chromium (VI) for complete requirements.

SUBSTANCE		ACGIH TLV mg/m ³	OSHA PEL mg/m ³
Chromium Compounds (as Cr)			
Chromium (II) inorganic compounds		N/E	0.5
Chromium (III) inorganic compounds		0.5	0.5
Chromium (VI) inorganic compounds, certain water insoluble		0.01	0.005
Chromium (VI) inorganic compounds, water soluble		0.05	0.005
Chromium (VI) all forms and compounds		N/E	0.005
Copper Compounds (as Cu)			
Fume, as Cu		0.2	0.1
Dusts and mists, as Cu		1	1
Iron Compounds			
Iron oxide (Fe ₂ O ₃) fume		N/E	10
Iron oxide (Fe ₂ O ₃)		5 (R)	N/E
Nickel Compounds (as Ni)			
Insoluble, inorganic compounds		0.2(I)	1
Soluble, inorganic compounds		0.1(I)	1
Nickel oxide		0.2(I)	1
Tin compounds (as Sn)			
Tin Oxide & inorganic compounds, except SnH ₄		2	N/E
Inorganic compounds, except oxides, as Sn		N/E	2
Tin Oxides, as Sn		2	N/E
TERMS			
All exposure limits referenced above are 8 hour time weighted averages (TWA) unless otherwise noted.			
N/E = None Established			
C = Ceiling			
I = Inhalable fraction			
R = Respirable fraction			
TLV = Threshold Limit Value/American Conference of Industrial Hygienists (ACGIH)			
PEL = Permissible Exposure Limit / OSHA			
mg/m ³ = milligrams per cubic meter			
PERSONAL PROTECTION:			
Proper hand and foot protection is recommended.			
SECTION 9—PHYSICAL & CHEMICAL PROPERTIES			
APPEARANCE /PHYSICAL STATE			
Solid, silver gray in color			
ODOR/ODOR THRESHOLD		VAPOR DENSITY	
None		Not applicable	
MELTING POINT/FREEZING POINT		SPECIFIC GRAVITY (relative density)	
Approximately 2350°F (1300°C)		7.85 g/cm ³ for iron	
BOILING POINT		VAPOR PRESSURE	
5000°F (2750°C) for iron		Not applicable	
FLASH POINT		EVAPORATION RATE	
Not applicable for solid castings		Not applicable	
FLAMMABILITY		SOLUBILITY IN WATER	
Not flammable		Insoluble	
UPPER AND LOWER FLAMMABILITY LIMITS		pH	
Not applicable for solid castings		Not applicable	
AUTO IGNITION TEMPERATURE		VISCOSITY	
Not applicable		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			
POTENTIAL HEALTH EFFECTS			
EYE CONTACT: None			
SKIN: None			
INGESTION: None			
INHALATION: None			
Carcinogen Classification of Ingredients			
INGREDIENT	OSHA	NTP	IARC
Nickel (metal)	NL	K	2B
TARGET ORGAN Lung, Nose			
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 Other NL = Not Listed			
SECTION 12—ECOLOGICAL INFORMATION			
ECOTOXICITY Not applicable		PERSISTENCE AND DEGRADABILITY Not applicable	
BIOACCUMULATION POTENTIAL Not applicable		MOBILITY IN SOIL Not applicable	
OTHER ADVERSE EFFECTS Not applicable			
SECTION 13—DISPOSAL CONSIDERATIONS			
Recover or recycle if possible. Dispose of according to federal, state and local regulations. Dust collected from machining, welding, etc. may be classified as a hazardous waste. Consult federal, state and local regulations.			
SECTION 14—TRANSPORT INFORMATION			
US DEPARTMENT OF TRANSPORTATION (DOT)-HMR (Hazardous Materials Registration) Not Regulated		CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG) Not regulated	
UN SHIPPING NAME Not regulated		UN NUMBER Not regulated	

TRANSPORT HAZARD CLASS Not regulated	PACKING GROUP Not regulated
ENVIRONMENTAL HAZARDS None	LABEL(S) REQUIRED? No
TRANSPORT IN BULK Not applicable	SPECIAL SHIPPING INFORMATION Not applicable
SECTION 15—REGULATORY INFORMATION	
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, such as chromium, copper, iron, manganese, nickel, silicon, tin and silica. For hexavalent chromium references see 29 CFR 1910.1026.	
US-EPA (Toxic Substances Control Act—TSCA) All components of these products are on the TSCA inventory list or are excluded from listing.	
US-EPA (SARA Title III) Releases to the environment of Chromium, Copper, Manganese and Nickel , may be subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 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 EJ, WITH INFORMATION SUPPLIED BY: American Foundry Society, Inc. Occupational Safety & Health Committee (10-Q)	DATE May 14, 2015
NOTE: This data and label information is offered in good faith as typical values and not as a product specification. No warranty either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review the recommendations in specific context of the intended use and determine if they are appropriate.	

Addendum: Label Information

<u>PRODUCT IDENTIFIER</u> GRAY IRON CASTINGS	
<u>SUPPLIER IDENTIFICATION</u> Company Name: <u>EJ</u> Street Address: <u>301 Spring Street</u> Mailing Address: <u>P.O. Box 439</u> City: <u>East Jordan</u> State: <u>MI</u> Zip/Postal Code : <u>49727</u> Country: <u>USA</u> Emergency Phone Number: <u>1-800-424-9300</u> Other Info: <u>Phone # is CHEMTREC</u>	<u>HAZARD PICTOGRAMS</u> None* <u>SIGNAL WORD</u> None*
<u>PRECAUTIONARY STATEMENTS</u> None*	<u>HAZARD STATEMENTS</u> None*
<p>*Castings do not present hazards in their original form.</p> <p>OTHER INFORMATION</p> <ol style="list-style-type: none">1. Grinding castings that have not been cleaned or that contain embedded sand may generate significant amounts of dust containing crystalline silica.2. Fumes from hot processes may contain other compounds with different exposure limits. Dust or fumes generated by machining, grinding, welding or thermal cutting of the casting may produce airborne contaminants. Consult Sections 3 & 8 of the SDS for further information.	



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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



Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS**SDS ID: MAT16625**

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

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Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS**SDS ID: MAT16625**

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.

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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	N ₂	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.



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Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS

SDS ID: MAT16625

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.

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Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS**SDS ID: MAT16625****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



Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS

SDS ID: MAT16625

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



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Safety Data Sheet

Material Name: NITROGEN, COMPRESSED GAS

SDS ID: MAT16625

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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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 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.

Oxidizing Gases - Category 1

Gases Under Pressure - Compressed gas

Specific Target Organ Toxicity - Single Exposure - Category 3

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.

May cause respiratory irritation.

Precautionary Statement(s)

Prevention

Keep away from clothing and other combustible materials.

Keep reduction valves free from grease and oil.

Response

In case of fire: stop leak if safe to do so.

Storage

Protect from sunlight. Store in a well-ventilated place.



Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS**SDS ID: MAT12831****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
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. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects**Acute**

frostbite

Delayed

no information on significant adverse effects.

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

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Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS**SDS ID: MAT12831**

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.

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.

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.

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



Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS**SDS ID: MAT12831**

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	(Non-flammable)
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	O ₂	Molecular Weight	31.9988

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.

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**



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Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS

SDS ID: MAT12831

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

irritation, blurred vision

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

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.

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Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS**SDS ID: MAT12831****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; Specific Target Organ Toxicity

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

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.

WHMIS Classification

A , C

Component Analysis - Inventory**OXYGEN, COMPRESSED GAS (7782-44-7)**



Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS

SDS ID: MAT12831

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: OX

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

Summary of Changes

New SDS:01/19/2016

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

ask. . .The Gas Professionals™

Safety Data Sheet

Material Name: OXYGEN, COMPRESSED GAS

SDS ID: MAT12831

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.



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/m ³ (PEL)	*10 mg/m ³	*5 mg/m ³ (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

Product Name: MOBIL SHC 630
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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

Product Name: MOBIL SHC 630
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from person to person.

SECTION 3	COMPOSITION / INFORMATION ON INGREDIENTS
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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
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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
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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.

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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/m ³		N/A	ExxonMobil
TRIPHENYL PHOSPHATE		TWA	3 mg/m ³		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m ³		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,

Product Name: MOBIL SHC 630

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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

Product Name: MOBIL SHC 630

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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	

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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

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.

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.

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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

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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
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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	

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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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Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A



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DGN: 2007966XUS (1011899)

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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

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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.

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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

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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/m ³		N/A	ExxonMobil
TRIPHENYL PHOSPHATE		TWA	3 mg/m ³		N/A	OSHA Z1
TRIPHENYL PHOSPHATE		TWA	3 mg/m ³		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.

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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

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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	

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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

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.

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.

Product Name: MOBIL SHC 634

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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

Product Name: MOBIL SHC 634
 Revision Date: 13 Feb 2018
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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

Product Name: MOBIL SHC 634

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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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MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 2007946XUS (547900)

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Safety Data Sheet

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Document Group: 23-3022-3
Issue Date: 03/30/20

Version Number: 5.04
Supersedes 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

Hydrocarbons
Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion
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 °F

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 propellant]

Flammable Limits(UEL)

12.7 % [Details:for propellant]

Vapor Pressure

31 - 43 psi [@ 70 °F] [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
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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	
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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

Hazard statements

Danger
 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)
USA

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:	CO ₂ , sand, extinguishing powder, or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards:	CO ₂ , extinguishing powder or water spray. Fight larger fires with water spray.
Protective equipment for firefighters:	Can form explosive gas-air mixtures. 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/m ³ , 1000 ppm
REL (USA)	Long-term value: 590 mg/m ³ , 250 ppm
TLV (USA)	Short-term value: (1782) NIC-1187 mg/m ³ , (750) NIC-500 ppm Long-term value: (1188) NIC-594 mg/m ³ , (500) NIC-250 ppm BEI

74-98-6 propane

PEL (USA)	Long-term value: 1800 mg/m ³ , 1000 ppm
REL (USA)	Long-term value: 1800 mg/m ³ , 1000 ppm
TLV (USA)	refer to Appendix F

106-97-8 n-butane

REL (USA)	Long-term value: 1900 mg/m ³ , 800 ppm
TLV (USA)	Short-term value: 2370 mg/m ³ , 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/m ³ , 150 ppm Long-term value: 375 mg/m ³ , 100 ppm
TLV (USA)	Long-term value: 75 mg/m ³ , 20 ppm BEI

1330-20-7 xylene (mix)

PEL (USA)	Long-term value: 435 mg/m ³ , 100 ppm
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Trade name: GRAY SANDABLE PRIMER

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REL (USA)	Short-term value: 655 mg/m ³ , 150 ppm Long-term value: 435 mg/m ³ , 100 ppm
TLV (USA)	Short-term value: 651 mg/m ³ , 150 ppm Long-term value: 434 mg/m ³ , 100 ppm BEI

64-17-5 ethyl alcohol

PEL (USA)	Long-term value: 1900 mg/m ³ , 1000 ppm
REL (USA)	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV (USA)	Short-term value: 1880 mg/m ³ , 1000 ppm

123-86-4 n-butyl acetate

PEL (USA)	Long-term value: 710 mg/m ³ , 150 ppm
REL (USA)	Short-term value: 950 mg/m ³ , 200 ppm Long-term value: 710 mg/m ³ , 150 ppm
TLV (USA)	Short-term value: 950 mg/m ³ , 200 ppm Long-term value: 713 mg/m ³ , 150 ppm

110-19-0 isobutyl acetate

PEL (USA)	Long-term value: 700 mg/m ³ , 150 ppm
REL (USA)	Long-term value: 700 mg/m ³ , 150 ppm
TLV (USA)	Long-term value: 713 mg/m ³ , 150 ppm

108-65-6 PM acetate

WEEL (USA)	Long-term value: 50 ppm
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Ingredients with biological limit values:**67-64-1 Acetone**

BEI (USA)	50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)
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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
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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 hygiene.

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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Trade name: GRAY SANDABLE PRIMER

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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-octanol/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)
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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)
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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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Trade name: GRAY SANDABLE PRIMER

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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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Revised On 09/25/2014

1 Identification of the substance and manufacturer

Trade name: CUMMINS BEIGE
Product code: 53374
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.
 STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
 Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2A H319 Causes serious eye irritation.

GHS Hazard pictograms



GHS02 GHS04 GHS07 GHS08

Signal word

Hazard statements

Precautionary statements

Danger
 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 damage to organs through prolonged or repeated exposure.
 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.
 Do not handle until all safety precautions have been read and understood.
 Wear protective gloves/protective clothing/eye protection/face protection.
 Use personal protective equipment as required.
 Do not breathe dust/fume/gas/mist/vapours/spray.
 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.
 Get medical advice/attention if you feel unwell.
 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.
 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:

108-88-3	Toluene	19.77%
67-64-1	Acetone	19.35%
74-98-6	propane	17.6%
106-97-8	n-butane	10.34%
110-19-0	isobutyl acetate	6.69%
2807-30-9	Glycol Ether EP	3.67%
13463-67-7	titanium dioxide	2.36%

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.

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USA

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Trade name: CUMMINS BEIGE

(Contd. of page 1)

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:

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/m ³ , 150 ppm Long-term value: 375 mg/m ³ , 100 ppm
TLV (USA)	Long-term value: 75 mg/m ³ , 20 ppm BEI

67-64-1 Acetone

PEL (USA)	Long-term value: 2400 mg/m ³ , 1000 ppm
REL (USA)	Long-term value: 590 mg/m ³ , 250 ppm
TLV (USA)	Short-term value: (1782) NIC-1187 mg/m ³ , (750) NIC-500 ppm Long-term value: (1188) NIC-594 mg/m ³ , (500) NIC-250 ppm BEI

74-98-6 propane

PEL (USA)	Long-term value: 1800 mg/m ³ , 1000 ppm
REL (USA)	Long-term value: 1800 mg/m ³ , 1000 ppm
TLV (USA)	refer to Appendix F

106-97-8 n-butane

REL (USA)	Long-term value: 1900 mg/m ³ , 800 ppm
TLV (USA)	Short-term value: 2370 mg/m ³ , 1000 ppm

110-19-0 isobutyl acetate

PEL (USA)	Long-term value: 700 mg/m ³ , 150 ppm
REL (USA)	Long-term value: 700 mg/m ³ , 150 ppm
TLV (USA)	Long-term value: 713 mg/m ³ , 150 ppm

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Trade name: CUMMINS BEIGE

(Contd. of page 2)

Ingredients with biological limit values:**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)

67-64-1 Acetone

BEI (USA)	50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)
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Hygienic protection: Keep away from foodstuffs and animal feed. Wash hands after use.
Immediately remove all soiled and contaminated clothing.
Wash hands after use.

Breathing equipment: Avoid contact with the eyes and skin.
Do not eat or drink while working.

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 hygiene.

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:	1.5 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-octanol/water:	Not determined.
Solubility:	Not determined.
Viscosity:	Not determined.
VOC content:	575.6 g/l / 4.80 lb/gl
VOC content (less exempt solvents):	61.0 %
MIR Value:	1.36
Solids content:	20.0 %

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.

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Revised On 09/25/2014

Trade name: CUMMINS BEIGE

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11 Toxicological information

LD/LC50 values that are relevant for classification:

106-97-8 n-butane

Inhalative LC50/4 h 658 mg/l (rat)

110-19-0 isobutyl acetate

Oral LD50 4763 mg/kg (rbt)

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)

Information on toxicological effects: No data available.

Sensitization: No sensitizing effects known.

Carcinogenic categories

IARC (International Agency for Research on Cancer)

108-88-3	Toluene	3
13463-67-7	titanium dioxide	2B

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):

108-88-3 Toluene

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:

108-88-3 Toluene

II

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Trade name: CUMMINS BEIGE

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67-64-1	Acetone	I
110-19-0	isobutyl acetate	D

16 Other information**Contact:** Regulatory Affairs

US4

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

Product code **CW4889A**Product name **White Valve
Action® Paint Marker**

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

Incompatibility

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)

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.

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

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

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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

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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.
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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

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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

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propyl acetate (109-60-4)		
OSHA	OSHA PEL (TWA) (mg/m ³)	840 mg/m ³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
Canada (Quebec)	VECD (mg/m ³)	1040 mg/m ³
Canada (Quebec)	VECD (ppm)	250 ppm
Canada (Quebec)	VEMP (mg/m ³)	835 mg/m ³
Canada (Quebec)	VEMP (ppm)	200 ppm
Carbon black (1333-86-4)		
ACGIH	ACGIH TWA (mg/m ³)	3.5 mg/m ³
ACGIH	Remark (ACGIH)	Bronchitis
OSHA	OSHA PEL (TWA) (mg/m ³)	3.5 mg/m ³
Canada (Quebec)	VEMP (mg/m ³)	10 mg/m ³ (Fibres de carbone et de graphite; Poussière totale) 5 mg/m ³ (Fibres de carbone et de graphite; Poussière respirable) 3.5 mg/m ³
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

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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 %
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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/m ³ 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

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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/m ³ 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

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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

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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	

Valve Action® Paint Markers, CERTIFIED Valve Action® Paint Markers

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)

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

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according to Canadian Hazardous Products Regulations (HPR)

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

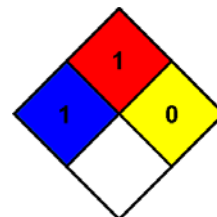
Indication of changes	: Added. Product.
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). European Chemicals Agency (ECHA) C&L Inventory database. Accessed at http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database . Krister Forsberg and S.Z. Mansdorf, "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.

