A-1 Asphalt
Material Safety & Data Sheets

Updated 8/23/2022

Acetylene

SAFETY DATA SHEET

Acetylene

Section 1. Identification

GHS product identifier : Acetylene

Chemical name : acetylene

Other means of identification : Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene

Product type : Gas.

Product use : Synthetic/Analytical chemistry.

Synonym : Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene

SDS # : 001001

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.
May form explosive mixtures with air.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Fusible plugs in top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F). Do not discharge at pressures above 15psig (103kpa). Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Approach suspected leak area with caution.

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources.

Storage : Protect from sunlight. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : acetylene

Other means of identification : Ethyne; Ethine; Narcylen; C2H2; Acetylen; UN 1001; Vinylene

Product code : 001001

CAS number/other identifiers

CAS number : 74-86-2

Ingredient name	%	CAS number
Acetylene	100	74-86-2

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 or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

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. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

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 : Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Use only non-sparking tools. Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Acetylene	**NIOSH REL (United States, 10/2016).** CEIL: 2662 mg/m³ CEIL: 2500 ppm **ACGIH TLV (United States, 3/2019). Oxygen Depletion [Asphyxiant]. Explosive potential.** **California PEL for Chemical Contaminants (*Table AC-1*) (United States). Oxygen Depletion [Asphyxiant].**

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.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 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 : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas.

Color : Colorless.

Odor : Mild. Ethereal.

Odor threshold : Not available.

pH : Not available.

Melting point : -81°C (-113.8°F)

Boiling point : Not available.

Critical temperature : 35.25°C (95.5°F)

Flash point : Closed cup: -18.15°C (-0.67°F)

Evaporation rate : Not available.

Flammability (solid, gas) : Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.
Highly flammable in the presence of the following materials or conditions: heat.

Lower and upper explosive (flammable) limits : Lower: 2.5%
Upper: 100%

Vapor pressure : 635 (psig)

Vapor density : 0.907 (Air = 1)

Specific Volume (ft ^{3}/lb) : 14.7058

Gas Density (lb/ft ^{3}) : 0.0691

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : 1.2 g/l

Partition coefficient: n-octanol/water : 0.37

Auto-ignition temperature : 305°C (581°F)

Section 9. Physical and chemical properties

Decomposition temperature : Not available.

Viscosity : Not applicable.

Flow time (ISO 2431) : Not available.

Molecular weight : 26.04 g/mole

Aerosol product

Heat of combustion : -48257522 J/kg

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.

Incompatible materials : Oxidizers

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Section 11. Toxicological information

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Acetylene	0.37	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1001	UN1001	UN1001	UN1001	UN1001
UN proper shipping name	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED	ACETYLENE, DISSOLVED
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity** Yes.
Quantity limitation Passenger aircraft/rail: Forbidden. Cargo aircraft: 15 kg.

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).

Explosive Limit and Limited Quantity Index
0

Passenger Carrying Vessel Index
75

Passenger Carrying Road or Rail Index
Forbidden

Section 14. Transport information

Special provisions
38

IATA : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Cargo Aircraft Only: 15 kg.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

Clean Air Act (CAA) 112 regulated flammable substances: acetylene

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 : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

Section 15. Regulatory information

UNECE Aarhus Protocol on POPs and Heavy Metals

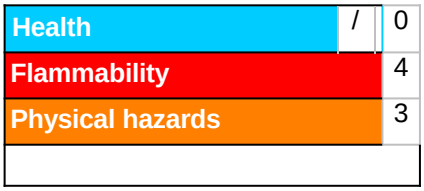
Not listed.

Inventory list

Australia	:	This material is listed or exempted.
Canada	:	This material is listed or exempted.
China	:	This material is listed or exempted.
Europe	:	This material is listed or exempted.
Japan	:	**Japan inventory (ENCS)**: This material is listed or exempted. **Japan inventory (ISHL)**: Not determined.
New Zealand	:	This material is listed or exempted.
Philippines	:	This material is listed or exempted.
Republic of Korea	:	This material is listed or exempted.
Taiwan	:	This material is listed or exempted.
Thailand	:	Not determined.
Turkey	:	This material is listed or exempted.
United States	:	This material is active or exempted.
Viet Nam	:	This material is listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Note: The instability hazard rating for acetylene, dissolved (stabilized acetylene) is 2.

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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.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Compressed gas	Expert judgment According to package

Section 16. Other information

History

Date of printing : 6/21/2021

Date of issue/Date of revision : 6/21/2021

Date of previous issue : 11/11/2020

Version : 2.02

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Aero-Ayd Rust Penetrant 79A

SAFETY DATA SHEET.

Issuing date 10-Aug-2017 Revision Date 10-Aug-2017 Version 1.01

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

Product identifier
Product name 79A Aero-Ayd Rust Penetrant

Recommended use of the chemical and restrictions on use

Product code F03686

Product Type Extremely Flammable Aerosol
Synonyms None

Supplier's details

Recommended Use Rust Removal.
Uses advised against No information available

Manufactured For:
1st Ayd Corporation
1325 Gateway Drive
Elgin, IL 60124

Emergency telephone number
Chemical Emergency Phone Number 800-255-3924

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Inhalation (Vapors)	Cateciorv 4
Skin corrosion/irritation	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
Harmful if inhaled
Causes skin irritation
May be fatal if swallowed and enters airways
Extremely Flammable Aerosol
Contains gas under pressure; may explode if heated

Appearance Slightly Hazy **Ph sical state** Aerosol **Odor** Solven

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
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 SWALLOWED: Immediately call a poison center/doctor
Do NOT induce vomiting.

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place.
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

Chemical Name	CAS-No	Weight%*
HYDROTREATED LIGHT DISTILLATES	64742-47-8	20-30
PROPANE/ISOBUTANE/N-BUTANE	68476-86-8	20-30
NAPHTHENIC OIL, SEVERELY HYDROTREATED	64742-52-5	10-20
KEROSENE	8008-20-6	10-20
PETROLEUM DISTILLATES	64742-47-8	10-20
2-BUTOXYETHANOL	111-76-2	1-10
NaphthalenesulfonicAcid,CaSalt	57855-77-3	1-10
ETHYLENE GLYCOL	107-21-1	<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, skin, and clothing. Avoid breathing vapors , mist, or gas.

Eye contact — Immediately flush with plenty of water for at least 15 minutes. After initial flushing, remove any contact lenses and continue flushing. Seek immediate medical attention/advice. If eye irritation persists, consult a doctor.

Skin contact — Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

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. 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 — Harmful if inhaled. May be fatal if swallowed and enters airways. May cause eye, skin, and respiratory irritation. Harmful if swallowed and enters the lungs.

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
Extremely Flammable/ Flammable. Keep product and empty container away from heat and sources of ignition.

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 Use with adequate ventiliation to keep the exposure levels below the occupational exposure limits.

Environmental precautions

Environmental precautions Vapors can accumulate in low areas. Report spills as required by local and federal regulations.

Methods and materials for containment and cleaning up

Methods for Containment Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

Methods for cleaning up Absorb with sand, clay, or other suitable material. hard surfaces may be mopped with water. Dam up. Cover liquid spill with sand, earth, or other noncombustible absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly.

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 and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Do not spray on hot surfaces. Keep in property labeled containers. Keep out of the reach of children. Store locked up.

Incompatible products Strong acids, alkali , or oxidizing agents.

Aerosol Level 3

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Ex osure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH

HYDROTREATED LIGHT DISTILLATES 64742-47-8	TWA: 200 PPM 8 hours	-	-
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/1113 (vacated) TWA: 1000 ppm (vacated) TWA: 1800 mg/m3 106-97--8: (vacated) TWA: 800 ppm (vacated) TWA: 1900 mg/m3	74-98-6:IDLH: 2100 ppm TWA: 1000ppm TWA: 1800 mg/ml 106-97-8:TWA: 800 ppm TWA: 1900 mg/ml 75-28-5:TWA: 800 ppm TWA: 1900 mg/ml
KEROSENE 8008-20-6	TWA: 200 mg/ml total hydrocarbon vapor application restricted to conditions in which there are negligible aerosol exposures Skin - potential significant contribution to overall exposure by the cutaneous route	-	TWA: 100 mg/m3
2-BUTOXYETHANOL 111-76-2	TWA: 20 ppm	TWA: 50 ppm TWA: 240 mg/ml (vacated) TWA: 25 ppm (vacated) TWA: 120 mg/ml (vacated) S• S•	IDLH: 700 ppm TWA: 5 ppm TWA: 24 mg/ml
ETHYLENE GLYCOL 107-21-1	Ceiling: 100 mg/ml aerosol only	(vacated) Ceiling 50 ppm (vacated) Ceiling: 125 mg/ml	-

ACG/H: (Amencan Conference of Governmental Industnal Hyg1emsts)
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 Solvent
Odor Threshold

Property	**Values**	**Remarks • Methods**
pH	No information available	
Melting/freezing point	No information available	

Boiling point/boiling range		
Flash Point	-96.4 °C / -141 °F	Based on propellant
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limits in Air		
upper flammability limit		
lower flammability limit		
Vapor pressure		
Vapor density		
Specific Gravity	0.785	
Water solubility	None	
Partition coefficient: n-octanol/water		
Autoignition temperature	No information available	Not applicable
Decomposition temperature		
Viscosity	No information available	
Explosive properties		

Other information

VOE Content(¾) 49.64

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
Strong acids, alkali , or oxidizing agents.

Hazardous Decomposition Products
Carbon oxides , Fumes, Hydrocarbons.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Harmful if inhaled. May cause respiratory irritation.
Eye contact	May cause eye irritation.
Skin contact	Causes skin irritation.
Ingestion	May be fatal if swallowed and enters airways.

Component Information

Chemical **Name**	LD50 Oral	LD50 Dermal	LC50 Inhalation
HYDROTREATED LIGHT DISTILLATES 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h

PROPANE/ISOBUTANE/N-BUTAN E 68476-86-8	-	-	=31mg/L (Rat) 4 hr
KEROSENE 8008-20-6	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.28 mg/L (Rat) 4 h
PETROLEUM DISTILLATES 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
12-BUTOXYETHANOL 111-76-2	= 470 mg/kg (Rat)	=99mg/kg (Rabbit)	= 450 ppm (Rat) 4 h
ETHYLENE GLYCOL 107-21-1	= 4700 mg/kg (Rat)	= 10600 mg/kg (Rat)	-

Information on toxicological effects

Symptoms Harmful if inhaled. Causes skin irritation .May cause eye and respiratory irritation. May be fatal if swallowed and enters airways.

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

Skin corrosion/irritation Causes skin irritation.
Eye damage/irritation May cause eye irritation.
Irritation May cause skin, eye, and respiratory irritation.
Sensitization No information available.
Germ Cell Mutagenicity Not a germ cell mutagen.
Carcinogenicity The table below indicates whether each agency has evaluated a listed ingredient as a carcinoaen.

Chemical Name	ACGIH	IARC	NTP	OSHA
12-BUTOXYETHANOL 111-76-2	-	Group 3	-	-

ACGIH: (Amer,can Conference of Governmental Industr,al Hyg,en,sts)
A2 - Suspected Human Carcinogen
IARC: (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans
Group 2A - Probably Carcinogenic to Humans
Group 28 - Possibly Carcinogenic to Humans
NTP: (National Toxicity Program)
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

Reproductive toxicity This product does not contain any known or suspected reproductive hazards.

Specific target organ systemic toxicity (single exposure) No information available.

Specific target organ systemic toxicity (repeated exposure) No information available.

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, Skin, Respiratory System, Central Nervous System, Liver, Kidney, and Lungs.

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 themixture consists of ingredient(s) of unknown toxicity.
The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 3165 mg/kg
ATEmix (dermal) 12362 mg/kg
ATEmix (inhalation-gas) 198334 mg/l
ATEmix (inhalation-dust/mist) 16.9 mg/l
ATEmix (inhalation-vapor) 379 mg/l

12. ECOLOGICAL **INFORMATION**

Ecotoxicity

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
HYDROTREATED LIGHT DISTILLATES 64742-47-8	-	45 mg/L LC50 Pimephales promelas 96h flow-through 2.2 mg/L LC50 Lepomis macrochirus 96h static 2.4 mg/L LC50 Oncorhynchus mykiss 96h static	-	-
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	-	-	-	-
NAPHTHENIC OIL, SEVERELY HYDROTREATED 64742-52-5	-	5000 mg/L LC50 Oncorhynchus mykiss 96h	-	1000 mg/L EC50 Daphnia magna 48h
PETROLEUM DISTILLATES 64742-47-8	-	45 mg/L LC50 Pimephales promelas 96h flow-through 2.2 mg/L LC50 Lepomis macrochirus 96h static 2.4 mg/L LC50 Oncorhynchus mykiss 96h static	-	-
2-BUTOXYETHANOL 111-76-2	-	1490 mg/L LC50 Lepomis macrochirus 96h static 2950 mg/L LC50 Lepomis macrochirus 96h	-	1000 mg/L EC50 Daphnia magna 48h
ETHYLENE GLYCOL 107-21-1	6500 - 13000 mg/L EC50 Pseudokirchneriella subcapitata 96h	41000 mg/L LC50 Oncorhynchus mykiss 96h 14 - 18 mUL LC50 Oncorhynchus mykiss 96h static 27540 mg/L LC50 Lepomis macrochirus 96h static 40761 mg/L LC50 Oncorhynchus mykiss 96h static 40000 - 60000 mg/L LC50 Pimephales promelas 96h static 16000 mg/L LC50 Poecilia reticulata 96h static	-	46300 mg/L EC50 Daphnia magna 48h

Persistence and degradability

Bioaccumulation

Chemical Name	log Pow
PROPANE/ISOBUTANE/N-BUTANE 68476-86-8	<=2.8
2-BUTOXYETHANOL 111-76-2	0.81
ETHYLENE GLYCOL 107-21-1	-1.93

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). 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	DSUNDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
HYDROTREATED LIGHT DISTILLATES	X	X	X	Not listed	X	X	X	X
PROPANE/ISOBUTANE/N-BUTANE	X	X	X	x	X	X	X	X
NAPHTHENIC OIL, SEVERELY HYDROTREATED	X	X	X	Not listed	X	X	X	X
KEROSENE	X	X	X	x	X	X	X	X
PETROLEUM DISTILLATES	X	X	X	x	X	X	X	X
2-BUTOXYETHANOL	X	X	X	X	X	X	X	X
NaphthalenesulfonicAcid,CaSalt	X	X	X	X	X	X	X	X
ETHYLENE GLYCOL	X	X	X	X	X	X	X	X

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSUNDSL - Canadian Domestic Substances Lisi/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

SARA313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does contain 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%
2-BUTOXYETHANOL - 111-76-2	111-76-2	1-10	1.0

ETHYLENE GLYCOL-107-21-1	107-21-1	<0.1	1.0
NAPHTHALENE - 91-20-3	91-20-3	<0.1	0.1

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Star 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 contain 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
ETHYLENE GLYCOL 107-21-1	5000lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S. State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	California Prop. 65
ETHYLENE GLYCOL- 107-21-1	Developmental
NAPHTHALENE- 91-20-3	Cancer

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
KEROSENE 8008-20-6	X	X	X
2-BUTOXYETHANOL 111-76-2	X	X	X
ETHYLENE GLYCOL 107-21-1	X	X	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 SOScontains all the information required by the **CPR.**

16. OTHER INFORMATION

NFPA	**Health Hazard** 2	**Flammability 4**	**Instability** O	**Physical and chemical hazards** -
HMIS	**Health Hazard** 2*	**Flammability 4**	**Physical Hazard**	**Personal protection** B

Chronic Hazard Star Legend *Chronic Health Star Hazard Repeated or prolonged exposure may causecentral nervous system damage*

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Revision Note
(M)SDS sections updated

Disclaimer

The information provided on this SOS 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

Aluminum Brightener

SAFETY DATA SHEET
Aluminum Brightener

SECTION 1 - PRODUCT AND COMPANY INFORMATION

Product Name:	: Aluminum Brightener
Product Use:	: Treatment for aluminum surfaces
Supplier Name and Address:	: Corporate Facility Supply 7 Neilson Street St. Catharines, ON L2M 5V9
Telephone:	: (905) 682-8888
Emergency Telephone:	: CANUTEC (613) 996-6666

SECTION 2 - HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Physical State: Clear, colourless liquid

GHS Classification:

Skin Irritation:	Category 1
Eye Irritation:	Category 1
Acute Toxicity:	Category 2

GHS Label Elements:

Hazard Pictograms

Signal Word: Danger

Hazard Statements:
H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage H335 May cause respiratory irritation

Precautionary Statements:

Prevention

P261 Avoid breathing dust/fume/gas/mist/vapours/spray P262 Do not get in eyes, on skin, or on clothing
P284 In case of inadequate ventilation wear respiratory protection

Response

P302 IF ON SKIN: Flush with plenty of water for at least 15 minutes
P305 IF IN EYES: Flush with plenty of water for at least 15 minutes
P332+P313 If skin irritation persists, get medical attention

Potential Health Effects:

Inhalation : Mild exposure. Can irritate nose, throat and respiratory system. Severe exposure can cause nose and throat burns, lung inflammation and pulmonary edema. Also depletes calcium levels in the body if not promptly treated resulting in death due to hypocalcaemia.

Skin : Causes burns which may not be immediately painful or visible. Hydrofluoric acid will penetrate skin and attack underlying tissues and bone.

Eyes : May cause severe burns and permanent eye damage.

Ingestion : Can cause severe mouth, throat and stomach burns. Can affect kidney function and be fatal if swallowed. Profound and possibly fatal hypocalcaemia is likely to occur unless medical treatment is promptly initiated.

Aggravated Medical Condition : None known

Symptoms of Overexposure : For hydrofluoric acid: Bone and joint changes in humans (fluorosis). Embryo toxicity ranges in rats are 0.47- 5.0mg/m^3/4hr daily for duration of gestation.

SECTION 3 - COMPOSITION/ INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS

Chemical Name	CAS-No.	Concentration [%]
Hydrogen Fluoride	7665-39-3	5-15
Sulphuric Acid	7664-93-9	5-15
Phosphoric Acid	7664-38-2	5-25

SECTION 4 - FIRST-AID MEASURES

General Advice : Move out of dangerous area
Consult a physician
Show this Safety Data Sheet to the doctor in attendance

Inhalation : Move victim to fresh air. Give artificial respiration only if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing and no pulse. Obtain medical attention immediately.

Skin Contact : Remove contaminated clothing immediately. Wash exposed areas with copious amounts of running water. Use alkaline soap or a 2% solution of sodium bi-carbonate if available. If irritation occurs, immerse and soak affected area in a 0.13% iced aqueous benzethonium chloride solution for 15-30 minutes (saturated compresses can be used if area can't be immersed). Get medical attention immediately for even minor burns.

Eye Contact : Flush with running water for 15 minutes lifting the upper and lower eyelids occasionally. Do not use benzethonium chloride solution on eyes. 1 or 2 drops of 0.5% pontocaine hydrochloride solution followed by a second irrigation for 15 minutes. Get medical attention.

Ingestion : Do not induce vomiting. If victim is alert and not convulsing, give 1-2 glasses of water to dilute material. Immediately contact local poison control centre. Vomiting should be induced under the direction of a physician or a poison control centre. If spontaneous vomiting occurs, rinse mouth and administer more water. Immediately

SECTION 5 - FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water fog, carbon dioxide, dry chemical

Specific hazards arising from the chemical :Oxides of carbon. Hydrogen fluoride fumes are released.

Special protective actions for fire-fighters : Fire-fighters should wear full protective equipment including a self-contained breathing apparatus. Remove storage vessels from fire zone if possible. Use water spray to cool containers to avoid pressure build-up.

Additional advice : Not sensitive to mechanical impact or static discharge

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions : Wear appropriate protective equipment.

Environmental precautions : Prevent entry into sewers or streams. Dike if needed.

Methods and materials for containment/ cleaning up : Isolate for 800 meters or 0.5 miles in all directions if tank, rail-car or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapours or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

Eliminate all ignition sources. Contain spill by diking. If fire potential exists, blanket spill with alcohol type aqueous film-forming foam or use water fog stream to disperse vapours. Neutralize the residue with sodium carbonate or crushed limestone. Absorb with an inert dry material and place in an appropriate waste disposal container. Flush area with water to remove trace residue.

SECTION 7 - HANDLING AND STORAGE

Additional advice : None

Precautions for safe handling : THIS PRODUCT IS VERY HAZARDOUS. Avoid contact with skin, eyes, and clothing. Wear proper protective equipment including rubber gloves. Maintain adequate ventilation. Protect containers against physical damage.

Conditions for safe storage : Properly label all containers. Do not store product in glass containers. Wash thoroughly after handling. Store in a cool dry area WITH CONTROLLED ACCESS. Do not freeze.

SECTION 8 - EXPOSURE CONTROLS/ PERSONAL PROTECTION

Other data : Polyethylene plastic containers recommended.

Control parameters : None available

Engineering Controls : Local exhaust recommended to reduce exposure. Fumes and mist are poisonous and corrosive. Do not mist.
Ensure that eyewash stations and safety showers are close to the workstation location

Personal Protective Equipment

Eye/face protection : Safety glasses with side shields when there is potential for eye contact. Face shield also recommended for handling large amounts. Contact lenses should not be worn

Hand protection Skin protection : Nitrile or rubber gloves are recommended

: Protective coveralls or thick clothing that covers exposed

Respiratory protection : skin
Hygiene measures : Wear a NIOSH/MSHA approved air-purifying respirator equipped with chlorine cartridges when vapours reach high levels
: Handle in accordance with good industrial hygiene and safety practice
When using do not eat or drink
When using do not smoke
Wash hands before breaks and at the end of the workday

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	: Clear, colourless liquid
Odor:	: Slight, pungent
Odor Threshold:	: Not available
pH:	: < 1.0
Melting point/ freezing point:	: -10°C
Initial boiling point and boiling range:	: 102°C
Flash point:	: Not available
Evaporation rate:	: Not available
Flammability (solid, gas):	: Not available
Upper/lower flammability or explosive limits:	: Not available
Vapour pressure:	: 17.5 mmHg @ 25°C
Vapour density:	: Not available
Relative density (g/mL):	: 1.10-1.15
Water solubility:	: Not available
Solubility in other solvents:	: Not available
Partition coefficient: n-octanol/water:	: Not available
Auto-ignition temperature:	: Not available
Decomposition temperature:	: Not available
Viscosity:	: As water

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	: Product is stable
Chemical Stability	: Stable under normal conditions
Possibility of hazardous reactions	: Hazardous polymerization will not occur
Conditions to avoid	: Hydrogen gas is released when in contact with metals
Incompatible materials	: Avoid glass as it is dissolved. Do not mix with chlorinated bleach products as chlorine gas is released.
Hazardous decomposition products	: Do not mix with strong acids and alkalis or powders and heat and gases are generated

SECTION 11 - TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity : Severe hydrofluoric acid exposure may result in systematic fluoride poisoning. Hydrofluoric acid can deeply penetrate into tissues. Additionally, the free fluoride ions can bind calcium ions at the cell membrane, increase the potassium permeability and alter the membrane electrical
potential. This results in spontaneous depolarization of the nervous tissue. Fluoride is a bone seeker and excessive
amounts will produce weakening and degeneration of the bone structure. Intake of more than 6 mg of fluorine per day may result in fluorosis, bone and joint damage,

hypocalcaemia and hypomagnesemia can occur from absorption of fluoride ions into the blood stream. After prolonged high intake in adults, bone changes may occur characterized by hardening or abnormal density of bone (osteosclerosis), benign bony growths projecting outward from the surface of the bone. Ingestion and skin contact may cause an abnormal reduction of blood calcium (hypocalcaemia) and kidney damage since fluorides precipitate calcium stored in the body. There may also be heart, asthma, nerve, intestinal and rheumatism problems.

Skin Corrosion/ Irritation	: Previous conditions may be aggravated by chronic exposure
Serious eye damage/irritation	: Previous conditions may be aggravated by chronic exposure
Respiratory or skin sensitization	: Previous conditions may be aggravated by chronic exposure
Germ cell mutagenicity	: Not available
Carcinogenicity	: Not listed by IARC, ACGIH, NTP and OSHA as a carcinogen
Reproductive toxicity	: Not available
STOT-single exposure	: Not available
STOT-repeated exposure	: Not available
Aspiration hazard	: Not available

Toxicology Data for Ingredients

Hydrogen Fluoride

Acute oral toxicity	: LD50 Not available LC50 (animal) from 456 to 1774 PPM/ 1Hr TLV = 3 PPM or 2.5 mg/m^3 Severe burns, not immediately visible
Skin irritation	: Not available
Eye irritation	: Not available
Sensitization	: Not available

Sulphuric Acid

Acute oral toxicity	: LD50 (oral, rat) 155 mg/kg (dermal, rabbit) >3g/kg LC50 Not available
Skin irritation	: Not available
Eye irritation	: Not available
Sensitization	: Not available

Phosphoric Acid

Acute oral toxicity	: LD50 (oral, rat)1500 mg/kg corrosive LC50 (oral, rat) 1530 mg/kg
Skin irritation	: Not available
Sensitization	: Not available

SECTION 12 - ECOLOGICAL INFORMATION

Product Information:

Toxicity:	: Not available
Persistence and degradability:	: Not available
Bioaccumulative potential:	: Not available
Mobility in soil:	: Not available
Other adverse effects:	: Product is corrosive. Since hypochlorite solutions are often used as disinfectants and biocides, product is expected to have some effect on aquatic life at high concentrations

Toxicology Data for Ingredients:
Sodium hypochlorite

Toxicity:	: LC50 Not available LC50 Not available
Persistence and degradability:	: Not available
Bioaccumulative potential:	: Not available
Mobility in soil:	: Not available
Other adverse effects:	: Not available

SECTION 13 - DISPOSAL CONSIDERATIONS

Product : Neutralize with sodium bicarbonate or lime. Caution is to be taken as heat is generated. Package solid neutralized material in suitable plastic containers such as pails.
Dispose of small neutralized amount in landfill site. Sanitary sewer or dry absorbent if available.
For large quantities, contact local environmental department or government authorities
Do not dispose in drains, waterways, or soil
Do not contaminate ponds, or ditches with chemical or the used container

SECTION 14 - TRANSPORT INFORMATION

UN Number	: UN1790
UN Proper Shipping Name	: HYDROFLUOROUS ACID
Transport hazard class(es)	: 8
Packing group, if applicable	: II
Environmental hazards	: Not available
Special precautions for user	: Not Available
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	: Not applicable

SECTION 15 - REGULATORY INFORMATION

None available

SECTION 16 - OTHER INFORMATION

Prepared by: Technical Services
Telephone number: (905) 682-8888

Preparation date: October 2014

Antifreeze/Coolant, Pride 1000 Concentrate

Coastline Chemical Inc.

SAFETY DATA SHEET

PRIDE 1000
HD ANTIFREEZE/COOLANT
CONCENTRATE

SECTION 1 L PRODUCT AND COMPANY IDENTIFICATION

Product Name:	PRIDE 1000
Product Code:	P1000
Primary Use(s):	Automotive/Truck Antifreeze & Coolant
Manufactured By:	Coastline Chemical Inc. 30470 Energy Drive New Church, VA 23415, USA www,prideantifreeze.com
Telephone (General)	757.824.3831
EMERGENCY TELEPHONE	CHEMTREC (800) 424-9300

SECTION 2 – HAZARD IDENTIFICATION

In accordance with	OSHA HCS 29CFR 1910-1200
Physical State	Liquid, clear green color
Odor	Mild, sweet odor
Emergency Overview	This product presents no specific emergency hazard
Signal Word(s)	**WARNING**
Hazard Statements	Causes Eye Irritation Causes Skin Irri Harmful/Toxic If Swallowe d
Hazard Symbol	 
GHS CLASSIFICATIONS	**(H373)May cause kidney damage** **(H302)Harmful if swallowed**

Acute Oral Toxicity	**4**	Acute Dermal Toxicity	**5**	Corrosion/Irritation Skin	**3**
Acute Inhalation Toxicity	**5**	Serious Eye Damage/ Eye Irritation	**2B**		

SECTION 3 – COMPOSITION/ INGREDIENT INFORMATION

NAME	CAS No	EU INVENTORY	PERCENTAGE
Ethane 1,2 - diol (monoethylene – 95 glycol)	107-21-1	203-473-3	90
2-(2 hydroxyethoxy) ethan-1-ol – 5 (diethylene glycol)	111-46-6	203-872-2	1
Water & proprietary additives	7732-18-5	231-791-2	balance

SECTION 4 – FIRST AID MEASURES

EYE CONTACT	Remove corrective lenses.Wash with cool water including under eyelid for 15 mins. See doctor if irritation persists.
SKIN CONTACT	Remove affected clothing, Wash with mild soap and water. Apply lotion for redness.
INHALATION	Remove person to fresh air.
INGESTION	Wash mouth and other contacted parts with water. Never give anything by mouth to an unconscious person. If conscious, give 1-2 glasses of water. Avoid alcohol. Contact doctor or poison control center.
PHYSICAL NOTES	N/A

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point	Flash Point > 200 deg. F
Combustion	Carbon Dioxide, Ash, Water
Extinguishing Media (suitable)	Water, Foam, ABC Extinguisher
(not suitable)	Unknown
Special Hazards	Unknown
Special Protective Equipment	Face Shield, Gloves, Self-contained air supply

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions	Safety Glasses and Gloves.
Environmental Precautions	Collect product or waste and offer to environmental waste disposal company
Cleanup Methods	Absorb and/or collect all spilled material put in suitable container and send to suitable hazmat collection service or landfill.

SECTION 7– HANDLING AND STORAGE

Handling	Only use suppliers approved and labelled containers
Storage	Store in clean, dry, ventilated place

SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION

Preventive Measures	ONLY USE SUPPLIED COONTAINER
Engineering Controls	Provide fresh air at all times
Personal Protection (recommended)	
EYES	Wear safety glasses when transferring product
SKIN	Wear gloves when transferring product
RESPIRATORY	Normal ventilation is sufficient
HANDS	Wear rubber gloves when transferring product

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	
Physical State	Liquid
Color	Clear Green
Odor	Characteristic
Odor Threshold	Unknown
Important Health , Safety, Environmental Information	
pH (50%w/water sol'n)	9.5 – 10.5
Boiling Point	Above 200 deg. F
Pour Point/Freezing (50% w/water)	Freeze Point -34F/-37C
Flash Point	260F/127C
Oxidizing Properties	None
Vapor Pressure	0.12 mm Hg @20C
Specific Gravity	1.12 -1.13
Water Solubility	Soluble
Vapor Density (air =1)	2.1

SECTION 10 – STABILITY AND REACTIVITY

Stability and Reactivity	Stable
Incompatibility with various substances Hazardous polymerization	Do not mix with strong acids Will not occur
Hazardous decomposition products	When heated to decomposition, may emit toxic fumes

SECTION 11 – TOXICALOGICAL

Potential Acute Health Effects (ingredient)	
monoethylene glycol	LD oral rat = 4000 mg/kg; LD50 dermal rat=9500 mg/kg
diethylene glycol	LD50 oral rat=12565 mg/kg; LD50 dermal rat=11890 mg/kg
Acute Oral Effects	Can cause irritation to mouth, throat, and stomach. Large volume ingestion may cause depression of central nervous system.
Potential Chronic Health Effects	
Chronic Effects:	None expected under normal use conditions
Carcinogenicity:	Neither product nor its ingredients are listed by IARC, NTD or OSHA
Mutagenicity:	Not mutagenic
Teratogenicity:	Not Teratogenic

SECTION 12 – ECOLOGICAL INFORMATION

Aquatic Toxicity

May be toxic to aquatic organisms

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Method:	Dispose of waste through hazardous waste contractor/recycler.
Container Cleaning and Disposal:	Containers should be cleaned of residual product before disposal.

SECTION 14 – TRANSPORT INFORMATION

DOT Proper Shipping Name:	Ethylene Glycol
Shipping Symbols:	Environmental Hazard
Hazard Class:	Environmental Hazard
UN Number:	Not regulated unless shipping container holds at least 10,539 pounds.
Packing Group:	Not applicable
Label:	Not applicable
Special Provisions (172.102):	Not applicable

Bulk Shipments

DOT Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)
UN Number:	UN 3082
Label Requirement:	Class 9, UN 3082

SECTION 15 – REGULATORY INFORMATION

EPA Regulations

RCRA Hazardous Waste Number and RCRA Hazardous Waste Classification:	Unused product is not classified as a hazardous waste by RCRA criteria
CERCLA Hazardous Substance and CERCLA Reportable Quantity:	Does not contain any ingredients listed as a CERCLA hazardous substance.
SARA Toxic Chemical and SARA EHS:	Contains following substance which is listed in Title III: Ethylene Glycol. SARA 313 Information: SARA Hazard Category: An immediate health hazard A delayed health hazard

OSHA Regulations:

State Regulations

Other:	All components listed on both TSCA (USA) and DSL (Canada) inventory. CANADIAN WHMIS CLASSIFICATION: Class D, Division 2, Subdivision B (A toxic material causing other chronic effects)

SECTION 16 – OTHER INFORMATION

Additional Hazard Rating Systems: HMIS(USA) Health=1, Fire=1, Reactivity=0

Disclaimer: THE INFORMATION GIVEN HEREIN IS GIVEN IN GOOD FAITH AND FROM SOURCES WE BELIEVE RELIABLE. BUT NO WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS IS MADE.

The conditions or methods of handling, storage, use and disposal of this product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not apply.

CONSULT Company listed in Section 1. FOR FURTHER INFORMATION.

Revised 2-01-2021

Antifreeze/Coolant Extended Life Commander 51 Premix (Pride)

Coastline Chemical Inc.

SAFETY DATA SHEET

COMMANDER 51
HD EXTENDED LIFE
ANTIFREEZE/COOLANT
PREMIX

SECTION 1 L PRODUCT AND COMPANY IDENTIFICATION

Product Name:	COMMANDER 51
Product Code:	PC51
Primary Use(s):	NMOAT Truck Antifreeze & Coolant
Manufactured By:	Coastline Chemical Inc. 30470 Energy Drive New Church, VA 23415, USA www,prideantifreeze.com
Telephone (General)	757.824.3831
EMERGENCY TELEPHONE	CHEMTREC (800) 424-9300

SECTION 2 – HAZARD IDENTIFICATION

Physical State	Liquid, clear red color
Odor	Mild, sweet odor
Emergency Overview	This product presents no specific emergency hazard
Signal Word(s)	**WARNING**
Hazard Statements	Causes Eye Irritation Causes Skin Irritation Harmful/Toxic If Swallowed
Hazard Symbol	
swallowed GHS CLASSIFICATIONS	**(H373)May cause kidney damage)** **(H302)Harmful if**

Acute Oral Toxicity **5** Acute Dermal Toxicity **5**
Corrosion/Irritation Skin **3**

Acute Inhalation Toxicity **5**
Serious Eye Damage/ Eye Irritation **2B**

SECTION 3 – COMPOSITION/ INGREDIENT INFORMATION

NAME	CAS No	EU INVENTORY	PERCENTAGE
Ethane 1,2 - diol (monoethylene – 56 glycol)	107-21-1	203-473-3	53
2-(2 hydroxyethoxy) ethan-1-ol – 5 (diethylene glycol)	111-46-6	203-872-2	1
Water & proprietary additives	7732-18-5	231-791-2	Balance

SECTION 4 – FIRST AID MEASURES

EYE CONTACT	Remove corrective lenses.Wash with cool water including under eyelid for 15 mins. See doctor if irritation persists.
SKIN CONTACT	Remove affected clothing, Wash with mild soap and water. Apply lotion for redness.
INHALATION	Remove person to fresh air.
INGESTION	Wash mouth and other contacted parts with water. Never give anything by mouth to an unconscious person. If conscious, give 1-2 glasses of water. Avoid alcohol. Contact doctor or poison control center.
PHYSICAL NOTES	N/A

SECTION 5 – FIRE FIGHTING MEASURES

Flash Point	Flash Point > 200 deg. F
Combustion	Carbon Dioxide, Ash, Water
Extinguishing Media (suitable)	Water, Foam, ABC Extinguisher
(not suitable)	Unknown
Special Hazards	Unknown
Special Protective Equipment	Face Shield, Gloves, Self-contained air supply

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions	Safety Glasses and Gloves.
Environmental Precautions	Collect product or waste and offer to environmental waste disposal company
Cleanup Methods	Absorb and/or collect all spilled material put in suitable container and send to suitable hazmat collection service or landfill.

SECTION 7– HANDLING AND STORAGE

Handling	Only use suppliers approved and labelled containers
Storage	Store in clean, dry, ventilated place

SECTION 8 – EXPOSURE CONTROL AND PERSONAL PROTECTION

Preventive Measures	ONLY USE SUPPLIED COONTAINER
Engineering Controls	Provide fresh air at all times
Personal Protection (recommended)	
EYES	Wear safety glasses when transferring product
SKIN	Wear gloves when transferring product
RESPIRATORY	Normal ventilation is sufficient
HANDS	Wear rubber gloves when transferring product

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	
Physical State	Liquid
Color	Clear Red
Odor	Characteristic
Odor Threshold	Unknown
Important Health , Safety, Environmental Information	
pH (as supplied)	8.5 – 9.5
Boiling Point	Above 200 deg. F
Pour Point/Freezing (as supplied)	Freeze Point -51F/-46C
Flash Point	260F/127C
Oxidizing Properties	None
Vapor Pressure	0.12 mm Hg @20C
Specific Gravity	1.06 -1.07
Water Solubility	Soluble
Vapor Density (air =1)	2.1

SECTION 10 – STABILITY AND REACTIVITY

Stability and Reactivity	Stable
Incompatibility with various substances Hazardous polymerization	Do not mix with strong acids Will not occur
Hazardous decomposition products	When heated to decomposition, may emit toxic fumes

SECTION 11 – TOXICALOGICAL

Potential Acute Health Effects (ingredient)	
monoethylene glycol	LD oral rat = 4000 mg/kg; LD50 dermal rat=9500 mg/kg
diethylene glycol	LD50 oral rat=12565 mg/kg; LD50 dermal rat=11890 mg/kg
Acute Oral Effects	Can cause irritation to mouth, throat, and stomach. Large volume ingestion may cause depression of central nervous system.
Potential Chronic Health Effects	
Chronic Effects:	None expected under normal use conditions
Carcinogenicity:	Neither product nor its ingredients are listed by IARC, NTD or OSHA
Mutagenicity:	Not mutagenic
Teratogenicity:	Not Teratogenic

SECTION 12 – ECOLOGICAL INFORMATION

May be toxic to aquatic organisms

Aquatic Toxicity

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Disposal Method:	Dispose of waste through hazardous waste contractor/recycler.
Container Cleaning and Disposal:	Containers should be cleaned of residual product before disposal.

SECTION 14 – TRANSPORT INFORMATION

DOT Proper Shipping Name:	Ethylene Glycol
Shipping Symbols:	Environmental Hazard
Hazard Class:	Environmental Hazard
UN Number:	Not regulated unless shipping container holds at least 10,539 pounds.
Packing Group:	Not applicable
Label:	Not applicable
Special Provisions (172.102):	Not applicable
Bulk Shipments	
DOT Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol)
UN Number:	UN 3082
Label Requirement:	Class 9, UN 3082

SECTION 15 – REGULATORY INFORMATION

EPA Regulations

RCRA Hazardous Waste Number and RCRA Hazardous Waste Classification:	Unused product is not classified as a hazardous waste by RCRA criteria
CERCLA Hazardous Substance and CERCLA Reportable Quantity:	Does not contain any ingredients listed as a CERCLA hazardous substance.
SARA Toxic Chemical and SARA EHS:	Contains following substance which is listed in Title III: Ethylene Glycol. SARA 313 Information: SARA Hazard Category: An immediate health hazard A delayed health hazard

OSHA Regulations:

State Regulations

Other:	All components listed on both TSCA (USA) and DSL (Canada) inventory. CANADIAN WHMIS CLASSIFICATION: Class D, Division 2, Subdivision B (A toxic material causing other chronic effects)

SECTION 16 – OTHER INFORMATION

Additional Hazard Rating Systems: HMIS(USA) Health=1, Fire=1, Reactivity=0

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This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not apply.

CONSULT Company listed in Section 1. FOR FURTHER INFORMATION.

Revised 2-05-2021

Anti-Seize (Lawson)

Safety Data Sheet

Issue date 11-Jul-2018 **Revision date** 30-May-2019 **Revision Number** 2

1. IDENTIFICATION

Product identification

Product identifier	Lawson Lubri-Temp Multipurpose Anti Seize
Other means of identification	19921
Recommended use	Lubricant
Restrictions on use	For industrial use only

Supplier

Corporate Headquarters:
Lawson Products, Inc.
8770 W. Bryn Mawr Ave., Suite 900
Chicago, IL 60631
(866) 837-9908

Canadian Distribution Center:
Lawson Canada
7315 Rapistan Court
Mississauga, ON L5N 5Z4
(800) 323-5922

24 Hour Emergency Phone Number (888) 426-4851 (Prosar)

Website https://www.lawsonproducts.com

2. HAZARD(S) IDENTIFICATION

Hazard Classification This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), WHMIS 2015 and GHS Regulations.