Valve Action® Paint Markers, CERTIFIED Valve Action® Paint Markers

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according to Canadian Hazardous Products Regulations (HPR)

- 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
 888-426-4851



Emergency telephone number:

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

Hazard statements

Precautionary statements

Danger
 Extremely flammable aerosol.
 Contains gas under pressure; may explode if heated.
 Causes serious eye irritation.
 Suspected of causing cancer.
 May cause drowsiness or dizziness.
 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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Trade name: Dark Machinery Gray

(Contd. of page 1)

Most important symptoms and effects:
Indication of any immediate medical attention needed:

Rinse mouth with water. Do not induce vomiting.

Dizziness

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.

Special hazards:
Protective equipment for firefighters:

CO2, extinguishing powder or water spray. Fight larger fires with water spray. Can form explosive gas-air mixtures.

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

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

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

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acc. to OSHA HCS

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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/m ³ , 100 ppm
REL (USA)	Short-term value: 655 mg/m ³ , 150 ppm
	Long-term value: 435 mg/m ³ , 100 ppm
TLV (USA)	Short-term value: 651 mg/m ³ , 150 ppm
	Long-term value: 434 mg/m ³ , 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 hygiene.

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-octanol/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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Trade name: Dark Machinery Gray

Hazardous decomposition: No dangerous decomposition products known.

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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)

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Trade name: Dark Machinery Gray

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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

acc. to OSHA HCS

Printing date 09/25/2014

Revised On 09/25/2014

1 Identification of the substance and manufacturer

Trade name: GLOSS BLACK
Product code: 98761
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	22.56%
74-98-6	propane	15.74%
106-97-8	n-butane	9.24%
7727-43-7	barium sulphate, natural	8.51%
108-10-1	methyl isobutyl ketone	5.47%
2807-30-9	Glycol Ether EP	5.45%
107-87-9	Methyl Propyl Ketone	3.06%
1330-20-7	xylene (mix)	2.69%
108-65-6	PM acetate	1.87%
110-19-0	isobutyl acetate	1.41%

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

Printing date 09/25/2014

Revised On 09/25/2014

Trade name: GLOSS BLACK

(Contd. of page 1)

Most important symptoms and effects:
Indication of any immediate medical attention needed:

Rinse mouth with water. Do not induce vomiting.

Dizziness

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.

Special hazards:
Protective equipment for firefighters:

CO2, extinguishing powder or water spray. Fight larger fires with water spray. Can form explosive gas-air mixtures.

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

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/m ³ , 1000 ppm
REL (USA)	Long-term value: 590 mg/m ³ , 250 ppm
TLV (USA)	Short-term value: (1782) NIC-1187 mg/m ³ , (750) NIC-500 ppm
	Long-term value: (1188) NIC-594 mg/m ³ , (500) NIC-250 ppm
	BEI

74-98-6 propane

PEL (USA)	Long-term value: 1800 mg/m ³ , 1000 ppm
REL (USA)	Long-term value: 1800 mg/m ³ , 1000 ppm
TLV (USA)	refer to Appendix F

106-97-8 n-butane

REL (USA)	Long-term value: 1900 mg/m ³ , 800 ppm
TLV (USA)	Short-term value: 2370 mg/m ³ , 1000 ppm

7727-43-7 barium sulphate, natural

PEL (USA)	Long-term value: 15* 5** mg/m ³ *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ *total dust **respirable fraction
TLV (USA)	Long-term value: 5* mg/m ³ *inhalable fraction; E

108-10-1 methyl isobutyl ketone

PEL (USA)	Long-term value: 410 mg/m ³ , 100 ppm
REL (USA)	Short-term value: 300 mg/m ³ , 75 ppm Long-term value: 205 mg/m ³ , 50 ppm
TLV (USA)	Short-term value: 307 mg/m ³ , 75 ppm Long-term value: 82 mg/m ³ , 20 ppm
	BEI

107-87-9 Methyl Propyl Ketone

PEL (USA)	Long-term value: 700 mg/m ³ , 200 ppm
REL (USA)	Long-term value: 530 mg/m ³ , 150 ppm
TLV (USA)	Short-term value: 529 mg/m ³ , 150 ppm

1330-20-7 xylene (mix)

PEL (USA)	Long-term value: 435 mg/m ³ , 100 ppm
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REL (USA)	Short-term value: 655 mg/m ³ , 150 ppm Long-term value: 435 mg/m ³ , 100 ppm
TLV (USA)	Short-term value: 651 mg/m ³ , 150 ppm Long-term value: 434 mg/m ³ , 100 ppm BEI

108-65-6 PM acetate

WEEL (USA)	Long-term value: 50 ppm
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110-19-0 isobutyl acetate

PEL (USA)	Long-term value: 700 mg/m ³ , 150 ppm
REL (USA)	Long-term value: 700 mg/m ³ , 150 ppm
TLV (USA)	Long-term value: 713 mg/m ³ , 150 ppm

Ingredients with biological limit values:**67-64-1 Acetone**

BEI (USA)	50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)
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108-10-1 methyl isobutyl ketone

BEI (USA)	1 mg/L Medium: urine Time: end of shift Parameter: MIBK
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1330-20-7 xylene (mix)

BEI (USA)	1.5 g/g creatinine Medium: urine Time: end of shift Parameter: Methylhippuric acids
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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 hygiene.

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-octanol/water:	Not determined.
Solubility:	Not determined.
Viscosity:	Not determined.
VOC content:	496.0 g/l / 4.14 lb/gl
VOC content (less exempt solvents):	46.2 %
MIR Value:	1.12
Solids content:	30.9 %

10 Stability and reactivity

Reactivity:	Stable at normal temperatures.
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(Contd. of page 3)

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:

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)

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)

108-65-6 PM acetate

Oral LD50 8500 mg/kg (rat)

Inhalative LC50/4 h 35.7 mg/l (rat)

110-19-0 isobutyl acetate

Oral LD50 4763 mg/kg (rbt)

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

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.

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Trade name: GLOSS BLACK

(Contd. of page 4)

SARA Section 313 (Specific toxic chemical listings):

7727-43-7 barium sulphate, natural

108-10-1 methyl isobutyl ketone

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:**

108-10-1 methyl isobutyl ketone

1333-86-4 Carbon black

100-41-4 ethyl benzene

EPA:

67-64-1 Acetone

I

7727-43-7 barium sulphate, natural

D, CBD(inh), NL(oral)

108-10-1 methyl isobutyl ketone

I

1330-20-7 xylene (mix)

I

110-19-0 isobutyl acetate

D

16 Other information**Contact:** Regulatory Affairs

US4

SAFETY DATA SHEET

1. Identification

Product identifier Propane

Other means of identification

SDS number WC002

Product code UN1075

Recommended use Portable fuel.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Worthington Cylinder Corporation

Address 300 E. Breed St., Chilton, WI 5301
United States

Contact person Ann Stiefvater

E-mail address Ann.Stiefvater@worthingtonindustries.com

Telephone number 1-920-849-1740

Emergency telephone number 1-703-527-3887 International / CHEMTREC 1-800-424-9300 Domestic


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 outdoors or in a well-ventilated area. Wear respiratory protection.

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) None known.

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
Butane	106-97-8	0-2.5

Additives

Chemical name	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 themselves.
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	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 (CO ₂). 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. 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	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).
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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. 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

Store at temperatures not exceeding 49°C/120°F. 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. 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. Keep container tightly closed. Store in a well-ventilated place. Use care in handling/storage. 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/m ³ 1000 ppm
Additives	Type	Value
Ethyl Mercaptan (CAS 75-08-1)	Ceiling	25 mg/m ³ 10 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
Additives	Type	Value
Ethyl Mercaptan (CAS 75-08-1)	TWA	0.5 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m ³ 800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m ³ 1000 ppm
Additives	Type	Value
Ethyl Mercaptan (CAS 75-08-1)	Ceiling	1.3 mg/m ³ 0.5 ppm

Biological limit values

No biological exposure limits noted for the ingredient(s).

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.

Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Neoprene or nitrile gloves are recommended.
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.
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	Colorless gas.
Physical state	Gas (Liquefied).
Form	Compressed liquefied gas.
Color	Colorless.
Odor	Rotten egg.
Odor threshold	Not available.
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 (-104.0 °C)
Evaporation rate	Not applicable.
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 available.
Relative density	0.504 (liquid) 1.5 (vapor) (air=1) @ 15°C / 60°F
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 available.
Viscosity	Not applicable.
Other information	
Explosive properties	Not explosive.
Molecular weight	45 g/mol
Oxidizing properties	Not oxidizing.
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.

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. Strong acids. 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. Victim may not be aware of asphyxiation. Asphyxiation may bring about unconsciousness without warning and so rapidly that victim may be unable to protect themselves.

Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Components	Species	Test Results
Propane (CAS 74-98-6)		
Acute		
<i>Inhalation</i>		
LC50	Rat	1355 mg/l
Propylene (CAS 115-07-1)		
Acute		
<i>Inhalation</i>		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 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 This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

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 1910.1001-1050)

Not regulated.

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 likely, due to the form of the product.

Further information 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	The product is readily biodegradable.
Bioaccumulative potential	The product is not expected to bioaccumulate.
Partition coefficient n-octanol / water (log Kow)	
Propane	1.77
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, Liquified
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Label(s)	2.1
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	19, T50
Packaging exceptions	306
Packaging non bulk	304
Packaging bulk	314, 315

IATA

UN number	UN1075
UN proper shipping name	Petroleum Gases, Liquified
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
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, Liquified
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
Packing group	Not applicable.
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.
General information	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: Ensure that containers are firmly secured. Ensure cylinder valve is closed and not leaking. Ensure valve outlet cap nut or plug (where provided) is correctly fitted. Ensure valve protection device (where provided) is correctly fitted. Ensure adequate ventilation. Ensure compliance with applicable regulations.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

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

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
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SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes
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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.
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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)

US. 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.

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	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
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	05-May-2014
Revision date	09-August-2016
Version #	02
Further information	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
HMIS® ratings	Health: 1 Flammability: 4 Physical hazard: 1

NFPA ratings



List of abbreviations

STEL: Short term exposure limit.
TWA: Time weighted average.
PEL: Permissible Exposure Limit.
LC50: Lethal Concentration, 50%.

References

EPA: AQUIRE database
NLM: Hazardous Substances Data Base
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices

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.

This SDS contains revisions in the following section(s):

1 - 16

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 ClassificationFlammable 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.

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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.

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- 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,

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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

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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.

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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

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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**

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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

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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:

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TSCA

On TSCA Inventory

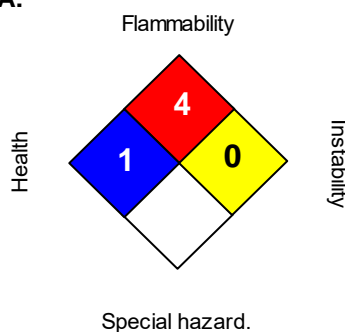
DSL

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.

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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.

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: OPEN & SHUT

Product Code: DA6152

SUPPLIER NAME: LAWSON PRODUCTS, INC.

ADDRESS : 8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
773-304-5050

EMERGENCY PHONE : 888-426-4851

Product Use: Multi-purpose penetrant

2. HAZARDS IDENTIFICATION

CLASSIFICATION

Gas under pressure	Dissolved gas
Skin Corrosion/Irritation	3
Eye Damage/Irritation	2B
Carcinogenicity	2
Aspiration hazard	1



SIGNAL WORD: **Danger**

Hazard Statements

Contains gas under pressure; may explode if heated
May be fatal if swallowed and enters airways
Causes mild skin irritation
Causes eye irritation
Suspected of causing cancer

Precautionary Statements

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wash hands thoroughly after handling
Use personal protective equipment as required
Do NOT induce vomiting
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse continuously 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 occurs: Get medical advice/attention
If eye irritation persists: Get medical advice/attention
Store locked up
Protect from sunlight. Store in a well ventilated place
Dispose of contents/container to comply with all local, state, and federal regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Percent
PERCHLOROETHYLENE	127-18-4	78.90
PETROLEUM OIL	64742-52-5	15.10
CARBON DIOXIDE	124-38-9	2.00

4. FIRST AID MEASURES

INHALATION: Remove to fresh air. Administer oxygen if needed. Apply artificial respiration if breathing has stopped. Get medical attention.

EYE CONTACT: Wash immediately with large volumes of fresh water for at least 15 minutes. Get medical attention.

SKIN CONTACT: Wipe off with a towel. Wash with soap and water. Get medical attention if irritation persists.

INGESTION: Not a likely route of exposure.

Most important symptoms/effects, acute and delayed: Repeated exposure may cause skin dryness or cracking. May cause drowsiness or dizziness.

Indication of immediate medical attention and special treatment needed: None known.

5. FIRE FIGHTING MEASURES

Suitable and unsuitable extinguishing media: Foam, Alcohol foam, CO2, Dry chemical, Water fog. Water spray may be ineffective.

Specific hazards arising from the chemical: Closed containers may explode from internal pressure build-up when exposed to extreme heat and discharge contents. Liquid content of container will not support combustion. Overexposure to decomposition products may cause a health hazard. Symptoms may not be readily apparent. Obtain medical attention. Hazardous decomposition products include carbon dioxide, carbon monoxide, and other toxic fumes.

Special equipment and precautions for fire-fighters: Water may be used to cool containers to prevent pressure build-up and explosion when exposed to extreme heat. Wear goggles and use self-contained breathing apparatus. If water is used, fog nozzles are preferred.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Avoid breathing vapors. Ventilate area. Remove all sources of ignition.

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 (burn) cans. Do not stick pins, nails, or any other sharp objects 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 and use in cool, dry, well-ventilated areas. Do not store above 120 F.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
PERCHLOROETHYLENE 127-18-4	Short term value: C 200; 300 ppm Long term value: 100 ppm	Short term value: 685 mg/m ³ , 100 ppm Long term value: 170 mg/m ³ ; 25 ppm	
PETROLEUM OIL 64742-52-5	PEL: Mist 5 mg/m ³ , 8 hrs	TLV: Mist 5 mg/m ³ , 8 hrs	
CARBON DIOXIDE 124-38-9	5000 ppm TWA, 8 hours	5000 ppm TWA; , 8 hours; 30000 ppm STEL, 15 minutes	5000 ppm NIOSH TWA, 10 hours; 30000 ppm NIOSH STEL, 15 minutes

Appropriate engineering controls: Ventilation should be sufficient to prevent inhalation of any vapors . General dilution and/or local exhaust ventilation in volume to keep PEL/TLV of most hazardous ingredient below acceptable limit and lel below stated limit.

Individual protection measures:

Respiratory protection: None under normal use. Avoid breathing vapors. In restricted areas , use approved chemical/mechanical filters designed to remove a combination or particles and vapor. In confined areas, use an approved air line respirator or hood. Self-contained breathing apparatus is required for vapor concentrations above PEL/TLV limits.

Protective gloves: None under normal use. Use solvent-resistant for prolonged or repeated contact.

Eye protection: None under normal use. However, use of safety glasses with splash guards or full face shield should be used if indicated.

Other protective clothing or equipment: None under normal use. However, use of solvent- resistant aprons or other clothing is recommended. Eye washes and safety showers in the workplace are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Aerosol product Vapor Pressure: Not determined Vapor Density: Heavier than air Density: 1.387533165 Freezing point: Not determined Boiling point: Not determined Evaporation rate: Slower than ether Explosive Limits: Not applicable Autoignition temperature: Not determined Viscosity: Not determined	Odor: Chlorinated solvent Odor threshold: Not determined pH: Not applicable Melting point: Not determined Solubility: Not determined Flash point: Not determined Flammability: Level 1 Aerosol Partition coefficient (n-octanol/water): Not determined Decomposition temperature: Not determined
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10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions of use.

Chemical stability: Stable under normal storage and handling conditions.

Possibility of hazardous reactions: None known.

Incompatible materials:

Acids, Bases, Strong oxidizing agents, Oxygen, Peroxides, Reactive metals, Aluminum

Hazardous decomposition products:

Hydrogen chloride, chlorine, phosgene, oxides of carbon

11. TOXICOLOGICAL INFORMATION

Long-term toxicological studies have not been conducted for this product.

12. ECOLOGICAL INFORMATION

Long-term ecological studies have not been conducted for this product.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state, and federal regulations. Before attempting clean up, refer to other sections of this document for hazard cautionary information.

14. TRANSPORT INFORMATION

By land: DOT Proper Shipping Name: None required per 49 CFR 173.306(i) for products that conform to the Limited Quantity provisions. Commodity shipping description: Lubricant, NOI

By water: DOT & IMDG Proper Shipping Name: UN1950, Aerosols, 2.2, LTD QTY

By air: DOT & IATA Proper Shipping Name: UN1950, Aerosols, non-flammable, 2.2, LTD QTY (packing instruction Y203 applies)

15. REGULATORY INFORMATION

All ingredients are either listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

Date revised: 2015-06-29

Revision 0

Date Printed: 2015-06-29

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. BECAUSE THE INFORMATION CONTAINED HEREIN MAY BE APPLIED UNDER CONDITIONS BEYOND OUR CONTROL, WE ASSUME NO RESPONSIBILITY FOR ITS USE.



SAFETY DATA SHEET

Product: MARC 104 BREAK-A-WAY II

Form R04132

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 50°C/122°F. 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.



SAFETY DATA SHEET

Product: MARC 104 BREAK-A-WAY II

Form R04132

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.



SAFETY DATA SHEET

Product: MARC 104 BREAK-A-WAY II

Form R04132

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:	Supplier:
OMG Midwest	Southern Minnesota Construction
2401 SE Tones Drive - Suite 13	1905 3 rd Ave/ PO BOX 3069
Ankeny IA, 50021 - USA	Mankato, MN 56002 – USA
T (515) 266-9928	

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

¹Only 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.

Quartzite

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

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/m ³)	0.025 mg/m ³ (respirable fraction)
OSHA	OSHA TWA (mg/m ³)	(30)/(%SiO ₂ + 2) mg/m ³ (total dust)
	OSHA TWA (mppcf)	(250)/(%SiO ₂ + 5) mppcf (respirable fraction)
	OSHA TWA (mg/m ³)	(10)/(%SiO ₂ + 2) mg/m ³ (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.

Quartzite

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

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.

Quartzite

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCoin 2012

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.

Quartzite

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

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.



SAFETY DATA SHEET

Flexseal Dispense-A-Gasket RTV Red Silicone

Section 1. Identification

GHS product identifier : Flexseal Dispense-A-Gasket RTV Red Silicone
Other means of identification : 93206

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

Sealant.

Supplier's details : Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
773-304-5050

Emergency telephone number (with hours of operation) : 888-426-4851

Section 2. Hazards identification

For this product, the ignition distance test and the flammability test do not apply. Therefore, the final product is non-flammable.

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
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.

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 protective gloves. Do not breathe vapor. Contaminated work clothing should not be allowed out of the workplace.

Response : Get medical attention if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention.

Section 2. Hazards identification

- Storage** : Protect from sunlight. Store in a well-ventilated place.
- 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	Pure Substance Classification
Butan-2-one O,O',O''-(methylsilylidyne)trioxime	5 - 10	22984-54-9	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2 SKIN SENSITIZATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (cardiovascular system and haematopoietic system) - Category 2
Siloxanes and Silicones, di-Me	1 - 5	63148-62-9	AQUATIC HAZARD (ACUTE) - Category 3
1,1-Difluoroethane	1 - 5	75-37-6	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas

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 20 minutes. Get medical attention following exposure or if feeling unwell.
- 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 following exposure or if feeling unwell. 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** : 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

- 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 following exposure or if feeling unwell. 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** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

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. 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.

Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
carbonyl halides
metal oxide/oxides
- 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. Avoid breathing vapor or mist. 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).

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). 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 breathe vapor or 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 reuse container.

Section 7. Handling and storage

- 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. Protect from sunlight. 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. 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.

Section 8. Exposure controls/personal protection

Respiratory protection : Use a properly fitted, air-purifying 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.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Paste.]
Color : Red.
Odor : Some odor.
Odor threshold : Not available.
pH : Not available.
Melting point : Not available.
Boiling point : Not available.
Flash point : Not available.
Burning time : Not applicable.
Burning rate : 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 : Not available.
Relative density : 1.05
Solubility : Not available.
Solubility in water : Not available.
Partition coefficient: n-octanol/water : There is no data available.
Auto-ignition temperature : Not available.
Decomposition temperature : Not available.
SADT : Not available.
Viscosity : 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 : Reactive or incompatible with the following materials: oxidizing materials and moisture.

Section 10. Stability and reactivity

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
Siloxanes and Silicones, di-Me	LD50 Oral	Rat	>2000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Siloxanes and Silicones, di-Me	Eyes - Mild irritant	Rabbit	-	1 hours 100 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 µL	-
	Eyes - Mild irritant	Rabbit	-	24 hours 100 µL	-

Sensitization

There is no data available.

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)

Name	Category	Route of exposure	Target organs
Butan-2-one O,O',O''-(methylsilylidyne)trioxime	Category 2	Not determined	cardiovascular system and haematopoietic system

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 : No known significant effects or critical hazards.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

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 known significant effects or critical hazards.

Section 11. Toxicological information

- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- 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** : 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.
- 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

There is no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Siloxanes and Silicones, di-Me	Acute LC50 44.5 ppm Fresh water Acute LC50 3160 to 4150 µg/L Fresh water	Daphnia - Daphnia magna - Instar Fish - Ictalurus punctatus	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.




Section 12. 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 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	UN1950	UN1950	UN1950
UN proper shipping name	Aerosols, flammable (each not exceeding 1 L capacity) (1, 1-Difluoroethane)	Aerosols, flammable (each not exceeding 1 L capacity) (1, 1-Difluoroethane)	Aerosols, flammable (each not exceeding 1 L capacity) (1, 1-Difluoroethane)
Transport hazard class(es)	2.1 	2.1 	2.1 
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	Remarks Limited Quantity Exemption	Remarks Limited Quantity Exemption	Remarks Limited Quantity Exemption

AERG : 126

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 Air Act (CAA) 112 regulated flammable substances: 1,1-Difluoroethane

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 : Sudden release of pressure
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
Butan-2-one O,O',O''-(methylsilylidyne)trioxime	5 - 10	No.	No.	No.	Yes.	Yes.

State regulations

Massachusetts : The following components are listed: Silicon dioxide; 1,1-Difluoroethane

New York : None of the components are listed.

New Jersey : The following components are listed: 1,1-Difluoroethane

Pennsylvania : The following components are listed: Silicon dioxide

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.

Section 15. Regulatory information

Chemical Weapons : Not listed

Convention List Schedule

I Chemicals

Chemical Weapons : Not listed

Convention List Schedule

II Chemicals

Chemical Weapons : Not listed

Convention List Schedule

III Chemicals

Section 16. Other information

History

Date of issue mm/dd/yyyy : 09/30/2014

Date of previous issue : 05/30/2014

Version : 3

Revised Section(s) : 8, 14, 15, 16.

Prepared by : Regulatory Affairs Department

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

Flexseal Dispense-A-Sealant RTV Clear Silicone

Section 1. Identification

GHS product identifier : Flexseal Dispense-A-Sealant RTV Clear Silicone
Other means of identification : 93205

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

Silicone sealant

Supplier's details : Lawson Products Inc.
 8770 W. Bryn Mawr Ave., Suite 900
 Chicago, IL 60631
 773-304-5050

Emergency telephone number (with hours of operation) : 888-426-4851

Section 2. Hazards identification

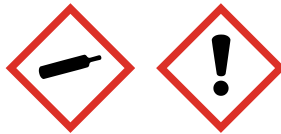
For this product, the ignition distance test and the flammability test do not apply. Therefore, the final product is non-flammable.

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
 SKIN CORROSION/IRRITATION - Category 2
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
 Causes serious eye irritation.
 Causes skin irritation.

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 protective gloves. Wear eye or face protection. Wash hands thoroughly after handling.

Section 2. Hazards identification

Response	: IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. 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	: Protect from sunlight. Store in a well-ventilated place.
Disposal	: Not applicable.
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	Pure Substance Classification
Triacetoxethylsilane	1 - 5	17689-77-9	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 1B SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
Methylsilanetriyl triacetate	1 - 5	4253-34-3	ACUTE TOXICITY (oral) - Category 4 SKIN CORROSION/IRRITATION - Category 1C SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
1,1-Difluoroethane	1 - 5	75-37-6	FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas

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 20 minutes. Get medical attention.
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. Continue to rinse for at least 20 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

- 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** : Causes serious eye irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No known significant effects or critical hazards.

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. 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** : No specific fire or explosion hazard.

Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
carbonyl halides
metal oxide/oxides
- 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).

Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. 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. Do not dry sweep. 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 ingest. Avoid contact with eyes, skin 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 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. Protect from sunlight. 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

United States

None.

Mexico

Ingredient name	Exposure limits
Silicon dioxide	NOM-010-STPS (Mexico, 9/2000). LMPE-PPT: 3 mg/m ³ 8 hours. Form: breathable particulates LMPE-PPT: 10 mg/m ³ 8 hours. Form: inhalable particulates

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.

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 or gases. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

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. [Paste.]
Color	: Depends on specific color ordered.
Odor	: Acetic acid odor.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: Not available.
Flash point	: Closed cup: >100°C (>212°F)
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	: 1.007
Solubility	: Not available.
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: There is no data available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: 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	: Reactive or incompatible with the following materials: oxidizing materials.
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
Methylsilanetriyl triacetate	LD50 Oral	Rat	2060 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Silica	Eyes - Mild irritant	Rabbit	-	24 hours 25 mg	-

Sensitization

There is no data available.

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 irritation.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes skin irritation.
- Ingestion** : Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
 - pain or irritation
 - watering
 - redness
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Adverse symptoms may include the following:
 - irritation
 - redness
- Ingestion** : No known significant effects or critical hazards.

Section 11. Toxicological information

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.

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

There is no data available.

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

Section 13. Disposal considerations

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	UN1950	UN1950	UN1950
UN proper shipping name	Aerosols, flammable (each not exceeding 1 L capacity) (1, 1-Difluoroethane)	Aerosols, flammable (each not exceeding 1 L capacity) (1, 1-Difluoroethane)	Aerosols, flammable (each not exceeding 1 L capacity) (1, 1-Difluoroethane)
Transport hazard class(es)	2.1 	2.1 	2.1 
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	<u>Remarks</u> Limited Quantity Exemption	<u>Remarks</u> Limited Quantity Exemption	<u>Remarks</u> Limited Quantity Exemption

AERG : 126

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 Air Act (CAA) 112 regulated flammable substances: 1,1-Difluoroethane

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

Section 15. Regulatory information

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Sudden release of pressure
Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Triacetoxyethylsilane Methylsilanetriyl triacetate	1 - 5 1 - 5	No. No.	No. No.	No. No.	Yes. Yes.	No. No.

State regulations

Massachusetts : The following components are listed: Silicon dioxide; 1,1-Difluoroethane

New York : None of the components are listed.

New Jersey : The following components are listed: 1,1-Difluoroethane

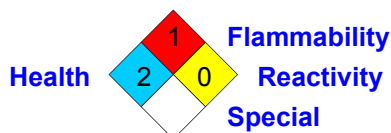
Pennsylvania : The following components are listed: Silicon dioxide

California Prop. 65

No products were found.

Mexico

Classification :



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 : Not listed

Convention List Schedule I Chemicals

Chemical Weapons : Not listed

Convention List Schedule II Chemicals

Chemical Weapons : Not listed

Convention List Schedule III Chemicals

Section 16. Other information

History

Date of issue mm/dd/yyyy	: 09/30/2014
Date of previous issue	: 05/30/2014
Version	: 3
Revised Section(s)	: 2, 3, 14, 16.
Prepared by	: Maureen Ruggeberg, Regulatory Affairs Specialist
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

Revision Date 01-Oct-2015

Version 1

1. IDENTIFICATION

Product identifier

Product Name 6MA POWERBEAD SENSOR SAFE BLUE RTV SILICONE 7.25 OZ AE

Other means of identification

Product Code 81860

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Sealant

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

ITW Permatex
10 Columbus Blvd.
Hartford, CT 06106 USA

Distributor

ITW Permatex Canada
35 Brownridge Road, Unit 1
Halton Hills, ON Canada L7G 0C6
Telephone: (800) 924-6994

Company Phone Number

1-87-Permatex
(877) 376-2839

24 Hour Emergency Phone Number

Chem-Tel: 800-255-3924
International Emergency:
00+1+ 813-248-0585
Contract Number: MIS0003453

E-mail address

mail@permatex.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

NOTE: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Carcinogenicity	Category 2

Label elements

Emergency Overview

Warning

Causes serious eye irritation
May cause an allergic skin reaction
Suspected of causing cancer



Appearance Blue

Physical state Paste

Odor Mild

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
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
Specific treatment (see supplemental first aid instructions on this label)

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: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

- Toxic to aquatic life with long lasting effects

Unknown acute toxicity 30.531 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

substance(s)

Chemical Name	CAS No	Weight-%	Trade Secret
POLY (DIMETHYLSILOXANE), HYDROXY TERMINATED	70131-67-8	15 - 40	*
CALCIUM CARBONATE	471-34-1	10 - 30	*
LIMESTONE	1317-65-3	10 - 30	*
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	3 - 7	*
VINYL OXIMINOSILANE	2224-33-1	1 - 5	*
NITROGEN	7727-37-9	1 - 5	*
STEARIC ACID	57-11-4	1 - 5	*
2-BUTANONE OXIME	96-29-7	1 - 5	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice	Get medical advice/attention if you feel unwell.
Eye contact	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.
Skin contact	IF ON SKIN: Wash skin with soap and water. If skin irritation persists, call a physician. Wash contaminated clothing before reuse.
Inhalation	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If symptoms persist, call a physician.
Ingestion	IF SWALLOWED: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms	See section 2 for more information.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Carbon dioxide (CO₂), Dry chemical, Foam

Unsuitable extinguishing media

None.

Specific hazards arising from the chemical

None in particular.

Explosion data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

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	Ensure adequate ventilation, especially in confined areas. Avoid contact with eyes and skin. Use personal protective equipment as required.
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Environmental precautions

Environmental precautions	Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological Information.
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Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Ensure adequate ventilation. Flood with water to complete polymerization and scrape off floor. Sweep up and shovel into suitable containers for disposal.
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	Handle in accordance with good industrial hygiene and safety practice. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing. Wash thoroughly after handling. Wash contaminated clothing before reuse. Use personal protective equipment as required.
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Conditions for safe storage, including any incompatibilities

Storage Conditions	Keep container tightly closed in a dry and well-ventilated place. Protect from moisture.
Incompatible materials	Strong oxidizing agents, Acids, Water

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
CALCIUM CARBONATE 471-34-1	-	-	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
LIMESTONE 1317-65-3	-	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 15 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information	Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).
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Appropriate engineering controls

Engineering Controls	Showers Eyewash stations Ventilation systems
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Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear protective gloves and protective clothing.
Respiratory protection	Use NIOSH-approved air-purifying respirator with organic vapor cartridge or canister, as appropriate.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Paste
Appearance	Blue
Odor	Mild
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting point / freezing point	No information available	
Boiling point / boiling range	Not Applicable	Polymerization
Flash point	> 93 °C / > 200 °F	Tag Closed Cup
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	<5 mm Hg @ 80°F	
Vapor density	>1	Air = 1
Relative density	1.43	
Water solubility	Not applicable	Polymerization
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	<4%
Density	No information available
Bulk density	No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Excessive heat.

Incompatible materials

Strong oxidizing agents, Acids, Water

Hazardous Decomposition Products

Carbon oxides

Nitrogen oxides (NO_x)

Formaldehyde

May release 2-butanone oxime (ethyl methyl ketoxime) at elevated temperature

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation	May cause irritation of respiratory tract.
Eye contact	Contact with eyes may cause irritation. May cause redness and tearing of the eyes.
Skin contact	May cause skin irritation and/or dermatitis. May cause sensitization by skin contact.
Ingestion	Ingestion may cause irritation to mucous membranes.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
POLY (DIMETHYLSILOXANE), HYDROXY TERMINATED 70131-67-8	-	> 16 mL/kg (Rabbit)	> 8750 mg/m ³ (Rat) 7 h
CALCIUM CARBONATE 471-34-1	= 6450 mg/kg (Rat)	-	-
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
STEARIC ACID 57-11-4	-	> 5 g/kg (Rabbit)	-
2-BUTANONE OXIME 96-29-7	= 930 mg/kg (Rat)	= 0.2 mg/kg (Rabbit)	= 20 mg/L (Rat) 4 h

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 No information available.

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 11227 mg/kg
ATEmix (dermal) 9359 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

93.9 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name	Algae/aquatic plants	Fish	Crustacea
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT 64742-47-8	-	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	4720: 96 h Den-dronereides heteropoda mg/L LC50
2-BUTANONE OXIME 96-29-7	83: 72 h Desmodemus subspicatus mg/L EC50	777 - 914: 96 h Pimephales promelas mg/L LC50 flow-through 760: 96 h Poecilia reticulata mg/L LC50 static 320 - 1000: 96 h Leuciscus idus mg/L LC50 static	750: 48 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Mobility

No information available.

Chemical Name	Partition coefficient
2-BUTANONE OXIME 96-29-7	0.65

Other adverse effects

No information available

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	Do not reuse container.
US EPA Waste Number	Not applicable

14. TRANSPORT INFORMATION

DOT

UN/ID no	1950
Proper shipping name:	Aerosols, Limited Quantity (LQ)
Hazard Class	2.2
Emergency Response Guide Number	126

IATA

UN/ID no	ID 8000
Proper shipping name:	Consumer commodity
Hazard Class	9
ERG Code	9L

IMDG

UN/ID no	1950
Proper shipping name:	Aerosols, Limited Quantity (LQ)
Hazard Class	2.2
EmS-No	F-D, S-U

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDL	Complies
EINECS/ELINCS	Not Listed.
ENCS	Not Listed.
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - 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

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

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

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)

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). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

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
LIMESTONE 1317-65-3	X	X	X
CI PIGMENT BLUE 15, CI #74160 147-14-8	X	-	X
NITROGEN 7727-37-9	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

WHMIS Hazard Class

D2B - Toxic materials

NFPA	Health hazards 2	Flammability 1	Instability 0	-
HMIS	Health hazards 2	Flammability 1	Physical hazards 0	Personal protection B

NFPA (National Fire Protection Association)
HMIS (Hazardous Material Information System)

Revision Date 01-Oct-2015

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

MONSANTO COMPANY

Safety Data Sheet Commercial Product

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Product identifier

Roundup QuikPRO™ Herbicide

1.1.1. Chemical name

Not applicable.