Skin sensitization	Category 1

Symbol

Signal word WARNING

Hazard statements H317 - May cause an allergic skin reaction

Precautionary statements

General
P101 - If medical advice is needed, have product container or label at hand
P102 - Keep out of reach of children
P103 - Read label before use.

Prevention
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves

Response

General
P321 - For Specific treatment see section 4 of this sds

Skin
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse

Storage
Not applicable

Disposal
P501 -Dispose of contents and container in accordance with local, regional, and federal regulations.

Hazard(s) Not Otherwise Classified (HNOC)
None known.

Physical Hazards Not Otherwise Classified (PHNOC)
None known.

Unknown acute toxicity
0%

3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition
Mixture.

Chemical name	CAS-No	Weight %
Odorless Mineral Spirits	8052-41-3	1-15
Polybutene	9003-29-6	1-10
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	1-5
Fumed Silica	112945-52-5	1-20
Antimony Dialkyldithiocarbamate	PROPRIETARY	1-10
Graphite	7782-42-5	1-10
Aluminum	7429-90-5	1-10
Molybdenum di(2-ethylhexyl)phosphorodithioate	72030-25-2	0.1-1

*chemical name, CAS number and/or exact concentration have been withheld as a trade secret.

4. FIRST-AID MEASURES

Necessary first-aid measures

Inhalation
Remove victim to fresh air and keep at rest in a position comfortable for breathing. Avoid breathing oil mist. If breathing is difficult, give oxygen. If not breathing, administer artificial respiration by trained personnel. Immediate medical attention is required.

Ingestion
Rinse mouth with water. Do not induce vomiting without medical advice. Seek medical attention if irritation persists.

Skin contact
Wash off immediately with soap and plenty of water. If skin irritation or rash occurs, get medical advice/attention.

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention if irritation occurs.
Most important symptoms (acute)	None known.
Most important symptoms (over-exposure)	None known.
Indication of any immediate medical attention and special treatment needed	There is no specific treatment regimen. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Dry chemical. Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	Water stream may spread fire.
Specific hazards	Keep away from oxygen generating materials.
Special protective equipment for fire-fighters	Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Water may be used to cool closed containers to prevent pressure build-up and/or explosion when exposed to extreme heat.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Use personal protection recommended in Section 8.
Methods and materials for containment and cleaning up	Wipe up with absorbent material (e.g. cloth, fleece). Dispose of all product, residues and clean-up materials in accordance with local, state, and federal regulations. Do not reuse containers.

7. HANDLING AND STORAGE

Precautions for safe handling	Store and use away from heat, sparks, open flame or any other ignition source. Keep container tightly closed and sealed until ready for use.
Conditions for safe storage, including any incompatibilities	Store in a cool, dry, and well-ventilated place. Keep container closed when not in use. Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Odorless Mineral Spirits	500 ppm TWA 2900 mg/m³ TWA	100 ppm TWA	350 mg/m³ TWA
Polybutene	-	-	-
Petroleum distillates, hydrotreated heavy naphthenic	5 mg/m³ TWA	5 mg/m³ TWA	10 mg/m³ STEL 5 mg/m³ TWA
Fumed Silica	-	-	6 mg/m³ TWA

Chemical name	OSHA PEL (TWA)	ACGIH OEL (TWA)	NIOSH - TWA
Antimony Dialkyldithiocarbamate	-	-	-
Graphite	15 mg/m³ TWA 5 mg/m³ TWA	2 mg/m³ TWA	2.5 mg/m³ TWA
Aluminum	15 mg/m³ TWA 5 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWA 5 mg/m³ TWA 5 mg/m³ TWA 5 mg/m³ TWA
Molybdenum di(2-ethylhexyl)phosphorodithioate	5 mg/m³ TWA	0.5 mg/m³ TWA	-

Appropriate engineering controls

Ensure adequate ventilation.

Individual protection measures, such as personal protective equipment

Eye protection

Wear safety glasses.

Skin and body protection

Wear appropriate chemical resistant gloves. For prolonged or repeated skin contact, use a chemically resistant glove such as nitrile or neoprene. Wash hands with soap and water after removing gloves. Dry hands thoroughly before re-applying gloves.

Respiratory protection

None necessary under normal conditions.

Hygiene measures

Wash hands with soap and water before eating, drinking, smoking, or using toilet facilities.

Canadian Province Occupational Exposure Limits

Chemical name	Alberta OEL	British Columbia OEL	Manitoba OEL	New Brunswick - OEL	Newfoundland & Labrador - OEL	Nova Scotia - OEL	Ontario OEL	Prince Edward Island - OEL	Quebec OEL	Saskatchewan - OEL
Odorless Mineral Spirits	100 ppm TWA 572 mg/m³ TWA	580 mg/m³ STEL 290 mg/m³ TWA	100 ppm TWA	100 ppm TWA 525 mg/m³ TWA	100 ppm TWA	100 ppm TWA	525 mg/m³ TWA	100 ppm TWA	100 ppm TWAEV 525 mg/m³ TWAEV	125 ppm STEL 100 ppm TWA
Polybutene	-	-	-	-	-	-	-	-	-	-
Petroleum distillates, hydrotreated heavy naphthenic	10 mg/m³ STEL 5 mg/m³ TWA	0.2 mg/m³ TWA 1 mg/m³ TWA	5 mg/m³ TWA	10 mg/m³ STEL 5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	5 mg/m³ TWA	10 mg/m³ STEV 5 mg/m³ TWAEV	10 mg/m³ STEL 5 mg/m³ TWA
Fumed Silica	-	-	-	-	-	-	-	-	-	-
Antimony Dialkyldithiocarbamate	-	-	-	-	-	-	-	-	-	-
Graphite	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWA	2 mg/m³ TWAEV	4 mg/m³ STEL 2 mg/m³ TWA
Aluminum	10 mg/m³ TWA 5 mg/m³ TWA	1.0 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWA 5 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ TWA	10 mg/m³ TWAEV 5 mg/m³ TWAEV 5 mg/m³ TWAEV	20 mg/m³ STEL 10 mg/m³ STEL 10 mg/m³ TWA 5 mg/m³ TWA
Molybdenum di(2-ethylhexyl)phosphorodithioate	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	0.5 mg/m³ TWA	5 mg/m³ TWAEV	1.5 mg/m³ STEL 0.5 mg/m³ TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Paste
Color	Light grey
Odor	Bland odor
Odor threshold	Not available
pH	Not applicable
Melting point/range °C	Not available
Melting point/range °F	Not available
Boiling point/range °C	Not available
Boiling point/range °F	Not available
Flash point °C / °F	Not available
Evaporation rate	<1
Flammability (Solid, Gas)	This product is not flammable
Lower explosion limit	Not available
Upper explosion limit	Not available
Vapor pressure	Not available
Vapor density	Not available
Relative density	0.950
Solubility	0%
Partition coefficient (n-octanol/water)	Not applicable
Autoignition temperature °C	Not available
Autoignition temperature °F	Not available
Decomposition temperature °C	Not available
Decomposition temperature °F	Not available
Viscosity	Not available

10. STABILITY AND REACTIVITY

Reactivity	None known.
Chemical stability	Stable.
Possibility of hazardous	None known.

reactions

Conditions to avoid Avoid heat, sparks, and other sources of ignition.

Incompatible materials None known.

Hazardous decomposition products None known.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure Dermal. Ingestion. Eyes.

Symptoms Repeated or prolonged exposure may cause irritation to eyes and skin. eye pain, redness, and watering. Ingestion may cause gastrointestinal irritation. If swallowed, nausea, vomiting, and diarrhea may result. Breathing of mist may cause irritation to the respiratory tract and headache. Causes eye and skin irritation.

Delayed and immediate effects as well as chronic effects from short and long-term exposure None known.

Numerical measures of toxicity

Chemical name	Inhalation LC50:	Dermal LD50:	Oral LD50:
Odorless Mineral Spirits	-	-	-
Polybutene	-	-	-
Petroleum distillates, hydrotreated heavy naphthenic	= 2062 ppm (Rat) 4 h	> 2000 mg/kg (Rabbit)	> 5000 mg/kg (Rat) > 24 g/kg (Rat)
Fumed Silica	> 2.2 mg/L (Rat) 1 h	> 2000 mg/kg (Rabbit)	= 3160 mg/kg (Rat) = 7900 mg/kg (Rat)
Antimony Dialkyldithiocarbamate	-	-	-
Graphite	-	-	> 10000 mg/kg (Rat)
Aluminum	-	-	-
Molybdenum di(2-ethylhexyl)phosphorodithioate	-	-	-

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
Odorless Mineral Spirits	-	-	-	-
Polybutene	-	-	-	-
Petroleum distillates, hydrotreated heavy	A2	Group 1	Listed	Known Carcinogen

Chemical name	ACGIH OEL - Carcinogens	IARC	OSHA RTK Carcinogens	NTP
naphthenic				
Fumed Silica	-	Group 3	-	-
Antimony Dialkyldithiocarbamate	-	-	-	-
Graphite	-	-	-	-
Aluminum	A4	-	-	-
Molybdenum di(2-ethylhexyl)phosphorodithioate	-	-	-	-

Canadian Province carcinogenicity limits

Chemical name	Alberta - Carcinogen	British Columbia - Carcinogen	Manitoba - Carcinogen	New Brunswick - Carcinogen	Nova Scotia - Carcinogen	Quebec - Carcinogen
Odorless Mineral Spirits	-	-	-	-	-	-
Polybutene	-	-	-	-	-	-
Petroleum distillates, hydrotreated heavy naphthenic	-	IARC 1	ACGIH A2 ACGIH A4	-	ACGIH A2 ACGIH A4	-
Fumed Silica	-	-	-	-	-	-
Antimony Dialkyldithiocarbamate	-	-	-	-	-	-
Graphite	-	-	-	-	-	-
Aluminum	-	-	ACGIH A4	-	ACGIH A4	-
Molybdenum di(2-ethylhexyl)phosphorodithioate	-	-	ACGIH A3	-	ACGIH A3	-

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish
Odorless Mineral Spirits	-	-
Polybutene	-	-
Petroleum distillates, hydrotreated heavy naphthenic	-	5000: 96 h Oncorhynchus mykiss mg/L LC50
Fumed Silica	440: 72 h Pseudokirchneriella subcapitata mg/L EC50	5000: 96 h Brachydanio rerio mg/L LC50 static
Antimony Dialkyldithiocarbamate	-	-
Graphite	-	-
Aluminum	-	-
Molybdenum di(2-ethylhexyl)phosphorodithioate	-	-

Persistence and degradability Not readily biodegradable.

Bioaccumulation Bioaccumulative potential

Chemical name	CAS-No	Partition coefficient (log Kow)
Odorless Mineral Spirits 8052-41-3	8052-41-3	-
Polybutene 9003-29-6	9003-29-6	-
Petroleum distillates, hydrotreated heavy naphthenic 64742-52-5	64742-52-5	-
Fumed Silica 112945-52-5	112945-52-5	-
Antimony Dialkyldithiocarbamate PROPRIETARY	PROPRIETARY	-
Graphite 7782-42-5	7782-42-5	-
Aluminum 7429-90-5	7429-90-5	-
Molybdenum di(2-ethylhexyl)phosphorodithioat	72030-25-2	-

Mobility in soil This product is not mobile in the soil.

Other adverse effects Not available

13. DISPOSAL CONSIDERATIONS

Disposal information Dispose of in accordance with federal, state and local regulations.

Contaminated packaging Dispose in accordance with local, state and federal regulations. Please recycle empty container whenever possible. Do not reuse containers.

14. TRANSPORTATION INFORMATION

Shipping Descriptions

DOT

ID-No Not Regulated
Subsidiary Risk
Packing group

TDG

ID-No Not Regulated
Packing group

IATA

ID-No Not Regulated
Subsidiary Risk
Packing group

IMDG/IMO

ID-No Not Regulated
Packing group

Marine Pollutants

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Odorless Mineral Spirits	8052-41-3	-	-	-
Polybutene	9003-29-6	-	-	-

Chemical name	CAS-No	USDOT Marine Pollutant	Canada TDG Marine Pollutant	IMDG Marine Pollutant
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	-	-	-
Fumed Silica	112945-52-5	-	-	-
Antimony Dialkyldithiocarbamate	PROPRIETARY	-	-	-
Graphite	7782-42-5	-	-	-
Aluminum	7429-90-5	-	-	-
Molybdenum di(2-ethylhexyl)phosphorodithioate	72030-25-2	-	-	-

Special Precautions

Multi-modal shipping descriptions are provided for informational purposes and do not consider container size. The presence of a shipping description for a particular mode of transport (sea, air, etc.), does not indicate that the product is packaged suitably for that mode of transport. All packaging must be reviewed for suitability prior to shipment, and compliance with the applicable regulations is the sole responsibility of the person offering the product for transport. People loading and unloading dangerous goods must be trained on all of the risks deriving from the substances and on all actions in case of emergency situations.

15. REGULATORY INFORMATION

State regulations

U.S. state Right-to-Know regulations

Chemical name	CAS-No	Massachusetts - RTK	New Jersey - RTK	Pennsylvania - RTK
Odorless Mineral Spirits	8052-41-3	X	X	X
Polybutene	9003-29-6	-	-	-
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	X	X	X
Fumed Silica	112945-52-5	X	-	X
Antimony Dialkyldithiocarbamate	PROPRIETARY	-	-	-
Graphite	7782-42-5	X	X	X
Aluminum	7429-90-5	X	X	X
Molybdenum di(2-ethylhexyl)phosphorodithioate	72030-25-2	-	-	-

California Prop. 65

Chemical name	CAS-No	California Prop. 65
Odorless Mineral Spirits	8052-41-3	-
Polybutene	9003-29-6	-
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	-
Fumed Silica	112945-52-5	-
Antimony Dialkyldithiocarbamate	PROPRIETARY	-
Graphite	7782-42-5	-
Aluminum	7429-90-5	-
Molybdenum di(2-ethylhexyl)phosphorodithioate	72030-25-2	-

California Proposition 65

WARNING: This product contains a chemical(s) known to the state of California to cause cancer, birth defects or other reproductive harm

U.S. Federal Regulations

RCRA - D Series Wastes Waste likely considered hazardous under RCRA, however, product should be fully characterized prior to disposal (40CFR 261).

US EPA SARA 313 This product contains no listed chemicals subject to reporting

Chemical name	CAS-No	CERCLA/SARA Hazardous Substances RQ	SARA 313 - Threshold Values
Odorless Mineral Spirits	8052-41-3	-	-
Polybutene	9003-29-6	-	-
Petroleum distillates, hydrotreated heavy naphthenic	64742-52-5	-	-
Fumed Silica	112945-52-5	-	-
Antimony Dialkyldithiocarbamate	PROPRIETARY	-	-
Graphite	7782-42-5	-	-
Aluminum	7429-90-5	-	1.0 %
Molybdenum di(2-ethylhexyl)phosphorodithioate	72030-25-2	-	-

US EPA SARA 311/312 hazardous categorization Not applicable

Chemical name	DSL/NDSL	Inventory - United States - Section 8(b) Inventory (TSCA)	U.S. - TSCA (Toxic Substances Control Act) - Section 12(b) - Export Notification
Odorless Mineral Spirits	X	X	-
Polybutene	X	X	-
Petroleum distillates, hydrotreated heavy naphthenic	X	X	-
Fumed Silica	X	X	-
Antimony Dialkyldithiocarbamate	-	-	-
Graphite	X	X	-
Aluminum	X	X	-
Molybdenum di(2-ethylhexyl)phosphorodithioate	X	X	-

Legend X - Listed

16. OTHER INFORMATION

NFPA

Health	1
Flammability	1
Instability	1
Specific hazard	None

HMIS

Health	1
Flammability	1
Physical hazards	1
Personal protection	A

Notice: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

Prepared by	Regulatory Affairs
Issue date	11-Jul-2018
Revision date	30-May-2019
Revision note	

Key to abbreviations

ACGIH (American Conference of Governmental Industrial Hygienists)
ATE (Average Toxicity Estimate)
DSL/NDSL (Domestic Substance List/Non-Domestic Substance List)
HMIS (Hazardous Materials Identification System)
IARC (International Agency for Research on Cancer)
IATA (International Air Transport Association)
IMDG/IMO (International Maritime Dangerous Goods/International Maritime Orgnaization)
NFPA (National Fire Protection Association)
NTP (National Toxicology Program)
OEL (Occupational Exposure Level)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
PEL (Permissible Exposure Limit)
TSCA (Toxic Substance Control Act)
USEPA (United States Environmental Protection Agency)

Disclaimer

The information accumulated herein is believed to be accurate, but is not warranted to be, whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

End of Safety Data Sheet

Anti-Seize, Copper (Permatex)

SAFETY DATA SHEET

Revision Date 15-Jan-2021 **Version** 9

1. IDENTIFICATION

Product identifier
Product Name COPPER ANTI-SEIZE LUBRICANT 8OZ

Other means of identification
Product Code 09128

Recommended use of the chemical and restrictions on use
Recommended Use Lubricant
Uses advised against No information available

Details of the supplier of the safety data sheet
Manufacturer Address
ITW Permatex
6875 Parkland Blvd.
Solon, Ohio 44139 USA
Telephone: 1-87-Permatex
(866) 732-9502

May Also Be Distributed by:
ITW Permatex Canada
101-2360 Bristol Circle
Oakville, ON Canada L6H 6M5
Telephone: (800) 924-6994

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 not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Carcinogenicity	Category 1B

Label elements

Emergency Overview

Signal word
Danger

May cause cancer

Appearance Copper	**Physical state** Paste Liquid	**Odor** Petroleum

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

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
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Gently wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
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
Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity 27.25 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Chemical Name	CAS No	Weight-%
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC	64742-54-7	30 - 60
MAGNESIUM SILICATE	14807-96-6	10 - 30
LIMESTONE	1317-65-3	10 - 30
COPPER	7440-50-8	3 - 7
GRAPHITE	7782-42-5	1 - 5
AMORPHOUS SILICA	7631-86-9	1 - 5

4. FIRST AID MEASURES

Description of first aid measures

General advice Call 911 or emergency medical service. Remove and isolate contaminated clothing and shoes.

Eye contact In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Skin contact IF ON SKIN:. Wash with soap and water.

Inhalation Move victim to fresh air. If breathing is irregular or stopped, administer artificial respiration.

Administer oxygen if breathing is difficult.

Ingestion IF SWALLOWED:. Do NOT induce vomiting.

Self-protection of the first aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Symptoms See section 2 for more information.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Dry chemical, CO2, water spray or regular foam, Water spray, fog or regular foam, Move containers from fire area if you can do it without risk, Dike fire-control water for later disposal

Unsuitable extinguishing media
Do not scatter spilled material with high pressure water streams

Specific hazards arising from the chemical
Some may burn but none ignite readily. Those substances designated with a "P" may polymerize explosively when heated or involved in a fire. Some may be transported hot.

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 Do not touch or walk through spilled material. Stop leak if you can do it without risk.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Prevent dust cloud.

Methods for cleaning up Cover liquid spill with sand, earth or other non-combustible absorbent material. With clean shovel place material into clean, dry container and cover loosely; move containers from spill area. Take up with sand or other non-combustible absorbent material and place into containers for later disposal. Cover powder spill with plastic sheet or tarp to minimize spreading.

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 Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities

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

Incompatible materials Strong oxidizing agents, Acids, Alkalis

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
MAGNESIUM SILICATE 14807-96-6	TWA: 2 mg/m³ particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	(vacated) TWA: 2 mg/m³ respirable dust <1% Crystalline silica, containing no Asbestos TWA: 20 mppcf if 1% Quartz or more;use Quartz limit	IDLH: 1000 mg/m³ TWA: 2 mg/m³ containing no Asbestos and <1% Quartz respirable dust
LIMESTON E 1317-65-3	-	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 15 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction	TWA: 10 mg/m³ total dust TWA: 5 mg/m³ respirable dust
COPPER 7440-50-8	TWA: 0.2 mg/m³ fume	TWA: 0.1 mg/m³ fume TWA: 1 mg/m³ dust and mist (vacated) TWA: 0.1 mg/m³ Cu dust, fume, mist	IDLH: 100 mg/m³ dust, fume and mist TWA: 1 mg/m³ dust and mist TWA: 0.1 mg/m³ fume
GRAPHIT E 7782-42-5	TWA: 2 mg/m³ respirable particulate matter all forms except graphite fibers	TWA: 15 mg/m³ total dust synthetic TWA: 5 mg/m³ respirable fraction synthetic (vacated) TWA: 2.5 mg/m³ respirable dust natural (vacated) TWA: 10 mg/m³ total dust synthetic (vacated) TWA: 5 mg/m³ respirable fraction synthetic TWA: 15 mppcf natural	IDLH: 1250 mg/m³ TWA: 2.5 mg/m³ natural respirable dust
AMORPHOUS SILICA 7631-86-9	-	TWA: 50 µg/m³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays (vacated) TWA: 6 mg/m³ <1 % Crystalline silica TWA: 20 mppcf : (80)/(% SiO2) mg/m³ TWA	IDLH: 3000 mg/m³ TWA: 6 mg/m³

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).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems

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

9.1. Information on basic physical and chemical properties

Physical state	Paste Liquid
Appearance	Copper
Odor	Petroleum
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	No information available	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	216 °C / 421 °F	
Evaporation rate	No information available	Butyl acetate = 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	No information available	Air = 1
Relative density	1.21	
Water solubility	Insoluble in water	
Solubility(ies)	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	0%
Density	No information available
Bulk density	No information available
SADT (self-accelerating decomposition temperature)	No information available

10. STABILITY AND REACTIVITY

Reactivity
No information available

Chemical stability
Stable under normal conditions

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Excessive heat.

Incompatible materials
Strong oxidizing agents, Acids, Alkalis

Hazardous Decomposition Products
Carbon oxides
Metal oxides
Halogenated compounds

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.

Ingestion Ingestion may cause irritation to mucous membranes.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC 64742-54-7	> 15 g/kg (Rat)	> 5000 mg/kg (Rabbit)	-
GRAPHIT E 7782-42-5	-	-	> 2000 mg/m³ (Rat) 4 h
AMORPHOUS SILICA 7631-86-9	= 7900 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 2.2 mg/L (Rat) 1 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
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC 64742-54-7	A2	Group 1	Known	X
MAGNESIUM SILICATE 14807-96-6	-	Group 3	-	X
AMORPHOUS SILICA 7631-86-9	-	Group 3	-	-

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Not classifiable as a human carcinogen
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Chronic toxicity May cause adverse liver effects.
Target Organ Effects Central Vascular System (CVS), Eyes, kidney, Liver, Respiratory system, Skin.

The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 18281 mg/kg
ATEmix (dermal) 6332 mg/kg

12. ECOLOGICAL INFORMATION

This product contains a chemical which is listed as a severe marine pollutant according to DOT.

Ecotoxicity

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

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

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

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Not regulated
Marine pollutant	This product contains a chemical which is listed as a severe marine pollutant according to DOT.

IATA

Proper shipping name	Not regulated

IMDG

Proper shipping name	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies

AICS Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing 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 %
COPPER - 7440-50-8	1.0

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)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
COPPER 7440-50-8	-	X	X	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
COPPER 7440-50-8	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
AMORPHOUS SILICA 7631-86-9	*Carcinogen

• *The asterisked chemical(s) listed are not subject to Proposition 65 because they are not airborne in the finished product

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
MAGNESIUM SILICATE 14807-96-6	X	X	X
LIMESTONE 1317-65-3	X	X	X
COPPER 7440-50-8	X	X	X
AMORPHOUS SILICA 7631-86-9	-	X	X
GRAPHITE 7782-42-5	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

WHMIS Hazard Class
D2A - Very toxic materials

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

NFPA	**Health hazards** 1	**Flammability** 1	**Instability** 0	-
HMIS	**Health hazards** 1	**Flammability** 1	**Physical hazards** 0	**Personal protection** B

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

Revision Date 15-Jan-2021

Disclaimer
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End of Safety Data Sheet

Asphalt Cement PG 58-28

Asphalt Cement PG 58-28

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 05/03/2018 Revision date: 05/03/0118 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : Asphalt Cement PG 58-28

Product code : Not available

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Road paving asphalt

1.3. Supplier

Manufacturer
Glenn O. Hawbaker, Inc.
1952 Waddle Road, Suite 203
State College, PA 16804
T (814) 237-1444

1.4. Emergency telephone number

Emergency number : CHEMTREC: (800) 424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

Contact with hot liquid product may cause burns. Fumes may cause upper respiratory irritation (nose & throat). Skin contact may increase susceptibility to sunburn. Poisonous hydrogen sulfide gas can accumulate in the head-space of containers.

2.4. Unknown acute toxicity (GHS US)

Nota applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Asphalt	(CAS-No.) 8052-42-4	<= 100
Asphalt, oxidized	(CAS-No.) 64742-93-4	<= 100

***Chemical name, CAS number and/or exact concentration have been withheld as a trade secret**

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 skin irritation occurs: Wash skin with plenty of water. Obtain medical attention if irritation persists. In case of contact with hot or molten product, get immediate medical advice/attention.

First-aid measures after 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.

First-aid measures after ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation	:	May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	:	May cause skin irritation. Repeated exposure may cause skin dryness or cracking. Contact with hot product may cause burns. If asphalt comes in contact with skin, immediately cool skin. Allow asphalt to fall off naturally. DO NOT remove asphalt from skin, as underlying tissue may easily be torn away.
Symptoms/effects after eye contact	:	May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling. Contact with hot product may cause burns.
Symptoms/effects after ingestion	:	May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting

4.3. Immediate medical attention and special treatment, if necessary

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	:	Carbon dioxide (CO_2). Dry chemical. Foam.
Unsuitable extinguishing media	:	None known.

5.2. Specific hazards arising from the chemical

Fire hazard	:	Products of combustion may include, and are not limited to: oxides of carbon. Nitrogen oxides. Sulfur oxides. Hydrogen sulfide. Toxic fumes may be released.
Reactivity	:	No dangerous reactions known under normal conditions of use.

5.3. Special protective equipment and precautions for fire-fighters

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.

1. For non-emergency personnel

No additional information available

2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment	:	Contain spill, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
Methods for cleaning up	:	Allow product to cool and solidify. Pick up large pieces, then place in a suitable container. Provide ventilation.

6.4. Reference to other sections

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

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Do not breathe gas, fumes, vapour or spray. Avoid contact with skin, eyes and clothing. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Significant concentrations of hydrogen sulfide (H_2S) gas can be generated and accumulate in storage tanks and bulk transport compartments which may require additional precautions and procedures during loading and unloading.
Hygiene measures	:	Wash contaminated clothing before reuse. Always wash hands after handling the product.

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 place.
Incompatible products	:	Strong oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Asphalt (8052-42-4)		
ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³ (fume, inhalable particulate matter)
NIOSH	NIOSH REL (ceiling) (mg/m³)	5 mg/m³ (fume)
Asphalt, oxidized (64742-93-4)		
Not applicable		

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Leather and/or heat resistant gloves are recommended, depending on the state of the material.

Eye protection:

Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. 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.

Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Solid / Liquid at high temperatures
Color	:	Dark brown / Black
Odor	:	Asphalt
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	> 371 °C / 700 °F
Flash point	:	> 232 °C / 450 °F
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	No data available
Specific gravity / density	:	0.95 - 1.13 g/ml
Solubility	:	Negligible in water.
Partition coefficient n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available

Explosion limits : No data available
Explosive properties : Not explosive.
Oxidizing properties : Not oxidizing.

9.2. Other information
No additional information available

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
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
Heat. Incompatible materials. Do not allow hot molten material to contact water.

10.5. Incompatible materials
Strong oxidizing agents.

10.6. Hazardous decomposition products
May include, and are not limited to: oxides of carbon. Nitrogen oxides. Sulfur oxides. Hydrogen sulfide. Toxic fumes may be released.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

Asphalt (8052-42-4)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 94.4 mg/m³ (Exposure time: 4.5 h)
Asphalt, oxidized (64742-93-4)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified.
Additional information : Classification as a carcinogen under 29CFR 1010.1200 is not warranted given the absence of positive cancer findings in human epidemiological studies and in cancer studies with laboratory animals when exposed dermally or by inhalation to asphalt products or fume condensates that are typical of road paving applications. Emissions from oxidized bitumen in this product at typical handling /use temperatures are not expected to be qualitatively different than emissions from straight-run bitumens, and therefore do not warrant a carcinogen classification under 29CFR 1910.1200.

Asphalt (8052-42-4)	
IARC group	2B - Possibly carcinogenic to humans
In OSHA Hazard Communication Carcinogen list	Yes
Asphalt, oxidized (64742-93-4)	
IARC group	2A - Probably carcinogenic to humans
In OSHA Hazard Communication Carcinogen list	Yes

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/effects after inhalation	:	May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	:	May cause skin irritation. Repeated exposure may cause skin dryness or cracking. Contact with hot product may cause burns. If asphalt comes in contact with skin, immediately cool skin. Allow asphalt to fall off naturally. DO NOT remove asphalt from skin, as underlying tissue may easily be torn away.
Symptoms/effects after eye contact	:	May cause eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling. Contact with hot product may cause burns.
Symptoms/effects after ingestion	:	May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information	:	Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

12.2. Persistence and degradability

Asphalt Cement PG 58-28	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Asphalt Cement PG 58-28	
Bioaccumulative potential	Not established.
Asphalt (8052-42-4)	
BCF fish 1	(no bioaccumulation expected)
Partition coefficient n-octanol/water	> 6

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

UN-No.(DOT)	:	UN3257
Proper Shipping Name (DOT)	:	Elevated temperature liquid, n.o.s.
Class (DOT)	:	9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140
Packing group (DOT)	:	III
Hazard labels (DOT)	:	

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

No additional information available

15.3. US State regulations

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.

SECTION 16: Other information

Date of issue	:	05/03/2018
Revision date	:	05/03/0118
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.

Asphalt Emulsion (MPM)

SAFETY DATA SHEET

Michigan Paving & Materials Company

Revision Date: 11/26/18

Section 1. Identification

PRODUCT identifier Asphalt Emulsion

OTHER means of identification

Synonyms/TRADE NAME: SS-1H, SS-1HP, RS-2, RS-2A, HFRS-2, HFRS-2M, HFRS-2P, CSEA, CSS-1HM, CQS-1H, CRS-2, CRS-2M, CRS-2P, AE-90, AMS SEAL SP, AMS SEAL WP, DUST CLEAR-DS, CSS-1H, CSS-1H DILUTE, CQSEA, PPSS, UBWC, PMEB, FIBERMAT, SSEA, CSS-1HR, LTSS-1HM, LTBC-2

Recommended use: Construction Material/road surfacing

Recommended Restrictions:

Manufacturer/Importer/Supplier/Distributor information

Company Name Michigan Paving & Materials
Monroe Terminal

Locations 3125 E. Front Street, Monroe MI 48161
Alma Terminal
1950 Williams St., Alma, MI 48801

Telephone Monroe Terminal: 734-337-2053
Alma Terminal: 989-402-5932

Website http://michiganpaving.com/

Emergency phone number 8-5 (M-F EST) 734-337-2053
Chemtrec: 800-424-9300

For technical assistance regarding this product, contact your local Michigan Paving & Materials Company representative.

2 HAZARDS IDENTIFICATION

GHS Hazard Classification(s):

Skin Corrosion Irritation – Category 2
Serious Eye Damage / Eye Irritation – Category 2A
Skin Sensitization – Category 1A
Carcinogenicity – Category 2
Acute Aquatic Toxicity – Category 3

Pictograms

Signal Word: WARNING!

Hazard Statements

H351 - Suspected of causing cancer.
May release toxic hydrogen sulfide gas that could accumulate at toxic concentrations inside containers of heated asphalt
H304 May be fatal if swallowed and enters airways.
H319: Causes serious eye irritation
H332: Harmful if inhaled
H335: May cause respiratory irritation

H316 Causes mild skin irritation.
Harmful to aquatic life

Precautionary Statements

Blended asphalt products are molten when heated above 200 ^{0}F and heated material may cause thermal burns.
The cured, inert semi solid material is considered non hazardous.
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling
P271: Use only in well-ventilated area.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
Keep away from sparks/open flames/hot surfaces. No smoking.
Avoid release to the environment

Prevention: Obtain special instructions before use. Do no handle until all safety precautions have been read and understood. Wash hands and any contacted skin thoroughly after handling. Wear protective gloves of materials such as leather or thick rubber, and long sleeved clothing. Wear safety eye glasses with side shields, and if needed to prevent splattering onto face, wear face shield.

Response: If exposed or concerned: Get medical advice or attention.
If on skin: Wash with plenty of water and hand cleaner. .
If skin irritation occurs: Get medical attention.
Take off contaminated clothing and wash it 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 attention.

Storage: Store locked up.

Disposal: Dispose of contents/containers in accordance with local, state and national regulations.

Hazard(s) not otherwise classified (HNOC): Hot Liquid May Cause Thermal Burns
May Release Hydrogen Sulfide Gas

Section 3. Composition/Information on Ingredients

Mixture

Component	CAS Number	Weight %
Asphalt	8052-42-4	20-80%
Water	7732-18-15	0-60%
Polymer Modifier (proprietary)	Mixture	<12%
Fuels, diesel, No2 Mineral Spirits Biodiesel	68476-34-6 8052-41-3 mixture	0-10%
Tall Oil	8002-26-4	0-3%
Sodium Hydroxide	1310-73-2	0-2%
Hydrochloric Acid (20 Baume)	7647-01-0	0-2%
Cationic Emulsifier	Mixture	0-2%
Anionic Emulsifier	Mixture	0-2%
Anti-Strip (proprietary)	Mixture	0-1%
Hydrogen Sulfide	7783-06-4	<1%

Section 4. First Aid Measures

Inhalation: Safely remove the victim from exposure. DO NOT ATTEMPT TO RESCUE WITHOUT ADEQUATE PROTECTIVE GEAR AND PROPER TRAINING. Remove to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Skin Contact For hot material, immerse or flush skin with large amounts of the coldest water possible. Cover with clean cotton sheeting or gauze. Remove clothing if not sticking to skin. DO NOT try to remove solidified material for the skin as the damaged flesh can be easily torn. DO NOT try to dissolve with solvents or thinners. GET IMMEDIATE MEDICAL ATTENTION.

For cold material, remove cold material with waterless hand cleaner and wash with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation persists.

Eye Contact Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. GET IMMEDIATE MEDICAL ATTENTION.

Burns due to contact with heated material require immediate medical attention.

Ingestion If large quantities of this material are accidentally ingested, do not induce vomiting. If spontaneous vomiting occurs keep head below hips to prevent aspiration and monitor for breathing difficulty. GET IMMEDIATE MEDICAL ATTENTION.

Most important symptoms/effects, acute and delayed

SPECIAL TOXIC EFFECTS

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: skin and lung. Exposure may cause the following specific symptoms, depending on the concentration and duration of exposure: fatigue, reduced appetite and respiratory effects.

Irritation and toxic hydrogen sulfide gas may be found in confined vapor space. WARNING –rotten egg odor of hydrogen sulfide is not a reliable indicator for warning of exposure since odor fatigue readily occurs. Odor sensation lost immediately at concentrations greater than 20 ppm. Avoid exposures to hydrogen sulfide gases. Hydrogen sulfide causes rapid death due to metabolic asphyxiation. Case reports suggest that toxic amounts can enter the body through a punctured ear drum, even while wearing some types of respiratory protective equipment.

This material contains petroleum asphalt. IARC has determined asphalt cement to have a 2B Classification; possibly carcinogenic to humans.

In solution, asphalts can produce skin cancer in animals following prolonged and repeated contact. Therefore, IARC has concluded that there is sufficient evidence for the carcinogenicity of asphalt extracts or cutbacks (asphalts that are diluted, dissolved or liquefied in hydrocarbon solvents) in experimental animals, implication these products as potentially carcinogenic to humans. While brief or intermittent skin contact with this product is not expected to cause harm, those workers who do not practice good personal hygiene and who are exposed repeatedly via skin contact may be at risk. It is important that all precautionary measures outlined in this MSDS be followed.

Asphalt fumes from heated material may cause eye, respiratory tract and skin irritation. These fumes may cause dermatitis and acne-like lesions as well as mild keratoses on prolonged and repeated exposure. However, inhalation studies on inhaled asphalt fumes in laboratory animals did not produce lung cancer. To date, human studies also have not established a link between lung cancer and asphalt fume exposure.

This material may contain polynuclear aromatic hydrocarbons (PNAs). Repeated or prolonged exposure to some PNAs has been associated with effects to the liver, kidneys, immune system and skin with warty growths, skin burns, pigmentation of the bare skin and cornification of the surface layers. They have also been associated with anemia, photosensitiivity, leukoplakia (white patches on the tongue, cheek or gums), edema of the eyelids, conjunctival hyperemia, lacrimation, photophobia, headache, loss of appetite, vital powers and strength, cough, bronchitis and nausea.

This material may contain untreated or mildly treated mineral oils. This material may contain solvent extract oils. IARC has determined that there is sufficient evidence for the carcinogenicity of these oils in experimental animals. Pre-existing medical conditions which may be aggravated by exposure include disorders of the kidney, liver skin and respiratory system.

Indication of immediate medical attention and special treatment needed

NOTES TO PHYSICAN

If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For skin contact with hot asphalt material, do not peel the solidified material from the skin, or use solvents such as gasoline, kerosene, or paint thinner to remove. Cooled asphalt may adhere so tenaciously to the skin that attempted removal may cause severe distress to the patient. Covering the affected area using commercially available preparations containing the emulsifying agent polysorbate (Tween 80), or an antibiotic cream in a polysorbate base is the most effective method to dissolve the solidified asphalt. Asphalt can also be slowly dissolved with vegetable oil, baby oil or mineral oil.

General information

HEALTH HAZARDS

Emulsified asphalt is a dark brown to black liquid emulsion. This asphalt is fluid at 150-200 degrees F. This product is not a flammable or combustible material per the OSHA hazard communication standard, but will burn when heated to extremely high temperatures.

When heated, this product may release toxic hydrogen sulfide vapors – do not rely on odor for warning
Fumes from heated material may be irritating and hazardous
May be irritating to the skin, eyes and respiratory tract
Heated material may cause thermal burns
May cause allergic skin reaction
Aspiration hazard if swallowed-can enter lungs and cause damage
Contains material which can cause cancer
* * SEE SPECIAL TOXIC EFFECTS SECTION FOR MORE INFORMATION

Section 5. Fire Fighting Measures

Extinguishing Media

Suitable Extinguishing Media:	Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO_2), Class B
Unsuitable Extinguishing Media:	Do not use water when molten material is involved. Use of water on hot/molten product will result in a violent expansion as the water turns to steam causing explosion with massive force.

Specific hazards arising from the chemical

Fire Hazard	Combustible at high temperatures. May release flammable gases/vapors. Flammable vapors can accumulate in head space of closed systems and in areas of insufficient ventilation.
Explosion Hazard	Product is not explosive. However, thermal decomposition may generate fumes that are flammable or explosive. Heating the product or containers can cause thermal decomposition of the product and release hydrogen sulfide. Hydrogen sulfide is a highly flammable, toxic gas.
Reactivity	Asphalt may be incompatible with strong oxidizing agents like nitric acid. Charring may occur followed by ignition of unreactive material and other nearby combustibles. If heated sufficiently or ignited in the presence of air, oxygen or strong oxidizing agents, can burn exothermically. May be ignited by strong oxidizing agents.
Special protective equipment	Firefighters must wear MSHA/NIOSH approved positive

and precautions for firefighters:	pressure breathing apparatus (SCBA) with full face mask and full protective equipment. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines.
Fire fighting equipment/instructions:	Do not breathe fumes from fires or vapors from decomposition: May release poisonous hydrogen sulfide. Do not allow run-off from firefighting to enter drains or water sources.
Protection During Firefighting:	Do not enter fire area without proper protective equipment, including respiratory protection.
Hazardous Combustion Products:	Fire involving this product may release carbon monoxide, carbon dioxide, reactive hydrocarbons and hydrogen sulfide.

NFPA: Health 1 Flammability 1 Instability 0 Special Hazards –

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures	General Measures: Do not breathe dust, vapor, or gas. Avoid all contact with skin, eyes, or clothing.
For Non-Emergency Personnel	**Protective Equipment:** Use appropriate personal protection equipment (PPE). **Emergency Procedures:** Evacuate unnecessary personnel.
For Emergency Personnel	**Protective Equipment**: Equip cleanup crew with proper protection. **Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.
Environmental Precautions	Prevent entry to sewers and public waters.
Methods and Material for Containment and Cleaning Up	**For Containment**: Cool molten material to limit spreading. **Methods for Cleaning Up:** Allow liquid material to solidify before cleaning up. Place spilled material into a container. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate protective equipment as described in Section 8. Do not wash asphalt down sewage and drainage systems or into bodies of water (e.g. streams).