1.1.2. Synonyms

None.

1.1.3. EPA Reg. No.

524-535

1.2. Company

MONSANTO COMPANY, 800 N. Lindbergh Blvd., St. Louis, MO, 63167

Telephone: 800-332-3111, **Fax:** 314-694-5557

E-mail: safety.datasheet@monsanto.com

1.3. Emergency numbers

FOR CHEMICAL EMERGENCY, SPILL LEAK, FIRE, EXPOSURE, OR ACCIDENT Call
CHEMTREC - Day or Night: 1-800-424-9300 toll free in the continental U.S., Puerto Rico, Canada, or
Virgin Islands. For calls originating elsewhere: 703-527-3887 (collect calls accepted).

FOR MEDICAL EMERGENCY - Day or Night: +1 (314) 694-4000 (collect calls accepted).

2. HAZARDS IDENTIFICATION

2.1. Classification

OSHA Hazard Communication Standard, 29 CFR 1910.1200 (2012)

STOT RE - Category 2

2.2. Label elements

2.2.1. Signal word

WARNING!

2.2.2. Hazard pictogram/pictograms



2.2.3. Hazard statement/statements

May cause damage to eyes or kidney through prolonged or repeated exposure.

2.2.4. Precautionary statement/statements

Do not breathe dust/fume/gas/mist/vapours/spray.

Get medical advice/attention if you feel unwell.

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

2.3. Appearance and odour (colour/form/odour)

Pale yellow-Brown /Granules / Slight

2.4. OSHA Status

This product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Refer to section 11 for toxicological and section 12 for environmental information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Active ingredient

Ammonium salt of N-(phosphonomethyl)glycine; {Ammonium salt of glyphosate}
6,7-Dihydrodipyrido(1,2-a:2',1'-c) pyrazinedium dibromide; {Diquat dibromide}

Composition

COMPONENT	CAS No.	% by weight (approximate)
Ammonium salt of glyphosate	114370-14-8	73.3
Diquat dibromide	85-00-7	2.9
Other ingredients		23.8

The specific chemical identity is being withheld because it is trade secret information of Monsanto Company.

4. FIRST AID MEASURES

Use personal protection recommended in section 8.

4.1. Description of first aid measures

- 4.1.1. Eye contact:** If in eyes, hold eye open and rinse slowly and gently for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing. Call a poison control center or doctor for treatment advice.
- 4.1.2. Skin contact:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- 4.1.3. Inhalation:** If inhaled, move person to fresh air. If person is not breathing, call emergency number or ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
- 4.1.4. Ingestion:** Call 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 told to do so by the poison center or doctor. Do not give anything by mouth to an unconscious person. QUICK TREATMENT IS ESSENTIAL TO COUNTERACT POISONING and should be initiated before signs and symptoms of injury appear.

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

- 4.2.1. Eye contact, short term:** May cause temporary eye irritation.
- 4.2.2. Skin contact, short term:** Not expected to produce significant adverse effects when recommended use instructions are followed.
- 4.2.3. Inhalation, short term:** Harmful by inhalation.
- 4.2.4. Single ingestion:** Harmful if swallowed.

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

- 4.3.1. Advice to doctors:** This product is not an inhibitor of cholinesterase.

4.3.2. Antidote: Treatment with atropine and oximes is not indicated.

5. FIRE-FIGHTING MEASURES

5.1. Extinguishing media

5.1.1. Recommended: Water, dry chemical, foam, carbon dioxide (CO₂)

5.2. Special hazards

5.2.1. Unusual fire and explosion hazards

None.

Environmental precautions: see section 6.

5.2.2. Hazardous products of combustion

Carbon monoxide (CO), nitrogen oxides (NO_x), phosphorus oxides (P_xO_y), hydrogen bromide (HBr)

5.3. Fire fighting equipment: Self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

5.4. Flash point

Does not flash.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

Use personal protection recommended in section 8.

6.2. Environmental precautions

SMALL QUANTITIES:

Low environmental hazard.

LARGE QUANTITIES:

Minimise spread.

Keep out of drains, sewers, ditches and water ways.

6.3. Methods for cleaning up

SMALL QUANTITIES:

Flush spill area with water.

LARGE QUANTITIES:

Absorb in earth, sand or absorbent material.

Dig up heavily contaminated soil.

Collect in containers for disposal.

Refer to section 7 for types of containers.

Flush residues with small quantities of water.

Minimise use of water to prevent environmental contamination.

Refer to section 13 for disposal of spilled material.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

7. HANDLING AND STORAGE

Good industrial practice in housekeeping and personal hygiene should be followed.

7.1. Precautions for safe handling

Avoid breathing dust. Avoid contact with eyes, skin and clothing. Wash contaminated clothing before re-use. Wash hands thoroughly after handling or contact.

7.2. Conditions for safe storage

Compatible materials for storage: stainless steel, fibreglass, plastic, glass lining

Incompatible materials for storage: galvanised steel, unlined mild steel, see section 10.

Keep out of reach of children.

Keep away from food, drink and animal feed.

Keep only in the original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Airborne exposure limits

Components	Exposure Guidelines
Ammonium salt of glyphosate	No specific occupational exposure limit has been established.
Diquat dibromide	TLV (ACGIH): 0.5 mg/m ³ : inhalable fraction, skin, The exposure limit indicated is for the diquat cation. TLV (ACGIH): 0.1 mg/m ³ : respirable fraction, skin, The exposure limit indicated is for the diquat cation. PEL (OSHA): No specific occupational exposure limit has been established.
Other ingredients	No specific occupational exposure limit has been established.

8.2. Engineering controls: Provide local exhaust ventilation.

8.3. Recommendations for personal protective equipment

8.3.1. Eye protection: If there is significant potential for contact: Wear dust goggles.

8.3.2. Skin protection: No special requirement when used as recommended.

If repeated or prolonged contact: Wear chemical resistant gloves.

8.3.3. Respiratory protection: If airborne exposure is excessive:

Wear respirator.

Full facepiece/hood/helmet respirator replaces need for chemical goggles.

When recommended, consult manufacturer of personal protective equipment for the appropriate type of equipment for a given application.

9. PHYSICAL AND CHEMICAL PROPERTIES

These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

Colour/colour range:	Pale yellow - Brown
Odour:	Slight
Form:	Granules
Physical form changes (melting, boiling, etc.):	
Melting point:	No data.
Flash point:	Does not flash.
Explosive properties:	No explosive properties
Auto ignition temperature:	No data.
Self-accelerating decomposition	No data.

temperature (SADT):	
Oxidizing properties:	none
Specific gravity:	No data.
Vapour pressure:	No significant volatility; aqueous solution.
Vapour density:	Not applicable.
Evaporation rate:	No data.
Dynamic viscosity:	Not applicable.
Kinematic viscosity:	Not applicable.
Density:	36 lb/ft ³ ; (loose bulk density)
	42.6 lb/ft ³ ; (tapped bulk density)
Solubility:	Water: Soluble
pH:	3.7 10 g/l
Partition coefficient:	log Pow: -3.2 @ 25 °C (glyphosate)

10. STABILITY AND REACTIVITY

10.1. Reactivity

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

10.2. Stability

Stable under normal conditions of handling and storage.

10.3. Possibility of hazardous reactions

Reacts with galvanised steel or unlined mild steel to produce hydrogen, a highly flammable gas that could explode.

10.4. Incompatible materials

galvanised steel; unlined mild steel; see section 10.;
Compatible materials for storage: see section 7.2.

10.5. Hazardous decomposition

Thermal decomposition: Hazardous products of combustion: see section 5.

11. TOXICOLOGICAL INFORMATION

This section is intended for use by toxicologists and other health professionals.

Likely routes of exposure: Skin contact, eye contact, inhalation

Potential health effects

Eye contact, short term: May cause temporary eye irritation.

Skin contact, short term: Not expected to produce significant adverse effects when recommended use instructions are followed.

Inhalation, short term: Harmful by inhalation.

Single ingestion: Harmful if swallowed.

Data obtained on product and components are summarized below.

Acute oral toxicity

Rat, LD50: 4,443 mg/kg body weight

Slightly toxic.

Acute dermal toxicity

Rat, LD50: > 5,000 mg/kg body weight

Practically non-toxic.

Acute inhalation toxicity

Rat, LC50, 4 hours, aerosol:

Slightly toxic. No 4-hr LC50 at the maximum achievable concentration.

Skin irritation

Rabbit, 3 animals, OECD 404 test:

Days to heal: 2

Primary Irritation Index (PII): 0.5/8.0

Slight irritation.

Eye irritation

Rabbit, 3 animals, OECD 405 test:

Days to heal: 3

Moderate irritation.

Skin sensitization

Guinea pig, 3-induction Buehler test:

Positive incidence: 0 %

Negative.

N-(phosphonomethyl)glycine; { glyphosate acid}

Genotoxicity

Not genotoxic.

Carcinogenicity

Not carcinogenic in rats or mice. Listed as Category 2A by the International Agency for Research on Cancer (IARC) but our expert opinion is that classification as a carcinogen is not warranted.

Reproductive/Developmental Toxicity

Developmental effects in rats and rabbits only in the presence of significant maternal toxicity.

Reproductive effects in rats only in the presence of significant maternal toxicity.

Diquat dibromide

Genotoxicity

Not genotoxic in vivo.

Carcinogenicity

Not carcinogenic in rats or mice.

Reproductive/Developmental Toxicity

Reproductive effects in rats only in the presence of maternal toxicity.

Developmental effects in rats, rabbits, and mice only in the presence of maternal toxicity.

Surfactant

Genotoxicity

Not genotoxic.

12. ECOLOGICAL INFORMATION

This section is intended for use by ecotoxicologists and other environmental specialists.

Data obtained on similar products and on components are summarized below.

Similar glyphosate formulation

Aquatic toxicity, fish

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, static, LC50: 5.4 mg/L
Moderately toxic.

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 11 mg/L
Slightly toxic.

Arthropod toxicity

Honey bee (*Apis mellifera*):

Oral/contact, 48 hours, LD50: > 100 µg/bee
Practically non-toxic.

Isopropylamine salt of glyphosate (62%)

Data obtained on product and components are summarized below.

Aquatic toxicity, algae/aquatic plants

Green algae (*Scenedesmus subspicatus*):

Acute toxicity, 72 hours, static, EbC50 (biomass): 72.9 mg/L
Slightly toxic.

Green algae (*Scenedesmus subspicatus*):

Acute toxicity, 72 hours, static, NOEC (growth rate): 26.4 mg/L

Diquat dibromide

Aquatic toxicity, fish

Bluegill sunfish (*Lepomis macrochirus*):

Acute toxicity, 72 hours, static, LC50: 12.1 - 21.5 mg/L

Rainbow trout (*Oncorhynchus mykiss*):

Acute toxicity, 96 hours, static, LC50: 14.8 mg/L
Slightly toxic.

Aquatic toxicity, invertebrates

Water flea (*Daphnia magna*):

Acute toxicity, 48 hours, static, EC50: 0.77 - 1.19 mg/L
Highly toxic.

Aquatic toxicity, algae/aquatic plants

Green algae (*Selenastrum capricornutum*):

Acute toxicity, 96 hours, static, EC50: 0.0094 mg/L
Very highly toxic.

Avian toxicity

Bobwhite quail (*Colinus virginianus*):

Dietary toxicity, 5 days, LC50: 575 mg/kg diet
Moderately toxic.

Mallard duck (*Anas platyrhynchos*):

Dietary toxicity, 5 days, LC50: > 980 mg/kg diet

Mallard duck (*Anas platyrhynchos*):

Acute oral toxicity, single dose, LD50: 60.6 - 89.6 mg/kg body weight

Moderately toxic.

Bioaccumulation

Bluegill sunfish (*Lepomis macrochirus*):

Edible portion: BCF: < 1

No significant bioaccumulation. Rapid depuration after end of exposure.

Dissipation

Water/sediment, field:

Half life: 1 - 2 days

Rapid removal by adsorption to sediments.

N-(phosphonomethyl)glycine { glyphosate }

Bioaccumulation

Bluegill sunfish (*Lepomis macrochirus*):

Whole fish: BCF: < 1

No significant bioaccumulation is expected.

Dissipation

Soil, field:

Half life: 2 - 174 days

Koc: 884 - 60,000 L/kg

Adsorbs strongly to soil.

Water, aerobic:

Half life: < 7 days

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product

Keep out of drains, sewers, ditches and water ways. Recycle if appropriate facilities/equipment available. Burn in proper incinerator. Follow all local/regional/national/international regulations.

13.1.2. Container

See the individual container label for disposal information. Emptied packages retain product residue and dust. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Empty packaging completely. Store for collection by approved waste disposal service. Ensure packaging cannot be reused. Do NOT re-use containers. Recycle if appropriate facilities/equipment available. Bury in approved landfill. Follow all local/regional/national/international regulations.

Use handling recommendations in Section 7 and personal protection recommendations in Section 8.

14. TRANSPORT INFORMATION

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

14.1. US Dept. of Transportation (DOT) Hazardous Materials Regulations (49 CFR Parts 105-180)

UN No.:	UN3077
Proper Shipping Name (Technical Name if required):	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (diquat dibromide)
Class:	9
Packing Group:	III

14.1.1. Note

Applies ONLY to packages which contain an RQ.

14.1.2. US DOT Reportable quantity

RQ Component	RQ	Minimum package size containing RQ
diquat	1,000 lb	34,483 lb

14.2. IMDG Code

UN No.:	UN3077
Proper Shipping Name (Technical Name if required):	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., LIMITED QUANTITY (diquat dibromide)
Class:	9
Packing Group:	III

14.3. IATA/ICAO

UN No.:	UN3077
Proper Shipping Name (Technical Name if required):	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., LIMITED QUANTITY ()
Class:	9
Packing Group:	III

15. REGULATORY INFORMATION

15.1. Environmental Protection Agency

15.1.1. TSCA Inventory

Exempt

15.1.2. SARA Title III Rules

Section 311/312 Hazard Categories: Immediate

Section 302 Extremely Hazardous Substances: Not applicable.

Section 313 Toxic Chemical(s): Not applicable.

15.1.3. CERCLA Reportable quantity

RQ Component	RQ	Minimum package size containing RQ
diquat	1,000 lb	34,483 lb

Release of more than any reportable quantity to the environment in a 24 hour period requires notification to the National Response Center (800-424-8802 or 202-426-2675).

15.1.4. Federal Insecticide, Fungicide, Rodenticide Act (FIFRA)

This chemical is a pesticide product regulated by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION!

HARMFUL IF SWALLOWED, HARMFUL IF INHALED, CAUSES MODERATE EYE IRRITATION

Acute oral toxicity: FIFRA category III.

Acute dermal toxicity: FIFRA category IV.
Acute inhalation toxicity: FIFRA category III.
Skin irritation: FIFRA category IV.
Eye irritation: FIFRA category III.

16. OTHER INFORMATION

The information given here is not necessarily exhaustive but is representative of relevant, reliable data.
Follow all local/regional/national/international regulations.
Please consult supplier if further information is needed.
In this document the British spelling was applied.
|| Significant changes versus previous edition.

	Health	Flammability	Instability	Additional Markings
NFPA	2	1	2	

0 = Minimal hazard, 1 = Slight hazard, 2 = Moderate hazard, 3 = Severe hazard, 4 = Extreme hazard

Full denomination of most frequently used acronyms. BCF (Bioconcentration Factor), BOD (Biochemical Oxygen Demand), COD (Chemical Oxygen Demand), EC50 (50% effect concentration), ED50 (50% effect dose), I.M. (intramuscular), I.P. (intraperitoneal), I.V. (intravenous), Koc (Soil adsorption coefficient), LC50 (50% lethality concentration), LD50 (50% lethality dose), LDLo (Lower limit of lethal dosage), LEL (Lower Explosion Limit), LOAEC (Lowest Observed Adverse Effect Concentration), LOAEL (Lowest Observed Adverse Effect Level), LOEC (Lowest Observed Effect Concentration), LOEL (Lowest Observed Effect Level), MEL (Maximum Exposure limit), MTD (Maximum Tolerated Dose), NOAEC (No Observed Adverse Effect Concentration), NOAEL (No Observed Adverse Effect Level), NOEC (No Observed Effect Concentration), NOEL (No Observed Effect Level), OEL (Occupational Exposure Limit), PEL (Permissible Exposure Limit), PII (Primary Irritation Index), Pow (Partition coefficient n-octanol/water), S.C. (subcutaneous), STEL (Short-Term Exposure Limit), STOT SE (Specific Target Organ Toxicity, Single Exposure), STOT RE (Specific Target Organ Toxicity, Repeated Exposure), TLV-C (Threshold Limit Value-Ceiling), TLV-TWA (Threshold Limit Value - Time Weighted Average), UEL (Upper Explosion Limit)

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, MONSANTO Company or any of its subsidiaries makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for the purposes prior to use. In no event will MONSANTO Company or any of its subsidiaries be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR TO THE PRODUCT TO WHICH INFORMATION REFERS.

**LAWSON** Products

SECTION 1. IDENTIFICATION

Product name : FLEXSEAL RTV BLUE

Product code : 91776

Manufacturer or supplier's details

Company name of supplier : Lawson Products

Address : 8770 West Bryn Mawr Ave., Suite 900
Chicago, IL 60631

Telephone : 773-304-5050

Emergency telephone : 888-426-4851

Recommended use of the chemical and restrictions on useRecommended use : Adhesive, binding agents

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

Precautionary Statements : **Prevention:**
P271 Use only outdoors or in a well-ventilated area.**Other hazards**None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Silicone elastomer

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Silicon dioxide	7631-86-9	>= 5 - < 10
Distillates (petroleum), hydrotreated middle	64742-46-7	>= 5 - < 10
Titanium dioxide	13463-67-7	>= 1 - < 5
Aluminium	7429-90-5	>= 1 - < 5
Carbon black	1333-86-4	>= 0.1 - < 1

SECTION 4. FIRST AID MEASURES

If inhaled	: If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact	: Wash with water and soap as a precaution. Get medical attention if symptoms occur.
In case of eye contact	: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.
If swallowed	: If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Rinse mouth thoroughly with water.
Most important symptoms and effects, both acute and delayed	: None known.
Protection of first-aiders	: No special precautions are necessary for first aid responders.
Notes to physician	: Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: Water spray Alcohol-resistant foam Dry chemical Carbon dioxide (CO ₂)
Unsuitable extinguishing media	: None known.
Specific hazards during fire fighting	: Exposure to combustion products may be a hazard to health.
Hazardous combustion products	: Carbon oxides Silicon oxides Formaldehyde Metal oxides
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	: Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Follow safe handling advice and personal protective equipment recommendations.
- Environmental precautions : Discharge into the environment must be avoided.
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. If diked material can be pumped, store recovered material in appropriate container.
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.
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : Use only with adequate ventilation.
- Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice.
Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers.
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:
Strong oxidizing agents

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Ingredients with workplace control parameters**

Ingr	CAS	Value	Control	Basis
is	M	W	L	

SAFETY DATA SHEET

Silicon dioxide	7631-86-9	TWA (Dust)	20 Million particles per cubic foot (Silica)	OSHA Z-3
		TWA (Dust)	80 mg/m ³ / %SiO ₂ (Silica)	OSHA Z-3
		TWA	6 mg/m ³ (Silica)	NIOSH REL
Distillates (petroleum), hydrotreated middle	64742-46-7	TWA (Mist)	5 mg/m ³	OSHA Z-1
		TWA (Mist)	5 mg/m ³	OSHA P0
		TWA (Mist)	5 mg/m ³	NIOSH REL
		ST (Mist)	10 mg/m ³	NIOSH REL
Titanium dioxide	13463-67-7	TWA (total dust)	15 mg/m ³	OSHA Z-1
		TWA	10 mg/m ³ (Titanium dioxide)	ACGIH
Aluminium	7429-90-5	TWA (Respirable)	5 mg/m ³	NIOSH REL
		TWA (total)	10 mg/m ³	NIOSH REL
		TWA (total dust)	15 mg/m ³ (Aluminum)	OSHA Z-1
		TWA (respirable fraction)	5 mg/m ³ (Aluminum)	OSHA Z-1
		TWA (pyro powders)	5 mg/m ³ (Aluminum)	NIOSH REL
		TWA (Respirable fraction)	1 mg/m ³ (Aluminum)	ACGIH
Carbon black	1333-86-4	TWA	3.5 mg/m ³	NIOSH REL
		TWA	3.5 mg/m ³	OSHA Z-1
		TWA (Inhalable fraction)	3 mg/m ³	ACGIH

Engineering measures

: Processing may form hazardous compounds (see section 10).
 Ensure adequate ventilation, especially in confined areas.
 Minimize workplace exposure concentrations.
 Dust formation may be relevant in the processing of this product. In addition to substance-specific OELs, general limitations of concentrations of particulates in the air at workplaces have to be considered in workplace risk assessment. Relevant limits include: OSHA PEL for Particulates Not Otherwise Regulated of 15 mg/m³ - total dust, 5 mg/m³ - respirable fraction; and ACGIH TWA for Particles (insoluble or poorly soluble) Not Otherwise Specified of 3 mg/m³ - respirable particles, 10 mg/m³ - inhalable particles.

Personal protective equipment

Respiratory protection

: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where

concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

Remarks : Wash hands before breaks and at the end of workday.

Eye protection

: Wear the following personal protective equipment:
Safety glasses

Skin and body protection

: Skin should be washed after contact.

Hygiene measures

: Ensure that eye flushing systems and safety showers are located close to the working place.
When using do not eat, drink or smoke.
Wash contaminated clothing before re-use.
These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : paste

Color : in accordance with the product description

Odor : Acetic acid

Odor Threshold : No data available

pH : Not applicable

Melting point/freezing point : No data available

Initial boiling point and boiling range : Not applicable

Flash point : > 100 °C
Method: closed cup

Evaporation rate : Not applicable

Flammability (solid, gas) : Not classified as a flammability hazard

Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapor pressure	: Not applicable
Relative vapor density	: No data available
Relative density	: 1.007
Solubility(ies)	
Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: Not applicable
Explosive properties	: Not explosive
Oxidizing properties	: The substance or mixture is not classified as oxidizing.
Molecular weight	: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not classified as a reactivity hazard.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: Use at elevated temperatures may form highly hazardous compounds. Can react with strong oxidizing agents. Acetic acid is formed upon contact with water or humid air. When heated to temperatures above 150 °C (300 °F) in the presence of air, trace quantities of formaldehyde may be released. Adequate ventilation is required. See OSHA formaldehyde standard, 29 CFR 1910.1048 Hazardous decomposition products will be formed at elevated temperatures.
Conditions to avoid	: None known.
Incompatible materials	: Oxidizing agents

Hazardous decomposition products
Thermal decomposition : Formaldehyde

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Skin contact

Ingestion

Eye contact

Acute toxicity

Not classified based on available information.

Product:

Acute inhalation toxicity : Acute toxicity estimate: > 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Ingredients:

Silicon dioxide:

Acute oral toxicity : LD50 (Rat): > 3,300 mg/kg
Assessment: The substance or mixture has no acute oral toxicity
Remarks: Information taken from reference works and the literature.

Acute inhalation toxicity : LC50 (Rat): > 2.08 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Information taken from reference works and the literature.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Information taken from reference works and the literature.

Distillates (petroleum), hydrotreated middle:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 1.78 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Titanium dioxide:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 6.82 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Aluminium:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 0.888 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Carbon black:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0.0046 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Skin corrosion/irritation

Not classified based on available information.

Ingredients:**Silicon dioxide:**

Result: No skin irritation

Remarks: Information taken from reference works and the literature.

Titanium dioxide:

Species: Rabbit

Result: No skin irritation

Aluminium:

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Remarks: Based on data from similar materials

Carbon black:

Species: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Ingredients:**Silicon dioxide:**

Result: No eye irritation

Remarks: Information taken from reference works and the literature.

Titanium dioxide:

Species: Rabbit

Result: No eye irritation

Aluminium:

Species: Rabbit

Result: No eye irritation

Remarks: Based on data from similar materials

Carbon black:

Species: Rabbit

Result: No eye irritation

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.

Respiratory sensitization: Not classified based on available information.

Ingredients:**Silicon dioxide:**

Assessment: Does not cause skin sensitization.

Test Type: Skin: test type not specified

Species: Guinea pig

Remarks: No known sensitising effect.

Information taken from reference works and the literature.

Titanium dioxide:

Test Type: Local lymph node assay (LLNA)

Routes of exposure: Skin contact

Species: Mouse

Result: negative

Aluminium:

Routes of exposure: Skin contact

Species: Guinea pig

Result: negative

Remarks: Based on data from similar materials

Carbon black:

Test Type: Buehler Test

Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: negative

Germ cell mutagenicity

Not classified based on available information.

Ingredients:**Silicon dioxide:**

- Genotoxicity in vitro : Result: negative
Remarks: Information taken from reference works and the literature.
- Genotoxicity in vivo : Application Route: Ingestion
Result: negative
Remarks: Information taken from reference works and the literature.
- Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

Titanium dioxide:

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
- Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Result: negative

Aluminium:

- Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
- Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

Carbon black:

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients:**Titanium dioxide:**

Species: Rat
Application Route: inhalation (dust/mist/fume)
Exposure time: 24 Months
Method: OECD Test Guideline 453
Result: positive
Remarks: The mechanism or mode of action may not be relevant in humans.
The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

- Carcinogenicity - Assess- : Limited evidence of carcinogenicity in inhalation studies with

ment

animals.

Aluminium:

Species: Rat

Application Route: inhalation (dust/mist/fume)

Exposure time: 86 weeks

Result: negative

Carbon black:

Species: Rat

Application Route: Inhalation

Exposure time: 2 Years

Result: positive

Target Organs: Lungs

Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Carcinogenicity - Assessment

: Sufficient evidence of carcinogenicity in inhalation studies with animals

IARC

Group 2B: Possibly carcinogenic to humans

Titanium dioxide

13463-67-7

Carbon black

1333-86-4

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 toxicity

Not classified based on available information.

Ingredients:**Aluminium:**

Effects on fertility

: Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion

Method: OECD Test Guideline 422

Result: negative

Remarks: Based on data from similar materials

Effects on fetal development

: Test Type: Embryo-fetal development

Species: Mouse

Application Route: Ingestion

Result: negative

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Ingredients:**Carbon black:**

Routes of exposure: inhalation (dust/mist/fume)

Assessment: No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.

Repeated dose toxicity**Ingredients:****Titanium dioxide:**

Species: Rat

NOAEL: 24,000 mg/kg

Application Route: Ingestion

Exposure time: 28 d

Species: Rat

NOAEL: 10 mg/m³

Application Route: inhalation (dust/mist/fume)

Exposure time: 2 y

Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Carbon black:

Species: Rat

NOAEL: 1 mg/m³

LOAEL: 7 mg/m³

Application Route: Inhalation

Test atmosphere: dust/mist

Exposure time: 90 d

Remarks: The substance is inextricably bound in the product and therefore does not contribute to a dust inhalation hazard.

Aspiration toxicity

Not classified based on available information.

Ingredients:**Distillates (petroleum), hydrotreated middle:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Ingredients:**

Titanium dioxide:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h
Toxicity to algae	: EC50 (Skeletonema costatum (marine diatom)): > 10,000 mg/l Exposure time: 72 h
Toxicity to bacteria	: EC50: > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

Aluminium:

Toxicity to fish	: LC50 (Oncorhynchus mykiss (rainbow trout)): 14.6 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 0.135 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: No toxicity at the limit of solubility.
Toxicity to algae	: EC50 (Pseudokirchneriella subcapitata (green algae)): > 0.004 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility.
Toxicity to fish (Chronic toxicity)	: NOEC (Pimephales promelas (fathead minnow)): 7.1 mg/l Exposure time: 28 d

Carbon black:

Toxicity to fish	: LC0 (Danio rerio (zebra fish)): 1,000 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 5,600 mg/l Exposure time: 24 h Method: OECD Test Guideline 202
Toxicity to algae	: NOEC (Desmodesmus subspicatus (green algae)): 10,000 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

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**

Resource Conservation and Recovery Act (RCRA) : This product has been evaluated for RCRA characteristics and does not meet the criteria of hazardous waste if discarded in its purchased form.

Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Dispose of as unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION**International Regulation****UNRTDG**

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation**49 CFR**

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Acetic anhydride	108-24-7	5000	*
Acetic acid	64-19-7	5000	*

*: 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 : No SARA Hazards

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Aluminium	7429-90-5	1.6 %
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US State Regulations**Pennsylvania Right To Know**

Dimethyl siloxane, hydroxy-terminated	70131-67-8	70 - 90 %
Silicon dioxide	7631-86-9	5 - 10 %
Distillates (petroleum), hydrotreated middle	64742-46-7	5 - 10 %
Iron oxide	1332-37-2	1 - 5 %
Titanium dioxide	13463-67-7	1 - 5 %
Aluminium	7429-90-5	1 - 5 %
Acetic acid	64-19-7	0 - 0.1 %
Acetic anhydride	108-24-7	0 - 0.1 %

New Jersey Right To Know

Dimethyl siloxane, hydroxy-terminated	70131-67-8	70 - 90 %
Silicon dioxide	7631-86-9	5 - 10 %
Distillates (petroleum), hydrotreated middle	64742-46-7	5 - 10 %
Iron oxide	1332-37-2	1 - 5 %
Titanium dioxide	13463-67-7	1 - 5 %
Aluminium	7429-90-5	1 - 5 %
Carbon black	1333-86-4	0.1 - 1 %

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:

REACH : All ingredients (pre-)registered or exempt.

TSCA : All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

AICS : All ingredients listed or exempt.

IECSC : All ingredients listed or exempt.

PICCS : All ingredients listed or exempt.

DSL : All chemical substances in this product comply with the CEPA 1999 and NSNR and are on or exempt from listing on the Canadian Domestic Substances List (DSL).

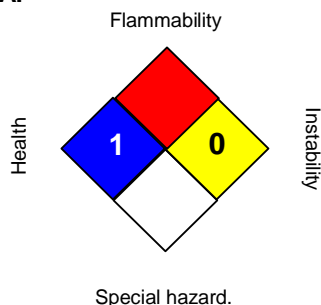
Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

NFPA:



HMIS III:

H	1
F	1
P	0
H	

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 NIOSH REL : USA. NIOSH Recommended Exposure Limits
 OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
 OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
 OSHA Z-3 : USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
 ACGIH / TWA : 8-hour, time-weighted average
 NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
 NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
 OSHA P0 / TWA : 8-hour time weighted average
 OSHA Z-1 / TWA : 8-hour time weighted average
 OSHA Z-3 / TWA : 8-hour time weighted average
 Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 02/25/2015

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

US / Z8



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Revision Date: 7/1/15

Prepared according to Global Harmonized System (GHS) standards

SECTION 1

CHEMICAL PRODUCT IDENTIFICATION

Lubrication Technologies, Inc.
900 Mandelsohn 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



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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-Trac (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°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
Sodium hydroxide	2 mg/m ³ (PEL)	-	2 mg/m ³ (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:

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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 AUTHORS 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.

Safety Data Sheet

FLUSH OFF



LAWSON Products

Section 1 Identification

Trade Name: FLUSH OFF
Product Identification: 95660
Synonyms: Orange Terpenes
Product Use Description:
Degreaser

General Info Phone: (773) 304-5050
Emergency Phone: (888) 426-4851

Supplier:
LAWSON PRODUCTS, INC.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631525

Section 2 Hazards Identification

Classifications

Aspiration Hazard - Category 1
Skin Irritation - Category 2
Eye Irritation - Category 2
Skin Sensitization - Category 1
Flammable Aerosols - Category 1
Gasses under pressure - Liquefied gas



Flammable



Compressed Gas



Irritant



Health Hazard

Signal Word: Danger

Hazard Statements

Keep out of reach of children.
Read label and SDS before use.
Extremely flammable aerosol.
Contains gas under pressure; may explode if heated.
May be fatal if swallowed and enters airways.
May cause an allergic skin reaction.
Causes skin and serious eye irritation.

Precautionary Statements

Prevention

Avoid breathing mist/spray.
Wash hands thoroughly after handling.
Wear protective gloves.
Wear eye or face protection.
Contaminated clothing must not be allowed out of the workplace.
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.

Response

IF SWALLOWED: Immediately call a poison center or a doctor. Do NOT induce vomiting.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs get medical attention.
Take off contaminated clothing and wash before reuse.

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FLUSH OFF

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 in a well-ventilated place.

Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Store locked up.

Disposal

Dispose of contents and container in accordance with all local, regional, and national regulations.

Hazards Not Otherwise Specified

Not applicable

Section 3 Composition

<u>Chemical Name</u>	<u>CAS #</u>	<u>Concentration</u> <u>% by Weight</u>
D-limonene	5989-27-5	>=90 = 95
Carbon Dioxide	124-38-9	>=1 <= 5

Section 4 First Aid

EMERGENCY OVERVIEW

DANGER. Extremely flammable. Contents under pressure. Harmful or fatal if swallowed. Aspiration hazard if swallowed. Keep away from heat and flame. Can cause nervous system depression.

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.

SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs get medical attention. Take off contaminated clothing and wash it before reuse.

INHALATION: Remove person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.

INGESTION: Harmful or fatal if swallowed. Seek medical attention immediately. Aspiration hazard - this material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Section 5 Fire Fighting Measures

Safety Data Sheet

FLUSH OFF

Suitable fire extinguishing media:

Use water spray, fog or foam.

Specific hazards arising from the chemical:

Flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of 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 create fire or explosion hazard.

Hazardous thermal decomposition products:

Carbon Dioxide, Carbon Monoxide

Specific fire-fighting methods:

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 a positive pressure mode.

Section 6 Accidental Release Measures

Personal precautions:

Put on appropriate personal protective equipment (see section 8)

Environmental precautions and clean-up methods:

Stop all leaks. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all ignition sources. Disperse vapors with water spray. Prevent runoff from entering drains, sewers, streams or other bodies of water. Absorb spill with inert material. **DO NOT use clay-type absorbent materials.** Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal.

Section 7 Handling and Storage

Do not use or store near heat, sparks or open flame. Exposure to temperatures above 120 F may cause bursting. Do not puncture or incinerate container. Store in a cool, dry place. Do not get in eyes, on skin or on clothing. Intentional misuse by deliberately concentrating and inhaling may be harmful or fatal. Keep out of reach of children.