Section 7. Handling and Storage

Precautions for safe handling :

Additional Hazards When Processed:	If stored under heat for extended periods or significantly agitated, this material might evolve or release hydrogen sulfide, a flammable gas. Hydrogen sulfide is a toxic gas that can be fatal. Exercise caution and ensure adequate ventilation.
Precautions for Safe Handling:	Do not handle until all safety precautions have been read and understood. Protect skin and eyes from contact with molten material. Do not breathe dust or fumes.
Conditions for safe storage, including incompatibilities	**Storage Conditions:** Store in a dry, cool and well-ventilated place. Keep container closed when not in use. **Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers (such as nitrates, chlorates, and peroxides). Fluorine. Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition. Store in a well-ventilated area. Avoid storage near incompatible materials. Hydrogen sulfide may accumulate in tanks and bulk transport compartments. Consider appropriate respiratory protection (see Section 8). Stand upwind. Avoid

	vapors when opening hatches and dome covers. Confined spaces should be ventilated prior to entry.
Specific End Use(s)	Asphalt is used as a binder in asphalt paving applications such as paving roads, driveways, parking lots and other surface, base, or sub-base applications.

Section 8. Exposure Controls / Personal

Product Information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA – Vacated PELs – Time Weighted Ave
Petroleum Asphalt	8052-42-4	>60%	=0.5 mg/m³ TWA	

Component Information:

Name	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA – Vacated PELs – Time Weighted Ave
Asphalt	8052-42-4	20-80%	=0.5 mg/m³ TWA (inhalable fraction, as benzene-soluble aerosol)	
Water	7732-18-15	0-40%	ND	
Polymer Modifier (proprietary)	Mixture	<12%	ND	
Sodium Hydroxide	1310-73-2	0-2%	2 mg/m3 Ceiling	2 mg/m3 TWA
Anionic Emulsifier (proprietary)	Mixture	0-2%	ND	
Hydrochloric Acid (20 Baume)	7647-01-0	0-0.5%	ND	
Cationic Emulsifier	Mixture	0-2%	ND	
Anti-Strip (proprietary)	Mixture	0-1%	ND	
Hydrogen Sulfide	7783-06-4	<1%	= 1 ppm TWA =5 ppm STEL	=10 ppm TWA =15 mg/m³ TWA =10 ppm REL (ceiling) =100 ppm (IDHL)
Fuels, diesel, No2 Mineral Spirits Biodiesel	68476-34-6 64742-47-8 mixture	0-10%	Distillates (petroleum), TWA 100 mg/m3	

ND= Not Determined

*Values do not reflect absolute minimums and maximums; these are typical values which may vary from time to time. The specific identities of some of the components of this product are being withheld as trade secrets. However, all pertinent hazards are addressed in this SDS.

Asphalt Products 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 by-product of asphalt processing.

Exposure Controls

Appropriate Engineering Controls:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.
Personal Protective Equipment:	Gloves. Protective goggles. Protective clothing. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: 	Suitable materials with adequate protection.
Hand Protection: 	Protective Gloves.
Eye Protection: 	Chemical goggles. Wearing contact lenses under dusty conditions is not recommended.
Skin and Body Protection:	Wear suitable protective clothing
Respiratory Protection: 	When first opening tank trucks, railcars, or other containers, it is recommended to wear appropriate NIOSH approved respiratory protection. Appropriate NIOSH approved respiratory protection must be worn if material is heated and/or generates asphalt fumes and/or hydrogen sulfide above the OSHA and ACGIH recommended limits.

Section 9. Physical and Chemical Properties

ODOR AND APPERANCE

Appearance: Dark brown to black viscous elastic liquid with asphalt odor
Or
Dark brown to black viscous elastic liquid with pungent odor

Physical State: Liquid

Color: Black-Brown

Odor: Tar

Boiling Point:	> 212 F (>100 C)
Specific Gravity:	0.95 – 1.04
Melting Point:	NA
Percent Volatile:	< 1 %
Vapor Pressure	< 0.01 mmHg @ 300 F (149 C)
Vapor Density:	ND
Bulk Density:	ND
Solubility in Water:	INSOLUBLE
Octanol/Water Partn:	ND
Volatile Organic:	ND
Pour Point:	NA
PH Value:	ND
Freezing Point:	NA
Viscosity:	1-3500 SUS @ 120 F (50 C)
Evaporation Rate:	ND
Molecular Formula:	NA
Molecular Weight	ND
Chemical Family	ASPHALT EMULSION
Odor Threshold:	ND
Flash Point:	> 400 F PENSKY-MARTENS CLOSED CUP
Auto Ignition Temperature	ND
Flammability Limits in Air, Lower (LEL), % by Volume:	ND
Flammability Limits in Air, Upper (UEL), % by Volume:	ND

Section 10. Stability and Reactivity

Reactivity:	Incompatible with oxidizing agents. Charring may occur followed by ignition of unreactive material and other nearby combustibles. If heated sufficiently or ignited in the presence of air, oxygen or strong oxidizing agents, can burn exothermically. May be ignited by strong oxidizing agents.
Chemical Stability:	Combustion may produce CO, NOx, SOx, and reactive hydrocarbons. Combustion may produce hydrogen sulfide, toxic and irritating vapors.
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to Avoid:	Excessive heat, sources of ignition, open flame. Extremely high or low temperatures. Incompatible materials.
Incompatible Materials:	Strong acids. Strong bases. Strong oxidizers (such as nitrates, chlorates, and peroxides). Fluorine.
Hazardous Decomposition Products:	Combustion may produce CO, NOx, SOx, and reactive hydrocarbons. Combustion may produce hydrogen sulfide, toxic and irritating vapors.

Section 11. Toxicological Information

Information on Toxicological Effects - Product

LD50 and LC50 Data:	Not available
Skin Corrosion/Irritation:	Not classified
Serious Eye Damage/Irritation:	Not classified
Respiratory or Skin Sensitization:	Not classified
Germ Cell Mutagenicity:	Not classified
Teratogenicity:	Not available
Carcinogenicity:	Suspected of causing cancer
Specific Target Organ Toxicity (Repeated Exposure):	Not classified.
Reproductive Toxicity:	Not classified
Specific Target Organ Toxicity (Single Exposure):	Not classified
Aspiration Hazard:	Not classified
Symptoms/Injuries After Inhalation:	Exposure to fumes, vapors, or dust may cause irritation of the nose, throat, and respiratory system. Hot material releases irritating fumes or vapors; symptoms may include headache, dizziness, loss of coordination, and drowsiness. WARNING: irritating and toxic hydrogen sulfide gas may be present. Greater than 15-20ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, and dizziness. Continued exposure at these levels can lead to loss of reasoning and balance, difficulty in breathing, fluid in the lungs, and possible loss of consciousness. Greater than 500ppm can cause rapid unconsciousness and death if not promptly revived.
Symptoms/Injuries After Skin Contact:	Dust may cause dry skin, discomfort, irritation and dermatitis. Hot product will cause severe burns.
Symptoms/Injuries After Eye Contact:	Eye contact to airborne dust may cause immediate or delayed irritation or inflammation. Hot product will cause severe burns. Eye exposures may require immediate first aid and medical attention to prevent significant damage to the eye.
Symptoms/Injuries After Ingestion:	Do not ingest asphalt. Ingestion of small quantities of asphalt is not known to be harmful; ingesting large quantities can cause intestinal distress. May cause nausea, vomiting, and diarrhea.
Chronic Symptoms:	Emissions from asphalt are suspected of causing cancer. Product may contain polynuclear aromatic hydrocarbons (PNAs). Evidence from animal studies indicates that prolonged exposure to various PNAs can cause cancer of the lungs, skin, and other organs.

Information on Toxicological Effects - Ingredient(s)

Asphalt (8052-42-4)	LD50 Oral Rat > 5000 mg/kg LD50 Dermal Rabbit > 2000 mg/kg LC50 Inhalation Rat > 94.4 mg/m³
Hydrogen Sulfide (7783-06-4)	Acute Inhalation LC50 Mouse: > 0.024 mg/L 960 minutes Acute Inhalation LC50 Rat: > 0.38 mg/L 960 minutes Acute Inhalation LC50 Monkey: 0.7 mg/L 35 minutes Inhalation LC50 Rat: 712 ppm (1-hour exposure) Inhalation LC50 Mouse: 634 ppm (1-hour exposure)
Sodium Hydroxide (1310-73-2)	irritation data: skin, rabbit: 500 mg / 24 h severe; eye rabbit: 50 ug / 24 h severe Investigated as a mutagen.
Asphalt (8052-42-4)	IARC Group 2B National Toxicology Program (NTP) Status: Twelfth Report - Items Listed by Classification OSHA Hazard Communication Carcinogen List: In OSHA Hazard Communication Carcinogen list.

Section 12. Ecological Information

Toxicity No additional information available

Hydrogen Sulfide (7783-06-4)	Very toxic to aquatic organisms.
Sodium Hydroxide (1310-73-2)	EC50 Water flea (Ceriodaphnia dubia): 34.59 mg/l 48 h LC50 Western mosquitofish (Gambusia affinis): 125 mg/l 96 h
Persistence and Degradability	Not available
Bioaccumulative Potential	BCF Fish 1: (no bioaccumulation expected) Log Pow: > 6
Mobility in Soil	Not available
Other Adverse Effects	Not available

Section 13. Disposal Considerations

WASTE DISPOSAL

This product, as shipped, when discarded or disposed of, will not be a hazardous waste according to Federal regulations. Under the Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user of the product to determine, at the time of disposal, whether the material is a hazardous waste subject to RCRA.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements, as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

Section 14. Transport Information

In Accordance with DOT
not regulated

TDG (Canada):
UN Proper shipping name: Not Regulated
UN/Identification No: Not applicable
Transport Hazard Class(es): Not applicable
Packing group: Not applicable

Section 15. Regulatory Information

US Federal Regulations

Asphalt (8052-42-4)	Listed on the United States TSCA (Toxic Substances Control Act) inventory SARA Section 311/312 Hazard Classes: Delayed (chronic) health hazard
Hydrogen Sulfide (7783-06-4)	CERCLA/SARA Section 302 EHS: 500 lb TPQ CERCLA/SARA 313: 1.0% de minimis concentration
Sodium Hydroxide (1310-73-2)	CERCLA 10000

US State Regulations

Asphalt (8052-42-4)	Right To Know List
Hydrogen Sulfide (7783-06-4)	Right To Know List
Sodium Hydroxide (1310-73-2)	Right To Know List

Section 16. Other Information

Additional Information

The following sections contain revisions or new statements: 1-16.

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.

Asphalt Emulsion SS-1h (SealMaster)

SAFETY DATA SHEET

Issuing Date 12-Jun-2017 **Revision Date** N/A **Revision Number** N/A

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

GHS Product Identifier
Product Name: **SS-1h Asphalt Emulsion**

Other Means of Identification
Product Code(s): **N/A**
Synonyms None

Recommended Use of the Chemical and Restrictions on Use
Recommended Use: No Information Available
Uses Advised Against: No Information Available

Manufacturer's Details

Supplier's Address
ThorWorks Industries, Inc.
2520 S. Campbell St.
Sandusky, OH 44870
www.sealmaster.net
1-800-326-1994

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification
This product is not considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

GHS Label Elements, Including Precautionary Statements

Emergency Overview

Signal Word **Warning**

- Harmful if swallowed
- May cause skin irritation

Appearance: Black **Physical State:** Mastic **Odor:** Asphaltic

Precautionary Statements

Prevention	**Inhalation:**	May cause irritation of respiratory tract.
	Eye Contact:	Contact with eyes may cause irritation.
	Skin Contact:	May cause irritation.
	Ingestion:	Ingestion may cause stomach discomfort.
General Advice	• None	
Storage	• Keep container tightly closed	
Disposal	• Dispose of material/containers in accordance with the appropriate state, regional, or local regulations.	

Hazard Not Otherwise Classified (HNOC)
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %	Trade Secret
Asphalt	8052-42-4	50-70	*
Water	7732-18-5	25-45	*
Proprietary Ingredients	-	< 5	*

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

4. FIRST AID MEASURES

Description of Necessary First-Aid Measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions, see a physician.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most Important Symptoms/Effects, Acute and Delayed

Most Important Symptoms/Effects No information available

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician Treat Symptomatically. May cause sensitization by skin contact.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon Dioxide (CO_2). Dry Chemical. Foam. Water Fog.

Unsuitable Extinguishing Media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available

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. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions

Environmental Precautions: See Section 12 for additional Ecological Information

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: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Wear personal protective equipment. Avoid breathing vapors or mists. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities

Storage: Keep container tightly closed

Incompatible Products: Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Asphalt 8052-42-4	TWA: 0.5 mg/m³ benzene soluble aerosol fume, inhalable fraction	-	Ceiling: 5 mg/m³ fume 15 min.

Appropriate Engineering Controls

Engineering Measures: Showers
Eyewash Stations
Ventilation Systems

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection: If splashes are likely to occur, wear: Safety glasses with side shields.

Skin and Body Protection: Impervious gloves.

Respiratory Protection: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene Measures: 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
Odor: Asphaltic

Appearance: Black
Odor Threshold: No Information Available

Property	Values	Remarks/Method
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	100° C	None known
Flash Point	No data available	None known
Evaporation Rate	1.8	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	<1	None known
Specific Density	1.01 @ 77 F	None known
Water Solubility	Easily dispersible	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not Flammable	
Explosive Properties	No data available	
Oxidizing Properties	No data available	

Other Information

VOC Content No data available

10. STABILITY AND REACTIVITY

Reactivity: No data available
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: None known
Incompatible Materials: Strong oxidizing agents. Acids.
Hazardous Decomposition Products: Carbon Monoxide (CO), Carbon Dioxide (CO^2), Hydrogen Sulfide, Nitrogen Dioxide

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation: May cause irritation of respiratory tract.
Eye Contact: Contact with eyes may cause irritation.
Skin Contact: May cause irritation.
Ingestion: Ingestion may cause stomach discomfort.

Chemical Name	LD50 Oral	LD50 Dermal	LD50 Inhalation
Asphalt	5000 mg/kg (Rat)	>2000 mg/kg (Rabbit)	-

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics

Symptoms: No information available.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure

Sensitization: No information available.
Mutagenic Effects: No information available.
Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen. The IARC, NTP, and OSHA do not list asphalt as a carcinogen. In general, the oxidation of polycyclic aromatic hydrocarbons destroys their carcinogenic potential. Petroleum asphalt, shale oil asphalts, and coal tars show distinct variation in their relative carcinogenicity for experimental animals.

Chemical Name	ACGIH	IARC	NTP	OSHA
Asphalt	A3	Group 2B	Reasonably Anticipated	X

ACGIH: (American Conference of Governmental Industrial Hygienists)
A3 – Animal Carcinogen
IRAC: (International Agency for Research on Cancer)
Group 2B – Possibly Carcinogenic to Humans
NTP: (National Toxicity Program)
Reasonably Anticipated – Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)
X – Present

Reproductive Toxicity: No information available.
STOT - Single Exposure: No information available.
STOT – Repeated Exposure: No information available.
Aspiration Hazard: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Persistence and Degradability: No information available.
Bioaccumulation

Chemical Name	Log Pow
Asphalt	6..006

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: 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: Do not re-use empty containers.

14. TRANSPORTATION INFORMATION

DOT: Not regulated

ICAO/IATA Not regulated as a hazardous material or dangerous goods for transportation.

15. REGULATORY INFORMATION

International Inventories
TSCA – Complies
DSL/NDSL – Complies

Legend
TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

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 Number	Weight %	SARA 313 – Threshold Values %
Asphalt	8052-42-4	20-40	0.1

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
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 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 Proposition 65 chemicals.

U.S. State Right-To-Know Regulations

"X" designates that the ingredients are listed on the state right to know list.

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Asphalt	X	X	X		X

U.S. EPA Label Information

EPA Pesticide Registration Number: Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard:** 1	**Flammability:** 0	**Instability:** 0	**Physical and Chemical**
HMIS	**Health Hazard:** 1	**Flammability:** 0	**Physical Hazard:** 0	**Hazards- Personal Protection: X**

Revision Date: 12-Jun-2017
Revision Note:

General 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.

Asphalt Pavement Mix (MPM)

MICHIGAN PAVING & MATERIALS CO
A CRH COMPANY

SAFETY DATA SHEET

Michigan Paving & Materials Company

Date: 11/26/18

Section 1: Identification

PRODUCT identifier Asphalt Pavement Mix
OTHER means of identification
Synonyms/TRADE NAME: Petroleum Asphalt / Road Paving Asphalt / Hot Mix Asphalt / Blacktop / Bitumen / Warm Mix Asphalt
Recommended use: Road Paving Asphalt
Recommended Restrictions:
Manufacturer/Importer/Supplier/Distributor information

Company	Michigan Paving & Materials	
Locations	Spartan: 16777 Wood St, Lansing, MI	Jackson: 1600 N Elm St, Jackson, MI
	Kalamazoo: 2000 Glendenning, Kalamazoo, MI	Klett: 46046 Red Arrow Highway, Paw Paw, MI
	Grand Rapids: 1100 Market Ave, Grand Rapids, MI	Grand N: 3566 Millcreek, Comstock Park, MI
Telephone	Spartan: 517-482-9611	Jackson: 517-787-4200
	Kalamazoo: 269-343-4659	Klett: 269-655-1394
	Grand Rapids: 616-459-9545	Grand N: 616-784-5220
Website	http://michiganpaving.com/	
Emergency phone number	8-5 (M-F EST) 734-397-2050	
	Chemtrec: 800-424-9300	

For technical assistance regarding this product, contact your local Michigan Paving & Materials Company representative.

Section 2: Hazards Identification

GHS Hazard Classification(s): Not classified as dangerous for supply/use.
Label elements
Pictograms None

Signal Word: None

Hazard Statements None

Precautionary Statements None

Other Hazards

Contact with hot ASPHALT PAVING MATERIALS causes skinburns.

May cause eye irritation.

Fumes may cause upper respiratory irritation (nose & throat).

Skin contact may increase susceptibility tosunburn.

Poisonous hydrogen sulfide gas can accumulate in the head-space of containers of certain asphalt products.
Mechanical disruption (e.g., milling, cutting, chipping) of cured asphalt pavement may release crystalline silica dust from the aggregate.

Additional Information: Avoid breathing dust/fume/gas/mist/vapors/spray.
As necessary, Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands and exposed skin after use.

Section 3: Composition/Information on Ingredients

Mixture

Composition/information on ingredients	% wt.	CAS No.
Aggregate (crushed stone, sand, gravel, slag)	70 - 97	Various
Petroleum asphalt / bitumen^	3 - 7	8052-42-4
Reclaimed Asphalt Pavement (RAP)	0 - 25	Mixture
Reclaimed Asphalt Shingles (RAS)	0 - 10	Mixture
Polymers and Natural Rubbers	< 0.5	Various
Process oils (inherent in refined petroleum asphalt)	< 0.1	Various

Anti-strip or other amine-based additives	< 0.1	Various
Warm-mix additives	< 0.1	Various

^Contains: <0.05% of 3 - 7 ring Polycyclic Aromatic Hydrocarbons (PAHs).

Other Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below. Please see Section 8 of SDS for more details.

- Contains: <0.1% airborne crystalline silica (inherent in aggregate) and <0.1% hydrogen sulfide.
- Hydrogen sulfide gas can accumulate in the head space of containers of certain asphalt products.
- Heated product releases asphalt fume.

Additional Information - None

Section 4: First Aid Measures

Description of first aid measures

Inhalation	Not normally required. Move person to fresh air. Apply artificial respiration if necessary. If symptoms persist, obtain medical attention.
Skin Contact	Causes burns. Immediately cool skin where asphalt binder has adhered to skin. Allow asphalt binder which remains on the skin to fall off naturally. DO NOT REMOVE. If problem persist or coverage is extensive, get medical attention.
Eye Contact	Flush eyes with water for at least 15 minutes while holding eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention.
Ingestion	Not normally required. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
Most important symptoms and effects, both acute and delayed	None known
Indication of any immediate medical attention and special treatment needed	None known

Section 5: Fire Fighting Measures

Extinguishing Media

-Suitable Extinguishing Media	Extinguish with carbon dioxide, dry chemical, foam or waterspray.
-Unsuitable Extinguishing Media	None anticipated.
Special hazards arising from the substance or mixture	Combustion causes toxic fumes. Combustion products: Carbonmonoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides
Advice for fire-fighters	A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures	Avoid contact with skin and eyes.
Environmental precautions	Not normally required.
Methods and material for containment and cleaning up	Allow product to cool/solidify and pick up as asolid.
Reference to other sections	None
Additional Information	None.

Section 7: Handling and Storage

Precautions for safe handling Avoid contact with skin and eyes.

Conditions for safe storage, including any incompatibilities

-Storage temperature	Store at temperatures not exceeding the product's flash point.
-Incompatible materials	Strong oxidizing agents.

Section 8: Exposure Controls/Personal Protection

Control parameters Occupational

SUBSTANCE.	CAS No.	(8hr TWA)		(STEL)		Note:
		PEL (OSHA) *	TLV (ACGIH)	PEL (OSHA)	TLV (ACGIH)	
Asphalt fume	------	------	0.5 mg/m3 (I)	------	------	See below
Crystalline Silica (respirable particulate)	------	$\frac{10\ mg/m^3}{\%SiO_2 + 2}$	0.025 mg/m3 ^	------	------	See below
Hydrogen sulfide	7783-06-4	------	1 ppm	20 ppm ceiling	5 ppm	50 ppm peak

(I) Inhalable benzene-soluble fraction; ^Suspected Human Carcinogen; *Refer to OSHA 29 CFR 1910.1000 & 29 CFR 1926.55; 8hr TWA = 8 hour time-weighted average; STEL = Short Term Exposure Limit.

Recommended monitoring method NIOSH 5042 (Asphalt Fume), NIOSH 7500 (Crystalline Silica), Electrochemical sensor (hydrogen sulfide).

Exposure controls

Appropriate engineering controls Use only outdoors or in a well-ventilated area.

Personal protection equipment

Eye/face protection

The following to be used as necessary: Safety Glasses

Skin protection (Hand protection/ Other)

The following to be used as necessary: Leather or thick textile gloves.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Use NIOSH approved respiratory protection. Air-purifying respirator with combination organic vapor cartridge / particulate filter may be sufficient. Check with protective equipment manufacturer's data.

Thermal hazards Use gloves with insulation for thermal protection, when needed.

Environmental Exposure Controls Do not discharge waste and/or cleaning water via public sewer system. Ensure waste is collected and contained.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Solid
Color.	Dark brown / Black
Odor	Asphalt / Bitumen
Odor Threshold (ppm)	Not available.
pH (Value)	Not available.
Melting Point (°C) / Freezing Point (°C)	Not available.
Boiling point/boiling range (°C):	> 371 (>700 ºF)
Flash Point (°C)	> 232 (> 450 ºF)
Evaporation Rate	Not available.
Flammability (solid, gas)	Not applicable.
Explosive Limit Ranges	Not applicable.
Vapor pressure (Pascal)	Not determined.
Vapor Density (Air=1)	Not determined.
Density (g/ml)	2.2 - 2.7
Solubility (Water)	Negligible
Solubility (Other)	Not known
Partition Coefficient (n-Octanol/water)	Not available.

Auto Ignition Point (°C)	Not available.
Decomposition Temperature (°C)	Not available.
Kinematic Viscosity (cSt) @ 40°C	Not available
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Other information	Not available.

Section 10: Stability and Reactivity

Reactivity	Stable under normal conditions.
Chemical stability	Stable.
Possibility of hazardous reactions	May react violently with: Strong oxidizing agents
Conditions to avoid	Incompatible materials
Incompatible materials	Oxidizers
Hazardous decomposition product(s)	Combustion causes toxic fumes. Combustion products: Carbonmonoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides

Section 11: Toxicological Information

Exposure routes: Inhalation**,** Skin Contact**,** Eye Contact

Information on toxicological effects

Acute toxicity	LD50 (rat): >5000 mg/kg bw LD50 (dermal): >2000 mg/kg bw LC50 (inhalation, fume): >94.4 mg/m^3
Irritation/Corrosivity	May cause irritation to skin, eyes and respiratory system.
Sensitization	Not to be expected
Repeated dose toxicity	NOAEL(rat): 28 mg/m^3 LOAEL (rat): 149 mg/m^3
Carcinogenicity	Not to be expected at typical road paving temperatures.

NTP	IARC	ACGIH	OSHA
No.	2B*	No.	No.

Mutagenicity	Not to be expected.
Reproductive toxicity	Not to be expected.

Other information * IARC (2013, volume 103) identifies that “occupational exposures to straight-run bitumens and their emissions during road paving are possibly carcinogenic to humans (Group 2B).” However, classification as a carcinogen under OSHA 29 CFR 1910.1200 is not warranted given the absence of positive cancer findings in human epidemiological studies and in cancer studies with laboratory animals when exposed dermally or by inhalation to asphalt products or fume condensates that are typical of road paving applications. IARC (2013, volume 103) also identifies that “occupational exposures to oxidized bitumens and their emissions during roofing are probably carcinogenic to humans (Group 2A).” Roofing shingle are sometimes recycled into road paving asphalt mix. Emissions from oxidized bitumen, e.g., from shingles, at road paving temperatures are not expected to be qualitatively different than emissions from straight-run bitumens, and therefore would not warrant a carcinogen classification under OSHA 29 CFR 1910.1200.

Section 12: Ecological Information

Ecotoxicity

Short term	LL50 (48 hour): >1000 mg/l (Fish) LL50 (48 hour): >1000 mg/L (Aquatic Invertebrates) EL50 (48 hour): >1000 mg/L (Aquatic Plants)
Long Term	No data
Persistence and degradability	The product is poorly biodegradable.
Bioaccumulative potential	The product has low potential for bioaccumulation.
Mobility in soil	The product has low mobility in soil.
Results of PBT and vPvB assessment	Not classified as PBT or vPvB.
Other adverse effects	None known.

Section 13: Disposal Considerations

Waste treatment methods — Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice.

Additional Information — None known.

Section 14: Transport Information

Ground or Water Domestic Voyage (DOT): Not regulated when transported below 240°C (464 °F).

Section 15: Regulatory Information

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

TSCA (Toxic Substance Control Act) - Inventory Status**:** All components listed or polymer exempt.

RCRA Hazardous Waste Number (40 CFR 261.33): None

US RCRA Hazard Class: Not applicable**.**

Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4):

Chemical Name	CAS No.	Typical %wt.	RQ (Pounds)
None	-----	-----	-----

SARA 311/312 - Hazard Categories: None

☐ Fire ☐ Sudden Release ☐ Reactivity ☐ Immediate (acute) ☐ Chronic (delayed)

SARA 313 - Toxic Chemicals (40 CFR 372):

Chemical Name	CAS No.	Typical %wt.
None	-----	-----

SARA 302 - Extremely Hazardous Substances(40 CFR 355):

Chemical Name	CAS No.	Typical %wt.	TPQ (pounds)
None	-----	-----	-----

Section 16: Other Information

Additional Information

The following sections contain revisions or new statements: 1-16.

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.

Automatic Transmission Fluid, VersaTrans LV (Kendall)

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1

SECTION 1: Identification

Product Identifier **VersaTrans® LV ATF**

Other means of identification Kendall VersaTrans® LV ATF
SDS Number **LBKN827394**
Relevant identified uses Automatic Transmission Fluid
Uses advised against All others
24 Hour Emergency Phone Number CHEMTREC 1-800-424-9300
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	<80
Distillates, petroleum, hydrotreated light paraffinic	64742-55-8	>15

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Prolonged or repeated contact may dry skin and cause irritation.

Notes to Physician: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

SECTION 5: Firefighting measures

NFPA 704 Hazard Class

Health: 0 **Flammability:** 1 **Instability:** 0

1 (Minimal)
2 (Slight)
3 (Moderate)
4 (Serious)
5 (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. 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	Phillips 66
Distillates, petroleum, hydrotreated heavy paraffinic	---	---	TWA: 5 mg/m^3 STEL: 10 mg/m^3 as Oil Mist, if Generated
Distillates, petroleum, hydrotreated light paraffinic	---	---	TWA: 5 mg/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 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: Red
Physical Form: Liquid
Odor: Petroleum
Odor Threshold: No data
pH: Not applicable

Flash Point: Minimum 315 °F / 157 °C
Test Method: Cleveland Open Cup (COC), ASTM D92
Initial Boiling Point/Range: No data
Vapor Pressure: <1 mm Hg
Partition Coefficient (n-octanol/water) (Kow): No data

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: Negligible
Flammability (solid, gas): May Ignite
Melting/Freezing Point: No data
Auto-ignition Temperature: No data
Decomposition Temperature: No data
Specific Gravity (water=1): 0.84 - 0.85 @ 60ºF (15.6ºC)
Bulk Density: 6.99 - 7.08 lbs/gal
Viscosity: 5.8-6.0 cSt @ 100°C; 27-31 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: 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

Lubricant Base Oil (Petroleum)

Carcinogenicity: The petroleum base oils contained in this product have been highly refined by a variety of processes

including severe hydrocracking/hydroprocessing to reduce aromatics and improve performance characteristics. All of the oils meet the IP-346 criteria of less than 3 percent PAH's and are not considered carcinogens by NTP, IARC, or OSHA.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

U.S. Department of Transportation (DOT)
UN Number: Not regulated
UN proper shipping name: Not regulated
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 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:
Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the warning requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Chemical Name	Type of Toxicity
Ethyl acrylate	Cancer

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:
22-Jun-2016	03-Jun-2016	LBKN827394	FINAL

Revised Sections or Basis for Revision:
New SDS

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.

Beaver Nut Scrub (BRC)

SAFETY DATA SHEET

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

Product ID: 290255, 290235, 230240, 290250,

Product Name: BEAVER NUT SCRUB

Revision Date: July 11, 2019

Version: 1.0

Distributor's Name: BEAVER RESEARCH COMPANY

Address: 3700 E KILGORE RD - PORTAGE, MI 49002

Emergency Phone: 1-800-535-5053

Information Phone: INFOTRAC (24 hrs) 1-352-323-3500 (International), 1-800-535-5053 (North America)

Fax:

Supersedes Date: Nov 27, 2017

DATE PRINTED: 1/9/20

Product/Recommended Uses: Hand Soap

SECTION 2) HAZARDS IDENTIFICATION

Classification:

Not classified

Pictograms:

No pictograms available.

Signal Word:

No signal word available.

Hazardous Statements - Physical:

Not classified

Precautionary Statements - General:

P101 - If medical advice is needed, have product container or label at hand. P102 - Keep out of reach of children.

P103 - Read label before use.

Precautionary Statements - Prevention:

No precautionary statement available.

Precautionary Statements - Response:

No precautionary statement available.

Precautionary Statements - Storage:

No precautionary statement available.

Precautionary Statements - Disposal:

No precautionary statement available.

SECTION 3) COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0007732-18-5	WATER	30% - 50%
N/A	Walnut Shells	15% - 25%
0008001-79-4	CASTOR OIL	5% - 15%
0067784-80-9	Methyl Soyate	5% - 15%

0008042-47-5	Mineral oil	5% - 15%
0068439-46-3	Ethoxylated alcohols (C9 - C11)	0.1% - 5%
0068585-34-2	(C10-C16) ALCOHOL ETHOXYLATE, SULFATED, SODIUM SALT	0.1% - 5%

SECTION 4) FIRST-AID MEASURES

Inhalation:

No ill effects expected.

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:

No ill effects expected. If skin irritation occurs stop using. Get medical advice/attention if condition warrants.

Ingestion:

Rinse mouth. Give two glasses of water. If you feel unwell or if concerned : Get medical advice/attention. Do NOT induce vomiting unless under the advice/direction of doctor/POISON CENTER. Note: Never give anything by mouth to an unconscious or convulsing victim. Keep person warm and quiet.

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

Will not burn. Use extinguishing material suitable for surrounding fire.

Unsuitable Extinguishing Media:

None.

Fire-Fighting Procedures:

N.A.

Special Protective Actions:

N.A.

SECTION 6) ACCIDENTAL RELEASE MEASURES

Emergency Procedure:

Do not walk through spilled material.
Isolate hazard area and keep unnecessary people away.

Pick up with mop or wet vac. Rinse spill area with water.

Recommended Equipment:

N.A.

Personal Precautions:

N.A.

Environmental Precautions:

Stop spill/release if it can be done safely.

SECTION 7) HANDLING AND STORAGE

General:

Do not get in eyes.
Use good personal hygiene practices.
Eating, drinking and smoking in work areas is prohibited.

Ventilation Requirements:

N.A.

Storage Room Requirements:

Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight and incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Containers that have been opened must be carefully resealed to prevent leakage.

Store at temperatures between 40°F and 100°F.

FOR INDUSTRIAL AND INSTITUTIONAL USE ONLY. FOR USE BY TRAINED PERSONNEL ONLY. KEEP FROM FREEZING.

SECTION 8) EXPOSURE CONTROLS, PERSONAL PROTECTION

Eye Protection:

N.A.

Skin Protection:

N.A.

Respiratory Protection:

N.A.

Appropriate Engineering Controls:

N.A.

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
No applicable chemical	-	-	-	-	-	-	-	-	-	-	-	-

Chemical Name	ACGIH TWA (ppm)	ACGIH TWA (mg/m3)	ACGIH STEL (ppm)	ACGIH STEL (mg/m3)
No applicable chemical	-	-	-	-

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Density VOC	0.07942 lb/gal
Density	8.36022 lb/gal
VOC Regulatory	9.51714 g/l
VOC Regulatory	0.07942 lb/gal
% VOC	0.95000%
VOC Actual	0.07942 lb/gal
VOC Actual	9.51715 g/l

Appearance	Thick brown liquid
Odor Threshold	N.A.
Odor Description	N.A.
pH	5-7
Water Solubility	Soluble
Flammability	Will not burn.
Flash Point Symbol	N.A.
Flash Point	N.A.
Viscosity	N.A.
Lower Explosion Level	N.A.
Upper Explosion Level	N.A.
Vapor Pressure	N.A.
Melting Point	N.A.
Vapor Density	N.A.
Freezing Point	N.A.
Low Boiling Point	N.A.
High Boiling Point	N.A.
Decomposition Pt	N.A.
Auto Ignition Temp	N.A.
Evaporation Rate	N.A.
VOC Composite Partial Pressure	N.A.

SECTION 10) STABILITY AND REACTIVITY

Stability:

Stable.

Conditions to Avoid:

None.

Incompatible Materials:

None known.

Hazardous Reactions/Polymerization:

Will not occur.

Hazardous Decomposition Products:

None known.

SECTION 11) TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation:

No data available

Serious Eye Damage/Irritation:

No data available

Carcinogenicity:

No data available

Germ Cell Mutagenicity:

No data available

Reproductive Toxicity:

No data available

Respiratory/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:

No data available.

Bio-Accumulative Potential:

No data available.

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. Return drums to reclamation centers for proper cleaning and reuse.

SECTION 14) TRANSPORT INFORMATION

U.S. DOT Information:

Not regulated.

IMDG Information:

Not regulated.

IATA Information:

Not regulated.

SECTION 15) REGULATORY INFORMATION

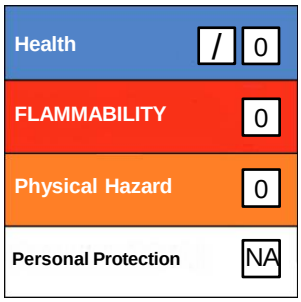
CAS	Chemical Name	% By Weight	Regulation List
0007732-18-5	WATER	30% - 50%	TSCA
N/A	Walnut Shells	15% - 25%	
0008001-79-4	CASTOR OIL	5% - 15%	SARA312,TSCA
0067784-80-9	Methyl soyate	5% - 15%	SARA312,TSCA
0008042-47-5	Mineral oil	5% - 15%	SARA312,TSCA
0068439-46-3	Ethoxylated alcohols (C9 - C11)	0.1% - 5%	SARA312,TSCA
0068585-34-2	(C10-C16)Alcohol ethoxylate sulfated, sodium salt	0.1% - 5%	SARA312,TSCA

SECTION 16) OTHER INFORMATION

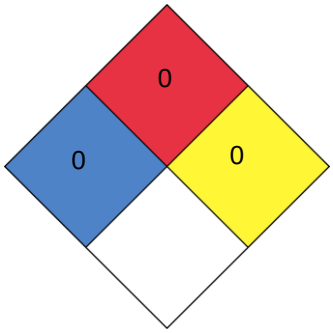
Glossary:

ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; Canadian TDG- Canadian Transportation of Dangerous Goods; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center (US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration; EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL- Effects screening levels; HMIS- Hazardous Material Information Service; LC- Lethal Concentration; LD- Lethal Dose; NFPA- National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL- Permissible Exposure Limit; SARA (Title III)- Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self-Contained Breathing Apparatus; STEL- Short Term Exposure Limit; TCEQ - Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA - Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

HMIS



NFPA



Chronic : ☐

DISCLAIMER

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. The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

Brake Parts Cleaner (Denco)

SAFETY DATA SHEET

Denco Distributing, Inc.

Date Issued : 06/30/2021
MSDS No : 360033-2

Denco N.C. Brake Parts Cleaner

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Denco N.C. Brake Parts Cleaner
PRODUCT CODE: 360033-2
ACTIVE INGREDIENT(S): n-Heptane; Acetone

DISTRIBUTOR
Denco Distributing
5151 Woodfield Ct. NE
Grand Rapids, MI 49525
Emergency Phone: 616-363-3669

24 HR. EMERGENCY TELEPHONE NUMBERS
616-363-3669

COMMENTS: To the best of our knowledge, this Safety Data Sheet conforms to the requirements of US OSHA 29 CFR 1910.1200, 91/155/EEC and Canadian Hazardous Products Act.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS

Health:

Aspiration Hazard, Category 1
Skin Irritation, Category 2
Target Organ Toxicity (Single exposure), Category 3
Eye Irritation, Category 2A

Physical:

Flammable Liquids, Category 2

GHS LABEL


Flammable Liquid


Health hazard


Exclamation mark

SIGNAL WORD: DANGER

HAZARD STATEMENTS

H225: Highly flammable liquid and vapour.
H319: Causes serious eye irritation.
H315: Causes skin irritation.
H304: May be fatal if swallowed and enters airways.

Precautionary statement(s)

Prevention:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P331: Do NOT induce vomiting.
P270: Do not eat, drink or smoke when using this product.
P262: Do not get in eyes, on skin, or on clothing.

Response:

SAFETY DATA SHEET

Denco Distributing, Inc.

Date Issued : 06/30/2021
MSDS No : 360033-2

Denco N.C. Brake Parts Cleaner

P312: Call a POISON CENTER/doctor/...if you feel unwell.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P302+P350: IF ON SKIN: Gently wash with plenty of soap and water.
P301: IF SWALLOWED:.

Storage:

P240: Ground and bond container and receiving equipment.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P241: Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242: Use non-sparking tools.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P264: Wash ... thoroughly after handling.

Disposal:

P501: Dispose of contents/container to ...

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Clear, Colorless liquid.

IMMEDIATE CONCERNS: Warning! Flammable liquid and vapor. High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract. Prolonged or repeated skin contact may cause drying, cracking, or irritation.

POTENTIAL HEALTH EFFECTS

EYES: May cause significant irritation to the eyes.

SKIN: Moderate irritation and discomfort. Defatting of skin and redness are possible. Toxic systemic effects from absorbtion are expected to be minor.

SKIN ABSORPTION: Refer to skin effects for any adverse symptoms that may occur from absorption.

INGESTION: Gastrointestinal tract irritation and/or discomfort is possible.

INHALATION: Dizziness, impaired coordination, headaches and loss of consciousness. Severe respiratory tract irritation. Toxic systemic effects are possible.

MEDICAL CONDITIONS AGGRAVATED: Individuals with pre-existing respiratory tract (nose, throat, and lungs), eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

ROUTES OF ENTRY: Absorption, Inhalation, Ingestion

TARGET ORGAN STATEMENT: Eyes, Skin, Respiratory System, CNS, Peripheral Nervous System. Skin contact may aggravate an existing dermatitis, Inhalation of material may aggravate asthma and inflammatory or fibrotic pulmonary disease.

COMMENTS HEALTH: SIGNS AND SYMPTOMS: IRRITATIONAS NOTED ABOVE. MODERATE CNS DEPRESSION MAYBE EVIDENCED BY GIDDINESS, HEADACHE, DIZZINESS AND NAUSEA, IN EXTREME CASES, UNCONSCIOUSNESS AND DEATH MAY OCCUR.

COMMENTS: INTENTIONAL ABUSE, MISUSE, OR MASSIVE EXPOSURE MAY CAUSE MULTIPLE ORGAN DAMAGE AND/OR DEATH.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
n-Heptane	45	142-82-5

SAFETY DATA SHEET

Denco Distributing, Inc.

Date Issued : 06/30/2021
MSDS No : 360033-2

Denco N.C. Brake Parts Cleaner

Acetone	55	67-64-1

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for 15 minutes. If irritation persists, seek medical attention.

SKIN: Wash exposed area with mild soap and water. Get medical attention if irritation develops or persists.

INGESTION: Do not induce vomiting. Danger from aspirating into lungs exceeds short term toxic effects. Get immediate medical help.

INHALATION: Remove victim from area of exposure. If unconscious, give oxygen. Give artificial respiration if not breathing. Get immediate medical attention.

5. FIRE FIGHTING MEASURES

FLAMMABLE CLASS: Treat as an OSHA Class IB Flammable liquid

GENERAL HAZARD: Flammable Liquid, can release vapors that form flammable mixtures at temperatures at or above the flashpoint. "Empty" containers retain product residue (liquid and/or vapor) and can be dagerous.