Section 8 Exposure Controls/Personal Protection

Eye Protection: Wear safety glasses or goggles.

Skin Protection: To prevent repeated or prolonged contact, wear impervious gloves (made from rubber, nitrile or neoprene).

Respiratory Protection: When respiratory protection is required use an organic vapor cartridge. A respiratory program that meets OSHA's 29 CFR 1910.34 & ANSI Z88.2 requirements must be followed.

Engineering Controls: Good general ventilation required.

Safety Data Sheet

FLUSH OFF

Section 9 Physical and Chemical Properties

Property	Value		
Appearance	CLEAR SPRAY/MIST	Auto Ignition Temp	NOT AVAILABLE
Boiling Point	NOT AVAILABLE	Color	COLORLESS
Decomposition Temperature	NOT AVAILABLE	Evaporation Rate	NOT AVAILABLE
Explosive Limit Ranges	NOT AVAILABLE	Explosive Properties	NOT AVAILABLE
Flash Point	120 F (liquid portion)	Melting/Freezing Point	NOT AVAILABLE
Odor	CITRUS	Odor Threshold	NOT AVAILABLE
Other Information	VOC content (wt. %): 98	Oxidizing Properties	NOT AVAILABLE
Partition Coeff	NOT AVAILABLE	Physical State	LIQUID
Relative Density	0.8	Solubility (Water)	EMULSIFIES
Vapor Density	NOT AVAILABLE	Vapor Pressure	NOT AVAILABLE
Viscosity	NOT AVAILABLE	pH	NOT APPLICABLE

Section 10 Stability and Reactivity

Reactivity :	Under normal conditions of storage and use, hazardous reactions will not occur.
Chemical Stability :	Stable under normal conditions.
Incompatible Materials :	Acids, strong oxidizers, inorganic clays (clay-type absorbents)
Conditions to Avoid :	High temperatures, open flames, sparks, welding.
Decomposition Products:	CO, CO2

Vapors may ignite at temperatures exceeding flash point.

Section 11 Toxicological Information

Primary Route of Entry: Skin contact, inhalation, ingestion

Acute/Potential Health Effects:

EYES: May cause serious eye irritation. Symptoms include stinging, tearing and redness.

SKIN: May cause skin irritation. Prolonged or repeated contact may dry the skin and cause sensitization. Symptoms may include redness, burning, drying of skin and skin burns.

INHALATION: High vapor/aerosol concentrations (>1000 ppm) are irritating to the eyes and respiratory tract. May cause nose, throat and respiratory tract irritation, coughing and headache.

INGESTION: Harmful or fatal if swallowed. Aspiration hazard - this material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Chronic / Long Term Effects: None known.

Target Organ Effects: Skin.

Reproductive/Developmental Information:

Carcinogenic Information: This material is not listed as a carcinogen by IARC, NTP or OSHA.

Acute Toxicity Values:

Not available.

Section 12 Ecological Information

Not available.

Safety Data Sheet

FLUSH OFF

Section 13 Disposal Considerations

Waste must be disposed of in accordance with federal, state and local environmental control regulations. See label for further instructions.

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.

UN number 1950
Proper shipping name Aerosols, flammable
Class 2.1
Packing group -

Section 15 Regulatory Information

If identified components of this product are **CERCLA** hazardous substances and/or listed under **Sections 302, 304, or 313 of Title III** of the Superfund Amendments and Reauthorization Act (SARA) of 1986 (also known as EPCRA, the Emergency Planning and Community Right-To-Know Act), or under **California Proposition 65** (Safe Drinking Water and Toxic Enforcement Act), they are listed above in Section 15 of this SDS.

If identified components of this product are listed under Section 313, this product contains toxic chemicals subject to the reporting requirements of Section 313. This information must be included in all SDS that are copied and distributed for this material.

Title III Section 311/312 Hazardous Categories - 40 CFR 370.2:

ACUTE (X) Chronic (X) Fire (X) Pressure (X) Reactive () Not Applicable ()

T.S.C.A. Status: All chemical substances found in this product comply with the Toxic Substances Control Act inventory reporting requirements.

RCRA Status: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. If this product becomes hazardous waste it would be assigned RCRA Code(s)

D001

Section 16 Other Information

HMIS Ratings :

HEALTH	2
FLAMMABILITY	4
REACTIVITY	0
PERSONAL PROTECTION	G

Safety Data Sheet

FLUSH OFF

Disclaimer: This Manufacturer believes that the information contained in the Safety Data Sheet is accurate. The suggested procedures are based on experience as of the date of the publication. They are not necessarily all inclusive nor fully adequate in every circumstance. Also, the suggestions should not be confused with, nor followed in violation of applicable laws, regulations, rules or insurance requirements.

Preparation/Revision Date: 6/19/15

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
Cyclohexane (CAS 110-82-7)	PEL	5000 ppm 1050 mg/m3
Diethyl Ether (CAS 60-29-7)	PEL	300 ppm 1200 mg/m3
n-Heptane (CAS 142-82-5)	PEL	400 ppm 2000 mg/m3
n-Hexane (CAS 110-54-3)	PEL	500 ppm 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	
Cyclohexane (CAS 110-82-7)	TWA	5000 ppm	
	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-Hexanedio n, 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.
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Information on toxicological effects

Acute toxicity	May be fatal if swallowed and enters airways. Narcotic effects.
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Components	Species	Test Results
Butylated Hydroxytoluene (CAS 128-37-0)		
<u>Acute</u>		
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)		
<u>Acute</u>		
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)		
<u>Acute</u>		
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)		
<u>Acute</u>		
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
Toluene (CAS 108-88-3)	Wistar rat	49 g/kg
	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.

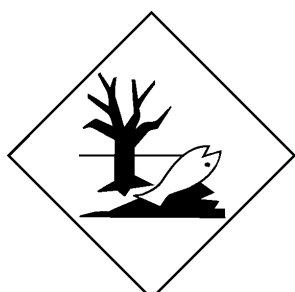
DOT



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: 006.0

Issue date: 01/19/2018

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	LOCTITE® 277™ THREADLOCKER HIGH STRENGTH	IDH number:	88448
Product type:	Anaerobic Sealant	Item number:	27731
Restriction of Use:	None identified	Region:	United States
Company address:	Contact information:		
Henkel Corporation	Telephone: (860) 571-5100		
One Henkel Way	MEDICAL EMERGENCY Phone: Poison Control Center		
Rocky Hill, Connecticut 06067	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

IDH number: 88448

Product name: LOCTITE® 277™ THREADLOCKER HIGH STRENGTH
Page 1 of 6

Hazardous Component(s)	CAS Number	Percentage*
Cumene hydroperoxide	80-15-9	1 - 5
Saccharin	81-07-2	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 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/m ³) TWA (SKIN)	None
Saccharin	None	None	None	None
Cumene	50 ppm TWA	50 ppm (245 mg/m ³) 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. 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
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:	1.1
Vapor density:	Not available.
Flash point:	> 93.3 °C (> 199.94 °F) Tagliabue closed cup
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:	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	Inhalation LC50 (Mouse, 4 h) = 200 mg/l	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Saccharin	Oral LD50 (Mouse) = 17 g/kg	No Target Organs
Cumene	Oral LD50 (Rat) = 2.91 g/kg Oral LD50 (Rat) = 1,400 mg/kg Inhalation LC50 (Rat, 4 h) = 8000 ppm	Central nervous system, Irritant, Lung

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Cumene hydroperoxide	No	No	No
Saccharin	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.

Hazardous waste number: Not a RCRA hazardous waste.

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 or are exempt from listing on the Toxic Substances Control Act 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.

Canada Regulatory Information

CEPA DSL/NDL 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: 2

Prepared by: Product Safety and Regulatory Affairs

Issue date: 01/19/2018

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Revision Number: 005.2

Issue date: 11/29/2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	Loctite Medium Strength Threadlocker	IDH number:	504466
Product type:	Anaerobic Sealant	Item number:	37614
Restriction of Use:	None identified	Region:	United States
Company address:	Contact information:		
Henkel AG & Co. KGaA	Telephone: +49 (211) 797 0		
Henkelstr. 67			
Düsseldorf 40589			

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING: CAUSES SKIN IRRITATION.
MAY CAUSE AN ALLERGIC SKIN REACTION.
CAUSES SERIOUS EYE IRRITATION.

HAZARD CLASS	HAZARD CATEGORY
SKIN IRRITATION	2
EYE IRRITATION	2A
SKIN SENSITIZATION	1

PICTOGRAM(S)



Precautionary Statements

Prevention:	Avoid breathing dust or fumes. Wash affected area thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. 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. If skin irritation or rash 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*
Polyglycol dimethacrylate	25852-47-5	60 - 70
Silica, amorphous, fumed, crystal-free	112945-52-5	1 - 5

IDH number: 504466

Product name: Loctite Medium Strength Threadlocker

Polyglycol dioctanoate	18268-70-7	1 - 5
Saccharin	81-07-2	1 - 5
Ethylene glycol	107-21-1	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
Polyglycol dimethacrylate	None	None	None	None
Silica, amorphous, fumed, crystal-free	10 mg/m3 TWA Inhalable dust. 3 mg/m3 TWA Respirable fraction.	20 MPPCF TWA 0.8 mg/m3 TWA	None	None
Polyglycol dioctanoate	None	None	None	None
Saccharin	None	None	None	None
Ethylene glycol	100 mg/m3 Ceiling Aerosol.	None	None	None
Cumene hydroperoxide	None	None	1 ppm (6 mg/m3) TWA (SKIN)	None
Cumene	50 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
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. May cause allergic skin reaction.
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
Polyglycol dimethacrylate	None	Allergen, Irritant
Silica, amorphous, fumed, crystal-free	None	Nuisance dust
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
Cumene hydroperoxide	Inhalation LC50 (Mouse, 4 h) = 200 mg/l	Allergen, Central nervous system, Corrosive, Irritant, Mutagen
Cumene	Oral LD50 (Rat) = 2.91 g/kg Oral LD50 (Rat) = 1,400 mg/kg Inhalation LC50 (Rat, 4 h) = 8000 ppm	Central nervous system, Irritant, Lung

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Polyglycol dimethacrylate	No	No	No
Silica, amorphous, fumed, crystal-free	No	No	No
Polyglycol dioctanoate	No	No	No
Saccharin	No	No	No
Ethylene glycol	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.

Hazardous waste number: Not a RCRA hazardous waste.

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 substances, 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/MDG)

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 or are exempt from listing on the Toxic Substances Control Act 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).

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: Reviewed SDS. Reissued with new date.

Prepared by: Sheila Gines, Regulatory Affairs Specialist

Issue date: 11/29/2016

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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°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/m ³ (PEL)	*10 mg/m ³	*5 mg/m ³ (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.



Initial boiling point:	Not determined.
Boiling range:	Not determined.
Flash point:	222°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:	0.868 @ 15.6°C
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°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

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.



PEAK Dexron III/Mercon ATF

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 : 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
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

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, in a safe manner, 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. 31.02 percent of the mixture consists of ingredient(s) of unknown acute toxicity.

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
distillates (petroleum), hydrotreated heavy paraffinic	(CAS No) 64742-54-7	40 - 70	Acute Tox. 3 (Inhalation:vapor), H331 Acute Tox. 4 (Inhalation:vapor), H332

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.

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- | | |
|--------------------------------------|--|
| 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 or doctor/physician. |

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

- | | |
|--------------------------------------|---|
| Symptoms/injuries after inhalation | : ON CONTINUOUS EXPOSURE/CONTACT: May cause respiratory irritation. |
| Symptoms/injuries after skin contact | : Contact during a long period may cause slight irritation. |
| Symptoms/injuries after eye contact | : Direct contact with the eyes is likely to be irritating. |
| Symptoms/injuries 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. |
| 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. Advice for firefighters

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

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 leaking substance. 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. |
|-------------------------------|---|

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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

distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)		
ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³ (Mineral oil, pure, highly and severely refined; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Inhalable fraction)
OSHA	Not applicable	

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.
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 : No data available
Flash point : 207 °C (404 °F) [Method used: Cleveland Open Cup]
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 : 0.86
Density : 0.86 kg/l (7.14 lbs/gal)
Solubility : Water: Negligible
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : 34.69 cP

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Explosive properties	: Not applicable.
Oxidizing properties	: No data available
Explosive limits	: No data available

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 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
----------------	------------------

distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

LD50 oral rat	> 5,000.00 mg/kg bodyweight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 5,000.00 mg/kg bodyweight (Rabbit; Experimental value; Equivalent or similar to OECD 402)
LC50 inhalation rat (mg/l)	> 5.53 mg/l/4h (Rat; Experimental value)
ATE US (vapors)	3.00 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

Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified

Specific target organ toxicity (repeated exposure)	: Not classified
--	------------------

Aspiration hazard	: Not classified
-------------------	------------------

Symptoms/injuries after inhalation	: ON CONTINUOUS EXPOSURE/CONTACT: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Contact during a long period may cause slight irritation.
Symptoms/injuries after eye contact	: Direct contact with the eyes is likely to be irritating.
Symptoms/injuries after ingestion	: Ingestion is likely to be harmful or have adverse effects.

SECTION 12: Ecological information

12.1. Toxicity

distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

LC50 fish 1	> 100.00 mg/l (LL50; OECD 203: Fish, Acute Toxicity Test; 96 h; Pimephales promelas; Static system; Fresh water; Experimental value)
-------------	--

PEAK Dexron III/Mercon ATF

Safety Data Sheet

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

distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

Threshold limit algae 1	>= 100 mg/l (NOEL; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Experimental value)
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12.2. Persistence and degradability

distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

Persistence and degradability	Not readily biodegradable in water. Adsorbs into the soil.
-------------------------------	--

12.3. Bioaccumulative potential

distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

Bioaccumulative potential	No bioaccumulation data available.
---------------------------	------------------------------------

12.4. Mobility in soil

No additional information available

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. No additional information available

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.
--------------------------------	--

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not a dangerous good in sense of transport regulations

TDG

Refer to current TDG Canada for further Canadian regulations

Transport by sea

No additional information available

Air transport

No additional information available

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
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distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

WHMIS Classification

Uncontrolled product
according to WHMIS
classification criteria

distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

Listed on the Canadian DSL (Domestic Substances List)

PEAK Dexron III/Mercon ATF

Safety Data Sheet

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

distillates (petroleum), hydrotreated heavy paraffinic (64742-54-7)

WHMIS Classification

Uncontrolled product according to WHMIS classification criteria

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]

Not classified

National regulations

No additional information available

15.3. US State regulations

PEAK Dexron III/Mercon ATF

U.S. - California - Proposition 65 - Other information

This products contains or may contain the following chemicals in the percentages listed, which are subject to the California Prop 65 regulation listed: Toluene (CAS # 108-88-3) [0.01 - 0.1%] (California Prop. 65-Developmental Toxicity)

SECTION 16: Other information

Full text of H-statements:

Acute Tox. 3 (Inhalation:vapor)	Acute toxicity (inhalation:vapor) Category 3
Acute Tox. 4 (Inhalation:vapor)	Acute toxicity (inhalation:vapor) Category 4
H331	Toxic if inhaled
H332	Harmful if inhaled

NFPA health hazard

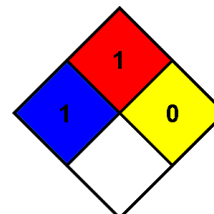
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

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

: 1 Slight Hazard - Irritation or minor reversible injury possible

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 (93 °C). (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.

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, Elmhendorf, 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 CHEMTREC in Country Emergency Number

Section 2 - Hazards Identification

2.1 GHS HAZARD

Hazard Classes

Highly Flammable liquid/vapor
Specific Target Organs toxicity single exposure
Specific Target Organs repeated exposure
Eye Irritation
Skin Irritation
Acute Toxicity (Oral)
Mutagenicity
Carcinogen
Reproductive Toxicity
Aspiration Hazard
Toxic to Aquatic Life Long Lasting Effects

Hazard Categories

Category 2
Category 3
Category 1
Category 2A
Category 2
Category 4
Category 1B
Category 1B
Category 2
Category 1
Category 2

SEF 50:1 2 Cycle

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
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Conforms to the Australian Preparation of Safety Data Sheets for Hazardous Chemicals under section 274 of the Work Health and Safety Act

2.2 Signal Word: **Danger**



Flame Health Hazard Irritant Aquatic Hazard

2.3 Pictograms:

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

T-5

SEF 50:1 2 Cycle

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

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Conforms to the Australian Preparation of Safety Data Sheets for Hazardous Chemicals under section 274 of the Work Health and Safety Act

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
				T-5

SEF 50:1 2 Cycle

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
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Conforms to the Australian Preparation of Safety Data Sheets for Hazardous Chemicals under section 274 of
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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.

4.4.5 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

SEF 50:1 2 Cycle

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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

SEF 50:1 2 Cycle

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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



Splash
Goggles



Gloves



Protective
Apron



Vapor
Respirator

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

SEF 50:1 2 Cycle

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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).

SEF 50:1 2 Cycle

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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.

SEF 50:1 2 Cycle

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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

SEF 50:1 2 Cycle

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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

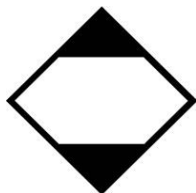
SEF 50:1 2 Cycle

Conforms to OSHA CFR 29 1910.1200 and aligns to the United Nations Globally Harmonized System
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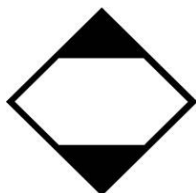
Use marking when shipping as a consumer commodity ground in the US

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



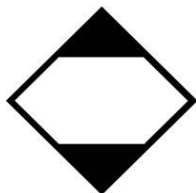
Use marking when shipping as a limited quantity ground in the Canada

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

SEF 50:1 2 Cycle

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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

SEF 50:1 2 Cycle

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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 BP Unleaded Gasolines
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.
150 West Warrenville Road
Naperville, Illinois 60563-8460
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)

OTHER PRODUCT INFORMATION 1 (866) 4 BP - MSDS
(866-427-6737 Toll Free - North America)
email: bpcares@bp.com

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 1B
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION (Unborn child) - 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.
Causes serious eye irritation.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging the unborn child.
May be fatal if swallowed and enters airways.
May cause drowsiness and dizziness.

Precautionary statements

Product name BP Unleaded Gasolines

Product code 12631

Page: 1/21

Version 1 Date of issue 12/16/2014.

Format US

Language ENGLISH

HOME

(US)

(ENGLISH)

U-1

Section 2. Hazards identification

Prevention	Obtain special instructions before use. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Avoid breathing vapor. Wash thoroughly after handling. Avoid release to the environment.
Response	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 or shower. 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 in well-ventilated place. Keep container tightly closed.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	Contains Benzene. Prolonged or repeated exposure to benzene can cause anaemia and other blood diseases, including leukemia. See toxicological information (Section 11).

Section 3. Composition/information on ingredients

Substance/mixture	Mixture	
Ingredient name	CAS number	%
Gasoline	Mixture	90 - 100
Ethanol	64-17-5	0 - 10
Contains:		
Benzene	71-43-2	0 - 3
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 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	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. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical 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.
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.

Product name	BP Unleaded Gasolines	Product code	12631	Page: 2/21
Version	1	Date of issue	12/16/2014.	Format US
				(US)
				Language ENGLISH
				(ENGLISH)

Section 4. First aid measures

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.
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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. This substance will float and can be reignited on surface water.
Unsuitable extinguishing media	Do not use water jet. Never use water.

Specific hazards arising from the chemical	Flammable liquid and vapor. Vapor may cause flash fire. 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 combustion products	Combustion products may include the following: carbon dioxide carbon monoxide other hazardous substances.
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 positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
Special remarks on fire hazards	Do not use water jet.

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).
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Section 6. Accidental release measures

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).

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). Do not get in eyes or on skin or clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. 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. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid exposure during pregnancy. Do not swallow. Aspiration hazard if swallowed. Can enter lungs and cause damage. Never siphon by mouth. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material.
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. 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.

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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 to any tanks or other confined space requires a full risk assessment and appropriate control measures to be put in place in conformance with appropriate regulations and industry practice on confined space entry. 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.

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. 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).

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/m ³ 8 hours. Issued/Revised: 5/1996 STEL: 500 ppm 15 minutes. Issued/Revised: 5/1996 STEL: 1480 mg/m ³ 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/m ³ 8 hours. Issued/Revised: 6/1993 TWA: 1000 ppm 8 hours. Issued/Revised: 6/1993
Benzene	ACGIH TLV (United States). Absorbed through skin. STEL: 8 mg/m ³ 15 minutes. Issued/Revised: 5/1997 STEL: 2.5 ppm 15 minutes. Issued/Revised:

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xylene

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
CELL: 25 ppm Issued/Revised: 6/1993
TWA: 10 ppm 8 hours. Issued/Revised:
6/1993

ACGIH TLV (United States).
STEL: 651 mg/m³ 15 minutes. Issued/
Revised: 5/1996
STEL: 150 ppm 15 minutes. Issued/Revised:
5/1996
TWA: 434 mg/m³ 8 hours. Issued/Revised:
5/1996
TWA: 100 ppm 8 hours. Issued/Revised:
5/1996
OSHA PEL (United States).
TWA: 435 mg/m³ 8 hours. Issued/Revised:
6/1993
TWA: 100 ppm 8 hours. Issued/Revised:
6/1993

toluene

OSHA PEL Z2 (United States).
AMP: 500 ppm 10 minutes. Issued/Revised:
6/1993
CELL: 300 ppm Issued/Revised: 6/1993
TWA: 200 ppm 8 hours. Issued/Revised:
6/1993
ACGIH TLV (United States).
TWA: 20 ppm 8 hours. Issued/Revised:
11/2006

1,2,4-Trimethylbenzene

ACGIH TLV (United States).
TWA: 123 mg/m³ 8 hours. Issued/Revised:
9/1994
TWA: 25 ppm 8 hours. Issued/Revised:
9/1994

ethylbenzene

ACGIH TLV (United States).
TWA: 20 ppm 8 hours. Issued/Revised:
12/2010
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

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through skin.

TWA: 52 mg/m³ 8 hours. Issued/Revised:
5/1996

TWA: 10 ppm 8 hours. Issued/Revised:
5/1996

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.

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. Gloves made from fluoroelastomer resistant to hydrocarbons and a wide range of chemicals. Nitrile 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.

Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

Body protection

Use of protective clothing is good industrial practice. 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 from static electricity, wear anti-static protective clothing. For greatest effectiveness against static electricity, overalls, boots and gloves should all be anti-static. When there is a risk of ignition wear inherently fire resistant protective clothes and gloves. 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

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clothes. 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. 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 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.

In case of insufficient ventilation, wear suitable respiratory equipment.

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.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Color	Clear
Odor	Hydrocarbon.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	26.67 to 221°C (80 to 430°F)
Flash point	Closed cup: -42.778°C (-45°F)
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits	Lower: 1.3% Upper: 7.6% (Estimated.)
Vapor pressure	48.134 to 103.146 kPa (361.97 to 775.66 mm Hg)
Vapor density	3 to 4 [Air = 1]
Density	750 kg/m ³ (0.75 g/cm ³)
Solubility	Very slightly soluble in water
Solubility	Very slightly soluble in the following materials: cold water.
Partition coefficient: n-octanol/water	>3
Auto-ignition temperature	257°C (494.6°F)
Decomposition temperature	Not available.
Viscosity	Not available.

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.
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/m ³ analytical	4 hours	Based on Gasoline
	LC50 Inhalation Vapor	Rat	>7630 mg/m ³ 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 available.				

Irritation/Corrosion

Product/ingredient name	Species	Result	Score	Exposure	Observation	Conc.	Remarks
Gasoline	Rabbit	Skin - Irritant	-	-	-	-	Based on Gasoline
	Rabbit	Eyes - Non-irritating to the eyes.	-	-	-	-	Based on Gasoline
Ethanol	Rabbit	Skin - Non-irritant to skin.	-	-	-	-	Based on Ethanol

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Rabbit	Eyes - Cornea opacity	-	-	-	-	Based on Ethanol
Rabbit	Eyes - Iris lesion	-	-	-	-	Based on Ethanol
Rabbit	Eyes - Irritant	-	-	-	-	Based on Ethanol

Sensitizer

Product/ingredient name	Route of exposure	Species	Result	Remarks
Gasoline	skin	Guinea pig	Not sensitizing	Based on Gasoline

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	Species	Exposure	Duration	Result	Remarks
Gasoline	Equivalent to OECD 451	Rat	Inhalation	113 weeks	Negative - Inhalation - Unspecified	Based on Gasoline
	Equivalent to OECD 451	Mouse	Dermal	102 weeks	Negative - Dermal - Unspecified	Based on Gasoline
Ethanol	EPA OPPTS 870.4200	Mouse	Oral	105 weeks	Positive - Oral - Unspecified	Based on Ethanol

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Equivalent - Rat Oral 104 weeks Negative - Based on
to OECD Oral - Ethanol
Unspecified

Conclusion/Summary May cause cancer

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.

IARC :

1 - Carcinogenic to human.

2B - Possible carcinogen to human.

3 - Not classifiable as a human carcinogen.

NTP :

Proven - Known to be human carcinogens.

Possible - Reasonably anticipated to be human carcinogens.

OSHA :

+ Potential occupational carcinogen

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Result	Exposure
Gasoline	-	Negative	-	Rat	Inhalation	2 generation
	-	-	Negative	Rat	Inhalation	14 days
Ethanol	-	Positive	-	Rat	Oral	2 generation
	-	-	Negative	Rat	Inhalation	18 days

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	Not applicable.	Narcotic effects
xylene	Category 3	Not applicable.	Respiratory tract irritation
toluene	Category 3	Not applicable.	Narcotic effects
1,2,4-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
cyclohexane	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
toluene	Category 2	Not determined	ears
Benzene	Category 1	Not determined	blood system

Aspiration hazard

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Name	Result
Gasoline	ASPIRATION HAZARD - Category 1
xylene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
ethylbenzene	ASPIRATION HAZARD - Category 1
cyclohexane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

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 and dizziness.
Ingestion	Can cause central nervous system (CNS) depression. 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.

Section 11. Toxicological information

Fertility effects

No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

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 as a mixture is classified as a 2B (possible human) carcinogen by IARC.

Gasoline engine exhaust is classified as possibly carcinogenic to humans by IARC (2B). This classification is based primarily on animal and in vitro studies of gasoline engine exhaust condensates/extracts. Studies of the gaseous exhaust stream in animals did not provide sufficient evidence for classification as a carcinogen.

Gasoline: Additional toxicity information on the components:

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.

Section 11. Toxicological information

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

Section 11. Toxicological information

to 1000 ppm ethylbenzene. No rats or mice died during the study. Kidney, liver, and lung 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

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		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

Section 12. Ecological information

Daphnia	Acute LC50 5012 mg/l	48 hours	-	Based on Ethanol
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 Not available.

Persistence and degradability

Partially 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
Ethanol	-	-	Readily

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 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

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Section 13. Disposal considerations

Ingredient	CAS #	Status	Reference number
Xylene	1330-20-7	Listed	U239
Toluene; Benzene, methyl-	108-88-3	Listed	U220
Benzene (I,T)	71-43-2	Listed	U019
Cyclohexane (I); Benzene, hexahydro- (I)	110-82-7	Listed	U056

Section 14. Transport information

	DOT Classification	TDG Classification	IMDG	IATA
UN number	UN1203	UN1203	UN1203	UN1203
UN proper shipping name	GASOLINE	GASOLINE	MOTOR SPIRIT or GASOLINE or PETROL MARINE POLLUTANT	Motor spirit or Gasoline or Petrol
Transport hazard class(es)	3 	3 	3  	3 
Packing group	II	II	II	-----
Environmental hazards	No.	No.	Yes.	No.
Additional information	<p>Reportable quantity 333.33 lbs / 151.33 kg [53.304 gal / 201.78 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</p> <p>Limited quantity Yes.</p> <p>Packaging instruction Passenger aircraft Quantity</p>	<p>The marine pollutant mark is not required when transported by road or rail.</p> <p>Explosive Limit and Limited Quantity Index 30</p> <p>Passenger Carrying Ship Index 100</p> <p>Passenger Carrying Road or Rail Index 5</p> <p>Special provisions 17, 82, 88</p>	<p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p>Emergency schedules (EmS) F-E, S-E</p> <p>Special provisions 243</p>	<p>The environmentally hazardous substance mark may appear if required by other transportation regulations.</p> <p>Passenger and Cargo Aircraft Quantity limitation: 5 L Packaging instructions: 353</p> <p>Cargo Aircraft Only Quantity limitation: 60 L Packaging instructions: 364</p> <p>Limited Quantities - Passenger Aircraft</p>

Section 14. Transport information

	limitation: 5 L		Quantity limitation: 1 L
	Cargo aircraft		Packaging instructions: Y341
	Quantity limitation: 60 L		
	Special provisions		Special provisions
	144, 177, B1, B33, IB2, T4, TP1		A100

Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code 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 listed or exempted.

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 311/312

Classification Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

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
	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
	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: XYLENE; TOLUENE; ETHYL ALCOHOL; BENZENE; PSEUDOCUMENE; ETHYL BENZENE; CYCLOHEXANE

New Jersey

The following components are listed: XYLENES; BENZENE, DIMETHYL-; TOLUENE; BENZENE, METHYL-; ETHYL ALCOHOL; ALCOHOL; BENZENE; PSEUDOCUMENE; 1, 2,4-TRIMETHYL BENZENE; ETHYL BENZENE; BENZENE, ETHYL-; CYCLOHEXANE; NAPHTHALENE; MOTH FLAKES

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Section 15. Regulatory information

Pennsylvania

The following components are listed: GASOLINE; BENZENE, DIMETHYL-; BENZENE, METHYL-; DENATURED ALCOHOL; BENZENE; PSEUDOCUMENE; BENZENE, ETHYL-; CYCLOHEXANE; NAPHTHALENE

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.
ethylbenzene; naphthalene; cumene

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
toluene

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.
Benzene

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.

Other regulations

Australia inventory (AICS)

At least one component is not listed.

Canada inventory

All components are listed or exempted.

China inventory (IECSC)

At least one component is not listed.

Japan inventory (ENCS)

At least one component is not listed.

Korea inventory (KECI)

At least one component is not listed.

Philippines inventory (PICCS)

At least one component is not listed.

Taiwan inventory (CSNN)

REACH Status

For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		3
Physical hazards		0
Personal protection		X

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.

National Fire Protection Association (U.S.A.)



History

Date of issue/Date of revision

12/16/2014.

Date of previous issue

No previous validation.

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Section 16. Other information

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 73/78 = 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.

▼ 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.

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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/sdsArc 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/sdsArc 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:	<p>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.)</p> <p>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.</p>

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
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Skin Corrosion/Irritation

Product:	Not classified
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Serious Eye Damage/Eye Irritation

Product:	Not classified
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Respiratory or Skin Sensitization

Product:	Not classified
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Carcinogenicity

Product:	Arc rays: Skin cancer has been reported.
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IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Titanium dioxide	Overall evaluation: 2B. Possibly carcinogenic to humans.
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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
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In vivo

Product:	Not classified
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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 (<i>Gambusia affinis</i>), 96 h): 1,800 mg/l
Potassium carbonate	LC 50 (Fathead minnow (<i>Pimephales promelas</i>), 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

Manganese

Reportable quantity

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

Manganese

Reportable quantity

Included in the regulation but with no data values. See regulation for further details.

SARA 311/312 Hazardous Chemical
Chemical Identity

Iron
Cellulose, pulp
Potassium silicate
Titanium dioxide
Manganese
Iron oxide

Threshold Planning Quantity

10000 lbs
10000 lbs
10000 lbs
10000 lbs
10000 lbs
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
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Canada. Canadian Environmental Protection Act (CEPA). National Pollutant Release Inventory (NPRI) (Parts 1-4)

NPRI	Not Regulated
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Greenhouse Gases

Not Regulated

Controlled Drugs and Substances Act

CA CDSI	Not Regulated
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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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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: Stooddy 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.stooddy.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/m³) 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.



	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/m³)	(C) 5 (fume)	5 (resp) 15 (dust)	0.5 0.5 µg/m³ (Cr VI)	15 (dust)	--	(C) 0.1 (V₂O₅ fume) (C) 0.5 (V₂O₅ resp)	5 (resp) 15 (dust)	15 (dust)	10 (fume)	2.5
ACGIH TLV (mg/m³)	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/m³)	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 contaminants 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 Stooddy Company web page (www.stooddy.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 form 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.



SAFETY DATA SHEET

Section 1: Identification

Product Name: Technician's Choice TEC471 Thick & Blue Car Wash Super Concentrate
Product Code: TEC471
Product Class: Car Wash Super Concentrate
Manufacturer/Supplier: ECP Incorporated
11210 Katherine's Crossing, Suite 100
Woodridge, IL 60517
Telephone: 630-754-4200
Emergency Telephone: CHEMTREC 800-424-9300

Date Prepared: February 25, 2002
Date of Review/Update: April 1, 2015

Section 2: Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

GHS Hazard Symbols:



GHS Classification: Eye Irritant Category 2B
Signal Word: Warning
Hazard Statements: Causes eye irritation

GHS Hazard Statements:
H320 - Causes eye irritation

GHS 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.
P264 - Wash hands thoroughly after handling.
P301 + P330 + P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
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.

Signs and Symptoms of Exposure:

Eye: Irritation including tearing or redness.
Skin: Prolonged skin contact may cause irritation including redness, irritation, itching.
Ingestion: Gastrointestinal irritation, nausea, vomiting, and diarrhea, upset stomach.
Inhalation: Not a likely route of exposure, but if over-inhalation occurs symptoms would include nose, throat, respiratory irritation.
Medical Conditions Aggravated by Exposure: None known.
HMIS Rating: Health- 1 Fire- 0 Reactivity- 0 Personal Protection- C

Section 3: Composition/Information on Ingredients

<u>Chemical Name</u>	<u>CAS Number</u>	<u>% Range</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Sodium Alkyl Aryl Sulfonate	25155-30-0	5-15	None Established	None Established
Cocoamide DIPA	68855-69-6	1-10	None Established	None Established

Section 4: First Aid Measures

Eye Contact: Flush with large amounts of water for 15 minutes. If symptoms develop, seek medical attention.
Skin Contact: Wash affected area with water for 15 minutes. Remove contaminated clothing and launder before reuse.
Ingestion: Never give anything by mouth to an unconscious person. If person is conscious then give several glasses of water. Do not induce vomiting. Keep warm and quiet. Seek medical attention.
Inhalation: Remove from exposure. Seek fresh air. Keep warm and quiet. If symptoms worsen seek medical attention.