EXTINGUISHING MEDIA: Use dry chemical, foam, or carbon dioxide.

HAZARDOUS COMBUSTION PRODUCTS: Oxides of carbon and noxious fumes.

EXPLOSION HAZARDS: Mists or sprays could ignite at temperatures below the indicated flash point. Keep ignition sources, open flames, etc., away from these fumes.

FIRE FIGHTING PROCEDURES: Proper respiratory equipment to protect against the hazardous effects of combustion products is recommended. Water in a straight hose stream may cause fire to spread and should be used as a cooling medium only.

FIRE FIGHTING EQUIPMENT: Respiratory and eye protection are required for fire fighting personnel. Full protective equipment (Bunker Gear) and self contained breathing apparatus (SCBA) should be used for all indoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of a SCBA may not be required.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide if burned with insufficient air.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Extinguish posssible sources of ignition and ventilate spill area. Dike area to contain spill and clean up by absorbing on an inert absorbent or other convenient means. Do not flush into sewers or natural waterways. Non-essential personnel should not enter area due to slipping hazards.

LARGE SPILL: Contain material as described above and call the local fire or police department for immediate emergency assistance.

7. HANDLING AND STORAGE

HANDLING: Keep away from heat, 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. These products have a low vapor pressure and are not expected to present an inhalation hazard under normal temperatures and pressures. However, when aerosolizing, misting, or heating these products, do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing and shoes.

STORAGE: Store unopened containers under cool, dry and ventilated conditions. Keep away from heat, sparks and flame.

SHELF LIFE: THE SHELF LIFE OF THIS PODUCT IS UNDETERMINED, BUT MAY BECOME SUSPECT ONE YEAR FROM THE DATE OF PURCHASE.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

SAFETY DATA SHEET

Denco Distributing, Inc.

Date Issued : 06/30/2021
MSDS No : 360033-2

Denco N.C. Brake Parts Cleaner

EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)				
	EXPOSURE LIMITS			
Chemical Name	**Type**		**ppm**	**mg/m³**
n-Heptane	**OSHA PEL**	**TWA**	500 ppm	2000
	ACGIH TLV	**TWA**	400 ppm	
		STEL	500 ppm	
Acetone	**OSHA PEL**	**TWA**	1000 ppm [1]	2400 mg/m3 [1]
		STEL	ppm	mg/m3
	ACGIH TLV	**TWA**	500 ppm	mg/m3
		STEL	750 ppm	mg/m3
	Supplier OEL	**TWA**	NL ppm	NL mg/m3
		STEL	NL ppm	NL mg/m3

OSHA TABLE COMMENTS:
1. NL = Not Listed

ENGINEERING CONTROLS: For normal application, special ventilation is not necessary. If user's operations generate fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are close to work-station.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Use safety goggles or face shield.

SKIN: To prevent any contact, wear impervious protective clothing such as nytrile or butyl rubber gloves, apron, boots or whole bodysuit, as appropriate.

RESPIRATORY: Use NIOSH/MSHA approved respirators when vapors or mist concentrations exceed permissible exposure limits.

PROTECTIVE CLOTHING: Chemical resistant boots, apron, etc. as necessary to prevent contamination of clothing and skin contact.

WORK HYGIENIC PRACTICES: Good personal hygiene practices should always be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Chemical Name	Flash Point (°C)	Boiling Point (°C)	Solubility in Water	Specific Gravity
n-Heptane	-7	93.333		0.698
Acetone	-18	56.111	complete	0.792

PHYSICAL STATE: Liquid

ODOR: Characteristic Odor

APPEARANCE: Clear

COLOR: Colorless

pH: Not Applicable

PERCENT VOLATILE: 99

SAFETY DATA SHEET

Denco Distributing, Inc.

Date Issued : 06/30/2021
MSDS No : 360033-2

Denco N.C. Brake Parts Cleaner

FLASHPOINT AND METHOD: ~ (5°F) ASTM D56

VAPOR PRESSURE: > 10 mmHg at 20°C

VAPOR DENSITY: > 1 (Air=1)

BOILING POINT: ~ (133°F)

SOLUBILITY IN WATER: Partially Soluble

EVAPORATION RATE: Not Applicable

DENSITY: ~ 6.02 at (68°F)

SPECIFIC GRAVITY: 0.723 (water=1) at (68°F)

(VOC): 4.71 lbs./gl.

10. STABILITY AND REACTIVITY

REACTIVITY: Yes

HAZARDOUS POLYMERIZATION: Will not occur

STABILITY: The product is stable under normal ambient conditions of temperature and pressure.

CONDITIONS TO AVOID: Exposure to excessive heat, open flames and sparks. Avoid conditions that favor the formation of excessive mists and/or fumes.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Carbon when burned.

INCOMPATIBLE MATERIALS: Strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Chemical Name	ORAL LD_{50} (rat)	DERMAL LD_{50} (rabbit)
Acetone	9750 mg/kg (RAT)	20000 mg/kg(RABBIT)

RESPIRATORY OR SKIN SENSITISATION: Based on best current information, there is no known human sensitization associated with these products.

REPRODUCTIVE TOXICITY: Based on best current information, there is no known reproductive toxicity associated with this product.

GENERAL COMMENTS: Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitits or pulmonary edema.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: KEEP OUT OF SURFACE WATERS, SEWERS, AND WATERWAYS ENTERING OR LEADING TO SURFACE WATERS. NOTIFY AUTHORITIES IF ANY EXPOSURE TO THE GENERAL PUBLIC OR ENVIRONMENT OCCURS OR IS LIKELY TO OCCUR.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Conditions of use may cause this material to become a hazardous waste as defined by state or federal law. Use approved treatment, transporters and disposal sites.

EMPTY CONTAINER: Keep containers closed when not in use. Do not reuse empty containers.

14. TRANSPORT INFORMATION

SAFETY DATA SHEET

Denco Distributing, Inc.

Date Issued : 06/30/2021
MSDS No : 360033-2

Denco N.C. Brake Parts Cleaner

DOT (DEPARTMENT OF TRANSPORTATION)

PRIMARY HAZARD CLASS/DIVISION: 3

UN/NA NUMBER: UN 1993

PACKING GROUP: II

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HEALTH HAZARDS: Fire Hazard, Acute (Immediate) Health Hazard.

313 REPORTABLE INGREDIENTS: CONTAINS ONE OR ALL OF THE FOLLOWING: TOLUENE (CASW#108-88-3), XYLENE(CAS# 1330-20-7), METHANOL(CAS#67-64-1), ACETONE(CAS#67-64-1), METHYL ETHYL KETONE(CAS#78-93-3), METHYL ISOBUTYL KETONE(CAS#108-10-1). SEE INGREDIENT SECTION FOR WEIGHT PERCENTAGE.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Chemical Name	Wt.%	CERCLA RQ
Acetone	55	5,000 lbs.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS
n-Heptane	142-82-5
Acetone	67-64-1

TSCA REGULATORY: All intentional ingredients are listed on the TSCA Inventory.

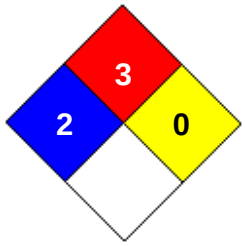
16. OTHER INFORMATION

Date Prepared: 06/30/2021

HMIS RATING

	- 2
	3
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

NFPA CODES



MANUFACTURER DISCLAIMER: The information in this SDS was obtained from sources which we believe are reliable. However, the above information is provided without warranty, expressed or implied, regarding its correctness. The conditions or methods if handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibilty and expressly dislcaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the procuct.

Coal Tar Pavement Sealer (SealMaster)

SAFETY DATA SHEET

Issuing Date 23-June-2014 **Revision Date** 30-Sept-2016 **Revision Number** 2

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

GHS Product Identifier

Product Name: **SealMaster Coal Tar Pavement Sealer**

Other Means of Identification

Product Code(s): **S1000**

Synonyms None

Recommended Use of the Chemical and Restrictions on Use

Recommended Use: No Information Available

Uses Advised Against: No Information Available

Supplier's Details

Supplier Address
SealMaster
Locations Nationwide
www.sealmaster.net
1-800-341-7325

Manufacturer Address
SealMaster
Locations Nationwide
www.sealmaster.net
1-800-341-7325

Emergency Telephone Number

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification

Carcinogenicity	Category 1B

GHS Label Elements, Including Precautionary Statements

Emergency Overview

Signal Word **Danger**

- May cause cancer
- Harmful if swallowed
- May cause skin irritation

Appearance: Black
Odor

Physical State: Liquid

Odor: Coal Tar

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.

Inhalation: May cause irritation of respiratory tract.
Eye Contact: Contact with eyes may cause irritation.
Skin Contact: May cause irritation.
Ingestion: Ingestion may cause stomach discomfort.

General Advice
- If exposed or concerned: Get medical attention/advice.

Storage
- Store locked up.

Disposal
- Dispose of contents/container to an approved waste disposal plant.

Hazard Not Otherwise Classified (HNOC)

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %	Trade Secret
Coal Tar Pitches	65996-93-2	20-40	*
Kaolin	1332-58-7	10-30	*
Bentonite	1302-78-9	<10	*

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

4. FIRST AID MEASURES

Description of Necessary First-Aid Measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.

Skin Contact Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions, see a physician.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most Important Symptoms/Effects, Acute and Delayed

Most Important Symptoms/Effects No information available

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician Treat Symptomatically. May cause sensitization by skin contact.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon Dioxide (CO_2). Dry Chemical. Foam. Water Fog.

Unsuitable Extinguishing Media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available

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. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions

Environmental Precautions: See Section 12 for additional Ecological Information

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: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Wear personal protective equipment. Avoid breathing vapors or mists. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities

Storage: Keep container tightly closed

Incompatible Products: Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Coal Tar Pitches 65996-93-2	TWA: 0.2 mg/m³benzene soluble aerosol	TWA: 0.2 mg/m³benzene soluble fraction (vacated) TWA: 0.2 mg/m³benzene soluble fraction	IDLH: 80 mg/m³ TWA: 0.1 mg/m³ Cyclohexane-extractable fraction
Kaolin 1332-58-7	-	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA 5 mg/m³ respirable fraction	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable dust
Bentonite 1302-78-9	TWA 1 mg/m³ respirable fraction	-	-

Appropriate Engineering Controls

Engineering Measures: Showers
Eyewash Stations
Ventilation Systems

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection: If splashes are likely to occur, wear: Safety glasses with side shields.
Skin and Body Protection: Impervious gloves.
Respiratory Protection: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene Measures: 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
Odor: Coal Tar Odor
Appearance: Black
Odor Threshold: No Information Available

Property	Values	Remarks/Method
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	100° C	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Specific Density	1.19 @ 77 F	None known
Water Solubility	Easily dispersible	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not Flammable	
Explosive Properties	No data available	
Oxidizing Properties	No data available	

Other Information
VOC Content Less than 50 g/l

10. STABILITY AND REACTIVITY

Reactivity: No data available

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: Incompatible Products.

Incompatible Materials: Strong oxidizing agents. Acids.

Hazardous Decomposition Products: Carbon Oxides, Nitrogen Oxides (NOx), Sulfur Oxides

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation: May cause irritation of respiratory tract.
Eye Contact: Contact with eyes may cause irritation.
Skin Contact: May cause irritation.
Ingestion: Ingestion may cause stomach discomfort.

Chemical Name	LD50 Oral	LD50 Dermal	LD50 Inhalation
Bentonite	>5000 mg/kg (Rat)	-	-

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics

Symptoms: No information available.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure

Sensitization: No information available.
Mutagenic Effects: No information available.
Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen. The IARC, NTP, and OSHA do not list asphalt as a carcinogen. In general, the oxidation of polycyclic aromatic hydrocarbons destroys their carcinogenic potential. Petroleum asphalt, shale oil asphalts, and coal tars show distinct variation in their relative carcinogenicity for experimental animals.

Chemical Name	ACGIH	IARC	NTP	OSHA
Coal Tar Pitches	A1	Group 1	Known	X

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 – Known Human Carcinogen
IRAC: (International Agency for Research on Cancer)
Group 1 – Carcinogenic to Humans
NTP: (National Toxicity Program)
Known – Known Carcinogen
OSHA: (Occupational Safety & Health Administration)
X – Present

Reproductive Toxicity: No information available.
STOT - Single Exposure: No information available.
STOT – Repeated Exposure: No information available.
Aspiration Hazard: No information available.

Numerical Measures of Toxicity – Product
The following values are calculated based on Chapter 3.1 of the GHS document

LD50 Oral: 75299 mg/kg; Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Bentonite 1302-78-9		LC50 96 h: 8.0-19.0 g/L (Salmo gairdneri) LC50 96 h: = 19000 mg/L static (Oncorhynchus mykiss)		

Persistence and Degradability: No information available.

Bioaccumulation

Chemical Name	Log Pow
Coal Tar Pitches	6.04

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: 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: Do not re-use empty containers.

14. TRANSPORTATION INFORMATION

DOT: Not regulated

15. REGULATORY INFORMATION

International Inventories
TSCA – Complies
DSL/NDSL – Complies

Legend
TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

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:

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
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 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 Proposition 65 chemicals.

U.S. State Right-To-Know Regulations

"X" designates that the ingredients are listed on the state right to know list.

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Coal Tar Pitches	X	X	X	X	
Kaolin	X	X	X		X

U.S. EPA Label Information

EPA Pesticide Registration Number: Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard:** 1	**Flammability:** 0	**Instability:** 0	**Physical and Chemical Hazards-**
HMIS	**Health Hazard:** 1*	**Flammability:** 0	**Physical Hazard:** 0	**Personal Protection: X**

**Indicates a chronic health hazard.*

Revision Date: **30-Sept-2016**
Revision Note: Supersedes 29-July-2015

General 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.

CrackMaster 1190 (SealMaster)

SAFETY DATA SHEET

Issuing Date 30-April-2015 **Revision Date** **Revision Number** 0

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

GHS Product Identifier

Product Name: CrackMaster 1190

Other Means of Identification

Product Code(s): **M1078**

Synonyms None

Recommended Use of the Chemical and Restrictions on Use

Recommended Use: Sealant

Uses Advised Against: No information Available

Supplier's Details

Supplier Address

ThorWorks Industries, Inc
2520 S. Campbell St.
Sandusky, OH 44870
1-800-326-1994

Emergency Telephone Number

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

Classification in accordance to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200) = 1B H350

GHS Label Elements, Including Precautionary Statements

Emergency Overview

Signal Word **Danger**

H350 May Cause Cancer
P201 Obtain special instructions before use
P202 Do not handle until all safety precautions have been read and understood
P280 Wear eye protection, face protection, protective clothing, protective gloves
P308 + P313 If exposed or concerned: Get medical attention
P405 Store locked up
P501 Dispose of contents/container to an authorized waste collection point

Describe any hazards- Hot material will burn skin.

Appearance: Black/Dark Brown **Physical State:** Solid at room temperature, liquid above softening point. **Odor:** Petroleum

Hazard Not Otherwise Classified (HNOC)
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	%	GHS-US classification
Extracts (petroleum), heavy paraffinic distillate solvent	64742.-04-7	0.1-20	Carc. 1B, H350
Carbon Black	1333-86-4	0-5	Carc. 2, H351 **

***Bound, not available to inhale as dust. Full text of H-phrases; see section 16.*

4. FIRST AID MEASURES

Description of Necessary First-Aid Measures

General Never give anything by mouth ot an unconscious person. If exposed or concerned: Get medical advice/attention.

Eye Contact Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart.

Skin Contact Drench affected area with water for at least 15 minutes.

Inhalation Remove victim to fresh air and keep at rest in position comfortable for breathing. Get medical attention/advice.

Ingestion Get Medical attention/advice if you feel unwell.

Most Important Symptoms/Effects, Acute and Delayed

Most Important Symptoms/Effects May cause cancer
Inhalation of vapors may cause respiratory irritation.
Heated product causes burns to skin and eyes.

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician Treat Symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Class B. Carbon dioxide. Dry chemical. Foam. Water spray

Unsuitable Extinguishing Media Do not use a heavy water stream.

Specific Hazards Arising from the Chemical
Fire hazard- When heated, material emits irritating fumes. Burning produces irritating, toxic, and noxious fumes.
Explosion hazard- Product is not explosive.
Reactivity- No dangerous reactions known.

Protective Equipment and Precautions for Firefighters
Full protective equipment, including self-contained breathing apparatus to be worn. Do not allow run-off from fire fighting to enter drains/water courses. Exercise caution when fighting any chemical fire.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Personal Precautions: Avoid all eye and skin contact and do not breathe vapor and mist. Keep upwind.

For non-emergency personnel: Chemical goggles or safety glasses. Wear suitable protective clothing and gloves. Evacuate unnecessary personnel.

For emergency responders: Chemical goggles or safety glasses. Wear suitable protective clothing and gloves. Stop leak if safe to do so.

Environmental Precautions

Environmental Precautions: Do not discharge into drains or the environment.

Methods and Materials for Containment and Cleaning Up

Methods for Containment: Stop the flow of material, if this is without risk. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Allow the molten material to cool. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. On land, sweep or shovel into suitable containers.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling: Avoid breathing vapors. Avoid contact with skin and eyes. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not eat, drink, or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking when leaving work.

Conditions for Safe Storage, Including Any Incompatibilities

Storage: Store in properly closed and labeled containers away from sources of ignition. Store containers in a well-ventilated, clean, and dry area.

Incompatible Products: Strong oxidizing agents.

Specific end use: Sealant.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL
Extracts (petroleum), heavy paraffinic distillate solvent (64742-04-7)	Not applicable	Not applicable
Carbon black (1333-86-4)	TWA 3.5 mg/m³ Remark; Bronchitis	3.5 mg/m³

Appropriate Engineering Controls

Engineering Measures: Avoid creating mist or spray. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Use only outdoors or in a well-ventilated area.

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection: Chemical goggles or safety glasses. Contact with hot material- risk of serious burns. Face shield.
Skin and Body Protection: Long sleeved protective clothing. Foot protection. Insulated gloves.
Respiratory Protection: In case of inadequate ventilation wear respiratory protection. Appropriate self-contained breathing apparatus may be required.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State: Solid at 77° F/ Liquid above softening point.
Odor: Petroleum
Appearance: Black/Dark Brown
Odor Threshold: No Information Available

Property	Values
pH	No data available
Melting Point/Range	150-250° F (65.5-121.1 ° C)
Boiling Point/Boiling Range	>600° F (>315.6° C)
Flash Point	>400° F (>204.4° C)
Evaporation Rate	No data available
Flammability (solid, gas)	No data available

Property	Values
Flammability Limits in Air	
Upper flammability limit	No data available
Lower flammability limit	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	1.0-1.9
Solubility	No data available
Solubility in other solvents	No data available
Density	8-16 lbs/gal

Partition coefficient: n-octanol/water No data available
Autoignition Temperature >700° F (>371.1° C)
Decomposition Temperature No data available
Viscosity No data available

Explosive Properties No data available
Oxidizing Properties No data available

Other Information

VOC Content 0%

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reactions known.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: None known.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon Monoxide (CO), Hydrogen Sulfide, Aldehydes, Aromatic hydrocarbons. Irritating and/or toxic fumes may be released if burned.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Likely routes of exposure: Skin and eye contact; Inhalation
Acute toxicity: Not classified

Chemical Name	LD50 Oral (Rat)	LC50 Inhalation (Rat)
Carbon Black (1333-86-4)	>8000 mg/kg (Rat)	>4.6 mg/m³ 4 h

Skin corrosion/irritation: Not Classified
Serious eye damae/irritation: Not Classified
Respiratory or skin sensitization: Not Classified
Germ cell mutagenicity: Not Classified
Carcinogenicity: Not Classified

Chemical Name	IRAC Group	National Toxicology Program (NTP) Status
Carbon Black (1333-86-4)	2B- Possibly carcinogenic to humans, Inhalation of dust.	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
Symptoms/injury after inhalation: Inhalation of vapors may cause respiratory irritation.
Symptoms/injury after skin contact: Heated product causes burns.
Symptoms/injury after eye contact: Heated product causes burns.

12. ECOLOGICAL INFORMATION

Toxicity: No information available.

Persistence and Degradability:
Carbon Black (1333-86-4): Not readily biodegradable

Bioaccumulation Potential: No information available.

Mobility in soil: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Sewage disposal recommendations: Do not dispose of waste into sewer.

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations.

14. TRANSPORTATION INFORMATION

DOT: Not considered a dangerous good for transport regulations.

15. REGULATORY INFORMATION

Legend
TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List
EINECS – European Inventory of Existing Commercial Chemical Substances

U.S. Federal Regulations

Extracts (petroleum), heavy paraffinic distillate solvent (64742-04-7)- listed on the US TSCA inventory.
Carbon Black (1333-86-4)- listed on the US TSCA inventory.

International Regulations

CANADA

Extracts (petroleum), heavy paraffinic distillate solvent (64742-04-7)- listed on the Canadian DSL inventory.
Carbon Black (1333-86-4)- listed on the Canadian DSL inventory.

EU Regulations

Extracts (petroleum), heavy paraffinic distillate solvent (64742-04-7)- listed on the EEC inventory EINECS
Carbon Black (1333-86-4)- listed on the EEC inventory EINECS

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Carc. 1B Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]
Carc. Cat. 2; R45

National Regulations
Carbon Black (1333-86-4)- Listed on IARC (International Agency for Research on Cancer)
Listed on PICCUS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on Taiwan National Chemical Inventory
Listed on the Korean ECL(Existing Chemicals List)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Inventory of Existing Chemical Substances Produced or Imported in China (IECSC)

U.S. State Regulations

Carbon Black (1333-86-4)
California Proposition 65 Carcinogens List: Yes
California Proposition 65 Developmental Toxicity: No
California Proposition 65 Reproductive Toxicity- Female: No
California Proposition 65 Reproductive Toxicity- Male: No

U.S. State Right-To-Know Regulations

"X" designates that the ingredients are listed on the state right to know list.

Chemical Name	New Jersey
Asphalt	X

16. OTHER INFORMATION

NFPA	**Health Hazard:** 2	**Flammability:** 1	**Instability:** 0	**Physical and Chemical Hazards-**
HMIS	**Health Hazard:** 2	**Flammability:** 1	**Physical Hazard:** 0	**Personal Protection: X**

Full text of H-phrases:

Carc. 1B- Carcinogenicity, Category 1B
Carc. 2- Carcinogenicity, Category 2
H350- May Cause Cancer
H351- Suspected of Causing Cancer

Revision Date: 30-April-2015
Revision Note: No information available.

General 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.

Crack Sealant, Pourable M1010 (SealMaster)

SAFETY DATA SHEET

Issuing Date 9-April-2015 **Revision Date** 4-Jan-2016 **Revision Number** 1

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

GHS Product Identifier
Product Name: **Pourable Crack Sealant**

Other Means of Identification
Product Code(s): **M1010**
Synonyms None

Recommended Use of the Chemical and Restrictions on Use
Recommended Use: No Information Available
Uses Advised Against: No Information Available

Manufacturer's Details
Manufacturer Address
ThorWorks Industries, Inc.
2520 S. Campbell St.
Sandusky, OH 44870
www.sealmaster.net
1-800-326-1994

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification
This product is not considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

GHS Label Elements, Including Precautionary Statements

Emergency Overview

Signal Word **Warning**

- Harmful if swallowed
- May cause skin irritation

Appearance: Black **Physical State:** Mastic **Odor:** Asphaltic

Precautionary Statements

Prevention	**Inhalation:**	May cause irritation of respiratory tract.
	Eye Contact:	Contact with eyes may cause irritation.
	Skin Contact:	May cause irritation.
	Ingestion:	Ingestion may cause stomach discomfort.
General Advice	• None	
Storage	• Keep container tightly closed	
Disposal	• Dispose of material/containers in accordance with the appropriate state, regional, or local regulations.	

Hazard Not Otherwise Classified (HNOC)
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %	Trade Secret
Asphalt	8052-42-4	40-60	*
Kaolin	1332-58-7	10-20	*
Polymer Blend	Proprietary	0-15	*

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

4. FIRST AID MEASURES

Description of Necessary First-Aid Measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.

Skin Contact Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions, see a physician.

Inhalation Move to fresh air. If symptoms persist, call a physician.

Ingestion Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most Important Symptoms/Effects, Acute and Delayed

Most Important Symptoms/Effects No information available

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician Treat Symptomatically. May cause sensitization by skin contact.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon Dioxide (CO_2). Dry Chemical. Foam. Water Fog.

Unsuitable Extinguishing Media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

No information available

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. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions

Environmental Precautions: See Section 12 for additional Ecological Information

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: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Wear personal protective equipment. Avoid breathing vapors or mists. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities

Storage: Keep container tightly closed

Incompatible Products: Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Asphalt 8052-42-4	TWA: 0.5 mg/m³ benzene soluble aerosol fume, inhalable fraction	-	Ceiling: 5 mg/m³ fume 15 min.
Kaolin 1332-58-7	-	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA 5 mg/m³ respirable fraction	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable dust

Appropriate Engineering Controls

Engineering Measures: Showers
Eyewash Stations
Ventilation Systems

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection: If splashes are likely to occur, wear: Safety glasses with side shields.
Skin and Body Protection: Impervious gloves.
Respiratory Protection: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene Measures: 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
Odor: Asphaltic
Appearance: Black
Odor Threshold: No Information Available

Property	Values	Remarks/Method
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	100° C	None known
Flash Point	No data available	None known
Evaporation Rate	1.8	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available No data available	None known
Vapor Pressure		
Vapor Density	<1	None known
Specific Density	1.15 @ 77 F	None known

Property	Values	Remarks/Method
Water Solubility	Easily dispersible	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not Flammable	
Explosive Properties	No data available	
Oxidizing Properties	No data available	

Other Information

VOC Content Less than 15 g/L

10. STABILITY AND REACTIVITY

Reactivity: No data available
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: None known
Incompatible Materials: Strong oxidizing agents. Acids.
Hazardous Decomposition Products: Carbon Monoxide (CO), Carbon Dioxide (CO^2), Hydrogen Sulfide, Nitrogen Dioxide

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation: May cause irritation of respiratory tract.
Eye Contact: Contact with eyes may cause irritation.
Skin Contact: May cause irritation.
Ingestion: Ingestion may cause stomach discomfort.

Chemical Name	LD50 Oral	LD50 Dermal	LD50 Inhalation
Asphalt	5000 mg/kg (Rat)	>2000 mg/kg (Rabbit)	-

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics

Symptoms: No information available.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure

Sensitization: No information available.
Mutagenic Effects: No information available.
Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen. The IARC, NTP, and OSHA do not list asphalt as a carcinogen. In general, the oxidation of polycyclic aromatic hydrocarbons destroys their carcinogenic potential. Petroleum asphalt, shale oil asphalts, and coal tars show distinct variation in their relative carcinogenicity for experimental animals.

Chemical Name	ACGIH	IARC	NTP	OSHA
Asphalt	A3	Group 2B	Reasonably Anticipated	X

ACGIH: (American Conference of Governmental Industrial Hygienists)
A3 – Animal Carcinogen
IRAC: (International Agency for Research on Cancer)
Group 2B – Possibly Carcinogenic to Humans
NTP: (National Toxicity Program)
Reasonably Anticipated – Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)
X – Present

Reproductive Toxicity: No information available.
STOT - Single Exposure: No information available.
STOT – Repeated Exposure: No information available.
Aspiration Hazard: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Persistence and Degradability: No information available.

Bioaccumulation

Chemical Name	Log Pow
Asphalt	6..006

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: 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: Do not re-use empty containers.

14. TRANSPORTATION INFORMATION

DOT: Not regulated

15. REGULATORY INFORMATION

International Inventories
TSCA – Complies
DSL/NDSL – Complies

Legend
TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

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 Number	Weight %	SARA 313 – Threshold Values %
Asphalt	8052-42-4	20-40	0.1

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
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 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 Proposition 65 chemicals.

U.S. State Right-To-Know Regulations

"X" designates that the ingredients are listed on the state right to know list.

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Asphalt	X	X	X		X
Kaolin	X	X	X		X
Carbon Black	X	X	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number: Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard:** 1	**Flammability:** 0	**Instability:** 0	**Physical and Chemical Hazards-**
HMIS	**Health Hazard:** 1	**Flammability:** 0	**Physical Hazard:** 0	**Personal Protection: X**

Revision Date: 4-Jan-2016
Revision Note: Supersedes 9-April-2015

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Diesel Engine Oil
Super-D 10W-30 & 15W-40
(Kendall)

Safety Data Sheet

According to Australia Model Code of Practice for the preparation of Safety Data Sheets for Hazardous Chemicals (GHS)

SECTION 1: Identification

Product Identifier **Super-D EC® Diesel Engine Oil**

Code **LBKN830033**

Other means of identification Kendall Super-D EC Diesel Engine Oil SAE 10W-30, CK-4
Kendall Super-D EC Diesel Engine Oil SAE 15W-40, CK-4

Recommended use of the chemical and restrictions on use

Recommended use Heavy Duty Diesel Engine Oil

Restrictions on use All others

24 Hour Emergency Phone Number CHEMTREC Australia +612 9037 2994
CHEMTREC Global +011 703 527 3887

Details of manufacturer or importer

Manufacturer/Supplier
Phillips 66 Lubricants
P.O. Box 4428
Houston, TX 77210

SDS Information
URL: www.Phillips66.com/SDS
Phone: 800-762-0942
Email: SDS@P66.com

Customer Service
Australia: 1300 744 554

Australian Importer
Oil & Energy Pty Ltd
20 Ambitious Link
Bibra Lake WA 6163

Australian Importer
Pacific Petroleum Products
1628 Ipswich Rd
Rocklea QLD 4106

SECTION 2: Hazard identification

Classified Hazards

Not classified as a hazardous substance in accordance with the criteria of Safe Work Australia - Globally Harmonised System (GHS)

Other hazards which do not result in classification

PHNOC: None known

HHNOC: None known

Label elements, including precautionary statements

No classified hazards

SECTION 3: Composition/information on ingredients

Mixture

Chemical Name	CASRN	Concentration
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	<80
Lubricant Base Oil (Petroleum)	VARIOUS	<15
Other components not contributing to product hazard(s)	VARIOUS	<15

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Description of necessary 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.

Symptoms caused by exposure: Prolonged or repeated contact may dry skin and cause irritation. Inhalation of oil mists or vapours generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea.

Medical attention and special treatment: 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

Suitable extinguishing equipment: 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 sulphur, nitrogen or phosphorus may also be formed.

Special protective equipment and precautions 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 vapours 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.

Hazchem code: None

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 unauthorised 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 unauthorised 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.

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. Do not wear contaminated clothing or shoes.

Conditions for safe storage, including any compatibilities: 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 appropriate guidance pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

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.

Exposure control measures			
Chemical Name	**Australia (HCIS)**	**ACGIH**	**Phillips 66**
Distillates, petroleum, hydrotreated heavy paraffinic	None	TWA-8hr: 5 mg/m^3 STEL: 10 mg/m^3 as Oil Mist, if Generated	None
Lubricant Base Oil (Petroleum)	None	TWA-8hr: 5 mg/m^3 STEL: 10 mg/m^3 as Oil Mist, if Generated	None

Biological Limit Values
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 protection that meets or exceeds EN 166 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, close fitting eye protection and a face shield may be necessary.

Skin/Hand Protection: The use of gloves impervious to the specific material handled that comply with EN 374 is advised to prevent skin contact. Users should check with manufacturers to confirm the breakthrough performance of their products. Suggested protective materials: Nitrile rubber. Wear thermal insulating gloves and face shield or eye protection when working with materials that present thermal hazards (hot or cold).

Respiratory Protection: A respiratory protection programme that follows recommendations for the selection, use, care and maintenance of respiratory protective devices in EN 529:2005 should be followed whenever workplace conditions warrant a respirator's use. Where there is potential for airborne exposure above the exposure limit an approved air purifying respirator equipped with Type A, organic gases and vapours filter (as specified by the manufacturer) in combination with Type P2 - Medium efficiency particle filters may be used. 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.

Environmental Exposure Controls: Refer to Sections 6, 7, 12 and 13.

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

Appearance:	Amber, Transparent
Physical Form:	Liquid
Odour:	Petroleum
Odour Threshold:	Not determined
pH	Not applicable
Melting/Freezing Point:	Not determined
Initial Boiling Point/Range:	Not determined
Flash Point:	220 °C; (ASTM D93)
Evaporation Rate (nBuAc=1):	Not determined
Flammability (solid, gas):	Not applicable
Upper Explosive Limits (vol % in air):	Not determined
Lower Explosive Limits (vol % in air):	Not determined
Vapour Pressure:	Not determined
Vapour Density	>1
Relative Density (water=1):	0.87 - 0.88 @ 15.6ºC
Solubility (ies):	Solubility in water: Negligible
Partition Coefficient (n-octanol/water) (Kow):	Not determined
Auto-ignition Temperature:	Not determined
Decomposition Temperature:	Not determined
Viscosity:	12.0 - 15.3 cSt @ 100°C; 82 - 119 cSt @ 40°C
Other physical or chemical parameters relevant to health and safety	
Pour Point:	-33 °C
Bulk Density:	7.25 - 7.32 lbs/gal

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Incompatible materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products: Not anticipated under normal conditions of use, During use in engines, contamination of oil with low levels of hazardous fuel combustion by-products (e.g. polycyclic aromatic hydrocarbons) may occur.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Skin Corrosion/Irritation: Causes mild skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Causes mild eye irritation.

Skin Sensitisation: No information available on the mixture, however none of the components have been classified for skin sensitisation (or are below the concentration threshold for classification).

Respiratory Sensitisation: No information available.

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).

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).

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).

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).

Aspiration Hazard Not expected to be an aspiration hazard

Information on Toxicological Effects of Components

Lubricant Base Oil (Petroleum)

Carcinogenicity: The petroleum base oils contained in this product have been highly refined by a variety of processes including severe hydrocracking/hydroprocessing to reduce aromatics and improve performance characteristics. All of the oils meet the IP-346 criteria of less than 3 percent PAH's and are not considered carcinogens by NTP, IARC, or OSHA.

SECTION 12: Ecological information

Ecotoxicity: 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 practise, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilisation to air is not expected to be a significant fate process due to the low vapour 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

Disposal Recommendations: This material under most intended uses would become "waste oils" due to contamination by physical or chemical impurities. Whenever possible, recycle "waste oils" in accordance with current national and regional provisions.

Empty Containers: Container contents should be completely used and containers emptied prior to discard. Empty drums should be properly sealed and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with applicable regulations.

SECTION 14: Transport information

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 ADG/UN/IMDG/IMO criteria of a marine pollutant
Special precautions for user: None
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable
Hazchem code: None

SECTION 15: Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP)
No Poisons Schedule number allocated.

National Pollutant Inventory (NPI)

Chemical Name	National Pollutant Inventory (NPI)
Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and isopropyl) esters, zinc salts	10 tonne/yr Threshold category 1

The Montreal Protocol on Substances that Deplete the Ozone Layer
Not applicable

The Stockholm Convention on Persistent Organic Pollutants
Not applicable

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
Not applicable

Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel Convention)
Not applicable

Inventory Status:
One or more components of this product are not listed on AICS.

SECTION 16: Other information

Issue Date:	Previous Issue Date:	SDS Number	Status:
16-Apr-2018	None	LBKN830033	FINAL

Revised Sections or Basis for Revision:
New SDS

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); GHS = Globally Harmonized System; HCIS = Hazardous Chemical Information System; IARC = International Agency for Research on Cancer; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NTP = National Toxicology Program; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit;

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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 authorisation is given nor implied to practice any patented invention without a licence.

Diesel Exhaust Fluid

Diesel Exhaust Fluid

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 1 September 2015 Date of issue:1 September 2015 Supersedes Date: 15 May 2015 Version: 1.1

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Diesel Exhaust Fluid

STCC: 2818142

1.2. Intended Use of the Product

Diesel Exhaust NOx Reducing Agent

1.3. Name, Address, and Telephone of the Responsible Party

Company

CF Industries Sales, LLC
4 Parkway North, Suite 400
Deerfield, Illinois 60015-2590
847-405-2400

www.cfindustries.com

1.4. Emergency Telephone Number

Emergency Number : 800-424-9300
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: DS IDENTIFICATION

HAZAR

Classification (GHS-US)

Not classified

2. Label Elements

GHS-US Labeling No labeling applicable

3. Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

4. Unknown Acute Toxicity (GHS-US) No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

1. Substances

Not applicable

2. Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Water	(CAS No) 7732-18-5	67.5	Not classified
Urea	(CAS No) 57-13-6	32.5	Not classified

SECTION 4: FIRST AID MEASURES

1. Description of 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).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if pain, blinking or redness develops or persists.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

2. Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation: Prolonged exposure to liquid may cause a mild irritation.

Skin Contact: May cause mild skin irritation.

Eye Contact: Prolonged exposure to liquid may cause a mild irritation.

Ingestion: Ingestion is likely to be harmful or have adverse effects.

Chronic Symptoms: Not available

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

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

Hazardous Combustion Products: Oxides of Carbon, Nitrogen. Ammonia.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid breathing (vapor, mist, spray). Avoid prolonged contact with eyes, skin and clothing.

1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Stop leak if safe to do so. Ventilate area.

2. Environmental Precautions

Prevent entry to sewers and public waters. Contact competent authorities after a spill

3. Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material, then place in suitable containers.

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: When heated to decomposition, emits toxic fumes.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. 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

Technical Measures: Comply with applicable regulations.

Storage Conditions: Store in a dry, cool, and well-ventilated place. Keep container closed when not in use. Keep/Store away from extremely high or low temperatures, incompatible materials.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Alkalis.

7.3. Specific End Use(s)

Diesel Exhaust NOx Reducing Agent.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

1. Control Parameters

No additional information available.

2. Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: In case of splash hazard: safety glasses.

Materials for Protective Clothing: Not applicable.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: In case of splash hazard: chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Colorless, clear
Odor	:	Slight Ammonia
Odor Threshold	:	Not available
pH	:	9.8 - 10
Evaporation Rate	:	Not available
Melting Point	:	Not available
Freezing Point	:	- 12 °C (11 °F)
Boiling Point	:	104 °C (219 °F)
Flash Point	:	Not available
Auto-ignition Temperature	:	Not available
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not available
Lower Flammable Limit	:	Not available
Upper Flammable Limit	:	Not available
Vapor Pressure	:	Not available
Relative Vapor Density at 20 °C	:	Not available
Relative Density	:	Not available
Specific gravity / density	:	9.0909 lbs. / USG - 4.13 kg / 3.785L @20°C (68°F)
Specific Gravity	:	1.087-1.093 @20°C (68°F)
Solubility	:	100%
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available
Explosion Data – Sensitivity to Mechanical Impact	:	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	:	Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

1. **Reactivity:** Hazardous reactions will not occur under normal conditions.
2. **Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).
3. **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
4. **Conditions to Avoid:** Extremely high or low temperatures. Incompatible materials.
5. **Incompatible Materials:** Strong acids. Strong bases. Strong oxidizers. Alkalis.
6. **Hazardous Decomposition Products:** Nitrogen oxides. Irritating fumes. Ammonia. Carbon oxides (CO, CO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

1. Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Not classified

pH: 9.8 - 10

Serious Eye Damage/Irritation: Not classified

pH: 9.8 - 10

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Carcinogenicity: Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Prolonged exposure to liquid may cause a mild irritation.

Symptoms/Injuries After Skin Contact: May cause mild skin irritation.

Symptoms/Injuries After Eye Contact: Prolonged exposure to liquid may cause a mild irritation.

Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.

2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg
Urea (57-13-6)	
LD50 Oral Rat	8471 mg/kg

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity No additional information available

Urea (57-13-6)	
LC50 Fish 1	16200 - 18300 mg/l (Exposure time: 96 h - Species: Poecilia reticulata)
EC50 Daphnia 1	3910 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

2. Persistence and Degradability

Diesel Exhaust Fluid	
Persistence and Degradability	Not established.

3. Bioaccumulative Potential

Diesel Exhaust Fluid	
Bioaccumulative Potential	Not established.
Urea (57-13-6)	
BCF Fish 1	< 10
Log Pow	-1.59 (at 25 °C)

12.4. Mobility in Soil Not available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

SECTION 14: TRANSPORT INFORMATION

1. In Accordance with DOT Not regulated for transport

2. In Accordance with IMDG Not regulated for transport

3. In Accordance with IATA Not regulated for transport

4. In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Urea (57-13-6)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State Regulations

Urea (57-13-6)
U.S. - Minnesota - Hazardous Substance List
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

15.3. Canadian Regulations

Diesel Exhaust Fluid	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Water (7732-18-5)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Urea (57-13-6)	
Listed on the Canadian DSL (Domestic Substances List)	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria

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

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

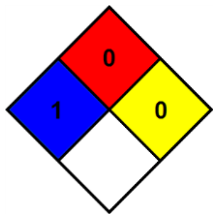
Revision Date : 1 September 2015

Revision Comments : Section 1.1 updated

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

NFPA Fire Hazard : 0 - Materials that will not burn.

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	:	0 Minimal Hazard
Physical	:	0 Minimal Hazard

Party Responsible for the Preparation of This Document

CF Industries, Corporate EHS Department, 847-405-2400

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.