Section 5: Fire-Fighting Measures

Fire and Explosive Properties: Flash Point: None to Boil / Estimate Flammable Limits: LEL / UEL: Not Applicable
Extinguishing Media: Not Applicable
Protective Equipment: Not Applicable

Section 6: Accidental Release Measures

Steps to be taken if Material is Spilled or Leaked: Ventilate and remove with inert absorbent.

Section 7: Handling and Storage

Precautions to be taken in Handling and Storage:

Never wear soaked clothing. Launder or dry-clean before wearing. Affix proper warning labels on containers in accordance with 29CFR 1010.1200.

Section 8: Exposure Controls and Personal Protection

Ventilation: Use only with adequate ventilation. Avoid breathing vapor or mist. Local exhaust preferred.
Respirator Protection: If required, a properly fitted NIOSH/MSHA approved respirator rated for the hazardous ingredients found in SECTION 3.
Skin Protection: Gloves rated for protection against ingredients in SECTION 3.
Eye Protection: Safety glasses with side shields or chemical goggles.

Section 9: Physical and Chemical Properties

Boiling Point:	212°F	Vapor Pressure (mmHg @ 68°F):	Unknown
Vapor Density:	Unknown	Solubility in Water:	Complete
Specific Gravity:	1.03 ± 0.05	Melting Point:	Not Applicable
% Volatile:	80.0 ± 0.5	pH:	9.0 ± 0.5
Appearance/Odor:	Blue Viscous Liquid, Cherry Scent.		

Section 10: Stability and Reactivity

Stability: Stable Materials to Avoid: Strong oxidizers.
Hazardous Polymerization: Will not occur. Conditions to Avoid: None
Hazardous Decomposition Products: Various hydrocarbons of incomplete combustion.

Section 11: Toxicology Information

IARC, NTP, or OSHA Carcinogen: None

Section 12: Ecological Information

Not Available

Section 13: Disposal Considerations

Waste Disposal: Dispose of in accordance with federal, state and local regulations.

Section 14: Transport Information

D.O.T. REQUIREMENTS (49CFR 172.101): Non-regulated by D.O.T.

Section 15: Regulatory Information

RQ (REPORTABLE QUANTITY) 49CFR 172.101

Component	RQ (lb.)	For This Product
Sodium Alkyl Aryl Sulfonate	1000	50,000
TSCA (Toxic Substances Control Act) Status:	The intentional ingredients of this product are listed. None	
CERCLA RQ - 40CFR 302.4		

Component	RQ (lb.)	For This Product
Sodium Alkyl Aryl Sulfonate	1000	50,000
SARA 302 COMPONENTS - 40CFR 355 Appendix A:	None	
SECTION 311/312 HAZARD CLASS - 40CFR 370.2		
Immediate (X)	Reactive	()
Delayed ()	Sudden Release of Pressure	()
Fire ()		

SARA 313 COMPONENTS - 40CFR 372.65: None
WORKPLACE HAZARDOUS INFORMATION SYSTEM (WHMIS)

Ingredient	Max. % By Wt.	LD50	LC50
Sodium Alkyl Aryl Sulfonate	5-15	Oral Rat - 438mg/kg	Not Established

Coco Diethanolamide

68603-42-9

1-10

Oral Rat - 12.4mL/kg

Not Established

CALIFORNIA PROPOSITION 65: None

Section 16: Other Information

Although the information contained herein is believed to be reliable, it is furnished without warranty of any kind. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, and storage.

EMPLOYEE HANDBOOK

For



HEARTLAND
— ASPHALT, INC. —
DRIVEWAYS TO HIGHWAYS

2601 S. FEDERAL AVENUE
MASON CITY, IA 50401
OFFICE : 641-424-1733
FAX : 641-424-0334

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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
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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.

Designation of EEO/AA Officer

Heartland Asphalt, Inc. has designated Christian Nitzschke, 2601 South Federal Ave. Mason City, IA 50401, (641) 424-1733 as the EEO/AA Officer. Christian Nitzschke has the responsibility to effectively administer and promote this Policy, and is assigned adequate authority and responsibility to do so.

Recruitment Statement

Heartland Asphalt, Inc. encourages employees to help recruit women and minorities by announcing positions to all active full time employees.

Training Letter

Heartland Asphalt, Inc. has an approved informal training and promotion program.

At this time, our company offers training programs in the following job classifications/areas.

Truck Driver Asphalt Laborer Equipment Operator Lab Technician

The qualifications(s) to be considered for our company's training program, a prospective trainee must be an employee in good standing and/or have supervisory approval. For further information, copies of individual job classification/areas training program outlines, you must request them from:

Christian Nitzschke
2601 South Federal Ave.
Mason City, IA 50401
(641) 424-1733

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
Heartland Asphalt, Inc.

Date

Christian Nitzschke, EEO/AA Officer
Heartland Asphalt, Inc.

Date

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 impart 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 their 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 at the rate established by the DOT for the given year. Random selection, by its 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 is 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 
<ul style="list-style-type: none">• Carcinogen• Mutagenicity• Reproductive Toxicity• Respiratory Sensitizer• Target Organ Toxicity• Aspiration Toxicity	<ul style="list-style-type: none">• Flammables• Pyrophorics• Self-Heating• Emits Flammable Gas• Self-Reactives• Organic Peroxides	<ul style="list-style-type: none">• 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 
<ul style="list-style-type: none">• Gases under Pressure	<ul style="list-style-type: none">• Skin Corrosion/ burns• Eye Damage• Corrosive to Metals	<ul style="list-style-type: none">• Explosives• Self-Reactives• Organic Peroxides
Flame over Circle 	Environment (Non Mandatory) 	Skull and Crossbones 
<ul style="list-style-type: none">• Oxidizers	<ul style="list-style-type: none">• Aquatic Toxicity	<ul style="list-style-type: none">• 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 certain 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 made 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

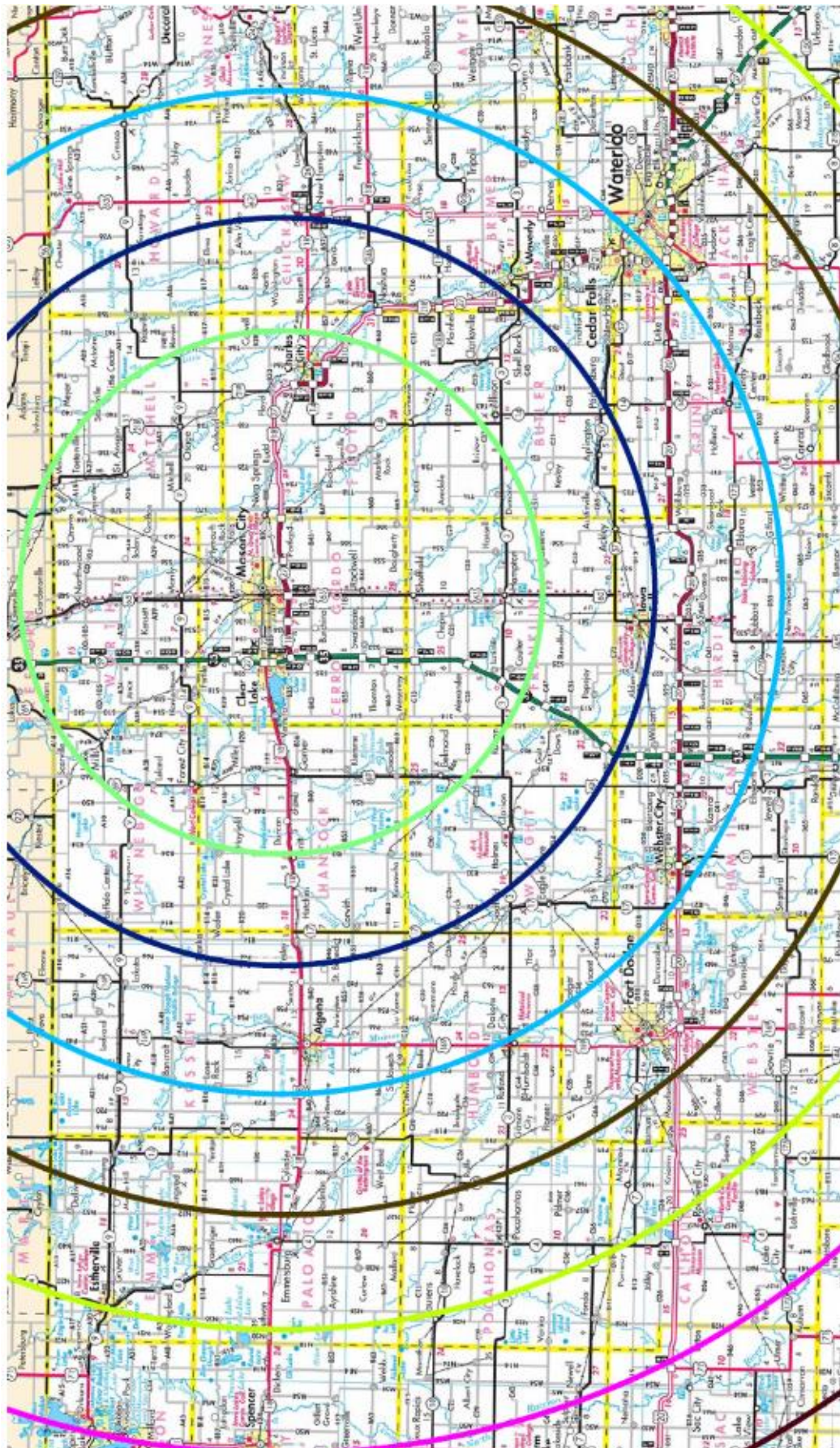
Clock in when told to report to project. Sign out when done on project.

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....



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

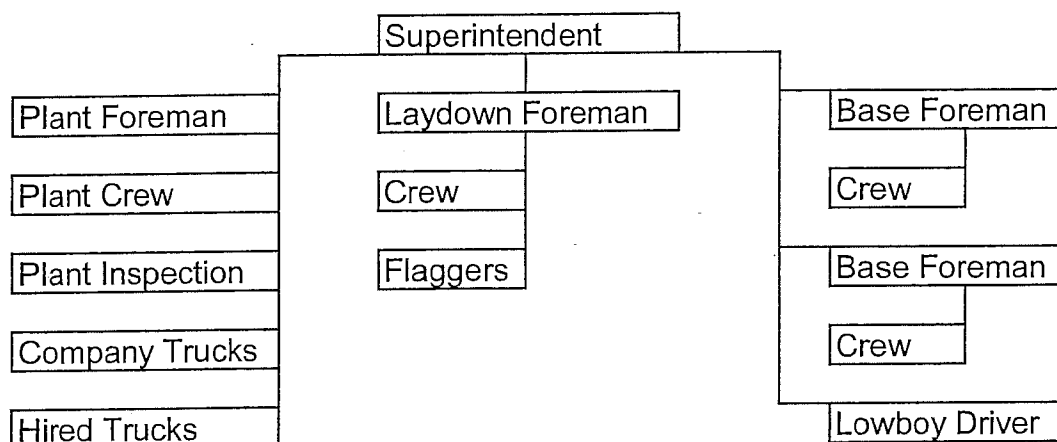
When a current Heartland Asphalt employee refers a person to work here at Heartland, there is a financial incentive given after durations of employment are met. The program offers a \$200 incentive after the first 2 months of full-time employment, a \$300 incentive if employed at season's end & 1,000 hours worked, and an additional \$500 paid after 2 continuous seasons.



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



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:

Other persons involved

Address:

Address:

City, State, Zip:

Phone #

Date of Birth:

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:	

Estimated 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:

Please make sure eq. numbers are valid

Please make sure equipment numbers are valid

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!

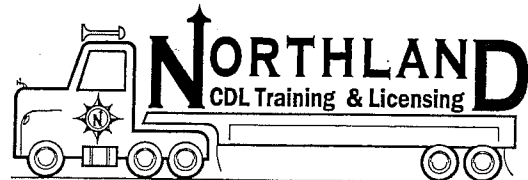
The Fees are: \$225 for the Class A CDL. The highlighted study manual is available for use for an additional \$25.

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



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



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 REQUIREMENTS TO BE COMPLETED AND REVIEWED PRIOR TO ENTRY

Requirements completed	Date	Time	Requirements completed	Date	Time
Lockout/De-energize/tryout	_____	_____	Full body harness w/ D ring	_____	_____
Line(s) broken-capped-blanked	_____	_____	Emergency escape equip	_____	_____
Purge-flush and vent	_____	_____	Lifelines	_____	_____
Ventilation	_____	_____	Fire Extinguishers	_____	_____
Secure Area (Post & Flag)	_____	_____	Lighting (Explosion proof)	_____	_____
Breathing apparatus	_____	_____	Protective Clothing	_____	_____
Resuscitator-Inhalator	_____	_____	Respirator(s) (Air purifying)	_____	_____
Standby safety personnel	_____	_____	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.

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.

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.

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.

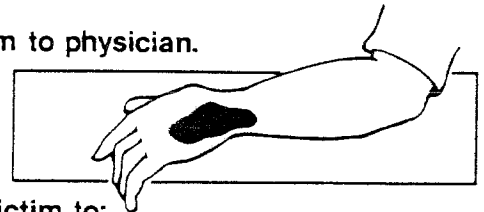
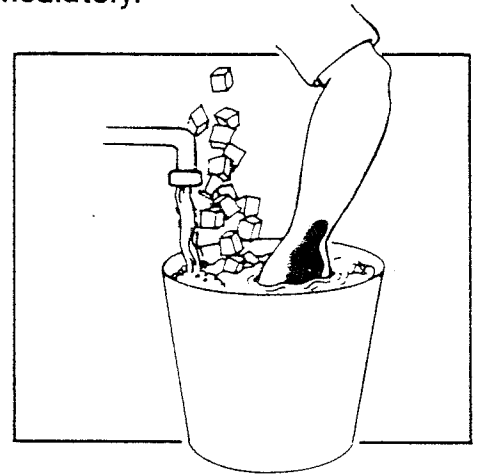
LEAVE cooled asphalt cement on affected area.

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 _____

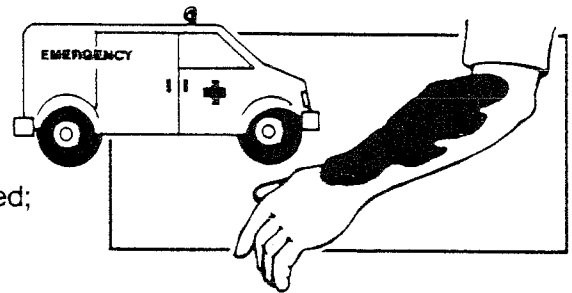
Physician's Office _____

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:

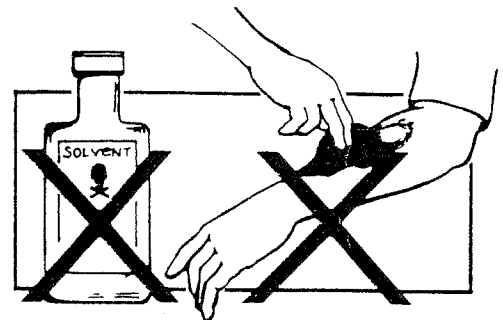
1. Keep victim lying down and quiet.
2. Keep victim covered with a blanket or something similar to keep body temperature at normal, 98°F (37°C).
3. Keep victim's head lower than feet to promote blood supply to head and chest.

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.



POTENTIAL HAZARDS
FIRE OR EXPLOSION <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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
<ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• Wear positive pressure self-contained breathing apparatus (SCBA).• Structural firefighters' protective clothing will only provide limited protection.
EVACUATION <p>Large Spill</p> <ul style="list-style-type: none">• Consider initial downwind evacuation for at least 300 meters (1000 feet). <p>Fire</p> <ul style="list-style-type: none">• 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 <p>CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.</p> <p>CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.</p> <p>Small Fire</p> <ul style="list-style-type: none">• Dry chemical, CO2, water spray or regular foam. <p>Large Fire</p> <ul style="list-style-type: none">• Water spray, fog or regular foam.• Do not use straight streams.• Move containers from fire area if you can do it without risk. <p>Fire Involving Tanks or Car/Trailer Loads</p> <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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. <p>Large Spill</p> <ul style="list-style-type: none">• Dike far ahead of liquid spill for later disposal.• Water spray may reduce vapor; but may not prevent ignition in closed spaces.
FIRST AID <ul style="list-style-type: none">• 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.

POTENTIAL HAZARDS
FIRE OR EXPLOSION <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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.
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FIRE <p>CAUTION: All these products have a very low flash point: Use of water spray when fighting fire may be inefficient.</p> <p>Small Fire</p> <ul style="list-style-type: none">• Dry chemical, CO2, water spray or regular foam. <p>Large Fire</p> <ul style="list-style-type: none">• Water spray, fog or regular foam.• Do not use straight streams.• Move containers from fire area if you can do it without risk. <p>Fire Involving Tanks or Car/Trailer Loads</p> <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• 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. <p>Large Spill</p> <ul style="list-style-type: none">• Dike far ahead of liquid spill for later disposal.• Water spray may reduce vapor; but may not prevent ignition in closed spaces.
FIRST AID <ul style="list-style-type: none">• 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.

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.

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 CO₂.

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.