CF believes the information contained herein is accurate; however, CF makes no guarantees or warranties with respect to such accuracy and assumes no liability in connection with the use of the information contained herein by any party. The provision of the information contained herein by CF is not intended to be and should not be construed as legal advice or as ensuring compliance by other parties. Judgments as to the suitability of the information contained herein for the party's own use or purposes are solely the responsibility of that party. Any party handling, transferring, transporting, storing, applying or otherwise using this product should review thoroughly all applicable laws, rules, regulations, standards and good engineering practices. Such thorough review should occur before the party handles, transfers, transports, stores, applies or otherwise uses this product.

Diesel Fuels, On/Off Road (Valero)

SAFETY DATA SHEET

1. Identification

Product identifier	**DIESEL FUELS**
Other means of identification	
SDS number	102-GHS
Synonyms	Diesel Fuels All Grades, Diesel Fuel No.2, Fuel Oil No.2, High Sulfur Diesel Fuel, Low Sulfur Diesel Fuel, Ultra Low Sulfur Diesel Fuel, CARB (California Air Resource Board) Diesel Fuel, Off-Road Diesel Fuel, Dyed Diesel Fuel, X Grade Diesel Fuel, X-1 Diesel Fuel, R5 ULSD, B5 ULS D See section 16 for complete information.
Recommended use	Motor Fuel Refinery feedstock.
Recommended restrictions	None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier	Valero Marketing & Supply Company and Affiliates One Valero Way San Antonio, TX 78269-6000
General Assistance	210-345-4593
E-Mail	CorpHSE@valero.com
Contact Person	Industrial Hygienist
Emergency Telephone	24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word	Danger
Hazard statement	Flammable liquid and vapor. Harmful if inhaled. Causes skin irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure. May be fatal if swallowed and enters airways.
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 discharges. Do not breathe mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area.

Response	If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If exposed or concerned: Get medical advice/attention. If swallowed: Immediately call a poison center/doctor. Take off contaminated clothing and wash before reuse. In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Fuels, diesel, no. 2	68476-34-6	85 - 100
Biodiesel - Fatty acid methyl esters	67762-38-3	0 - 10
Fuels, diesel, C9-18-alkane branched and linear	1159170-26-9	0 - 5
n-Nonane	111-84-2	1 - 3
Octane (All isomers)	111-65-9	1 - 2
Hexane (Other isomers)	96-14-0	0 - 1
Naphthalene	91-20-3	0 - 1
n-Heptane	142-82-5	0 - 1
n-Hexane	110-54-3	0 - 1

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.
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.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash. The toxicological properties of this product have not been thoroughly investigated. Use appropriate precautions. Hydrogen sulfide, a highly toxic gas, may be present. 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. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed. The toxicological properties of this material have not been fully investigated.
General information	If exposed or concerned: get medical attention/advice. 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 re-use.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. Thermal decomposition or combustion may liberate toxic gases or fumes.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire-fighting equipment/instructions	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Local authorities should be advised if significant spillages cannot be contained. Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. Use non-sparking tools and explosion-proof equipment. Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment. Clean up in accordance with all applicable regulations.
Environmental precautions	If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300.

7. Handling and storage

Precautions for safe handling	Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Wear personal protective equipment. Avoid breathing mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities	Flammable liquid storage. 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. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3
		10 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3
		500 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm
Octane (All isomers) (CAS 111-65-9)	PEL	2350 mg/m3
		500 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Fuels, diesel, no. 2 (CAS 68476-34-6)	TWA	100 mg/m3	Inhalable fraction and vapor.
Hexane (Other isomers) (CAS 96-14-0)	STEL	1000 ppm	
	TWA	500 ppm	
Naphthalene (CAS 91-20-3)	STEL	15 ppm	
	TWA	10 ppm	
n-Heptane (CAS 142-82-5)	STEL	500 ppm	
	TWA	400 ppm	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
n-Nonane (CAS 111-84-2)	TWA	200 ppm	
Octane (All isomers) (CAS 111-65-9)	TWA	300 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Hexane (Other isomers) (CAS 96-14-0)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3
		15 ppm
	TWA	50 mg/m3
		10 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
n-Nonane (CAS 111-84-2)	TWA	1050 mg/m3
		200 ppm
Octane (All isomers) (CAS 111-65-9)	Ceiling	1800 mg/m3
		385 ppm
	TWA	350 mg/m3
		75 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	*
	0.4 mg/l	2,5-Hexanedi - on, without hydrolysis		*

* - 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.

US ACGIH Threshold Limit Values: Skin designation

Fuels, diesel, no. 2 (CAS 68476-34-6) Can be absorbed through the skin.
Naphthalene (CAS 91-20-3) Can be absorbed through the skin.
n-Hexane (CAS 110-54-3) Can be absorbed through the skin.

Appropriate engineering controls Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

Skin protection

Hand protection Wear chemical-resistant, impervious gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Other Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.

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. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance Liquid (may be dyed red).

Physical state Liquid.

Form Liquid.

Color Clear. Straw.

Odor Kerosene (strong).

Odor threshold Not available.

pH Not available.

Melting point/freezing point -60.07 °F (-51.15 °C) Estimated

Initial boiling point and boiling range 325 - 700 °F (162.78 - 371.11 °C)

Flash point > 100.0 °F (> 37.8 °C) Closed Cup

Evaporation rate 0.02

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	0.4 %
Flammability limit - upper (%)	8 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 1 mm Hg (20°C)
Vapor density	3 (Air = 1)
Relative density	0.82 - 0.87
Relative density temperature	60 °F (15.56 °C)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	494.96 °F (257.2 °C)
Decomposition temperature	Not available.
Viscosity	2 - 4.5 mm²/s

10. Stability and reactivity

Reactivity	Stable at normal conditions.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Harmful if inhaled. In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.
Skin contact	Causes skin irritation.
Eye contact	May cause eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash. The toxicological properties of this product have not been thoroughly investigated. Use appropriate precautions.

Information on toxicological effects

Acute toxicity	Harmful if inhaled. Harmful: may cause lung damage if swallowed. The toxicological properties of this material have not been fully investigated.

Components	**Species**	**Test Results**
Fuels, diesel, no. 2 (CAS 68476-34-6)		
Acute		
Inhalation		
LC50	Rat	4.1 mg/l, 4 hours

Components	Species	Test Results
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	490 mg/kg
n-Heptane (CAS 142-82-5)		
Acute		
Inhalation		
LC50	Rat	103 mg/l, 4 Hours
n-Hexane (CAS 110-54-3)		
Acute		
Oral		
LD50	Rat	28710 mg/kg
n-Nonane (CAS 111-84-2)		
Acute		
Inhalation		
LC50	Rat	3200 mg/l, 4 Hours
Octane (All isomers) (CAS 111-65-9)		
Acute		
Inhalation		
LC50	Rat	118 mg/l, 4 Hours

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Respiratory sensitization Based on available data, the classification criteria are not met.

Skin sensitization Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Suspected of causing cancer.
International Agency for Research on Cancer (IARC): Whole diesel engine exhaust – IARC Group 1. Exposure may cause lung cancer and also noted a positive association with an increased risk of bladder cancer.
Diesel exhaust has been reported to be an occupational hazard due to NIOSH-reported potential carcinogenic properties.

IARC Monographs. Overall Evaluation of Carcinogenicity

Fuels, diesel, no. 2 (CAS 68476-34-6)	3 Not classifiable as to carcinogenicity to humans.
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.

NTP Report on Carcinogens

Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity Suspected of damaging fertility or the unborn child.
Napthalene interferes with embryo development in experimental animals at dose levels that cause maternal toxicity. In humans, excessive exposure to this agent may cause hemolytic anemia in the mother and fetus.

Specific target organ toxicity - single exposure Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure May cause damage to the following organs through prolonged or repeated exposure: Blood. Liver. Thymus.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Contains organic solvents which in case of overexposure may depress the central nervous system causing dizziness and intoxication. Repeated exposure to naphthalene may cause cataracts, allergic skin rashes, destruction of red blood cells, and anemia, jaundice, kidney and liver damage. Danger of serious damage to health by prolonged exposure. Prolonged or repeated overexposure may cause central nervous system, kidney, liver, and lung damage.

Further information Symptoms may be delayed. Hydrogen sulfide, a highly toxic gas, may be present. 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. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere. Toxicological properties of this material have not been fully investigated.

12. Ecological information

Ecotoxicity Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Components		Species	Test Results
Fuels, diesel, no. 2 (CAS 68476-34-6)			
Aquatic			
Acute			
Crustacea	EL50	Daphnia magna	68 mg/l, 48 hours
Fish	LL50	Oncorhynchus mykiss	65 mg/l, 96 hours
Naphthalene (CAS 91-20-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	0.95 - 1.62 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	4924 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

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Hexane (Other isomers) (CAS 96-14-0)	3.6
Octane (All isomers) (CAS 111-65-9)	5.18
n-Heptane (CAS 142-82-5)	4.66
n-Hexane (CAS 110-54-3)	3.9
n-Nonane (CAS 111-84-2)	5.46

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Hazardous waste code D001: Waste Flammable material with a flash point <140 °F

US RCRA Hazardous Waste U List: Reference

Naphthalene (CAS 91-20-3)	U165

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Offer rinsed packaging material to local recycling facilities.

14. Transport information

DOT

UN number UN1202

UN proper shipping name Diesel fuel

Transport hazard class(es)

Class Combustible Liquid

Subsidiary risk -

Packing group III

Environmental hazards

Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	144, B1, IB3, T2, TP1
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA

UN number	UN1202
UN proper shipping name	Diesel fuel
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1202
UN proper shipping name	DIESEL FUEL
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

15. Regulatory information

US federal regulations

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

n-Nonane (CAS 111-84-2)	1.0 % One-Time Export Notification only.

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

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hexane (Other isomers) (CAS 96-14-0)	LISTED
Naphthalene (CAS 91-20-3)	LISTED
n-Heptane (CAS 142-82-5)	LISTED
n-Hexane (CAS 110-54-3)	LISTED
n-Nonane (CAS 111-84-2)	LISTED
Octane (All isomers) (CAS 111-65-9)	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	Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Naphthalene	91-20-3	0 - 1

Other federal regulations

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

Naphthalene (CAS 91-20-3)
n-Hexane (CAS 110-54-3)

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 WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Hexane (Other isomers) (CAS 96-14-0)
Naphthalene (CAS 91-20-3)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
n-Nonane (CAS 111-84-2)
Octane (All isomers) (CAS 111-65-9)

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

Fuels, diesel, no. 2 (CAS 68476-34-6)
Naphthalene (CAS 91-20-3)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
n-Nonane (CAS 111-84-2)
Octane (All isomers) (CAS 111-65-9)

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

Fuels, diesel, no. 2 (CAS 68476-34-6)
Hexane (Other isomers) (CAS 96-14-0)
Naphthalene (CAS 91-20-3)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
n-Nonane (CAS 111-84-2)
Octane (All isomers) (CAS 111-65-9)

US. Rhode Island RTK

Naphthalene (CAS 91-20-3)
n-Hexane (CAS 110-54-3)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Benzene (CAS 71-43-2)
Toluene (CAS 108-88-3)

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

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

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

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

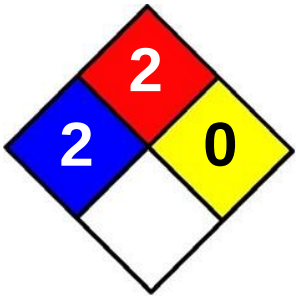
Issue date 13-May-2013

Revision date 23-May-2014

Version # 04

Further information HMIS® is a registered trade and service mark of the NPCA.

NFPA Ratings



Disclaimer This material Safety Data Sheet (SDS) was prepared in accordance with 29 CFR 1910.1200 by Valero Marketing & Supply Co., ("VALERO"). VALERO does not assume any liability arising out of product use by others. The information, recommendations, and suggestions presented in this SDS are based upon test results and data believed to be reliable. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use , the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all the scientific and study information in the format of this document, plus additional information may be necessary under exceptional conditions of use, or because of applicable laws or government regulations.

Form a Gasket Sealant (Permatex)

SAFETY DATA SHEET

Revision Date 08-Jun-2021 **Version** 12

1. IDENTIFICATION

Product identifier
Product Name 2BR FORM A GASKET #2 SEALANT 3OZ

Other means of identification
Product Code 80016

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
6875 Parkland Blvd.
Solon, Ohio 44139 USA
Telephone: 1-87-Permatex
(866) 732-9502

May Also Be Distributed by:
ITW Permatex Canada
101-2360 Bristol Circle
Oakville, ON Canada L6H 6M5
Telephone: (800) 924-6994

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)

Carcinogenicity	Category 1A

Label elements

Emergency Overview

Signal word
Danger

May cause cancer

Appearance Black	**Physical state** Paste / Gel Liquid	**Odor** Alcohol

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

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention

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. Toxic to aquatic life.

Unknown acute toxicity 2.14 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
KAOLIN	1332-58-7	30 - 60
FUMARATED RESIN	65997-04-8	10 - 30
ETHANOL	64-17-5	5 - 10
2-PROPANOL	67-63-0	1 - 5
CRYSTALLINE SILICA	14808-60-7	1 - 5
TITANIUM DIOXIDE	13463-67-7	0.1 - 1
CARBON BLACK	1333-86-4	0.1 - 1
METHYL ISOBUTYL KETONE	108-10-1	0.1 - 1

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 or rash occurs: Get medical advice/attention. 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 Ensure that medical personnel are aware of the material(s) involved and take precautions to

protect themselves.

Most important symptoms and effects, both acute and delayed

Symptoms May cause allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide (CO2), Use 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.

Environmental precautions

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 cleaning up Ensure adequate ventilation. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Use personal protective equipment as required.

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.

Conditions for safe storage, including any incompatibilities

Storage Conditions Store in a well-ventilated place. Keep cool.

Incompatible materials Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
KAOLIN 1332-58-7	TWA: 2 mg/m³ particulate matter containing no asbestos and <1% crystalline silica, respirable particulate matter	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA: 5 mg/m³ respirable fraction	TWA: 10 mg/m³ total dust TWA: 5 mg/m³ respirable dust
ETHANOL 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m³ (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m³
2-PROPANOL 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m³ (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m³ (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m³	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m³ STEL: 500 ppm STEL: 1225 mg/m³
CRYSTALLINE SILICA 14808-60-7	TWA: 0.025 mg/m³ respirable particulate matter	TWA: 50 µg/m³ TWA: 50 µg/m³ excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays (vacated) TWA: 0.1 mg/m³ respirable dust : (250)/(%SiO2 + 5) mppcf TWA respirable fraction : (10)/(%SiO2 + 2) mg/m ³ TWA respirable fraction	IDLH: 50 mg/m³ respirable dust TWA: 0.05 mg/m³ respirable dust
TITANIUM DIOXIDE 13463-67-7	TWA: 10 mg/m³	TWA: 15 mg/m³ total dust (vacated) TWA: 10 mg/m³ total dust	IDLH: 5000 mg/m³ TWA: 2.4 mg/m³ CIB 63 fine TWA: 0.3 mg/m³ CIB 63 ultrafine, including engineered nanoscale
CARBON BLACK 1333-86-4	TWA: 3 mg/m³ inhalable particulate matter	TWA: 3.5 mg/m³ (vacated) TWA: 3.5 mg/m³	IDLH: 1750 mg/m³ TWA: 3.5 mg/m³ TWA: 0.1 mg/m³ Carbon black in presence of Polycyclic aromatic hydrocarbons PAH
METHYL ISOBUTYL KETONE 108-10-	STEL: 75 ppm TWA: 20 ppm	TWA: 100 ppm TWA: 410 mg/m³ (vacated) TWA: 50 ppm (vacated) TWA: 205 mg/m³ (vacated) STEL: 75 ppm (vacated) STEL: 300 mg/m³	IDLH: 500 ppm TWA: 50 ppm TWA: 205 mg/m³ STEL: 75 ppm STEL: 300 mg/m³

NIOSH IDLH[1] *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).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems

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

9.1. Information on basic physical and chemical properties

Physical state	Paste / Gel Liquid
Appearance	Black
Odor	Alcoh ol
Odor threshold	No information available

Property	**Values**		**Remarks • Method**
pH	No information available		
Melting point / freezing point	No information available		
Boiling point / boiling range	82 °C / 179.6 °F		
Flash point	No information available	°C / °F	ASTM D 4359
Evaporation rate	7.7		Ether = 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	33 mm Hg @ 68°F		Air = 1
Vapor density	2.0		
Relative density	1.5		
Water solubility	Partially soluble		
Solubility(ies)	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Hyphen			
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		
Explosive properties	No information available		
Oxidizing properties	No information available		

Other Information

No information available

Molecular weight No information available

VOC content 11%

Density No information available

Bulk density No information available

10. STABILITY AND REACTIVITY

Reactivity

No information available

Chemical stability

Stable under normal conditions

SADT (self-accelerating decomposition temperature) No information available

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Excessive heat.

Incompatible materials

Strong oxidizing agents

Hazardous Decomposition Products
Carbon oxides
Aldehydes
Carboxylic acids

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. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion Ingestion may cause irritation to mucous membranes.

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
KAOLIN 1332-58-7	> 5000 mg/kg (Rat)	> 5000 mg/kg (Rat)	-
FUMARATED RESIN 65997-04-8	> 2000 mg/kg (Rat)	-	-
ETHANOL 64-17-5	= 7060 mg/kg (Rat)	-	= 124.7 mg/L (Rat) 4 h
2-PROPANOL 67-63-0	5050 mg/kg	12800 mg/kg	= 72600 mg/m³ (Rat) 4 h
TITANIUM DIOXIDE 13463-67-7	> 10000 mg/kg (Rat)	-	-
CARBON BLACK 1333-86-4	> 15400 mg/kg (Rat)	-	> 4.6 mg/m³ (Rat) 4 h
METHYL ISOBUTYL KETONE 108-10-1	= 2080 mg/kg (Rat)	= 3000 mg/kg (Rabbit)	2000 - 4000 ppm (Rat) 4 h

Symptoms related to the physical, chemical and toxicological characteristics

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
ETHANOL 64-17-5	A3	Group 1	Known	X
CRYSTALLINE SILICA 14808-60-7	A2	Group 1	Known	X
TITANIUM DIOXIDE 13463-67-7	-	Group 2B	-	X
CARBON BLACK 1333-86-4	A3	Group 2B	-	X
METHYL ISOBUTYL KETONE 108-10-1	A3	Group 2B	-	X

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen

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

Chronic toxicity May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects. Contains a known or suspected reproductive toxin.

Target organ effects Blood, Central nervous system, Eyes, Liver, Reproductive system, Respiratory system, Skin, Thyroid, Lungs.

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

ATEmix (oral) 7016 mg/kg
ATEmix (dermal) 58017 mg/kg
ATEmix (inhalation-dust/mist) 102.2 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

0.042 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Persistence and degradability
No information available.

Bioaccumulation
No information available.

Mobility
No information available.

Chemical name	Partition coefficient
ETHANOL 64-17-5	-0.32
2-PROPANOL 67-63-0	0.05
METHYL ISOBUTYL KETONE 108-10-1	1.19

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 U154 U161

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
ETHANOL 64-17-5	Toxic Ignitable
2-PROPANOL 67-63-0	Toxic Ignita

14. TRANSPORT INFORMATION

DOT

Proper shipping name Not regulated

IATA

Proper shipping name Not regulated

IMDG

Proper shipping name Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing 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 %
2-PROPANOL - 67-63-0	1.0
METHYL ISOBUTYL KETONE - 108-10-1	0.1

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 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	CERCLA/SARA RQ	Reportable Quantity (RQ)
METHYL ISOBUTYL KETONE 108-10-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical name	California Proposition 65
ETHANOL 64-17-5	Carcinogen Developmental
CRYSTALLINE SILICA 14808-60-7	*Carcinogen
TITANIUM DIOXIDE 13463-67-7	*Carcinogen (airborne, unbound particles of respirable size)
METHANOL 67-56-1	Developmental
CARBON BLACK 1333-86-4	*Carcinogen (airborne, unbound particles of respirable size)
METHYL ISOBUTYL KETONE 108-10-1	Carcinogen Developmental

• *The asterisked chemical(s) listed are not subject to Proposition 65 because they are not airborne in the finished product
• Ethanol has been shown to be carcinogenic in long-term studies only when consumed as alcoholic beverage
• Ethanol has been shown to be a reproductive toxin only when consumed as an alcoholic beverage

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
KAOLIN 1332-58-7	X	X	X
ETHANOL 64-17-5	X	X	X
2-PROPANOL 67-63-0	X	X	X
CRYSTALLINE SILICA 14808-60-7	X	X	X
TITANIUM DIOXIDE 13463-67-7	X	X	X
METHANOL 67-56-1	X	X	X
CARBON BLACK 1333-86-4	X	X	X
METHYL ISOBUTYL KETONE 108-10-1	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

WHMIS Hazard Class

D2B - Toxic materials

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

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 08-Jun-2021

Disclaimer

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End of Safety Data Sheet

Gear Lubricant, Super 3 Star Synthetic (Kendall)

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200)

Section 1: Identification

Product Identifier: **Super Three Star® Synthetic Gear Lubricant**

Other means of identification: Kendall Super Three Star® Synthetic Gear Lubricant, SAE 75W-90
Kendall Super Three Star® Synthetic Gear Lubricant, SAE 80W-140

SDS Number: **778680**

Intended Use: Automotive Gear Oil

Uses Advised Against: All others

Emergency Health and Safety Number: Chemtrec: 800-424-9300 (24 Hours)

Manufacturer:
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.: 1-800-822-6457 or International: +1-83-2486-3363
Technical Information: 1-877-445-9198

Section 2: Hazards Identification

Classified Hazards
This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Other Hazards
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	>40
Non-Hazardous Materials	VARIOUS	<60

[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 (Breathing): 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 (Swallowing): 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: Fire-Fighting Measures

NFPA 704 Hazard Class

Health: 0 **Flammability:** 1 **Instability:** 0

1 (Minimal)
2 (Slight)
3 (Moderate)
4 (Serious)
5 (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 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. 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 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.

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. 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: 5 mg/m³ STEL:10 mg/m³ as Oil Mist, if Generated	TWA: 5 mg/m³ (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
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: N/A

Flash Point: Minimum 302 °F / 150 °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): 0.87 - 0.89 @ 60ºF (15.6ºC)
Bulk Density: 7.24 - 7.41 lbs/gal

Percent Volatile: Negligible
Flammability (solid, gas): N/A
Viscosity: 16.5 - 27.5 cSt @ 100°C; 108 - 233 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 of 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: Not expected to be a skin sensitizer.

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).

Section 12: Ecological Information

GHS Classification:
No classified hazards

Toxicity: Experimental studies with rainbow trout, daphnia, and fresh water algae indicate that synthetic base oils are not expected to be harmful to aquatic organisms.

Persistence and Degradability: Synthetic base oils are not considered to be readily biodegradable but may be inherently biodegradable. They are expected to completely biodegrade over extended periods of time.

Bioaccumulative Potential: Not expected to bioaccumulate.

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, this material will float and spread over the surface at a rate dependent upon viscosity. The main fate process is expected to be slow biodegradation of individual components 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 MSDS 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)
Shipping Description: ***Not regulated***
Note: ***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)***

International Maritime Dangerous Goods (IMDG)
Shipping Description: ***Not regulated***
Note: ***U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25.***

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

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)
UN/ID #: ***Not regulated***
Note: ***U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24.***

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	---	---	---
Max. Net Qty. Per Package:	---	---	---

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:
Warning: This material may contain detectable quantities of the following chemicals, known to the State of California to cause cancer, birth defects or other reproductive harm, and which may be subject to the warning requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Chemical Name	Type of Toxicity
Ethyl acrylate	Cancer
Ethylene oxide	Cancer Developmental Toxicant Female Reproductive Toxicant Male Reproductive Toxicant

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.

WHMIS Hazard Class:
none

National Chemical 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

Date of Issue:	Previous Issue Date:	SDS Number:	Status:
07-Aug-2013	12-May-2011	778680	FINAL

Revised Sections or Basis for Revision:
Format change; Composition (Section 3); Toxicological (Section 11); Regulatory information (Section 15)

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)

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Gear Oil, Advantage EP 220 (ALS)

SAFETY DATA SHEET

ADVANTAGE ® E.P. 220 GEAR OIL

Section 1 - Identification

1.1 Product Identifiers

Product Name : ADVANTAGE ® E.P. 220 GEAR OIL

Product Code(s) : 617-055, 617-000, 617-005, 617-330, 617-275

1.4 Supplier Information

Advanced Lubrication Specialties
420 Imperial Court
Bensalem, PA 19020
United States

Phone : 215-214-2114
Fax : 215-214-2118
Email : sds@advancedlubes.com
technical@advancedlubes.com
sales@advancedlubes.com

1.2 Product Usage

Recommended Usage : Industrial Gear Oil

Restricted Usage : Not Intended for any other usage

1.3 Emergency Support

Emergency Support : CHEMTREC
United States/Canada +1(800) 424-9300

Section 2 - Hazards Identification

2.1 Classification of the Substance or the Mixture

GHS Rating(s) : **No Classified Hazards**

Signal Word : **Not Applicable**

2.2 Label Elements

No Classified Hazards.

Precautionary	**P201**	Obtain Special Instructions Before Use.
	P202	Do Not Handle Until All Safety Precautions Are Understood.
	P281	Use Personal Protective Equipment As Required.
Response	**P308**	If Exposed Or Concerned: Get Medical Advice/attention.
Storage	**P405**	Store Locked Up.
Disposal	**P501**	Dispose Of Container According To Regional Regulations.

2.3 Other Hazards

Section 3 - Composition / Information on Ingredients

3.1 Substance Details

Chemical Name	CAS #	%Weight
BASE OIL SEVERELY REFINED	64742-65-0	32.0
RESIDUAL OILS, PETROLEUM, SOLVENT-DEWAXED	64742-62-7	66.0

INERT	The remaining percentage are not listed as Physical or Health Hazards (29 CFR 1910.1200)	2.0

Products containing mineral oil with less than 3% DMSO extract as measured by IP-346.

Section 4 - First Aid Measures

4.1 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 atleast 20 minutes. Get Medical Attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for 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. Maintain an open airway. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. 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. Never give anything by mouth to an unconscious person. get medical attention if symptoms occur.

4.2 Symptoms & Effects

To Physician : Treat symptomatically. Contact poison specialist if product has been ingested.

Specific Treatment : No Specific Treatment.

4.3 Medical Attention

Protection of First Aiders : No action should 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.

Note To Doctor : 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 - Fire Fighting

5.1 Extinguishing Media

Suitable Media
Unsuitable Media : CO_2, Dry chemical, or Foam. Water can be used to cool and protect product. Do not use water jet as an extinguisher, it will spread the fire.

Specific hazards arising from this product : When heated, hazardous gases may be released including: sulfur dioxide. A solid stream of water will spread the burning material. Material creates a special hazard because it floats on water. This material creates a special hazard because it floats on water. This material is harmful to aquatic life. Any fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

5.3 Firefighters Advice

Special protective equipment : Fire Equipment Information: Fire-fighters should wear appriovirate protective equipment and sel contained breathing apparatus(SCBA) with a full face -piece operated in positive pressure mode.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment

General Measures : No health affects expect from the cleanup of this material if contact can be avoided. Follow personal protect equipment recommendations found in section 8 of this SDS.

2. Environmental Precautions

Non-Emergency Personnel : Avoid dispersal of spilled material and runoff and contact with soil , waterways, drains and sewers. Inform authorities if the product has caused environmental pollution Water Polluting Material may be harmful to the environment if released in large quantities.

3. Materials & Methods to Contain and Cleanup

Reference Section 8 : Follow all protective equipment recommendations provided in Section 8.

Spill Control Measures : 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. Dispose of according to Federal, State, Local, or Provincial regulations. Used fluid should be disposed of at a recycling center.

Containment and Cleanup : 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 spillage's with noncombustible, absorbent material e.g. sand earth vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via licensed waste disposal contractor. Contaminated absorbent material may pose the same threat hazard as the spilled product.

Section 7 - Handling & Storage

7.1 Safe Handling

Personal Protective Equipment : Put on appropriate personal protective equipment (see section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, keep lid tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

7.2 Safe Storage

Required conditions : Odorous and toxic fumes may form from the decomposition of this product if stored at temperatures in excess of 113 deg F (45 deg C) for extended periods of time or if heat sources in excess of 250 deg F (121 deg C) are used. Store away from incompatible materials. See section 10 for incompatible materials.

7.3 Specific End Use

Designed Purpose : This product is designed for use as a Industrial Gear Oil

Section 8 - Exposure Control

8.1 United States Exposure Limits

CAS	Chemical Name	Exposure Limits	Source
64742-65-0	Distillates, petroleum, solvent-dewaxed	5mg/m3	

8.2 Exposure Controls

Engineering Controls : Material should be handled in enclosed vessels and equipment, in which case general room ventilation should be sufficient. Local exhaust ventilation should be used at points where dust, mist, vapors or gases can escape into the room air. No special requirements under ordinary conditions of use and with adequate ventilation.

Enviromental Exposure Controls : General room ventilation should be satisfactory. Local exhaust ventilation may be necessary if misting is generated.

Hygeine 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 to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Eye / Face Protection : If contact is likely, safety glasses with side shields are recommended.

Skin / Hand Protection : Butyl rubber. Use nitrile or neoprene gloves. Use good industrial hygiene practices. In case of skin contact, wash hands and arms with soap and water. Use caution when opening manway covers of storage and transportation containers. 3-nitroaniline crystals may be present on the interior surface of these openings. 3-nitroaniline is toxic by dermal exposure.

Respiratory Protection : Use a properly fitted air purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this a 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 & Chemical Properties

9.1 Information On Basic Physical and Chemical Properties

Physical state	: Liquid
Color	: B&C
Odor	: Characteristic of Petroleum
Odor threshold	: No Data Available
pH	: No Data Available
Freezing Point	: No Data Available
Boiling Point / Range	: No Data Available
Flash Point COC	: 213C
Evaporation rate:	: No Data Available
Upper Explosive Limits (% air)	: No Data Available
Lower Explosive Limits (% air)	: No Data Available
Flammability (solid, gas)	: Not Applicable
Vapor pressure	: <1 mm Hg
Vapor density (air=1)	: > 1
Relative Density	: 0.89
Auto-ignition temperature	: Not Determined
Decomposition temperature	: Not Determined
Solubility in water	: Negligible, 0-1%
Partition coefficient, n-octanol/water	: No Data Available
Viscosity @ 40C	: 212 cst
Viscosity @ 100C	: 19 cst

Section 10 - Stability & Reactivity

1.Material Analysis

Reactivity	: No Data Available
Chemical stability	: Stable Under Normal Circumstances.
Possibility of hazardous reactions	: Hazardous polymerization will not occur.

2.Environmental

Conditions to avoid	: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: Carbon monoxide, Smoke, Carbon monoxide, sulfur oxides, aldehydes, and other petroleum decomposition products in the case of incomplete combustion. Oxides of nitrogen, phosphorus, calcium, copper, magnesium, sodium, and hydrogen sulfide may also be present

Section 11 - Toxicological Information

11.1 Toxicological Effects

Ingestion Toxicity	: No hazard in normal industrial use.
Skin Contact	: This material is likely to be slightly irritating to skin based on animal data.
Inhalation Toxicity	: Non-hazardous under Respiratory Sensitization category.
Eye Contact	: The material is likely to be irritating to eyes based on animal data.

11.2 Inhalation Toxicity Data

CAS	Chemical Name	Test	Value		Species	Source
64742-62-7	Residual oils, petroleum, solvent-dewaxed	Inhalation	2.18mg/L	4h	Rat	NLM_CIP

Section 11 - Toxicological Information Continued

11.3 Dermal & Other Toxicity Data

CAS	Chemical Name	Test	Value		Species	Source
64742-62-7	Residual oils, petroleum, solvent-dewaxed	LC50	5000mg/L	96h	Oncorhynchus	IUCLID
64742-65-0	Distillates, petroleum, solvent-dewaxed heavy paraffinic	LC50	5000mg/L	96h	Oncorhynchus	IUCLID

Sensitizer : No data available to indicate product or components may be a skin sensitizer.

Mutagenicity : No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.

Carcinogenicity : Not expected to cause cancer. This product meets the IP-346 criteria of <3%.

Reproductive Toxicity : No data available if components greater than 0.1% may cause birth defects.

Section 12 - Ecological Information

12.1 Aquatic Toxicity

Acute Aquatic ecotoxicity : Non-hazardous under Aquatic Acute Environment category.

Chronic Aquatic ecotoxicity : Non-hazardous under Aquatic Chronic Environment category.

Persistence and degradability : Biodegrades slowly.

Bioaccumulative potential : Bioconcentration may occur.

Mobility in soil : This material is expected to have essentially no mobility in soil.

Results of PBT and vPvB assessment : Not determined.

Other adverse effects : No data available.

12.2 Ecological Data

CAS	Chemical Name	Test	Value		Species	Source
64742-62-7	Residual oils, petroleum, solvent-dewaxed	EC50	1000mg/L	48h	Daphnia magna	IUCLID
64742-65-0	Distillates, petroleum, solvent-dewaxed heavy paraffinic	EC50	1000mg/L	48h	Daphnia magna	IUCLID

Section 13 - Disposal Considerations

13.1 Waste treatment

Waste treatment methods : Dispose of according to Federal, State, Local, or Provincial regulations.

Disposal Methods : Recycle used oil.

Waste Disposal : Use material is non-hazardous according to environmental regulations.

Contaminated packaging : Recycle containers whenever possible!

Section 14 - Transportation Information

14.1 U.S. Department of Transportation (DOT)

14.2. Shipping Description : 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) International Maritime Dangerous Goods (IMDG)

14.2. DOT Compliance Note : U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

14.2. DOT Compliance Requirement : U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24

Section 15 - Regulatory Information

Regulatory Agency			Chemical List Status
(TSCA) Toxic Substance Control Act	:	All components are either listed or not regulated US TSCA Inventory.	64742-62-7 64742-65-0

WHMIS Hazard Class : None

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

CERCLA Sections
302, 313, 372 : This material does not contain reportable chemicals.

311, 312 :

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

New Jersey Right to Know (NJ RTK) This material does not contain reportable chemicals.

Massachusets Right to Know (MA RTK) This material does not contain reportable chemicals.

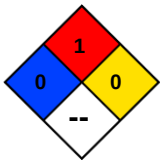
Pennsylavania Right to Know (PA RTK) This material does not contain reportable chemicals.

Rhode Island Right to Know (RI RTK) This material does not contain reportable chemicals.

Section 16 - Other Information

ACGIH	American Conference of Governmental Industrial Hygienists
CFR	Code of Federal Regulations
DOT	United States Department of Transportation
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RTK	Right-to-Know
SARA	Short-term Exposure Limit
TSCA	Toxic Substances Control Act
WHMIS	Workplace Hazardous Materials Information System

NFPA:		
	HEALTH	**0**
	FLAMMABILITY	**1**
	INSTABILITY	**0**
	SPECIAL	**-**



Disclaimer: This safety data sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in the data sheet which we have received from outside sources and we believe the information to be correct, but cannot guarantee its accuracy or completeness.
Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product in a safe manner and to comply with all applicable laws and regulations. No statement made in this data sheet shall be construed as permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either expressed or implied.

Internal Use: 3E9

Revised: 7/13/2018

Gear Oil, Mobil SHC 629 (ExxonMobil)

SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **MOBIL SHC 629**
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560500540, 602946-00
Intended Use: Circulating/gear oil

COMPANY IDENTIFICATION

Supplier: **AMPOL AUSTRALIA PETROLEUM PTY LTD**
ABN 17 000 032 128
29-33 Bourke Rd
Alexandria
New South Wales 2015 Australia

24 Hour Emergency Telephone	1800 033 111
Product Technical Information	1300364169
Supplier General Contact	+612 9250-5000
FAX	+612 9250-5742

SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

Other hazard information:

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.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
1-DECENE, TETRAMER AND TRIMER HYDROGENATED	68649-12-7	30 - < 40%	H304
PHOSPHORIC ACID, METHYLPHENYL DIPHENYL ESTER	26444-49-5	0.1 - < 0.25%	H400(M factor 1), H410(M factor 1)
TRIPHENYL PHOSPHATE	115-86-6	0.1 - < 0.25%	H400(M factor 1), H411

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Other ingredients determined not to be hazardous up to 100%.

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.

NOTE TO PHYSICIAN

None

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 run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters 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, Sulphur 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.

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 so without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do so 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: Dyke 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 earthing procedures. However, bonding and earthing 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.

Material is defined under the National Standard [NOHSC:1015] Storage and Handling of Workplace Dangerous Goods.

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, TETRAMER AND TRIMER HYDROGENATED	Aerosols (thoracic fraction)	TWA	5 mg/m3			ExxonMobil
TRIPHENYL PHOSPHATE		TWA	3 mg/m3			Australia WES
TRIPHENYL PHOSPHATE		TWA	3 mg/m3			ACGIH

Exposure limits/standards for materials that can be formed when handling this product:

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Biological limits

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:

Particulate

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/vapour 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:

Nitrile,Viton

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. Practise 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
Colour: Orange
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.864
Flammability (Solid, Gas): N/A
Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F) [Estimated]
Decomposition Temperature: N/D
Vapour Density (Air = 1): > 2 at 101 kPa [Estimated]
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20 ºC [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: 150 cSt (150 mm2/sec) at 40 ºC
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION
Freezing Point: N/D
Melting Point: N/A
Pour Point: -39°C (-38°F)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

INCOMPATIBLE MATERIALS: Strong oxidisers

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.
Sensitisation	
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 sensitising in test animals and humans.

IARC Classification:
The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1 2 = IARC 2A 3 = IARC 2B

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.
Material -- Not expected to demonstrate chronic toxicity to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

ECOLOGICAL DATA

Ecotoxicity

Test	Duration	Organism Type	Test Results
Aquatic - Acute Toxicity	96 hour(s)	Oncorhynchus mykiss	LL50 1003 mg/l: data for similar materials
Aquatic - Chronic Toxicity	21 day(s)	Daphnia magna	NOELR 1 mg/l: data for similar materials

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

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 (ADG) : 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

This material is not considered hazardous according to Australia Model Work Health and Safety Regulations.

Product is not regulated according to Australian Dangerous Goods Code.

No Poison Schedule number allocated by the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the Therapeutic Goods Act.

AS1940 COMBUSTIBLE CLASS: C2

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories : AIIC, DSL, IECSC, ISHL, KECI, PICCS, TCSI, TSCA

Special Cases:

Inventory	Status
ENCS	Restrictions Apply

SECTION 16 OTHER INFORMATION

KEY TO ABBREVIATIONS AND ACRONYMS:

N/D = Not determined, N/A = Not applicable, STEL = Short-Term Exposure Limit, TWA = Time-Weighted Average

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
H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
Section 01: Company Mailing Address information was modified.

DGN: 2007964DAU (1018272)

Prepared by: Exxon Mobil Corporation
EMBSI, Clinton NJ USA
Contact Point: See Section 1 for Local Contact number

End of (M)SDS

Gear Oil 80W-90

Safety Data Sheet

Hazardous, NON-Dangerous Goods

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product name: Gear Oil 80W-90

Synonyms	**Product Code**
Gear Oil 80W-90	GO8090
HS Code: 2710.19.91	-
HS Code: 2710.91.91	-
HS Code: 2710.99.91	-

Recommended use: Differential oil

Supplier: Penrite Oil Company Pty Ltd
ABN: 25 005 001 525
Street Address: Australia:
110-116 Greens Road
Dandenong South VIC 3175

New Zealand:
75 Lady Ruby Drive
East Tamaki Auckland 2013

Telephone: Australia: 1300 736 748; New Zealand: 0800 533 698
Facsimile: Australia: 1800 736 748; New Zealand: 0800 533 698

Emergency Telephone number: **Australia: 1300 736 748; New Zealand: 0800 533 698**

2. HAZARDS IDENTIFICATION

Classification

This material is hazardous according to health criteria of Safe Work Australia.

Hazard Classifications
Eye Damage/Irritation - Category 2A
Acute Hazard to the Aquatic Environment - Category 3
Chronic Hazard to the Aquatic Environment - Category 3

Label Elements

Hazard Pictogram(s)

Signal Word
Warning

Hazard Statements

H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Prevention Precautionary Statements

P102	Keep out of reach of children.
P103	Read carefully and follow all instructions.

P264	Wash hands, face and all exposed skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing including eye/face protection and suitable respirator.

Response Precautionary Statements

P101	If medical advice is needed, have product container or label at hand.
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.

Storage Precautionary Statement
Not allocated

Disposal Precautionary Statement

P501	Dispose of contents/container in accordance with local, regional, national and international regulations.

Poison Schedule: Not Applicable

Child-resistant fastening: Not Applicable

Tactile warning: Not Applicable

DANGEROUS GOOD CLASSIFICATION

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

Classified as a C2 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO	PROPORTION
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	>60 %
Residual oils, petroleum, hydrotreated	64742-57-0	10 - 30 %
Residual oils, petroleum, solvent, dewaxed	64742-62-7	10 - 30 %
Phosphoric acid, dipentyl ester	3138-42-9	<1 %
Amines, C12-14-tert-alkyl	68955-53-3	<1 %
Phosphoric acid, monopentyl ester	2382-76-5	<1 %
Oleylamine	112-90-3	<1 %
Amines, N-(C14-18 and C16-18-unsaturated alkyl)trimethylenedi-	68439-73-6	<1 %
Phosphoric acid, bis(2-ethylhexyl) ester	298-07-7	<1 %
Ingredients determined to be Non-Hazardous	-	Balance
		100%

4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

Skin Contact: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running

water. If swelling, redness, blistering or irritation occurs seek medical assistance.

Eye contact: If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a Doctor; or for at least 15 minutes and transport to Doctor or Hospital.

Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

PPE for First Aiders: Wear safety shoes, overalls, gloves, chemical goggles. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Notes to physician: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Hazchem Code: Not applicable.

Suitable extinguishing media: If material is involved in a fire use water fog (or if unavailable fine water spray), alcohol resistant foam, standard foam, dry agent (carbon dioxide, dry chemical powder).

Specific hazards: Combustible liquid.

Fire fighting further advice: On burning or decomposing may emit toxic fumes. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion or decomposition.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS
Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.

LARGE SPILLS
Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

Dangerous Goods - Initial Emergency Response Guide No: Not applicable

7. HANDLING AND STORAGE

Handling: Avoid eye contact and repeated or prolonged skin contact. Avoid inhalation of vapour, mist or aerosols.

Storage: Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat and/or ignition. Keep container standing upright. Keep containers closed when not in use - check regularly for leaks.

Classified as a C2 (COMBUSTIBLE LIQUID) for the purpose of storage and handling, in accordance with the requirements of AS 1940. Refer to State Regulations for storage and transport requirements.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National occupational exposure limits:

	TWA		STEL		NOTICES
	ppm	mg/m3	ppm	mg/m3	
Oil mist, refined mineral	-	5	-	-	-

As published by Safe Work Australia.

TWA - The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL (Short Term Exposure Limit) - the average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

If the directions for use on the product label are followed, exposure of individuals using the product should not exceed the above standard. The standard was created for workers who are routinely, potentially exposed during product manufacture.

Biological Limit Values: As per the "National Model Regulations for the Control of Workplace Hazardous Substances (Safe Work Australia)" the ingredients in this material do not have a Biological Limit Allocated.

Engineering Measures: Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. Use only in well ventilated areas. Use with local exhaust ventilation or while wearing appropriate respirator. Vapour heavier than air - prevent concentration in hollows or sumps. Do NOT enter confined spaces where vapour may have collected.

Personal Protection Equipment: SAFETY SHOES, OVERALLS, GLOVES, CHEMICAL GOGGLES.

Personal protective equipment (PPE) must be suitable for the nature of the work and any hazard associated with the work as identified by the risk assessment conducted.

Wear safety shoes, overalls, gloves, chemical goggles. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Hygiene measures: Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and repeated or prolonged skin contact. Avoid inhalation of vapour, mist or aerosols. Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquid
Colour: Blue
Odour: Petroleum

Solubility: Immiscible in water
Density: 0.889 g/cm³ @ 15°C
Relative Vapour Density (air=1): >1

Vapour Pressure (20 °C):	<0.001 kPa
Flash Point (°C):	216
Flammability Limits (%):	N Av
Autoignition Temperature (°C):	N Av
Melting Point/Range (°C):	N Av
Pour Point/Range (°C):	-32
Boiling Point/Range (°C):	N Av
pH:	N App
Viscosity:	145 cSt @ 40°C
Total VOC (g/Litre):	N Av

(Typical values only - consult specification sheet)
N Av = Not available, N App = Not applicable

10. STABILITY AND REACTIVITY

Chemical stability: This material is thermally stable when stored and used as directed.

Conditions to avoid: Elevated temperatures and sources of ignition.

Incompatible materials: Oxidising agents.

Hazardous decomposition products: Oxides of carbon and nitrogen, smoke and other toxic fumes.

Hazardous reactions: No known hazardous reactions.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Acute Effects

Inhalation: Material may be an irritant to mucous membranes and respiratory tract.

Skin contact: Contact with skin may result in irritation.

Ingestion: Swallowing can result in nausea, vomiting and irritation of the gastrointestinal tract.

Eye contact: An eye irritant.

Acute toxicity

Inhalation: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): LC50 > 20.0 mg/L for vapours or LC50 > 5.0 mg/L for dust and mist or LC50 > 20,000 ppm for gas

Skin contact: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg bw

Ingestion: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >2,000 mg/Kg bw

Corrosion/Irritancy: Eye: this material has been classified as not corrosive or irritating to eyes. Skin: this material has been classified as not corrosive or irritating to skin.

Sensitisation: Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as not a skin sensitiser.

Aspiration hazard: This material has been classified as non-hazardous.

Specific target organ toxicity (single exposure): This material has been classified as non-hazardous.

Chronic Toxicity

Mutagenicity: This material has been classified as non-hazardous.

Carcinogenicity: This material has been classified as non-hazardous.

Reproductive toxicity (including via lactation): This material has been classified as non-hazardous.

Specific target organ toxicity (repeat exposure): This material has been classified as non-hazardous.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

Acute aquatic hazard: This material has been classified as a Category Acute 3 Hazard. Acute toxicity estimate (based on ingredients): 10 - 100 mg/L

Long-term aquatic hazard: This material has been classified as a Category Chronic 3 Hazard. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data, Acute toxicity estimate (based on ingredients): 10 - 100 mg/L, where the substance is not rapidly degradable and/or BCF ≥ 500 and/or log K_{ow} ≥ 4.

Ecotoxicity: No information available.

Persistence and degradability: No information available.

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT
Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

MARINE TRANSPORT
Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

AIR TRANSPORT
Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

15. REGULATORY INFORMATION

This material is not subject to the following international agreements:
Montreal Protocol (Ozone depleting substances)
The Stockholm Convention (Persistent Organic Pollutants)
The Rotterdam Convention (Prior Informed Consent)
Basel Convention (Hazardous Waste)

This material is subject to the following international agreements:

International Convention for the Prevention of Pollution from Ships (MARPOL)
- Annex III - Harmful Substances carried in Packaged Form

This material/constituent(s) is covered by the following requirements:
- All components of this product are listed on or exempt from the Australian Inventory of Industrial Chemicals (AIIC).
- All components of this product are listed on or exempt from the New Zealand Inventory of Chemical (NZIoC).

HSNO Group Standard: HSR002606 - Lubricants, Lubricant Additives, Coolants and Anti-freeze Agents (Subsidiary Hazard) Group Standard

16. OTHER INFORMATION

Reason for issue: Update to GHS 7.

This Safety Data Sheet has been prepared by Chemical Data Services Pty Ltd on behalf of its client.

Safety Data Sheets are updated frequently. Please ensure that you have a current copy.

This information was prepared in good faith from the best information available at the time of issue. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.

Heavy Duty Citrus Degreaser & Cleaner (ZEP)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Material name : ZEP HEAVY-DUTY CITRUS DEGREASER & CLEANER 24OZ_12CT

Material number : ZUCIT24

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

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	liquid
Colour	amber
Odour	characteristic

GHS Classification

Eye irritation : Category 2A

GHS label elements

Hazard pictograms :

Exclamation mark

Signal word : Warning

Hazard statements : H319 Causes serious eye irritation.

Precautionary statements : **Prevention:**
P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.
Response:
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.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration [%]
Alcohols, C9-11, ethoxylated	68439-46-3	>= 1 - < 3
Oxirane, methyl-, polymer with oxirane, mono(2-ethylhexyl) ether	64366-70-7	>= 1 - < 3

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.
Get medical attention.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.
Remove contaminated clothing and shoes.
Wash contaminated clothing before re-use.
If skin irritation persists, call a physician.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

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 are dependent on exposure (dose, concentration, contact time).
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	:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	:	High volume water jet
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.
Further information	:	Standard procedure for chemical fires. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
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.
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 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	:	Do not breathe vapours/dust. Avoid contact with skin and 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. Electrical installations / working materials must comply with the technological safety standards.
Materials to avoid	:	Oxidizing agents Do not store near acids.

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	:	Access to clean water to rinse eyes must be available, options include: eye wash stations or showers, or eye wash bottles with pure water. Safety glasses
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	amber
Odour	:	characteristic
Odour Threshold	:	No data available

pH	:	11 - 12
Melting point/freezing point	:	No data available
Boiling point	:	No data available
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	:	1.01 g/cm3
Solubility(ies)		
Water solubility	:	soluble
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	:	No data available

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	:	Heat, flames and sparks.
Incompatible materials	:	Oxidizing agents Acids
Hazardous decomposition products	:	Carbon oxides Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects

Aggravated Medical Condition	:	None known.
Symptoms of Overexposure	:	Effects are dependent on exposure (dose, concentration, contact time). 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. Treat symptomatically. Symptoms may be delayed.

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

Components:

Alcohols, C9-11, ethoxylated:

Acute oral toxicity	:	LD50 Oral Rat: 1,400 mg/kg

Skin corrosion/irritation

Product:

Remarks: May irritate skin.

Serious eye damage/eye irritation

Product:

Remarks: Severe eye irritation

Respiratory or skin sensitisation

No data available

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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Product:

Partition coefficient: n-octanol/water	:	Remarks: No data available

Mobility in soil

No data available

Other adverse effects

No data available

Product:

Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

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 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)
sodium hydroxide	1310-73-2	1000	*

*: 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 : Serious eye damage or eye irritation

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)

SECTION 16. OTHER INFORMATION

Further information

NFPA:

HEALTH	**2**
FLAMMABILITY	**1**
INSTABILITY	**0**
SPECIAL HAZARD.	

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme

HMIS III:

HEALTH	**2**
FLAMMABILITY	**1**
PHYSICAL HAZARD	**0**

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

OSHA - GHS Label Information:

Hazard pictograms :

Exclamation mark

Signal word : **Warning:**
Hazard statements : Causes serious eye irritation.
Precautionary statements :

Prevention: Wash skin thoroughly after handling. Wear eye protection/ face protection.
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.

Version:	4.0
Revision Date:	09/29/2021
Print Date:	08/17/2022

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.

Heating Oil, #2 (Phillips66)

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: **#2 Heating Oil**

Other means of identification: High Sulfur No. 2 Heating Oil; High Sulfur No. 2 Heating Oil – Dyed; High Sulfur No. 2 Heating Oil Blend Stock; Home Heating Oil; Low Sulfur No. 2 Heating Oil; No. 2 Fuel Oil; Winterized No. 2 Low Sulfur Heating Oil;#2 HO 15D;#2 HO 20D;#2 HO 25D;#2 HO 30D;#2 HO 100D;#2 Marine Gas Oil HS
NRLM

Code: **724240**

Issue date: 19-Oct-2020

MARPOL Annex I Category: Gas Oils, Including Ship's Bunkers

Relevant identified uses: Heating Oil

Uses advised against: All others

24 Hour Emergency Phone Number: CHEMTREC Global +1 703 527 3887
CHEMTREC United States 1-800-424-9300
CHEMTREC Mexico 01-800-681-9531

Manufacturer/Supplier: Phillips 66 Company
P.O. Box 421959
Houston, Texas 77242-1959

SDS Information: Phone: 800-762-0942
Email: SDS@P66.com
URL: www.phillips66.com/SDS

SECTION 2: Hazard identification

Classified Hazards
H226 - Flammable liquids -- Category 3
H304 -- Aspiration Hazard -- Category 1
H315 -- Skin corrosion/irritation -- Category 2
H332 -- Acute toxicity, Inhalation -- Category 4
H351 -- Carcinogenicity -- Category 2
H373 -- Specific target organ toxicity (repeated exposure) -- Category 2
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2

Hazards Not Otherwise Classified (HNOC)
PHNOC: Electrostatic charge may be generated during pumping and other operations

HHNOC: None known

Label elements

DANGER
H226 - Flammable liquid and vapor
H304 - May be fatal if swallowed and enters airways
H315 - Causes skin irritation
H332 - Harmful if inhaled
H351 - Suspected of causing cancer
H373 - May cause damage to organs through prolonged or repeated exposure
H411 - Toxic to aquatic life with long lasting effects

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 (ventilation and lighting) equipment; P242 - Use only non-sparking tools; P243 - Take precautionary measures against static discharge; P260 - Do not breathe dust/fume/gas/mist/vapors/spray; 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 and eye/face protection; P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician; P331 - Do NOT induce vomiting; P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower; P332 + P313 - If skin irritation occurs: Get medical advice/attention; P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing; P308 + P313 - IF exposed or concerned: Get medical advice/attention; P362 - Take off contaminated clothing and wash before reuse; P370 + P378 - In case of fire: Use CO_2, dry chemical, or foam to extinguish; P391 - Collect spillage; P403 + P235 - Store in a well-ventilated place. Keep cool; P501 - Dispose of contents/ container to an approved waste disposal plant

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration[1]
Fuel oil No. 2	68476-30-2	100

Hazardous Constituent(s) Contained Within Above Complex Substance(s)

Chemical Name	CASRN	Concentration[1]
Naphthalene	91-20-3	<1

[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 flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse.

Inhalation: If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. 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.

SECTION 5: Firefighting measures

NFPA 704: National Fire Protection Association

Health: 1 **Flammability:** 2 **Instability:** 0

0 = minimal hazard
1 = slight hazard
2 = moderate hazard
3 = severe hazard
4 = extreme hazard

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. 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. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: Flammable. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe) Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors,

in confined spaces, outdoors, or in sewers. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. 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 nitrogen and sulfur 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: Flammable. Spillages of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release if safe to do so. The use of explosion-proof electrical equipment is recommended. 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 foam on spills to minimize vapors 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: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use non-sparking tools. Do not breathe vapor or mist. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Flammable. May vaporize easily at ambient temperatures. The vapor is heavier than air and may create an explosive mixture of vapor and air. Beware of accumulation in confined spaces and low lying areas. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. 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. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of incomplete combustion products (e.g. carbon monoxide, oxides of sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels.

Static Accumulation Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding of tanks, transfer piping, and storage tank level floats are necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. Special care should be given to ensure that special slow load procedures for "switch loading" are followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such as gasoline or naphtha). For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Conditions for safe storage: Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

"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
Fuel oil No. 2	TWA-8hr: 100 mg/m³ inhalable fraction and vapor Diesel fuel Skin	---	TWA-8hr: 100 mg/m³ inhalable fraction and vapor (VLE-PPT)	---
Naphthalene	TWA-8hr: 10 ppm Skin	TWA-8hr: 10 ppm TWA-8hr: 50 mg/m³ Carcinogen	TWA-8hr: 10 ppm (VLE-PPT) TWA-8hr: 50 mg/m³ (VLE-PPT) STEL: 15 ppm (PPT-CT)	TWA-8hr: 10 ppm Skin

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

Chemical Name	ACGIH	Mexican NOM-047-SSA1-2011
Naphthalene	1-Naphthol with hydrolysis plus 2-Naphthol with hydrolysis in : (end of shift)	---

State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information. --- =. None.

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. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile rubber

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying

respirator equipped with organic vapor cartridges/canisters 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).

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

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:	Straw colored. May be dyed yellow or red
Physical form of product:	Liquid
Odor:	Diesel fuel
Odor threshold:	No data
pH:	Not applicable
Melting / freezing point:	No data
Initial boiling point and boiling range:	300 - 691 °F / 149 - 366 °C
Flash point:	125-180 °F / 52-82 °C
Method:	Tag Closed Cup (TCC), ASTM D56
Evaporation Rate (nBuAc=1):	<1
Flammability (solid, gas):	Not applicable
Upper Explosive Limits (vol % in air):	10.0
Lower Explosive Limits (vol % in air):	0.3
Vapor pressure:	0.40 mm Hg
Vapor density:	>1 (air = 1)
Relative density:	0.81-0.88 @ 60ºF (15.6ºC) (water = 1)
Solubility(ies):	Negligible
Partition coefficient n-octanol /water (log KOW):	No data
Autoignition temperature:	500 °F / 260 °C
Decomposition temperature:	No data
Viscosity:	1.7-4.1 cSt @ 40°C
Molecular weight:	No data

Other information

Particle Size:	No data
Pour point:	No data
Bulk density	7.08 lbs/gal

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of Hazardous Reactions: Hazardous reactions not anticipated.

Conditions to Avoid: Avoid high temperatures and all sources of ignition. Prevent vapor accumulation.

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	Harmful if inhaled		4.1 mg/L (mist)
Dermal	Unlikely to be harmful		4.3 g/kg
Oral	Unlikely to be harmful		>5 g/kg

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Aspiration Hazard: May be fatal if swallowed and enters airways

Skin Corrosion/Irritation: Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Causes mild eye irritation.

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: Not expected to be a respiratory sensitizer.

Specific Target Organ Toxicity (Single Exposure): Not expected to cause organ effects from single exposure.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure. Repeated dermal application of petroleum gas oils for 90 days resulted in decreased liver, thymus, and spleen weights, and altered bone marrow function. Microscopic alterations included liver hypertrophy and necrosis, decreased hematopoesis and lymphocyte depletion.

Carcinogenicity: Suspected of causing cancer. Petroleum middle distillates have been shown to cause skin tumors in mice following repeated and prolonged skin contact. Follow-up studies have shown that these tumors are produced through a non-genotoxic mechanism associated with frequent cell damage and repair, and that they are not likely to cause tumors in the absence of prolonged skin irritation.

Germ Cell Mutagenicity: Not expected to cause heritable genetic effects.

Reproductive Toxicity: Not expected to cause reproductive toxicity.

Information on Toxicological Effects of Components

Naphthalene

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The US National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has been identified as a carcinogen by IARC and NTP.

SECTION 12: Ecological information

GHS Classification:
H411 -- Hazardous to the aquatic environment, chronic toxicity -- Category 2
Toxic to aquatic life with long lasting effects.

Toxicity: Experimental studies of gas oils show that acute aquatic toxicity values are typically in the range 2-20 mg/L. These values are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions. They should be regarded as toxic to aquatic organisms, with the potential to cause long term adverse effects in the aquatic environment.

Persistence and Degradability: Gas oils are complex combinations of individual hydrocarbon species. Based on the known or expected properties of individual constituents, category members are not predicted to be readily biodegradable. Some hydrocarbon constituents of gas oils are predicted to meet the criteria for persistence; on the other hand, some components can be easily degraded by microorganisms under aerobic conditions.

Persistence per IOPC Fund definition: Non-Persistent

Bioaccumulative Potential: Gas oil components have measured or calculated Log Kow values in the range of 3.9 to 6 which indicates a high potential to bioaccumulate. Lower molecular weight compounds are readily metabolized and the actual bioaccumulation potential of higher molecular weight compounds is limited by the low water solubility and large molecular size.

Mobility in Soil: Releases to water will result in a hydrocarbon film floating and spreading on the surface. For the lighter components, volatilization is an important loss process and reduces the hazard to aquatic organisms. In air, the hydrocarbon vapors react readily with hydroxyl radicals with half-lives of less than one day. Photoxidation on the water surface is also a significant loss process particularly for polycyclic aromatic compounds. In water, the majority of components will be adsorbed on sediment. Adsorption is the most predominant physical process on release to soil. Adsorbed hydrocarbons will slowly degrade in both water and soil.

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. However, it would likely be identified as a federally regulated RCRA hazardous waste for the following characteristic(s) shown below. 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.Container contents should be completely used and containers should be emptied prior to discard. Container residues and rinseates could be considered to be hazardous wastes.

EPA Waste Number(s)
- D001 - Ignitability characteristic

SECTION 14: Transport information

UN Number: UN1202
UN proper shipping name: Heating oil, light,
Transport hazard class(es): 3 ***or*** Combustible liquid
Packing Group: III
Environmental Hazard(s): Marine pollutant - Environmentally Hazardous
Special precautions for user: ***Combustible liquid classification is dependent on a flash point of >60° C (140° F) and <93° C (200° F).***
If transported in bulk by marine vessel in international waters, product is being carried under the scope of MARPOL Annex I.
Container(s) greater than 5 liters (liquids) or 5 kilograms (solids), shipped by water mode and ALL bulk shipments may require the shipping description to contain the "Marine Pollutant" notation [49 CFR 172.203(l)] and the container(s) to display the [Marine Pollutant Mark] [49 CFR 172.322].
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
Naphthalene	<1	0.1%

[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)
EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

California Proposition 65

WARNING. This product can expose you to chemicals including Naphthalene (CASRN 91-20-3) and Benzene (CASRN 71-43-2) which are known to the State of California to cause cancer, and Toluene (CASRN 108-88-3) and Benzene (CASRN 71-43-2) which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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:
19-Oct-2020	12-Feb-2018	724240	FINAL

Revised Sections or Basis for Revision:
Periodic review and update

Mexican NOM-018-STPS-2015:
The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Precautionary Statements
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 (ventilation and lighting) equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
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 and eye/face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P370 + P378 - In case of fire: Use CO2, dry chemical, or foam to extinguish
P391 - Collect spillage
P403 + P235 - Store in a well-ventilated place. Keep cool

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.

Hydraulic Fluid AW, Four Seasons AW32, AW46, AW68, AW100 (Kendall)

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: **Four Seasons Hydraulic Fluid AW**

Other means of identification:
Kendall® Four Seasons Hydraulic Fluid AW 32
Kendall® Four Seasons Hydraulic Fluid AW 46
Kendall® Four Seasons Hydraulic Fluid AW 68
Kendall® Four Seasons Hydraulic Fluid AW 100

Code: **LBKN726500**
Issue date: 12-Jan-2021
Relevant identified uses: Hydraulic Fluid
Uses advised against: All others
24 Hour Emergency Phone Number: CHEMTREC Global +1 703 527 3887
CHEMTREC United States 1-800-424-9300
CHEMTREC Mexico 01-800-681-9531

Manufacturer/Supplier:
Phillips 66 Lubricants
A Division of Phillips 66 Company
P.O. Box 421959
Houston, Texas 77242-1959

SDS Information:
URL: www.phillips66.com/SDS
Phone: 800-762-0942
Email: SDS@P66.com

Customer Service: U.S.: 800-368-7128 or International: 1-832-765-2500
Technical Information: 1-877-445-9198

SECTION 2: Hazard identification

Classified Hazards
No classified hazards

Hazards Not Otherwise Classified (HNOC)
PHNOC: None known

HHNOC: None known

Label elements

No classified hazards

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration[1]
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	<100

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be

evaluated immediately by a physician. (see Note to Physician)

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Prolonged or repeated contact may dry skin and cause irritation.

Notes to Physician: 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: National Fire Protection Association

Health: 0 **Flammability:** 1 **Instability:** 0

0 = minimal hazard
1 = slight hazard
2 = moderate hazard
3 = severe hazard
4 = extreme hazard

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Spills will produce very slippery surfaces. 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: Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Keep container(s) tightly closed and properly labeled. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits .

Chemical Name	ACGIH	OSHA	Mexico	Phillips 66
Distillates, petroleum, hydrotreated heavy paraffinic	TWA-8hr: 5 mg/m^3 STEL: 10 mg/m^3 as Oil Mist, if Generated	---	---	---

State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

Biological occupational exposure limits

None.

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

Eye/Face Protection: The use of eye/face protection is not normally required; however, good industrial hygiene practice suggests the use of eye protection that meets or exceeds ANSI Z.87.1 whenever working with chemicals.

Skin/Hand Protection: The use of skin protection is not normally required; however, good industrial hygiene practice suggests the use of gloves or other appropriate skin protection whenever working with chemicals. Suggested protective materials: Nitrile

rubber

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.

SECTION 9: Physical and chemical properties

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

Appearance:	Amber, Transparent
Physical form of product:	Liquid
Odor:	Petroleum
Odor threshold:	No data
pH:	Not applicable
Melting / freezing point:	No data
Initial boiling point and boiling range:	No data
Flash point:	> 400 °F / > 204 °C
Method:	Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
Evaporation Rate (nBuAc=1):	No data
Flammability (solid, gas):	Not applicable
Upper Explosive Limits (vol % in air):	No data
Lower Explosive Limits (vol % in air):	No data
Vapor pressure:	<1 mm Hg
Vapor density:	>1
Relative density:	0.864-0.876 @ 60ºF (15.6ºC)
Solubility(ies):	Insoluble
Partition coefficient n-octanol /water (log KOW):	No data
Autoignition temperature:	No data
Decomposition temperature:	No data
Viscosity:	5.4 - 11 cSt @ 100°C; 32 - 100 cSt @ 40°C
Molecular weight:	No data

Other information

Particle Size:	No data
Pour point:	No data < -35 to -26 < -37 to -32
Bulk density	7.16 - 7.29 lbs/gal

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of Hazardous Reactions: Hazardous reactions not anticipated.

Conditions to Avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Incompatible Materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous Decomposition Products: Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Aspiration Hazard: Not expected to be an aspiration hazard.

Skin Corrosion/Irritation: 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).

Distillates, petroleum, hydrotreated heavy paraffinic
Carcinogenicity: This oil has been highly refined by a variety of processes to reduce aromatics and improve performance characteristics. It meets the IP-346 criteria of less than 3 percent PAH's and is not considered a carcinogen by the International Agency for Research on Cancer.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

UN Number: Not regulated
UN proper shipping name: None
Transport hazard class(es): None
Packing Group: None
Environmental Hazard(s): This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant
Special precautions for user: If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory information

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds)
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

CERCLA/SARA - Section 311/312 (Title III Hazard Categories)
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CERCLA/SARA - Section 313 and 40 CFR 372
This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

EPA (CERCLA) Reportable Quantity (in pounds)
This material does not contain any chemicals with CERCLA Reportable Quantities.

California Proposition 65
This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

International Inventories
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
All components are either on the DSL, or are exempt from DSL listing requirements.

SECTION 16: Other information

Issue date	Previous Issue Date:	SDS Number	Status:
12-Jan-2021	02-May-2018	LBKN726500	FINAL

Revised Sections or Basis for Revision:
Composition (Section 3); Periodic review and update

Mexican NOM-018-STPS-2015:
The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

Guide to Abbreviations:
ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; GHS = Globally Harmonized System; HPR = Hazardous Products Regulations; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

Disclaimer of Expressed and implied Warranties:
The information presented in this Safety Data Sheet is based on data believed to be accurate as of the date this Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Hydraulic Oil, Advantage AW-32 (ALS)

SAFETY DATA SHEET

ADVANTAGE ® AW-32 HYDRAULIC OIL

Section 1 - Identification

1.1 Product Identifiers

Product Name : ADVANTAGE ® AW-32 HYDRAULIC OIL

Product Code(s) : 430-005, 430-000, 430-055, 430-330, 430-275

1.2 Product Usage

Recommended Usage : Antiwear Hydraulic Oil

Restricted Usage : Not Intended for any other usage

1.3 Emergency Support

Emergency Support : CHEMTREC
United States/Canada +1(800) 424-9300

1.4 Supplier Information

Advanced Lubrication Specialties
420 Imperial Court
Bensalem, PA 19020
United States

Phone : 215-214-2114
Fax : 215-214-2118
Email : sds@advancedlubes.com
technical@advancedlubes.com
sales@advancedlubes.com

Section 2 - Hazards Identification

2.1 Classification of the Substance or the Mixture

GHS Rating(s) : **No Classified Hazards**

Signal Word : **Not Applicable**

2.2 Label Elements

No Classified Hazards.

Precautionary	**P201**	Obtain Special Instructions Before Use.
	P202	Do Not Handle Until All Safety Precautions Are Understood.
	P281	Use Personal Protective Equipment As Required.
Response	**P308**	If Exposed Or Concerned: Get Medical Advice/attention.
Storage	**P405**	Store Locked Up.
Disposal	**P501**	Dispose Of Container According To Regional Regulations.

2.3 Other Hazards

Section 3 - Composition / Information on Ingredients

3.1 Substance Details

Chemical Name	CAS #	%Weight
LUBRICANT BASE OIL (PETROLEUM)	64742-54-7	98.0
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT PARAFFINIC	64742-55-8	1.0

INERT	The remaining percentage are not listed as Physical or Health Hazards (29 CFR 1910.1200)	1.0

Products containing mineral oil with less than 3% DMSO extract as measured by IP-346.

Section 4 - First Aid Measures

4.1 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 atleast 20 minutes. Get Medical Attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for 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. Maintain an open airway. Get medical attention if symptoms occur.

Ingestion : Wash out mouth with water. 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. Never give anything by mouth to an unconscious person. get medical attention if symptoms occur.

4.2 Symptoms & Effects

To Physician : Treat symptomatically. Contact poison specialist if product has been ingested.

Specific Treatment : No Specific Treatment.

4.3 Medical Attention

Protection of First Aiders : No action should 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.

Note To Doctor : 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 - Fire Fighting

5.1 Extinguishing Media

Suitable Media
Unsuitable Media : CO_2, Dry chemical, or Foam. Water can be used to cool and protect product. Do not use water jet as an extinguisher, it will spread the fire.

Specific hazards arising from this product : When heated, hazardous gases may be released including: sulfur dioxide. A solid stream of water will spread the burning material. Material creates a special hazard because it floats on water. This material creates a special hazard because it floats on water. This material is harmful to aquatic life. Any fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

5.3 Firefighters Advice

Special protective equipment : Fire Equipment Information: Fire-fighters should wear appriovirate protective equipment and sel contained breathing apparatus(SCBA) with a full face -piece operated in positive pressure mode.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment

General Measures : No health affects expect from the cleanup of this material if contact can be avoided. Follow personal protect equipment recommendations found in section 8 of this SDS.

2. Environmental Precautions

Non-Emergency Personnel : Avoid dispersal of spilled material and runoff and contact with soil , waterways, drains and sewers. Inform authorities if the product has caused environmental pollution Water Polluting Material may be harmful to the environment if released in large quantities.

3. Materials & Methods to Contain and Cleanup

Reference Section 8 : Follow all protective equipment recommendations provided in Section 8.

Spill Control Measures : 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. Dispose of according to Federal, State, Local, or Provincial regulations. Used fluid should be disposed of at a recycling center.

Containment and Cleanup : 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 spillage's with noncombustible, absorbent material e.g. sand earth vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via licensed waste disposal contractor. Contaminated absorbent material may pose the same threat hazard as the spilled product.

Section 7 - Handling & Storage

7.1 Safe Handling

Personal Protective Equipment : Put on appropriate personal protective equipment (see section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, keep lid tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

7.2 Safe Storage

Required conditions : Odorous and toxic fumes may form from the decomposition of this product if stored at temperatures in excess of 113 deg F (45 deg C) for extended periods of time or if heat sources in excess of 250 deg F (121 deg C) are used. Store away from incompatible materials. See section 10 for incompatible materials.

7.3 Specific End Use

Designed Purpose : This product is designed for use as a Antiwear Hydraulic Oil

Section 8 - Exposure Control

8.1 United States Exposure Limits

CAS	Chemical Name	Exposure Limits	Source
64742-55-8	Distillates, petroleum, hydrotreated light	5mg/m3	NLM_CI
64742-54-7	Distillates, petroleum, hydrotreated heavy	5mg/m3	IUCLID

8.2 Exposure Controls

Engineering Controls : Material should be handled in enclosed vessels and equipment, in which case general room ventilation should be sufficient. Local exhaust ventilation should be used at points where dust, mist, vapors or gases can escape into the room air. No special requirements under ordinary conditions of use and with adequate ventilation.

Enviromental Exposure Controls : General room ventilation should be satisfactory. Local exhaust ventilation may be necessary if misting is generated.

Hygeine 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 to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Eye / Face Protection : If contact is likely, safety glasses with side shields are recommended.

Skin / Hand Protection : Butyl rubber. Use nitrile or neoprene gloves. Use good industrial hygiene practices. In case of skin contact, wash hands and arms with soap and water. Use caution when opening manway covers of storage and transportation containers. 3-nitroaniline crystals may be present on the interior surface of these openings. 3-nitroaniline is toxic by dermal exposure.

Respiratory Protection : Use a properly fitted air purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this a 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 & Chemical Properties

9.1 Information On Basic Physical and Chemical Properties

Physical state	: Liquid
Color	: B&C
Odor	: Characteristic of Petroleum
Odor threshold	: No Data Available
pH	: No Data Available
Freezing Point	: No Data Available
Boiling Point / Range	: No Data Available
Flash Point COC	: 236C
Evaporation rate:	: No Data Available
Upper Explosive Limits (% air)	: No Data Available
Lower Explosive Limits (% air)	: No Data Available
Flammability (solid, gas)	: Not Applicable
Vapor pressure	: <1 mm Hg
Vapor density (air=1)	: > 1
Relative Density	: 0.86
Auto-ignition temperature	: Not Determined
Decomposition temperature	: Not Determined
Solubility in water	: Negligible, 0-1%
Partition coefficient, n-octanol/water	: No Data Available
Viscosity @ 40C	: 30 cst
Viscosity @ 100C	: 5 cst

Section 10 - Stability & Reactivity

1.Material Analysis

Reactivity	: No Data Available
Chemical stability	: Stable Under Normal Circumstances.
Possibility of hazardous reactions	: Hazardous polymerization will not occur.

2.Environmental

Conditions to avoid	: Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.
Incompatible materials	: Strong oxidizing agents
Hazardous decomposition products	: Carbon monoxide, Smoke, Carbon monoxide, sulfur oxides, aldehydes, and other petroleum decomposition products in the case of incomplete combustion. Oxides of nitrogen, phosphorus, calcium, copper, magnesium, sodium, and hydrogen sulfide may also be present

Section 11 - Toxicological Information

11.1 Toxicological Effects

Ingestion Toxicity	: No hazard in normal industrial use.
Skin Contact	: This material is likely to be slightly irritating to skin based on animal data.
Inhalation Toxicity	: Non-hazardous under Respiratory Sensitization category.
Eye Contact	: The material is likely to be irritating to eyes based on animal data.

11.2 Inhalation Toxicity Data

CAS	Chemical Name	Test	Value		Species	Source
64742-55-8	Distillates, petroleum, hydrotreated light paraffinic	Inhalation	3900mg/m3	4h	Rat	NLM_CIP

Section 11 - Toxicological Information Continued

11.3 Dermal & Other Toxicity Data

CAS	Chemical Name	Test	Value		Species	Source
64742-55-8	Distillates, petroleum, hydrotreated light paraffinic	LC50	5000mg/L	96h	Oncorhynchus	IUCLID
64742-54-7	Distillates, petroleum, hydrotreated heavy paraffinic	LC50	5000mg/L	96h	Oncorhynchus	IUCLID

Sensitizer : No data available to indicate product or components may be a skin sensitizer.

Mutagenicity : No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.

Carcinogenicity : Not expected to cause cancer. This product meets the IP-346 criteria of <3%.

Reproductive Toxicity : No data available if components greater than 0.1% may cause birth defects.

Section 12 - Ecological Information

12.1 Aquatic Toxicity

Acute Aquatic ecotoxicity : Non-hazardous under Aquatic Acute Environment category.

Chronic Aquatic ecotoxicity : Non-hazardous under Aquatic Chronic Environment category.

Persistence and degradability : Biodegrades slowly.

Bioaccumulative potential : Bioconcentration may occur.

Mobility in soil : This material is expected to have essentially no mobility in soil.

Results of PBT and vPvB assessment : Not determined.

Other adverse effects : No data available.

12.2 Ecological Data

CAS	Chemical Name	Test	Value		Species	Source
64742-55-8	Distillates, petroleum, hydrotreated light paraffinic	EC50	1000mg/L	48h	Daphnia magna	IUCLID
64742-54-7	Distillates, petroleum, hydrotreated heavy paraffinic	EC50	1000mg/L	48h	Daphnia magna	IUCLID

Section 13 - Disposal Considerations

13.1 Waste treatment

Waste treatment methods : Dispose of according to Federal, State, Local, or Provincial regulations.

Disposal Methods : Recycle used oil.

Waste Disposal : Use material is non-hazardous according to environmental regulations.

Contaminated packaging : Recycle containers whenever possible!

Section 14 - Transportation Information

14.1 U.S. Department of Transportation (DOT)

14.2. Shipping Description : 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) International Maritime Dangerous Goods (IMDG)

14.2. DOT Compliance Note : U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)

14.2. DOT Compliance Requirement : U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24

Section 15 - Regulatory Information

Regulatory Agency			Chemical List Status
(TSCA) Toxic Substance Control Act	:	All components are either listed or not regulated US TSCA Inventory.	64742-54-7 64742-55-8

WHMIS Hazard Class : None

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

CERCLA Sections
302, 313, 372 : This material does not contain reportable chemicals.

311, 312 :

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

New Jersey Right to Know (NJ RTK) This material does not contain reportable chemicals.

Massachusets Right to Know (MA RTK) This material contains the following listed chemicals 64742-55-8

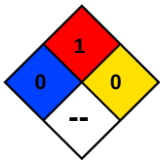
Pennsylavania Right to Know (PA RTK) This material does not contain reportable chemicals.

Rhode Island Right to Know (RI RTK) This material does not contain reportable chemicals.

Section 16 - Other Information

ACGIH	American Conference of Governmental Industrial Hygienists
CFR	Code of Federal Regulations
DOT	United States Department of Transportation
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RTK	Right-to-Know
SARA	Short-term Exposure Limit
TSCA	Toxic Substances Control Act
WHMIS	Workplace Hazardous Materials Information System

NFPA:		
	HEALTH	**0**
	FLAMMABILITY	**1**
	INSTABILITY	**0**
	SPECIAL	**-**



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Internal Use: 3E9

Revised: 7/13/2018

Hydraulic Oil, Premium AW-46 (RelaTech)

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

RelaTECH Premium AW 46 Hydraulic Oil

Product Use: Hydraulic Oil
Product Number(s): 951470046PR
Company Identification
RelaDyne, LLC.
8280 Montgomery Road, Suite 101
Cincinnati, OH 45236
888-830-3156
www.reladyne.com

Transportation Emergency Response
INFOTRAC 800-535-5053

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Not classified as hazardous according to 29 CFR 1910.1200 (2012).

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 99 %weight

SECTION 4 FIRST AID MEASURES

Description of first aid measures
Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.
Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Most important symptoms and effects, both acute and delayed
IMMEDIATE HEALTH EFFECTS
Eye: Not expected to cause prolonged or significant eye irritation.
Skin: Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.

Ingestion: Not expected to be harmful if swallowed.
Inhalation: Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of oil mist at airborne levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

DELAYED OR OTHER HEALTH EFFECTS: Not classified

Indication of any immediate medical attention and special treatment needed
Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Unusual Fire Hazards: Leaks/ruptures in high pressure system using materials of this type can create a fire hazard when in the vicinity of ignition sources (eg. open flame, pilot lights, sparks, or electric arcs).

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent

further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: DO NOT USE IN HIGH PRESSURE SYSTEMS in the vicinity of flames, sparks and hot surfaces. Use only in well ventilated areas. Keep container closed.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, 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, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Silver Shield, Viton.
Respiratory Protection: No respiratory protection is normally required.
If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection

from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge. Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Yellow
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: <0.01 mmHg @ 37.8 °C (100 °F)
Vapor Density (Air = 1): >1
Initial Boiling Point: 315°C (599°F)
Solubility: Soluble in hydrocarbon solvents; insoluble in water.
Freezing Point: Not Applicable
Density: 0.87 kg/l @ 15°C (59°F) (Typical)
Viscosity: 28.8 mm2/s @ 40°C (104°F) Minimum
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: (Cleveland Open Cup) 170 °C (338 °F) Minimum
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: Not applicable
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects
Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for product components.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.
Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:
This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B).
These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is not expected to be harmful to aquatic organisms.
The product has not been tested. The statement has been derived from the properties of the individual components.

MOBILITY

No data available.

PERSISTENCE AND DEGRADABILITY
This material is not expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material.
The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING OIL, NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

IMO/IMDG Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING OIL; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO TI OR IATA DGR

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

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1.	Immediate (Acute) Health Effects:	NO
2.	Delayed (Chronic) Health Effects:	NO
3.	Fire Hazard:	NO
4.	Sudden Release of Pressure Hazard:	NO
5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

1	=IARC Group 1	03=EPCRA 313
2	A=IARC Group 2A	04=CA Proposition 65

01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

No components of this material were found on the regulatory lists above.

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

NEW JERSEY RTK CLASSIFICATION:
Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Hydraulic oil)

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 0 Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:
Label Category : INDUSTRIAL OIL 1 - IND1

REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1
Revision Date: June 1, 2018

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

Kleen & Glow (BRC)

SAFETY DATA SHEET

Kleen & Glow

Section 1. Identification

GHS product identifier : Kleen & Glow

Other means of identification : 190010 (PL)

Product type : Liquid

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

Not applicable

Supplier's details : Beaver Research
3700 E. Kilgore Road
Portage, MI 49002
Phone: 1-800-544-0133

Emergency Telephone #:

INFOTRAC (24 Hours)
1-352-323-3500 (International)
1-800-535-5053 (North America)

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 : CARCINOGENICITY - Category 2

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : 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.

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing.

Response : IF exposed or concerned: Get medical attention.

Storage : Store locked up.

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 : 1970007, 190008, 190009, 190010, 190011, 190012

Ingredient name	%	CAS number
Benzenesulfonic acid, C10-16-alkyl derivs.	1 - 5	68584-22-5
Coconut oil diethanolamide	1 - 5	68603-42-9
Diethanolamine	0 - 1	111-42-2

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 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 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 unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. 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. 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 : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Section 4. First aid measures

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (section 8)

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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
metal oxide/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. 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 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).

Section 6. Accidental release measures

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). 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 ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. 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 and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Diethanolamine	**OSHA PEL 1989 (United States, 3/1989).** TWA: 3 ppm 8 hours. TWA: 15 mg/m^3 8 hours. **NIOSH REL (United States, 10/2013).** TWA: 3 ppm 10 hours. TWA: 15 mg/m^3 10 hours. **ACGIH TLV (United States, 4/2014).** **Absorbed through skin.** TWA: 1 mg/m^3 8 hours. Form: Inhalable fraction and vapor

Section 8. Exposure controls/personal protection

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. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : 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 : Pink

Odor : Floral

Odor threshold : Not available

pH : Not available

Melting point : 0°C (32°F)

Boiling point : 100°C (212°F)

Flash point : Closed cup: >93.334°C (>200°F)

Evaporation rate : Not available

Flammability (solid, gas) : Not available

Lower and upper explosive (flammable) limits : Not available

Section 9. Physical and chemical properties

Vapor pressure : <4 kPa (<30 mm Hg) [room temperature]

Vapor density : <1 [Air = 1]

Specific gravity : 1.05 g/cm^3

Solubility : Not available

Partition coefficient: n-octanol/water : Not available

Auto-ignition temperature : Not available

Viscosity : not available

VOC content : 0%

VOCs are calculated following the requirements under 40 CFR, Part 59, Subpart C for Consumer Products and Subpart D for Architectural Coatings.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzenesulfonic acid, C10-16-alkyl derivs.	LD50 Dermal	Rabbit	2000 mg/kg	-
Coconut oil diethanolamide	LD50 Oral	Rat	775 mg/kg	-
	LD50 Dermal	Rabbit	12200	-
Diethanolamine	LD50 Oral	Rat	mg/kg 1600	-
	LD50 Dermal	Rabbit	mg/kg	-
	LD50 Oral	Rat	12200	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Coconut oil diethanolamide	Eyes - Severe irritant	Rabbit	-	100 microliters	-
	Skin - Moderate irritant	Rabbit	-	300 microliters	-
Diethanolamine	Eyes - Severe irritant	Rabbit	-	24 hours 750 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	5500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500	-

Section 11. Toxicological information

	Skin - Mild irritant	Rabbit	-	milligrams 50 milligrams	-

Sensitization

Not available

Mutagenicity

Not available

Carcinogenicity

Not available

Classification

Product/ingredient name	OSHA	IARC	NTP
Coconut oil diethanolamide Diethanolamine	- -	2B 2B	- -

Reproductive toxicity

Not available

Teratogenicity

Not available

Specific target organ toxicity (single exposure)

Not available

Specific target organ toxicity (repeated exposure)

Not available

Aspiration hazard

Not available

Information on the likely routes of exposure : Not available

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : 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 : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available

Potential delayed effects : Not available

Long term exposure

Section 11. Toxicological information

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	16730.4 mg/kg
Derma	51967.3 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Benzenesulfonic acid, C10-16-alkyl derivs.	Acute EC50 5.65 mg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
Diethanolamine	Acute EC50 12 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 28800 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 2150 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 775 mg/l Fresh water	Fish - Lepomis macrochirus	96 hours

Persistence and degradability

Not available

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Diethanolamine	-1.43	-	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. 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	Not regulated	Not regulated
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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

Section 15. Regulatory information

U.S. Federal regulations : United States inventory (TSCA 8b): All components are listed or exempted.

EPA Registered Disinfectant Products : Hazard and caution statements required under the OSHA 2012 regulations may be different from those required by the EPA FIFRA regulations for registered disinfectant products . Please refer to the EPA registered disinfectant label for this product for the appropriate hazard and caution statements required under the EPA FIFRA regulations.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) Not listed

SARA 311/312

Classification : Delayed (chronic) health hazard

Date of issue/Date of revision	*Date of previous issue*

Section 15. Regulatory information

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Benzenesulfonic acid, C10-16-alkyl derivs.	1 - 5	No.	No.	No.	Yes.	No.
Coconut oil diethanolamide	1 - 5	No.	No.	No.	Yes.	Yes.
Diethanolamine	0 - 1	No.	No.	No.	Yes.	Yes.

State regulations

California Prop. 65

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

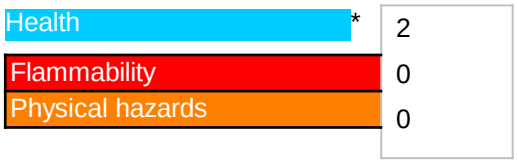
Ingredient name	Cancer	Reproductive	No significant risk level	Max acceptable dosage
Coconut oil diethanolamide	Yes.	No	No.	No
Diethanolamine	Yes.	.	No.	.
9-(2-carboxyphenyl)-3,6-bis (diethylamino)xanthylium chloride	Yes.	No .	No.	No .

International regulations

Canada inventory : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

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Date of issue/Date of revision	Date of previous issue

Section 16. Other information

History

Date of printing : 5/31/2015

Date of issue/Date of revision : 12/29/19

Date of previous issue : No previous validation

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

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.

Lubricating Grease, Multiplex 220 #1 & #2 (Phillips66)

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	**Multiplex® 220**
Other means of identification	Phillips 66® Multiplex® 220 #1 Phillips 66® Multiplex® 220 #2
Code	**831603**
Issue date	30-Aug-2018
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 CHEMTREC Global +1 703 527 3887

Manufacturer/Supplier
Phillips 66 Lubricants
P.O. Box 4428
Houston, TX 77210

SDS Information
URL: www.phillips66.com/SDS
Phone: 800-762-0942
Email: SDS@P66.com

Customer Service
U.S.: 800-368-7128 or International: 1-832-765-2500
Technical Information
1-877-445-9198

SECTION 2: Hazard identification

Classified Hazards

No classified hazards

Hazards Not Otherwise Classified (HNOC)

PHNOC: None known

HHNOC: None known

Label elements

No classified hazards

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration
Distillates, petroleum, hydrotreated heavy naphthenic	64742-52-5	<60
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	<25
Residual oils, petroleum, solvent-dewaxed	64742-62-7	<10

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and

water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician. (see Note to Physician)

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Prolonged or repeated contact may dry skin and cause irritation.

Notes to Physician: When using high-pressure equipment, injection of product under the skin can occur. In this case, the casualty should be sent immediately to the hospital. Do not wait for symptoms to develop. High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing external wound. These injuries often require extensive emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury. Early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

SECTION 5: Firefighting measures

NFPA 704: National Fire Protection Association

Health: 0 **Flammability:** 1 **Instability:** 0

0 = minimal hazard
1 = slight hazard
2 = moderate hazard
3 = severe hazard
4 = extreme hazard

Extinguishing Media: Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

Specific hazards arising from the chemical

Unusual Fire & Explosion Hazards: This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

Hazardous Combustion Products: Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

Special protective actions for fire-fighters: For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. When the potential chemical hazard is unknown, in enclosed or confined spaces, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done safely. Avoid spreading burning liquid with water used for cooling purposes.

See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures: This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

Environmental Precautions: Stop and contain spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental

contamination and reduce disposal requirements. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

Methods and material for containment and cleaning up: Notify relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

SECTION 7: Handling and storage

Precautions for safe handling: Keep away from flames and hot surfaces. Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). 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
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.

Chemical Name	ACGIH	OSHA	Mexico	Phillips 66
Distillates, petroleum, hydrotreated heavy naphthenic	TWA: 5mg/m³ STEL: 10 mg/m³ as Oil Mist, if Generated	---	---	---
Distillates, petroleum, hydrotreated heavy paraffinic	TWA: 5mg/m³ STEL: 10 mg/m³ as Oil Mist, if Generated	---	---	---
Residual oils, petroleum, solvent-dewaxed	TWA: 5mg/m³ STEL: 10 mg/m³ 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

Note: This product, as supplied, does not contain any hazardous materials with occupational exposure 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 rubber

Respiratory Protection: Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used. 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). 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.

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: Red
Physical Form: Semi-Solid
Odor: Petroleum
Odor Threshold: No data
pH: Not applicable
Vapor Density (air=1): >1
Upper Explosive Limits (vol % in air): 7.0
Lower Explosive Limits (vol % in air): 1.0
Evaporation Rate (nBuAc=1): <1
Particle Size: Not applicable
Percent Volatile: No data
Flammability (solid, gas): Not applicable
Solubility in Water: Insoluble

Flash Point: > 302 °F / > 150 °C
Test Method: Cleveland Open Cup (COC), ASTM D92
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): 0.93 @ 60ºF (15.6ºC)
Bulk Density: 7.75 lbs/gal
Viscosity: No data
Pour Point: No data

SECTION 10: Stability and reactivity

Reactivity: Not chemically reactive.

Chemical stability: Stable under normal ambient and anticipated conditions of use.

Possibility of hazardous reactions: Hazardous reactions not anticipated.

Conditions to avoid: Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

Incompatible materials: Avoid contact with strong oxidizing agents and strong reducing agents.

Hazardous decomposition products: Not anticipated under normal conditions of use.

SECTION 11: Toxicological information

Information on Toxicological Effects

Substance / Mixture

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

Likely Routes of Exposure: Inhalation, eye contact, skin contact

Aspiration Hazard: Not expected to be an aspiration hazard

Skin Corrosion/Irritation: Not expected to be irritating. Repeated exposure may cause skin dryness or cracking.

Serious Eye Damage/Irritation: Not expected to be irritating.

Skin Sensitization: No information available on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification).

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Specific Target Organ Toxicity (Repeated Exposure): No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

Carcinogenicity: No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification).

Germ Cell Mutagenicity: No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).

Reproductive Toxicity: No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

Information on Toxicological Effects of Components

Lubricant Base Oil (Petroleum)

Carcinogenicity: The petroleum base oils contained in this product have been highly refined by a variety of processes including severe hydrocracking/hydroprocessing to reduce aromatics and improve performance characteristics. All of the oils meet the IP-346 criteria of less than 3 percent PAH's and are not considered carcinogens by NTP, IARC, or OSHA.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

Persistence and Degradability: The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

Bioaccumulative Potential: Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

Mobility in Soil: Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

Other adverse effects: None anticipated.

SECTION 13: Disposal considerations

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations. This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the SDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.This material under most intended uses would become "Used Oil" due to contamination by physical or chemical

impurities. Whenever possible, Recycle used oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

SECTION 14: Transport information

UN Number: Not regulated
UN proper shipping name: None
Transport hazard class(es): None
Packing Group: None
Environmental 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 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:
30-Aug-2018	18-Jun-2018	831603	FINAL

Revised Sections or Basis for Revision:
Product Name / Synonyms (Section 1)

Legend (pursuant to NOM-018-STPS-2015):
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.

Lubricating Grease, Muscle Grease (Castle)

SAFETY DATA SHEET

SECTION 1 PRODUCT and COMPANY INFORMATION

TRADE NAME: **Castle® Muscle Grease™**

PRODUCT TYPE: Lubricating Grease
PRODUCT CODE: C1606

MANUFACTURED FOR: Castle Products, Inc.
424 St. Paul Street
Rochester, NY 14605
(800) 876-0222
EMERGENCY (585) 275-3232

SECTION 2 HAZARDS IDENTIFICATION

Physical hazards	Flammable aerosols	Category 1
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Reproductive toxicity (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
Environmental hazards	Not classified.	
OSHA defined hazards	Not classified.	

Label elements

Signal word	Danger
Hazard statement	Extremely flammable aerosol. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of damaging the unborn child. 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. 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: 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. Call a poison center/doctor if you feel unwell. Specific treatment (see this label). Do NOT induce vomiting. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Collect spillage.
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.

SECTION 3 COMPOSITION INFORMATION ON INGREDIENTS

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Acetone		67-64-1	10 - 20
Heptane, branched, cyclic and linear		426260-76-6	10 - 20
Propane		74-98-6	10 - 20
Isobutane		75-28-5	2.5 - 10
n-Heptane		142-82-5	2.5 - 10
Toluene		108-88-3	2.5 - 10
Residual Oils (petroleum), Solvent-dewaxed		64742-62-7	1 - 2.5
Other components below reportable levels			40 - 60

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

SECTION 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	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 and dizziness. Headache. Nausea, vomiting. Aspiration may cause pulmonary edema and pneumonitis. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. 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 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.

SECTION 5 FIRE FIGHTING MEASURES

Suitable extinguishing media	Alcohol resistant foam. Dry powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
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.

SECTION 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. 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. 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. Following product recovery, flush area with water. 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.

SECTION 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. Avoid contact with eyes, skin, and clothing. Use only in well-ventilated areas. Should be handled in closed systems, if possible. Pregnant or breastfeeding women must not handle this product. 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 2 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. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits

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

Components	Type	Value
Acetone (CAS 67-64-1)	PEL	2400 mg/m3 1000 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3 500 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm

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

Components	Type	Value
Toluene (CAS 108-88-3)	Ceilin g TWA	300 ppm 200 ppm

US. ACGIH Threshold Limit Values Components

Components	Type	Value
Acetone (CAS 67-64-1)	STEL	750 ppm
	TWA	500 ppm
Isobutane (CAS 75-28-5)	STEL	1000 ppm
n-Heptane (CAS 142-82-5)	STEL	500 ppm
	TWA	400 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Acetone (CAS 67-64-1)	TWA	590 mg/m3 250 ppm
Isobutane (CAS 75-28-5)	TWA	1900 mg/m3 800 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3 440 ppm
	TWA	350 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
		85 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 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
Acetone (CAS 67-64-1)	50 mg/l	Acetone	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

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

US - Minnesota Haz Subs: Skin designation applies

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

Appropriate engineering controls: Good general ventilation (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).

Hand protection: Wear appropriate chemical resistant gloves.

Skin protection

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

Skin protection

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 eat, drink or 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.

SECTION 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: 182.37 °F (83.54 °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 (%)	1.3 % estimated
Flammability limit - upper (%)	8.3 % estimated
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	150.47 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	720.76 °F (382.64 °C) estimated
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Specific gravity	0.557 estimated

SECTION 10 STABILITY and REACTIVITY DATA

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	Acids. Strong oxidizing agents. Nitrates. Fluorine. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

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

Information on toxicological effects

Acute toxicity: May be fatal if swallowed and enters airways. Narcotic effects.

Components	Species	Test Results
Acetone (CAS 67-64-1)		
Acute		
Dermal		
LD50	Guinea pig	> 7426 mg/kg, 24 Hours
		> 9.4 ml/kg, 24 Hours
	Rabbit	> 7426 mg/kg, 24 Hours
		> 9.4 ml/kg, 24 Hours

Components	Species	Test Results
Inhalation		
LC50	Rat	55700 ppm, 3 Hours
		132 mg/l, 3 Hours
		50.1 mg/l
Oral		
LD50	Rat	5800 mg/kg
		2.2 ml/kg
Isobutane (CAS 75-28-5)		
Acute		
Inhalation		
LC50	Mouse	1237 mg/l, 120 Minutes
		52 %, 120 Minutes
	Rat	1355 mg/l
n-Heptane (CAS 142-82-5)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 29.29 mg/l, 4 Hours
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
Residual Oils (petroleum), Solvent-dewaxed (CAS 64742-62-7)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
		> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rat	> 2.5 mg/l, 4 Hours
Oral		
LD50	Rat	5000 mg/kg
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg, 24 Hours
Inhalation		
LC50	Mouse	6405 - 7436 ppm, 6 Hours
		5320 ppm, 8 Hours
	Rat	5879 - 6281 ppm, 6 Hours
		12.5 - 28.8 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	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not available.
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	Risk of cancer cannot be excluded with prolonged exposure.

IARC Monographs. Overall Evaluation of Carcinogenicity

Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	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. Kidneys. Central nervous system. Eyes. Liver. May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	May be fatal if swallowed and enters airways.
Chronic effects	Prolonged exposure may cause chronic effects. May cause damage to organs through prolonged or repeated exposure.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity: Toxic to aquatic life with long lasting effects.

Components		Species	Test Results
Acetone (CAS 67-64-1)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	21.6 - 23.9 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4740 - 6330 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
Fish	LC50	Mozambique tilapia (Tilapia mossambica)	375 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	No data available.

Partition coefficient n-octanol / water (log Kow)

Acetone	-0.24
Isobutane	2.76
n-Heptane	4.66
Propane	2.36
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.

SECTION 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.
US RCRA Hazardous Waste U List: Reference	
Acetone (CAS 67-64-1)	U002
Toluene (CAS 108-88-3)	U220
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.

SECTION 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.
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. 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.

SECTION 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)

Acetone (CAS 67-64-1)	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.
Toluene	108-88-3	2.5 - 10
Ethyl Benzene	100-41-4	0.01 - 0.1

Other federal regulations

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

Toluene (CAS 108-88-3)

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

Isobutane (CAS 75-28-5)
Propane (CAS 74-98-6)

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

Acetone (CAS 67-64-1)	6532
Toluene (CAS 108-88-3)	6594

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

Acetone (CAS 67-64-1)	35 %WV
Toluene (CAS 108-88-3)	35 %WV

DEA Exempt Chemical Mixtures Code Number

Acetone (CAS 67-64-1)	6532
Toluene (CAS 108-88-3)	594

US state regulations

US. Massachusetts RTK - Substance List

Acetone (CAS 67-64-1)
Isobutane (CAS 75-28-5)
n-Heptane (CAS 142-82-5)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

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

Acetone (CAS 67-64-1)
Isobutane (CAS 75-28-5)
n-Heptane (CAS 142-82-5)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

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

Acetone (CAS 67-64-1)
Isobutane (CAS 75-28-5)
n-Heptane (CAS 142-82-5)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

US. Rhode Island RTK

Acetone (CAS 67-64-1)
Isobutane (CAS 75-28-5)
Propane (CAS 74-98-6)
Toluene (CAS 108-88-3)

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

Ethyl Benzene (CAS 100-41-4) Listed: June 11, 2004

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

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

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)	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)	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).

SECTION 16 OTHER INFORMATION

Other: NA-Not Applicable, ND-Not Determined, NE-Not Established.

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PREPARED: 11/29/93 UPDATED: 9/3/16 PRODUCT #: C1606

Lubricating Grease, L-427 Super Blu (Kendall)

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200)

SECTION 1: Identification

Product Identifier: **L-427 Super Blu®**

Other means of identification: Kendall L-427 Super Blu®

SDS Number: **726670**

Relevant identified uses: Lubricating Grease

Uses Advised Against: All others

24 Hour Emergency Phone Number: CHEMTREC 800-424-9300 (24 Hours)
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
H412 -- Hazardous to the aquatic environment, chronic toxicity -- Category 3

Other Hazards
None Known

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, solvent-dewaxed heavy paraffinic	64742-65-0	>65
Distillates, petroleum, hydrotreated heavy naphthenic	64742-52-5	>15
Non-Hazardous Materials	VARIOUS	<20
Phosphorodithioic acid, O,O-di-C1-14-alkyl esters, zinc salts	68649-42-3	1.5
Polysulfides, di-tert-butyl	68937-96-2	0.5

[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: First aid is not normally required. However, it is good practice to wash any chemical from the skin. 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 (Breathing): 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 (Swallowing): 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: 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

1 (Minimal)
2 (Slight)
3 (Moderate)
4 (Serious)
5 (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 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. 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.

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	Other
Distillates, petroleum, solvent-dewaxed heavy paraffinic	TWA: 5mg/m³ STEL: 10 mg/m³ as Oil Mist, if Generated	TWA: 5mg/m³ as Oil Mist, if Generated	---
Distillates, petroleum, hydrotreated heavy naphthenic	TWA: 5mg/m³ STEL: 10 mg/m³ as Oil Mist, if Generated	TWA: 5mg/m³ 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: Respiratory protection is not normally required under intended conditions of use. Emergencies or conditions that could result in significant airborne exposures may require the use of NIOSH approved respiratory protection. An industrial hygienist or other appropriate health and safety professional should be consulted for specific guidance under these situations.

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
Physical Form: Semi-Solid
Odor: Petroleum
Odor Threshold: No data
pH: Not applicable

Flash Point: > 392 °F / > 200 °C
Test Method: Cleveland Open Cup (COC), ASTM D92
Initial Boiling Point/Range: No data
Vapor Pressure: <0.01 mm Hg
Partition Coefficient (n-octanol/water) (Kow): No data

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): < 0.01
Particle Size: Not applicable
Percent Volatile: Negligible
Flammability (solid, gas): Not applicable

Melting/Freezing Point: No data
Auto-ignition Temperature: No data
Decomposition Temperature: No data
Specific Gravity (water=1): 0.90 @ 60ºF (15.6ºC)
Bulk Density: 7.5 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 of Substance/Mixture

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.

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

Lubricant Base Oil (Petroleum)

Carcinogenicity: The petroleum base oils contained in this product have been highly refined by a variety of processes including severe hydrocracking/hydroprocessing to reduce aromatics and improve performance characteristics. All of the oils meet the IP-346 criteria of less than 3 percent PAH's and are not considered carcinogens by NTP, IARC, or OSHA.

SECTION 12: Ecological information

GHS Classification:
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)
Shipping Description: ***Not regulated***
Note: ***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)***

International Maritime Dangerous Goods (IMDG)
Shipping Description: ***Not regulated***
Note: ***U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25.***

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

International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)
UN/ID #: ***Not regulated***
Note: ***U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 24.***

	LTD. QTY	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	---	---	---
Max. Net Qty. Per Package:	---	---	---

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)	1.5	1.0%

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

EPA (CERCLA) Reportable Quantity (in pounds):
This material does not contain any chemicals with CERCLA Reportable Quantities.

California Proposition 65:
This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

International 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.

WHMIS Hazard Class:
none

National Chemical 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

Date of Issue:	Previous Issue Date:	SDS Number:	Status:
12-Nov-2014	07-Feb-2013	726670	FINAL

Revised Sections or Basis for Revision:
Composition (Section 3); Precautionary Statement(s) (Section 2); Identified Hazards (Section 2); Environmental hazards (Section 12)

Precautionary Statement(s):
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.

Lubricating Grease, No. 105 (Lubriplate)

SAFETY DATASHEET

No. 105

According to Regulation (EC) No 1907/2006, Annex II, as amended. Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

1.1. Product identifier

Product name	No. 105
Product number	L0034-004, L0034-005, L0034-035, L0034-039, L0034-040, L0034-079, L0034- 086, L0034-092, L0034-094, L0034-097, L0034-100, L0034-001, L0034-006, L0034-078, L0034-086T

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

Identified uses	Lubricating grease.
Uses advised against	No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier	Finke Neo GmbH Rudolf- Diesel-Str. 1 27374 Visselhövede +49 4262 798
Manufacturer	Lubriplate Lubricant Co. Corporate Headquarters 129 Lockwood Street Newark, NJ 07105 Midwest Blending Plant 1500 Oakdale Ave. Toledo, OH 43605 419-691-2491 419-693-3806

1.4. Emergency telephone number

Emergency phone	Chem-Tel: 1-800-255-3924 (US & Canada only) 01-813-248-0585 (Outside US & Canada)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture Classification (EC 1272/2008)

Physical hazards	Not classified
Health hazards Environmental hazards	Not classified
2.2. Label elements	Aquatic Chronic 3 - H412
Hazard statements	
	H412 Harmful to aquatic life with long lasting effects.

Precautionary statements P273 Avoid release to the environment.
P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Distillates (petroleum), hydrotreated heavy naphthenic	60-100%
CAS number: 64742-52-5 EC number: 265-155-0	
Not Classified	

zinc oxide	1-5%
CAS number: 1314-13-2 EC number: 215-222-5	
M factor (Acute) = 1 M factor (Chronic) = 1	
Classification Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments * The exact percentage withheld as a trade secret in accordance with 29 CFR 1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Get medical attention immediately. Show this Safety Data Sheet to the medical personnel.

Inhalation Remove affected person from source of exposure. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Maintain an open airway.
Loosen tight clothing such as collar, tie or belt. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Place unconscious person on their side in the recovery position and ensure breathing can take place.

Ingestion Rinse mouth thoroughly with water. Remove any dentures. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Do not induce vomiting unless under the direction of medical personnel. 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. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Place unconscious person on their side in the recovery position and ensure breathing can take place. Maintain an open airway. Loosen tight clothing such as collar, tie or belt.

Skin contact Rinse with water.

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 10 minutes.

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue.

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

No. [illegible]

General information	See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	No specific symptoms known.
Ingestion Skin contact Eye contact	May cause discomfort if swallowed. May cause stomach pain or vomiting. Prolonged contact may cause dryness of the skin. No specific symptoms known. May be slightly irritating to eyes.

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

Notes for the doctor	Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	None known.
Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting	Avoid breathing fire gases or vapours. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	No action shall be taken without appropriate training or involving any personal risk. Keep unnecessary and unprotected personnel away from the spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Wash thoroughly after dealing with a spillage. Ensure procedures and training for emergency decontamination and disposal are in place. Do not touch or walk into spilled material.

6.2. Environmental precautions

Environmental precautions	Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment. Large Spillages: Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Approach the spillage from upwind. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

6.4. Reference to other sections

Reference to other sections	For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment.
Advice on general occupational hygiene	Wash promptly if skin becomes contaminated. Take off contaminated clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash at the end of each work shift and before eating, smoking and using the toilet. Change work clothing daily before leaving workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Store away from incompatible materials (see Section 10). Store in accordance with local regulations. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Bund storage facilities to prevent soil and water pollution in the event of spillage. The storage area floor should be leak-tight, jointless and not absorbent.
Storage class	Miscellaneous hazardous material storage.

7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

1. Control parameters

Occupational exposure limits

Distillates (petroleum), hydrotreated heavy naphthenic

Mineral oil, excluding metal working fluids (pure, highly and severely refined)
ACGIH

zinc oxide

Long-term exposure limit (8-hour TWA): ACGIH 2 mg/m³ respirable dust Short-term exposure limit (15-minute): ACGIH 10 mg/m³ respirable dust
ACGIH = American Conference of Governmental Industrial Hygienists.

2. Exposure controls

No. 6

Protective pictogram

Appropriate engineering controls	Provide adequate ventilation. Personal, workplace environment or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Use process enclosures, local exhaust ventilation or other engineering controls as the primary means to minimise worker exposure. Personal protective equipment should only be used if worker exposure cannot be controlled adequately by the engineering control measures. Ensure control measures are regularly inspected and maintained. Ensure operatives are trained to minimise exposure.
Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.
Other skin and body protection	Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.
Hygiene measures	Provide eyewash station and safety shower. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Clean equipment and the work area every day. Good personal hygiene procedures should be implemented. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Preventive industrial medical examinations should be carried out. Warn cleaning personnel of any hazardous properties of the product.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.
Environmental protection controls	Keep container tightly sealed when not in use. 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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Solid.
Colour	White. White. Mild.
Odour limit	Not available.

pH	Not available.
Melting point	Not available.
Initial lg point and range	>288°C (>550.4°F)
Flash point	> 185°C/359.6°F Cp open cup.
Evaporation a	< 0.01 (butyl acetate = 1)
Upper/lower g or explosive limits	Not available.
Vapour p Vapour g	<0.0013 kPa @ 25°C
Relative g Partition	> 5
coef ent	0.89 - 0.93
Auto-ignition p Decomposition	Insoluble in water. Not
Temperature Viscosity	a ble.
Explosive p Oxidising	Not a lot a lot a
properties	Not p Not a

9.2. Other i Other information

N e

SECTION 10: Stability and reactivity

1 R y

Reactivity — See the other subsections t this section for further details.

2 C al stability Stability

Stable at normal ambient temperatures a when used as recommended. Stable under the prescribed storage conditions.

10.3. Possibility o hazardous reactions

Possibility o hazardous reactions — No potentially e actions known.

4 C ns to avoid Conditions to avoid — There are no known conditions that a likely to result in a hazardous situation.

5 C ble materials Materials to avoid — No specific material or group of m s likely to react with the product to produce a hazardous situation.

10.6. Hazardous p products

Hazardous p products — Does not decompose when used and stored a recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapours.

SECTION 11: Toxicological information

11.1. Information o toxicological effects

Acute toxicity - oral

Notes (oral LD_{50}) — Based on available data the classification criteria are not met.

Acute toxicity - dermal

Notes (dermal LD_{50}) — Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Notes (inhalation LC_{50}) — Based on available data the classification criteria are not met.

Skin corrosion/irritation — Animal data — Based on available data the classification criteria are not met.

Serious eye damage/irritation — Serious eye damage/irritation — Based on available data the classification criteria are not met.

Respiratory sensitisation — Respiratory sensitisation — Based on available data the classification criteria are not met.

Skin sensitisation — Skin sensitisation — Based on available data the classification criteria are not met.

Germ cell mutagenicity — Genotoxicity - in vitro — Based on available data the classification criteria are not met.

Carcinogenicity — Based on available data the classification criteria are not met.

IARC carcinogenicity — None of the ingredients are listed or exempt.

Reproductive toxicity — Reproductive toxicity - fertility — Based on available data the classification criteria are not met.

Reproductive toxicity - development — Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure — Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure — Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard — Aspiration hazard — Not relevant. Solid.

General information — The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation — No specific symptoms known.

Ingestion — May cause discomfort if swallowed. May cause stomach pain or vomiting.

Skin contact — Prolonged contact may cause dryness of the skin.

Eye contact — No specific symptoms known.

Route of exposure — Ingestion Inhalation Skin and/or eye contact

Target organs — No specific target organs known.

SECTION 12: Ecological information

No. 105

1. Toxicity

Toxicity — Aquatic Chronic 2 - H411 Toxic to aquatic life with long lasting effects.

2. Persistence and degradability

Persistence and degradability — The degradability of the product is not known.

3. Bioaccumulative potential

Bioaccumulative potential — No data available on bioaccumulation.

Partition coefficient — Not available.

12.4. Mobility in soil

Mobility — No data available.

5. Results of PBT and vPvB assessment

6. Other adverse effects

Other adverse effects — None known

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information — The generation of waste should be minimised or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal operations — Do not empty into drains. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labelled with their contents. Waste packaging should be collected for reuse or recycling. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 14: Transport information

General — The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

1. UN number

Not applicable.

2.UN proper shipping name Not applicable.

3.Transport hazard class(es) No transport warning sign required.

4.Packing group Not applicable.

5. Environmental hazards

Environmentally hazardous substance/marine pollutant No.

No. 105

6. Special precautions for user Not applicable.

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

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

SECTION 15: Regulatory information

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

National regulations	Health and Safety at Work etc. Act 1974 (as amended). The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.
EU regulations	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS
All the ingredients are listed or exempt.

Distillates (petroleum), light heavy naphthenic zinc oxide

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways. RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail. IATA: International Air Transport Association. ICAO: Technical Instructions for the Safe Transport of Dangerous Goods by Air. IMDG: International Maritime Dangerous Goods. CAS: Chemical Abstracts Service. ATE: Acute Toxicity Estimate. LC_{50}: Lethal Concentration to 50 % of a test population. LD_{50}: Lethal Dose to 50% of a test population (Median Lethal Dose). EC_{50}: 50% of maximal Effective Concentration. PBT: Persistent, Bioaccumulative and Toxic substance. vPvB: Very Persistent and Very Bioaccumulative. Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Classification and acronyms

No. 0

Classification according to Regulation (EC) 1272/2008	Aquatic Chronic 2 - H41 Calculation method.
Training advice	Read and follow manufacturer's recommendations. Only trained personnel should use this material. Rereleased through new GHS Software.
Revision date	09/07/2019
Revision no/Revision	1
Supersedes date SDS number	16/05/2017 4852
Hazard statements in full	H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects.

End of SDS

Mineral Spirits, Odorless (KleanStrip)

SAFETY DATA SHEET
Klean Strip Odorless Mineral Spirits

Revision: 12/21/2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Klean Strip Odorless Mineral Spirits

Reference #: SLM3616

Company Name: ScienceLab.com, Inc.
2700 Greens Rd., Bldg I, Ste
300 Houston, TX 77032

Web site address: (281)441-4400

Emergency Contact: https://www.sciencelab.com

Information: Chemtrec 1-800-424-9300

Intended Use: Paint, stain, and varnish thinning.

Synonyms: GKSP94006P, QKSP94005, QKSP94205, GKSP94006, GKSP94214

Additional Information This product is regulated by the United States Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS). The product label also includes other important information, including directions for use, and should always be read in its entirety prior to using the product.

2. HAZARDS IDENTIFICATION

Aspiration Toxicity, Category 1 Flammable Liquids, Categ

GHS Signal Word: **Danger**

GHS Hazard Phrases: H304: May be fatal if swallowed and enters airways.
H226: Flammable liquid and vapor.

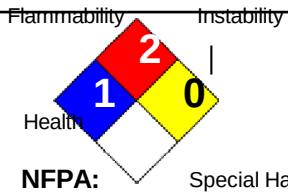
GHS Precaution Phrases: P233: Keep container tightly closed.
P210: Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280: Wear protective gloves/protective clothing/eye protection/face protection. P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting equipment. P243: Take precautionary measures against static discharge.
P242: Use only non-sparking tools.

GHS Response Phrases: P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331: Do NOT induce vomiting.
P370+378: In case of fire, use dry chemical to extinguish.
P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.

GHS Storage and Disposal Phrases: P405: Store locked up.
P501: Dispose of contents/container according to local, state and federal regulations.
P403+235: Store in cool/well-ventilated place.

Hazard Rating System:

HMIS:



NFPA:

OSHA Regulatory Status: This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic):

Inhalation Acute Exposure Effects:
Vapor concentration may cause headache, dizziness, irritation of the respiratory tract, eye irritation, stupor, depression of the central nervous system, watering of the eyes, weakness, nausea, muscle twitches, and kidney effects. Aspiration into lungs may cause pneumonia or death. Severe overexposure may cause convulsions, unconsciousness, and death.

Skin Contact Acute Exposure Effects:
May cause irritation.

Eye Contact Acute Exposure Effects:
Liquid contact may cause irritation.

Ingestion Acute Exposure Effects:
Harmful or fatal if swallowed. May cause nausea, weakness, muscle twitches, gastrointestinal irritation, diarrhea, unconsciousness, and death.

Chronic Exposure Effects:
Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. Repeated or prolonged skin contact may cause redness, irritation, and scaling of the skin. May cause skin irritation, anemia, bone marrow damage, liver damage, and jaundice.

Medical Conditions Generally Aggravated By Exposure: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration	RTECS #
64742-47-8	Hydrotreated light distillate (petroleum)	100.0 %	OA5504000

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

Inhalation:
If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.

Skin contact:
Wash with soap and large quantities of water for at least 15 minutes. Seek medical attention if irritation from contact persists.

Eye contact:
Immediately flush eyes with water, remove nay contact lens, continue flushing with water for at least 15 minutes. Get medical attention.

Ingestion:
Do not induce vomiting. Call your poison control center, hospital emergency room, or physician immediately.

Signs and Symptoms Of Exposure:	Primary routes of exposure: Inhalation, ingestion, and dermal.
Note to Physician:	Call your local poison control center for further instructions.

5. FIRE FIGHTING MEASURES

	NFPA Class II
Flash Pt:	> 105.00 F
Explosive Limits:	LEL: 0.8 UEL: 6
Autoignition Pt:	No data.
Suitable Extinguishing Media:	Use carbon dioxide, dry chemical powder, or foam.
Fire Fighting Instructions:	Self-contained respiratory protection should be provided for fire fighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.
Flammable Properties and Hazards:	No data available.

6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:	Clean-up: Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind, out of low areas, and ventilate closed spaces before entering. Shut off ignition sources, keep flares, smoking or flames out of hazard area. Small spills: Take up the spilled liquid with sand, earth, or other noncombustible absorbent material and place in a plastic container where applicable. Large spills: Dike far ahead of spill for later disposal.

7. HANDLING AND STORAGE

Precautions To Be Taken in Handling:	Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.
Precautions To Be Taken in Storing:	Keep container tightly closed when not in use. Store in a cool, dry place. Do not store near flames or at elevated temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
64742-47-8	Hydrotreated light distillate (petroleum)	No data.	TLV: 200 mg/m3	No data.

Respiratory Equipment (Specify Type):	For OSHA controlled work place and other regular users. Use only with adequate ventilation under engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for organic solvent vapors. A dust mask does not provide protection against vapors.
Eye Protection:	Safety glasses, chemical goggles or face shields are recommended to safeguard against potential eye contact, irritation, or injury. Contact lenses should not be worn while working with chemicals.
Protective Gloves:	Wear impermeable gloves. Gloves contaminated with product should be discarded.

	Promptly remove clothing that becomes soiled with product.
Other Protective Clothing:	Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure. Before reuse, thoroughly clean any clothing or protective equipment that has been contaminated by prior use. Discard any clothing or other protective equipment that cannot be decontaminated, such as gloves or shoes.
Engineering Controls and **(Ventilation etc.):**	Use only with adequate ventilation to prevent build-up of vapors. Open all windows doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea, or eye-watering -- Stop -- ventilation is inadequate. Leave area immediately.
Work/Hygienic/Maintenance Practices:	A source of clean water should be available in the work area for flushing eyes and skin. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[ ] Gas [X] Liquid [ ] Solid
Appearance and Odor:	Colorless to light yellow Solvent odor
Melting Point:	No data.
Boiling Point:	318.00 F - 354.00 F
Autoignition Pt:	No data.
Flash Pt:	> 105.00 F
Explosive Limits:	LEL: 0.8 UEL: 6
Specific Gravity (Water = 1):	0.78
Vapor Pressure (vs. Air or data. **mm Hg):**	No
Vapor Density (vs. Air = 1):	5 Air = 1
Evaporation Rate:	No data.
Solubility in Water:	No data.
Solubility Notes:	Very slightly soluble in cold water (<0.1% w/w)
Percent Volatile:	100.0 % by weight.
VOC / Volume:	780.0000 G/L
Additional Physical Information	Conductivity = <5 picosiemens/meter

10. STABILITY AND REACTIVITY

Stability:	Unstable [ ] Stable [X]
Conditions To Avoid - Instability:	No data available.
Incompatibility - Materials To Avoid:	Incompatible with strong oxidizing agents.
Hazardous Decomposition Or Byproducts:	Thermal decomposition may produce carbon monoxide and carbon dioxide.
Possibility of Hazardous Reactions:	Will occur [ ] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.

11. TOXICOLOGICAL INFORMATION

Toxicological Information: Refer to section 2 for acute and chronic effects.

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
64742-47-8	Hydrotreated light distillate (petroleum)	n.a.	n.a.	A4	n.a.

12. ECOLOGICAL INFORMATION

No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose in accordance with applicable local, state, and federal regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Paint Related Material, Not Regulated
DOT Hazard Class:
UN/NA Number:

MARINE TRANSPORT (IMDG/IMO):

IMDG/IMO Shipping Name: Paint Related Material

EMS: F-E, S-E
UN Number: |UN1 **Packing Group:** III
Hazard Class:
IMDG MFAG Number: |
IMDG EMS Page: |

AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Paint Related Material

Packaging Instructions: See IATA Dangerous Goods
Regulations **UN Number:** 1263 **Packing**
Group: III **Hazard Class:**

Additional Transport The shipper may apply one of the following exceptions: Combustible Liquid,
Consumer **Information:** Commodity, Limited Quantity, Viscous Liquid, Does Not Sustain Combustion, or others, as allowed under 49CFR Hazmat Regulations. Please consult 49CFR Subchapter C to ensure that subsequent shipments comply with these exceptions.

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
64742-47-8	Hydrotreated light distillate (petroleum)	No	No	No

This material meets the EPA [X] Yes [ ] No Acute (immediate) Health Hazard **'Hazard Categories' defined** [X] Yes [ ] No Chronic (delayed) Health Hazard **for SARA Title III Sections** [X] Yes [ ] No Fire Hazard **311/312 as indicated:** [ ] Yes [X] No Sudden Release of Pressure Hazard
[ ] Yes [X] No Reactive Hazard

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists	
64742-47-8	Hydrotreated light distillate (petroleum)	CAA HAP,ODC: No; CWA NPDES: No; Inventory; CA PROP.65: No	TSCA: Yes -

Regulatory Information Statement: All components of this material are listed on the TSCA Inventory or are exempt.

16. OTHER INFORMATION

Revision Date: 12/21/2016

Additional Information About This Product: No data available.

Company Policy or Disclaimer: The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.

Motor Oil, GT-1 Liquid Titanium 0W-20, 5W-20, 5W-30, 10W-30 (Kendall)

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR

Click Here to Order

SECTION 1: Identification

Product Identifier	**GT-1® Max Motor Oil With Liquid Titanium®**
Other means of identification	Kendall GT-1® Max Motor Oil With Liquid Titanium® SAE 0W-20 Kendall GT-1® Max Motor Oil With Liquid Titanium® SAE 5W-20 Kendall GT-1® Max Motor Oil With Liquid Titanium® SAE 5W-30 Kendall GT-1® Max Motor Oil With Liquid Titanium® SAE 10W-30
SDS Number	**LBKN815901**
Relevant identified uses	Automotive Engine Oil
Uses advised against	All others
24 Hour Emergency Phone Number	CHEMTREC 1-800-424-9300 CHEMTREC Mexico 01-800-681-9531

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	>80

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Prolonged or repeated contact may dry skin and cause irritation.

Notes to Physician: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

SECTION 5: Firefighting measures

NFPA 704 Hazard Class

Health: 0 **Flammability:** 1 **Instability:** 0

1 (Minimal)
2 (Slight)
3 (Moderate)
4 (Serious)
5 (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	Phillips 66
Distillates, petroleum, hydrotreated heavy paraffinic	---	---	TWA: 5 mg/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 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

Flash Point: Minimum 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

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: Negligible
Flammability (solid, gas): Not applicable

Auto-ignition Temperature: No data
Decomposition Temperature: No data
Specific Gravity (water=1): 0.84 - 0.86 @ 60ºF (15.6ºC)
Bulk Density: 6.99 - 7.16 lbs/gal
Viscosity: 7.7 - 11.5 cSt @ 100°C; 40 - 67 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: 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.

SECTION 12: Ecological information

GHS Classification:
No classified hazards

Toxicity: Experimental studies with rainbow trout, daphnia, and fresh water algae indicate that synthetic base oils are not expected to be harmful to aquatic organisms.

Persistence and Degradability: Synthetic base oils are not considered to be readily biodegradable but may be inherently biodegradable. They are expected to completely biodegrade over extended periods of time.

Bioaccumulative Potential: Not expected to bioaccumulate.

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, this material will float and spread over the surface at a rate dependent upon viscosity. The main fate process is expected to be slow biodegradation of individual components 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)	<2	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 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:
22-Jun-2016	18-May-2016	LBKN815901	FINAL

Revised Sections or Basis for Revision:
New SDS

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.

Motor Oil, Non-Detergent SAE 10W, SAE 20W, SAE 30 (Kendall)

Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200)

SECTION 1: Identification

Product Identifier **Non-Detergent Motor Oil**

Other means of identification
Kendall Non-Detergent Motor Oil, SAE 10W
Kendall Non-Detergent Motor Oil, SAE 20W-20
Kendall Non-Detergent Motor Oil, SAE 30

SDS Number **726220**

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)
None

Label Elements

No classified hazards

SECTION 3: Composition/information on ingredients

Chemical Name	CASRN	Concentration[1]
Distillates, petroleum, solvent-refined heavy paraffinic	64741-88-4	0 - 99
Distillates, petroleum, hydrotreated heavy paraffinic	64742-54-7	0 - 99

[1] All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4: First aid measures

Eye Contact: If irritation or redness develops from exposure, flush eyes with clean water. If symptoms persist, seek medical attention.

Skin Contact: Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops and persists, seek medical attention.

Inhalation: First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

Ingestion: First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

Most important symptoms and effects, both acute and delayed: Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Prolonged or repeated contact may dry skin and cause irritation.

Notes to Physician: Acute aspirations of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

SECTION 5: Firefighting measures

NFPA 704 Hazard Class

Health: 0 **Flammability:** 1 **Instability:** 0

1 (Minimal)
2 (Slight)
3 (Moderate)
4 (Serious)
5 (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: Storage temperatures above 113°F may lead to thermal decomposition, resulting in the generation of hydrogen sulfide and other sulfur containing gases. Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Keep container(s) tightly closed and properly labeled. 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: 5 mg/m³ STEL:10 mg/m³ as Oil Mist, if Generated	TWA: 5 mg/m³ (as Oil Mist, if generated)	---
Distillates, petroleum, solvent-refined heavy paraffinic	TWA: 5 mg/m³ STEL:10 mg/m³ as Oil Mist, if Generated	TWA: 5 mg/m³ (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

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: clear Amber
Physical Form: Liquid
Odor: Petroleum
Odor Threshold: No data
pH: Not applicable
Vapor Density (air=1): >1

Flash Point: Minimum 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

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

Auto-ignition Temperature: No data
Decomposition Temperature: No data
Specific Gravity (water=1): 0.86 - 0.88 @ 60ºF (15.6ºC)
Bulk Density: 7.16 - 7.33 lbs/gal
Viscosity: 4.3 - 12.0 cSt @ 100°C; 27 - 100 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: Avoid all possible sources of ignition. Extended exposure to high temperatures can cause decomposition.

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.

Distillates, petroleum, solvent-refined 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)

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:
28-Oct-2015	17-Jun-2013	726220	FINAL

Revised Sections or Basis for Revision:
Periodic review and update

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)

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Oxygen (Airgas)

SAFETY DATA SHEET

Oxygen

Section 1. Identification

GHS product identifier : Oxygen

Chemical name : oxygen

Other means of identification : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

Product type : Gas.

Product use : Synthetic/Analytical chemistry.

Synonym : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

SDS # : 001043

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : OXIDIZING GASES - Category 1
GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : May cause or intensify fire; oxidizer.
Contains gas under pressure; may explode if heated.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Open valve slowly. Use only with equipment cleaned for Oxygen service.

Prevention : Keep away from clothing and other combustible materials. Keep reduction valves, valves and fittings free from oil and grease.

Response : In case of fire: Stop leak if safe to do so.

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 : Substance

Chemical name : oxygen

Other means of identification : Molecular oxygen; Oxygen molecule; Pure oxygen; O2; UN 1072; Dioxygen; Oxygen USP, Aviator's Breathing Oxygen (ABO)

Product code : 001043

CAS number/other identifiers

CAS number : 7782-44-7

Ingredient name	%	CAS number
oxygen	100	7782-44-7

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

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

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 : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Oxidizing material. This material increases the risk of fire and may aid combustion. Contact with combustible material may cause fire. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk.

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Section 7. Handling and storage

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid breathing gas. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous. Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Separate from reducing agents and combustible materials. Store away from grease and oil. Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
oxygen	None.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Section 8. Exposure controls/personal protection

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Compressed gas.]

Color : Colorless. Blue.

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Melting point : -218.4°C (-361.1°F)

Boiling point : -183°C (-297.4°F)

Critical temperature : -118.15°C (-180.7°F)

Flash point : [Product does not sustain combustion.]

Evaporation rate : Not available.

Flammability (solid, gas) : Extremely flammable in the presence of the following materials or conditions: reducing materials, combustible materials and organic materials.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : 1.1 (Air = 1)

Specific Volume (ft ^{3}/lb) : 12.0482

Gas Density (lb/ft ^{3}) : 0.083

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : 0.65

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Not applicable.

Flow time (ISO 2431) : Not available.

Molecular weight : 32 g/mole

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.
Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing fire

Section 10. Stability and reactivity

Conditions to avoid : No specific data.

Incompatible materials : Highly reactive or incompatible with the following materials:
combustible materials
reducing materials
grease
oil

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
oxygen	0.65	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1072	UN1072	UN1072	UN1072	UN1072
UN proper shipping name	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED	OXYGEN, COMPRESSED
Transport hazard class(es)	2.2 (5.1) 	2.2 	2.2 (5.1) 	2.2 (5.1) 	2.2 (5.1) 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity** Yes.
Quantity limitation Passenger aircraft/rail: 75 kg. Cargo aircraft: 150 kg.
Special provisions A52

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2), 2.23-2.25 (Class 5).
Explosive Limit and Limited Quantity Index 0.125
ERAP Index 3000
Passenger Carrying Vessel Index 50
Passenger Carrying Road or Rail Index 75
Special provisions 42

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 75 kg. Cargo Aircraft Only: 150 kg.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: This material is 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 : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

Europe : This material is listed or exempted.

Japan : **Japan inventory (ENCS)**: Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : This material is listed or exempted.

Philippines : This material is listed or exempted.

Section 15. Regulatory information

Republic of Korea : This material is listed or exempted.

Taiwan : This material is listed or exempted.

Thailand : Not determined.

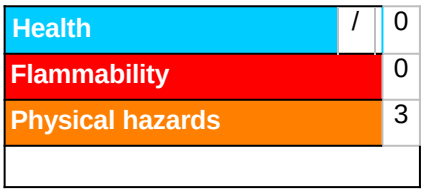
Turkey : Not determined.

United States : This material is active or exempted.

Viet Nam : This material is listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
OXIDIZING GASES - Category 1 GASES UNDER PRESSURE - Compressed gas	Expert judgment According to package

History

Date of printing : 9/22/2020

Date of issue/Date of revision : 9/22/2020

Date of previous issue : 2/3/2018

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

Section 16. Other information

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Penetrating Catalyst, PB Blaster

PB Penetreating Catalyst

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.
Issue date: 9/11/2016 Revision date: 6/9/2022 Version: 2.0

SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	PB Penetreating Catalyst
Product code	:	16-PB, 8-PB, PB-TS, 20-PB, 26-PB, 16-PB-DS

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	Penetrant

3. Supplier

Manufacturer
Blaster LLC
8500 Sweet Valley Drive
44125 Valley View, Ohio - USA
T (216) 901-5800 - F (216) 901-5801
www.blasterproducts.com

4. Emergency telephone number

Emergency number	:	Chemtrec (800) 424-9300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flam. Aerosol 2	Flammable aerosol
Press. Gas (Diss.)	Contains gas under pressure; may explode if heated
Eye Irrit. 2	Causes serious eye irritation
Repr. 1B	May damage fertility or the unborn child
Asp. Tox. 1	May be fatal if swallowed and enters airways

2.2. GHS Label elements, including precautionary statements

This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) :
Flammable aerosol
Contains gas under pressure; may explode if heated
May be fatal if swallowed and enters airways
Causes serious eye irritation
May damage fertility or the unborn child

Precautionary statements (GHS US) :
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.
Wash hands, forearms and face thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Immediately call a poison center or doctor.
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.
Do NOT induce vomiting.
If eye irritation persists: Get medical advice/attention.
Store locked up.
Store in a well-ventilated place.
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Other hazards which do not result in classification

No additional information available

4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

1. Substances

Not applicable

2. Mixtures

Name	Product identifier	%	Classification according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.
Petroleum distillates, hydrotreated light	CAS-No.: 64742-47-8	30 – 60	Flam. Liq. 3;H226 Asp. Tox. 1;H304
Solvent naphtha, petroleum, heavy aromatic	CAS-No.: 64742-94-5	10 – 30	Flam. Liq. 3;H226 Asp. Tox. 1;H304
Distillates, petroleum, hydrotreated heavy naphthenic	CAS-No.: 64742-52-5	10 – 30	Asp. Tox. 1;H304
Carbon dioxide	CAS-No.: 124-38-9	0.5 - 1.5	Press. Gas (Comp.);H280
Poly(oxy-1,2-ethanediyl), .alpha.-(dinonylphenyl)-.omega.-hydroxy-, phosphate	CAS-No.: 39464-64-7	0.1 - 1	Skin Corr. 1A;H314 Eye Dam. 1;H318
Methyl salicylate	CAS-No.: 119-36-8	0.1 - 1	Acute Tox. 4 (Oral);H302 Eye Dam. 1;H318 Repr. 1B;H360

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret
Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : 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 for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, get medical attention.

First-aid measures after ingestion : IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : May cause respiratory tract irritation.

Symptoms/effects after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Symptoms/effects after eye contact : Causes serious eye irritation.Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

4.3. Immediate medical attention and special treatment, if necessary

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: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Carbon dioxide, dry chemical, halons.
Foam.

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

5.2. Specific hazards arising from the chemical

Fire hazard : Flammable aerosol. Products of combustion may include, and are not limited to: oxides of carbon.

Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : DO NOT fight fire when fire reaches explosives. Evacuate area. Exercise caution when fighting any chemical fire.

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Use water spray to keep fire-exposed containers cool.

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. Isolate from fire, if possible, without unnecessary risk. Remove ignition sources. Use special care to avoid static electric charges.

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.
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	:	Eliminate sources of ignition. Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. 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.

6.4. 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	:	Do not spray on an open flame or other ignition source. Keep away from sources of ignition - No smoking. Use non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharge. Avoid contact with skin and eyes. Do not swallow. Do not breathe gas, fumes, vapour or spray. When using do not eat, drink or smoke. Use only outdoors or in a well- ventilated area. Do not pierce or burn, even after use.
Hygiene measures	:	Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	:	Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	:	Keep locked up and out of reach of children. Do not expose to temperatures exceeding 50 °C/ 122 °F. Store away from direct sunlight or other heat sources. Keep in fireproof place.
Storage area	:	Store in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PB Penetreating Catalyst	
No additional information available	
Petroleum distillates, hydrotreated light (64742-47-8)	
No additional information available	
Carbon dioxide (124-38-9)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	5000 ppm
ACGIH OEL STEL [ppm]	30000 ppm
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (TWA) [1]	9000 mg/m³
OSHA PEL (TWA) [2]	5000 ppm

Carbon dioxide (124-38-9)	
USA - IDLH - Occupational Exposure Limits	
IDLH [ppm]	40000 ppm
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA)	9000 mg/m³
NIOSH REL TWA [ppm]	5000 ppm
NIOSH REL (STEL)	54000 mg/m³
NIOSH REL STEL [ppm]	30000 ppm

Poly(oxy-1,2-ethanediyl), .alpha.-(dinonylphenyl)-.omega.-hydroxy-, phosphate (39464-64-7)
No additional information available

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)
No additional information available

Solvent naphtha, petroleum, heavy aromatic (64742-94-5)
No additional information available

Methyl salicylate (119-36-8)
No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

Environmental exposure controls : Maintain levels below Community environmental protection thresholds.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear chemically resistant protective gloves.
Eye protection:
Safety glasses or goggles are recommended when using product.
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. 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.

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 : Liquid

Appearance : Clear. Aerosol.

Color	:	orange
Odor	:	Characteristic
Odor threshold	:	No data available
pH	:	No data available
Melting point	:	No data available
Freezing point	:	No data available
Boiling point	:	180 °C (356 °F)
Flash point	:	> 141 ºF (> 61 °C)
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	Flammable aerosol.
Vapor pressure	:	No data available
Relative vapor density at 20 °C	:	No data available
Relative density	:	0.9
Solubility	:	No data available
Partition coefficient n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

Heat of Combustion	:	45.8 kJ/g
Flashback	:	None
Flame Projection	:	0 inches

SECTION 10: Stability and reactivity

1. Reactivity

No dangerous reaction known under conditions of normal use.

2. Chemical stability

Stable under normal storage conditions. Flammable aerosol. Contents under pressure. Container may explode if heated. Do not puncture. Do not burn. Extreme risk of explosion by shock, friction, fire or other sources of ignition.

3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

4. Conditions to avoid

Sources of ignition. Heat. Incompatible materials.

5. Incompatible materials

Strong oxidizing agents.

6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Petroleum distillates, hydrotreated light (64742-47-8)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 5.2 mg/l/4h

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rabbit	> 5000 mg/kg

Solvent naphtha, petroleum, heavy aromatic (64742-94-5)	
LD50 oral rat	> 5000 mg/kg
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: other:EPA Fed Reg Vol 50, No. 188 1985 and as amended in Fed Reg Vol 52, No. 97, 1987
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 590 mg/m³ (Exposure time: 4 h)

Methyl salicylate (119-36-8)	
LD50 oral rat	887 mg/kg
LD50 oral	1060 mg/kg body weight Animal: guinea pig, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 873 - 1300
LD50 dermal rabbit	> 5000 mg/kg
ATE US (oral)	887 mg/kg body weight

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met.)
Reproductive toxicity : May damage fertility or the unborn child.

Petroleum distillates, hydrotreated light (64742-47-8)	
NOAEL (animal/male, F0/P)	≥ 3000 mg/kg body weight Animal: rat, Animal sex: male

Solvent naphtha, petroleum, heavy aromatic (64742-94-5)	
NOAEL (animal/male, F0/P)	35 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:OPPTS 870.3650 Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test
NOAEL (animal/female, F0/P)	125 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:OPPTS 870.3650 Combined Repeated Dose Toxicity Study with the Reproduction/Developmental Toxicity Screening Test

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Petroleum distillates, hydrotreated light (64742-47-8)	
NOAEL (oral,rat,90 days)	750 mg/kg body weight Animal: rat, Animal sex: female
NOAEC (inhalation,rat,vapor,90 days)	≥ 0.024 mg/l air Animal: rat, Guideline: OECD Guideline 412 (Subacute Inhalation Toxicity: 28- Day Study)

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)	
LOAEL (oral,rat,90 days)	125 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (dermal,rat/rabbit,90 days)	≈ 1000 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

Solvent naphtha, petroleum, heavy aromatic (64742-94-5)	
LOAEL (oral,rat,90 days)	1250 mg/kg body weight Animal: rat, Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)
LOAEC (inhalation,rat,vapor,90 days)	4.71 mg/l air Animal: rat, Guideline: EU Method B.29 (Sub-Chronic Inhalation Toxicity:90-Day Study)
NOAEL (oral,rat,90 days)	625 mg/kg body weight Animal: rat, Guideline: EU Method B.26 (Sub-Chronic Oral Toxicity Test: Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (dermal,rat/rabbit,90 days)	2000 mg/kg body weight Animal: rabbit, Animal sex: male, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)
NOAEC (inhalation,rat,vapor,90 days)	2.355 mg/l air Animal: rat, Guideline: EU Method B.29 (Sub-Chronic Inhalation Toxicity:90-Day Study)

Aspiration hazard : May be fatal if swallowed and enters airways.

Viscosity, kinematic : No data available

Carbon dioxide (124-38-9)	
Vaporizer	Aerosol

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)	
Viscosity, kinematic	1.99 – 847 mm²/s Temp.: '40°C' Parameter: 'mm²/smm2/s '

Solvent naphtha, petroleum, heavy aromatic (64742-94-5)	
Viscosity, kinematic	2.66 mm²/s

Methyl salicylate (119-36-8)	
Viscosity, kinematic	1.308 mm²/s

Symptoms/effects after inhalation : May cause respiratory tract irritation.

Symptoms/effects after skin contact : May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Symptoms/effects after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Symptoms/effects after ingestion : May be fatal if swallowed and enters airways. This product may be aspirated into the lungs and cause chemical pneumonitis. May cause stomach distress, nausea or vomiting.

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

Petroleum distillates, hydrotreated light (64742-47-8)	
LC50 - Fish [1]	45 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 - Fish [2]	2.2 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

Distillates, petroleum, hydrotreated heavy naphthenic (64742-52-5)	
LC50 - Fish [1]	> 5000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 - Crustacea [1]	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Solvent naphtha, petroleum, heavy aromatic (64742-94-5)	
LC50 - Fish [1]	19 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [1]	0.95 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 - Fish [2]	2.34 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)
EC50 - Crustacea [2]	0.76 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	12.4 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	18.9 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	11.7 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [2]	18.4 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Methyl salicylate (119-36-8)	
LC50 - Fish [1]	19.8 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	28 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	1370 mg/l Test organisms (species): Pimephales promelas
EC50 72h - Algae [1]	1.6 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	1.1 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

12.2. Persistence and degradability

PB Penetreating Catalyst	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

PB Penetreating Catalyst	
Bioaccumulative potential	Not established.

Petroleum distillates, hydrotreated light (64742-47-8)	
BCF - Fish [1]	61 – 159
Carbon dioxide (124-38-9)	
BCF - Fish [1]	(no bioaccumulation)
Solvent naphtha, petroleum, heavy aromatic (64742-94-5)	
BCF - Fish [1]	61 – 159
Partition coefficient n-octanol/water	2.9 – 6.1
Methyl salicylate (119-36-8)	
Partition coefficient n-octanol/water	2.55

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. Disposal methods

Product/Packaging disposal recommendations : 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.

Additional information : Flammable vapors may accumulate in the container.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

DOT NA No : UN1950

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Aerosols (flammable, (each not exceeding 1 L capacity))

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 2.1

Hazard labels (DOT) : 2.1

14.4. Packing group

Packing group (DOT) : Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

DOT

UN-No.(DOT)	:	UN1950
DOT Special Provisions (49 CFR 172.102)	:	N82 - See 173.306 of this subchapter for classification criteria for flammable aerosols.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	306
DOT Packaging Non Bulk (49 CFR 173.xxx)	:	None
DOT Packaging Bulk (49 CFR 173.xxx)	:	None
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	75 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	150 kg
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	:	25 - Protected from sources of heat,87 - Stow ‘‘separated from’’ Class 1 (explosives) except Division 14,126 - Segregation same as for Class 9, miscellaneous hazardous materials

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

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

15.2. International regulations

No additional information available

15.3. US State regulations

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

SECTION 16: Other information

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Issue date	:	09/11/2016
Revision date	:	06/09/2022
Other information	:	None.

Full text of H-phrases	
Asp. Tox. 1	Aspiration hazard Category 1
Eye Irrit. 2	Serious eye damage/eye irritation Category 2

PB Penetreating Catalyst

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Full text of H-phrases	
Flam. Aerosol 2	Flammable aerosol Category 2
Press. Gas (Diss.)	Gases under pressure Dissolved gas
Repr. 1B	Reproductive toxicity Category 1B

Polymer Modified Coal Tar Sealer, PMCTS #S1096 (SealMaster)

SAFETY DATA SHEET

Issuing Date 23-June-2014 **Revision Date 30**-Sept-2016 **Revision Number** 2

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

GHS Product Identifier
Product Name: **Polymer Modified Coal Tar Sealer (PMCTS)**

Other Means of Identification
Product Code(s): **S1096**
Synonyms None

Recommended Use of the Chemical and Restrictions on Use
Recommended Use: No Information Available
Uses Advised Against: No Information Available

Supplier Address
SealMaster
Locations Nationwide
www.sealmaster.net
1-800-341-7325

Manufacturer Address
SealMaster
Locations Nationwide
www.sealmaster.net
1-800-341-7325

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

Carcinogenicity	Category 1B

GHS Label Elements, Including Precautionary Statements

Emergency Overview

Signal Word **Danger**

- May cause cancer
- Harmful if swallowed
- May cause skin irritation

Appearance: Black
Odor

Physical State: Liquid

Odor: Coal Tar

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.

Inhalation: May cause irritation of respiratory tract.
Eye Contact: Contact with eyes may cause irritation.
Skin Contact: May cause irritation.
Ingestion: Ingestion may cause stomach discomfort.

General Advice ● If exposed or concerned: Get medical attention/advice.
Storage ● Store locked up.
Disposal ● Dispose of contents/container to an approved waste disposal plant.

Hazard Not Otherwise Classified (HNOC)
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %	Trade Secret
Coal Tar Pitches	65996-93-2	20-40	*
Kaolin	1332-58-7	10-30	*
Bentonite	1302-78-9	<10	*

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

4. FIRST AID MEASURES

Description of Necessary First-Aid Measures

Eye Contact Rinse thoroughly with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
Skin Contact Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions, see a physician.
Inhalation Move to fresh air. If symptoms persist, call a physician.
Ingestion Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most Important Symptoms/Effects, Acute and Delayed
Most Important Symptoms/Effects No information available

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary
Notes to Physician Treat Symptomatically. May cause sensitization by skin contact.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Carbon Dioxide (CO_2). Dry Chemical. Foam. Water Fog.

Unsuitable Extinguishing Media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical
No information available

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. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions
Environmental Precautions: See Section 12 for additional Ecological Information

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: Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Wear personal protective equipment. Avoid breathing vapors or mists. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities

Storage: Keep container tightly closed

Incompatible Products: Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Coal Tar Pitches 65996-93-2	TWA: 0.2 mg/m³benzene soluble aerosol	TWA: 0.2 mg/m³benzene soluble fraction (vacated) TWA: 0.2 mg/m³benzene soluble fraction	IDLH: 80 mg/m³ TWA: 0.1 mg/m³ Cyclohexane-extractable fraction
Kaolin 1332-58-7	-	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable fraction (vacated) TWA: 10 mg/m³ total dust (vacated) TWA 5 mg/m³ respirable fraction	TWA: 15 mg/m³ total dust TWA: 5 mg/m³ respirable dust
Bentonite 1302-78-9	TWA 1 mg/m³ respirable fraction	-	-

Appropriate Engineering Controls

Engineering Measures: Showers
Eyewash Stations
Ventilation Systems

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection: If splashes are likely to occur, wear: Safety glasses with side shields.

Skin and Body Protection: Impervious gloves.

Respiratory Protection: No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene Measures: 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: Black
Odor: Coal Tar Odor
Odor Threshold: No Information Available

Property	Values	Remarks/Method
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	100° C	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Specific Density	1.17 @ 77 F	None known
Water Solubility	Easily dispersible	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known

Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not Flammable	
Explosive Properties	No data available No	
Oxidizing Properties	data available	

10. STABILITY AND REACTIVITY

Reactivity: No data available
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: Incompatible Products.
Incompatible Materials: Strong oxidizing agents. Acids.
Hazardous Decomposition Products: Carbon Oxides, Nitrogen Oxides (NOx), Sulfur Oxides

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation: May cause irritation of respiratory tract.
Eye Contact: Contact with eyes may cause irritation.
Skin Contact: May cause irritation.
Ingestion: Ingestion may cause stomach discomfort.

Chemical Name	LD50 Oral	LD50 Dermal	LD50 Inhalation
Bentonite	>5000 mg/kg (Rat)	-	-

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics

Symptoms: No information available.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure

Sensitization: No information available.
Mutagenic Effects: No information available.
Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen. The IARC, NTP, and OSHA do not list asphalt as a carcinogen. In general, the oxidation of polycyclic aromatic hydrocarbons destroys their carcinogenic potential. Petroleum asphalt, shale oil asphalts, and coal tars show distinct variation in their relative carcinogenicity for experimental animals.

Chemical Name	ACGIH	IARC	NTP	OSHA
Coal Tar Pitches	A1	Group 1	Known	X

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 – Known Human Carcinogen
IRAC: (International Agency for Research on Cancer)
Group 1 – Carcinogenic to Humans
NTP: (National Toxicity Program)
Known – Known Carcinogen
OSHA: (Occupational Safety & Health Administration)
X – Present

Reproductive Toxicity: No information available.
STOT - Single Exposure: No information available.
STOT – Repeated Exposure: No information available.
Aspiration Hazard: No information available.

Numerical Measures of Toxicity – Product

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

LD50 Oral: 75299 mg/kg; Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity
The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Bentonite 1302-78-9		LC50 96 h: 8.0-19.0 g/L (Salmo gairdneri) LC50 96 h: = 19000 mg/L static (Oncorhynchus mykiss)		

Persistence and Degradability: No information available.

Bioaccumulation

Chemical Name	Log Pow
Coal Tar Pitches	6.04

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: 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: Do not re-use empty containers.

14. TRANSPORTATION INFORMATION

DOT: Not regulated

15. REGULATORY INFORMATION

International Inventories
TSCA – Complies
DSL/NDSL – Complies

Legend
TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations
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:

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
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 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 Proposition 65 chemicals.

U.S. State Right-To-Know Regulations
"X" designates that the ingredients are listed on the state right to know list.

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Coal Tar Pitches	X	X	X	X	
Kaolin	X	X	X		X

U.S. EPA Label Information
EPA Pesticide Registration Number: Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard:** 1	**Flammability:** 0	**Instability:** 0	**Physical and Chemical Hazards-**
HMIS	**Health Hazard:** 1*	**Flammability:** 0	**Physical Hazard:** 0	**Personal Protection:** **X**

**Indicates a chronic health hazard.*

Revision Date: **30-Sept-2016**
Revision Note: Supersedes 29-July-2015

General 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.

Pramitol 25E Herbicide (Loveland, Inc.)

SAFETY DATA SHEET

PRAMITOL® 25E

SDS NUMBER: 6622222-17-LPI **SDS REVISIONS: SEC. 2** **DATE OF ISSUE: 06/19/17** **SUPERSEDES: 07/29/15**

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CALL CHEMTREC - DAY OR NIGHT 1-800-424-9300

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1. **PRODUCT IDENTIFIER:** **EPA REGISTRATION NO. 66222-22-34704**
   TRADE NAME: **PRAMITOL® 25E HERBICIDE**
2. **RECOMMENDED USE:** GROUP 5 HERBICIDE - FOR TOTAL VEGETATION CONTROL OF WEEDS IN NON-CROP AREAS
3. **SUPPLIER DETAILS:**
   LOVELAND PRODUCTS, INC.
   P.O. Box 1286 • Greeley, CO 80632-1286

1.4 24 Hour Emergency Phone: 1-800-424-9300 - **Medical Emergencies:** 1-866-944-8565
U.S. Coast Guard National Response Center: 1-800-424-8802

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to 29 CFR 1910.1200

Acute Toxicity – Inhalation (Dusts/Mists)	Category 4	H332
Skin Corrosion/Irritation	Category 2	H315
Eye Damage/Irritation	Category 1	H318
Germ Cell Mutagenicity	Category 1B	H340
Aspiration Hazard	Category 1	H304
Flammable liquids	Category 3	H226

Hazards Not Otherwise Classified (HNOC)
May be harmful in contact with skin

2.2 Label elements

Signal word: DANGER

Hazard Statement:
H332 – Harmful if inhaled.
H315 – Causes skin irritation.
H318 – Causes serious eye damage.
H340 – May cause genetic defects.
H304 – May be fatal if swallowed and enters airways.
H226 – Flammable liquid and vapor.

Precautionary Statement: (Prevention):
P201 – Obtain special instructions before use.
P202 – Do not handle until all safety precautions have been read and understood.
P281 – Use personal protective equipment as required.
P264 – Wash face, hands and any exposed skin thoroughly after handling.
P270 – Do not eat, drink or smoke when using this product.
P261 – Avoid breathing dust/fume/gas/mist/vapors/spray.
P271 – Use only outdoors or in a well-ventilated area.
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 equipment.
P242 – Use only non-sparking tools.
P243 – Take precautionary measures against static discharge.

Precautionary Statement: (Response):	P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P312 – Call a poison center or doctor/physician if you feel unwell. P302+P352: IF ON SKIN: Wash with plenty of soap and water. P321 – Specific treatment (see: Note to Physician on the product label). P332+P313: If skin irritation occurs: Get medical advice/attention. P362 – Take off contaminated clothing and wash it before reuse. 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. P308+P313 – If exposed or concerned: Get medical advice/attention. P303+P361+P353: (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P363 – Wash contaminated clothing before reuse. P301+P310: IF SWALLOWED: Immediately call a poison center/doctor/physician. P331 – Do NOT induce vomiting. P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P370 – In case of fire: Use CO_2, dry chemical, or foam to extinguish.
Precautionary Statement: (Storage):	P405 – Store locked up. P403+P235 – Store in a well-ventilated place. Keep cool.
Precautionary Statement: (Disposal):	P501 – Dispose of contents/container in accordance with local, state, and federal requirements.
Environmental Hazards:	H411 – Toxic to aquatic life with long lasting effects.

2.3 Other hazards

None known

3. COMPOSITION, INFORMATION ON INGREDIENTS

1. Substances

3.2 Mixtures

Classification according to 29 CFR 1910.1200

Chemical Name:	CAS No.	Concentration [%]
2-Methoxy-4,6-bis(isopropylamino)-1,3,5 triazine	1610-18-0	24.20 – 25.80
Heavy Aromatic Naphtha	64742-95-6	48.20 – 52.20
n-Butyl Alcohol	71-36-3	9.50 – 10.50
Ethylene glycol monophenyl ether	122-99-6	8.50 – 9.50

**If Chemical Name/CAS No. is “proprietary” and/or weight-% is listed as a range, the specific chemical identity and/or percentage of the composition has been withheld as a trade secret.

4. FIRST AID MEASURES

1. Description of First Aid Measures

General Advice: Get medical attention if symptoms occur.

If swallowed: 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 told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If in 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.

If on skin or clothing: Take of contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

2. Most Important Symptoms and Effects, Acute and Delayed

Symptoms: Causes skin irritation. Causes serious eye damage. May be fatal if swallowed and enters airways. Ingestion with aspiration may cause headache, nausea, drowsiness, fatigue, pneumonitis, pulmonary edema, central nervous system depression, convulsions, and loss of conscious. May be harmful in contact with skin. May aggravate pre-existing conditions. Harmful if inhaled. Vapors may cause irritation to nose, throat, and respiratory tract. High vapor concentrations may cause central nervous system depression which can lead to dizziness, weakness and headache. Inhalation may aggravate respiratory problems.

3. Immediate Medical Attention and Special Treatment

Treatment: **NOTES TO PHYSICIAN:** Contains petroleum distillate; vomiting may cause aspiration pneumonia. Probable mucosal damage may contraindicate the use of gastric lavage. Treat for circulatory shock, respiratory depression, and convulsions, if needed.

FOR A MEDICAL EMERGENCY INVOLVING THIS PRODUCT CALL: 1-866-944-8565

Have the product container or label with you when calling a poison control center or doctor or going for treatment.

5. FIRE FIGHTING MEASURES

1. EXTINGUISHING MEDIA:

Suitable Extinguishing Media: Use medium appropriate to surrounding fire. Dry chemical, carbon dioxide (CO_2), foam.

2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

Specific Hazards During Firefighting: Flammable liquid and vapor.

3. SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Special Protective Equipment for Firefighters: Self-contained breathing apparatus and full protective gear should be worn in fighting large fires involving chemicals. Use water spray to keep fire exposed containers cool. Keep people away. Isolate fire and deny unnecessary entry.

6. ACCIDENTAL RELEASE MEASURES

1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Personal Precautions: Avoid inhalation of vapors and spray mist and contact with skin and eyes. Ensure adequate ventilation. Wear suitable protective clothing. Remove all sources of ignition.

6.2 ENVIRONMENTAL PRECAUTIONS

Environmental Precautions: This pesticide may adversely affect non-target plants. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters or rinsate. This chemical has properties and characteristics associated with chemical detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of dicking water or groundwater.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN-UP

Methods for Clean-Up: Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. After removal flush contaminated area thoroughly 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.

7. HANDLING AND STORAGE

7.1 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. Use personal protection recommended in Section 8. Avoid breathing vapors or mists. Use only outdoors or in a well-ventilated area. Follow all product label instructions. Use only as directed. Wash face, hands, and any exposed skin thoroughly after handling. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Ground/bond container and receiving equipment. Use non-sparking hand tools and explosion-proof electrical equipment. Take precautionary measures against static discharges. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry. Discard clothing and other absorbent material that have been drenched or heavily contaminated with the product's concentrate. Do not reuse them. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

7.2 CONDITIONS FOR SAFE STORAGE:

Requirements for Storage Areas and Containers: Keep container tightly closed and store in a cool, dry, well-ventilated place. Store locked up. Keep out of reach of children. Store at ambient conditions. Store away from food stuffs. Store at temperatures above 32 °F. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

1.CONTROL PARAMETERS:
OCCUPATIONAL EXPOSURE LIMITS

U.S. Workplace Exposure Level (ACGIH) TLVs

Components	Type	Value
n-Butyl alcohol	TLV	20 ppm / 61 mg/m^3

U.S. Workplace Exposure Level (OSHA) PELs

Components	Type	Value
n-Butyl alcohol	TLV	100 ppm / 300 mg/m^3

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Specimen
No listings		

8.2 EXPOSURE CONTROLS:

Engineering Measures

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS OF END USE PRODUCTS CONTAINING THIS MATERIAL, CONSULT THE SDS OR PRODUCT LABEL FOR THE END USE PRODUCT.

Individual Protection Measures:

Eye / Face Protection: Goggles or shielded safety glasses are recommended.

Skin Protection: Long-sleeved shirt and long pants. Chemical-resistant gloves, such as viton, polyethylene or polyvinylchloride. Shoes plus socks.

Respiratory Protection: In case of inadequate ventilation or risk of inhalation of mists or vapors, use suitable respiratory equipment approved by MSHA/NIOSH. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be in place to assure compliance with 29 CFR 1910.134, the OSHA Respiratory Protection standard. Wear air supplied respiratory protection if exposure concentrations are unknown.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 APPEARANCE : Liquid
ODOR: Aromatic, solvent-like.
ODOR THRESHOLD: No data available.
COLOR: Yellow to amber.
pH: 6.6 (1% solution)
MELTING POINT / FREEZING POINT: No data available
BOILING POINT: 248 – 266 °F / 120 – 130 °C)
FLASH POINT: 98 °F / 36 °C.
FLAMMABILILITY (solid, gas): Not applicable.
UPPER / LOWER FLAMMABILITY OR EXPLOSIVE LIMITS: Upper: 4.9% +/- 0.25% by volume @ 60°C / Lower 1.3%.
VAPOR PRESSURE: 3.10E-06 mbar @ 20 °C (based on Prometon).
SOLUBILITY: Miscible.
PARTITION CO-EFFICIENT, n-OCTANOL / WATER: No data available.
AUTO-IGNITION TEMPERATURE: 340 °C / 644 °F.
DECOMPOSITION TEMPERATURE: No data available.
VISCOSITY: (kinematic): No data available
SPECIFIC GRAVITY (Water = 1): 0.93 g/ml
DENSITY: 7.80 lbs./gal **/** 0.93 kg/L

Note: 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 specification items.

10. STABILITY AND REACTIVITY

1. **REACTIVITY**
   Stable
2. **CHEMICAL STABILITY**
   Stable under normal temperature conditions
3. **POSSIBILITY OF HAZARDOUS REACTIONS**
   No data available. Will not polymerize.
4. **CONDITIONS TO AVOID**
   Strong acids.
5. **INCOMPATIBILE MATERIALS**
   Strong acids.
6. **HAZARDOUS DECOMPOSITION PRODUCTS**
   Oxides of carbon and/or other asphyxiants may be formed from incomplete combustion.

11 TOXICOLOGICAL INFORMATION

11.3 LIKELY ROUTES OF EXPOSURE

LC_{50} (rat): 36g/m^3 (4 HR) (Prometon); >5.2 mg/L (Heavy Aromatic Naphtha); >17.7 mg/L (n-Butyl alcohol)
LD_{50} Oral (rat): 503 mg/kg (Prometon); 8,400 mg/kg (Heavy Aromatic Naphtha); 790 mg/kg (n-Butyl alcohol); 1,260 mg/kg (Ethylene glycol monophenyl ether)
LD_{50} Dermal (rabbit): > 2,500 mg/kg (Prometon); > 2,000 mg/kg (Heavy Aromatic Naphtha); 3,400 mg/kg (n-Butyl alcohol); 5 mL/kg (Ethylene glycol monophenyl ether)
Acute Toxicity Estimates: No data available.
Skin Irritation: May be harmful in contact with skin. Causes skin irritation.
Eye Irritation: Causes serious eye damage.
Inhalation: Harmful if inhaled.
Ingestion: Harmful if swallowed.
Specific Target Organ Toxicity: No data available.
Aspiration: May be fatal if swallowed and enters airways.
Skin Sensitization (guinea pig): Not a sensitizer
Carcinogenicity: Based on information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Germ Cell Mutagenicity: May cause genetic defects.
Interactive Effects: None known.

12 ECOLOGICAL INFORMATION

12.3 ECOTOXICITY

Toxic to aquatic life with long lasting effects. The pesticide is toxic to fish and aquatic invertebrates.

Ecotoxicological Data

	Species	Test Results
Heavy aromatic naphtha	Oncorhynchus mykiss	9.22 mg/L – 96-hour LC_{50}
	Daphnia magna	6.14 mg/L – 48-hour EC_{50}
n-Butyl alcohol	Pimephales promelas	1,730 – 1,910 mg/L – 96-hour LC_{50}
	Daphnia magna	1,383 mg/L – 48-hour EC_{50}
Ethylene glycol monophenyl ether	Pimephales promelas	337 – 352 mg/L – 96-hour LC_{50}
	Daphnia magna	500 mg/L – 48-hour EC_{50}

Drift or runoff may adversely affect non-target plants.
Do not apply directly to water.
Do not contaminate water when disposing of equipment wash water.
Do not apply when weather conditions favor drift from target area.

2. **PERSISTENCE AND DEGRADABILITY**
   Biodegradability: No data available.
3. **BIOACCUMULATIVE POTENTIAL**
   Bioaccumulation: No data available.
4. **MOBILITY IN SOIL**
   n-Butyl alcohol: Partition Coefficient: 0.785
   Ethylene glycol monophenyl ether: Partition Coefficient: 1.13.
5. **OTHER ADVERSE EFFECTS**
   Assessment: No data available.

13 DISPOSAL CONSIDERATIONS

1. **WASTE TREATMENT METHODS**
   Wastes may be disposed of on site or at an approved waste disposal facility. Triple rinse (or equivalent), adding rinse water to spray tank. Offer container for recycling or dispose of in a sanitary landfill or by other procedures approved by appropriate authorities. Recycling decontaminated containers is the best option of container disposal. The Agricultural Container Recycling Council (ACRC) operates the national recycling program. To contact your state and local ACRC recycler visit the ACRC web page at http://www.acrecycle.org/. Do not contaminate water, food or feed by storage or disposal.

14 TRANSPORT INFORMATION

14.3 LAND TRANSPORT

DOT Shipping Description: 2X2 ½ GALLON: NA1993, COMPOUND, WEED KILLING, LIQUID, 3, III (XYLENE) ERG GUIDE 128.
DOT Shipping Description: 4X1 GALLON: NA1993, COMPOUND, WEED KILLING, LIQUID, 3, III (XYLENE) LTD QTY ERG GUIDE 128
U.S. Surface Freight Classification: COMPOUND, TREE OR WEED KILLING, NOI (NMFC 50320, SUB 2: CLASS: 60)

15 REGULATORY INFORMATION

1. **SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS**

NFPA & HMIS Hazard Ratings:

NFPA		HMIS	
2	Health	2	Health
3	Flammability	3	Flammability
0	Instability	0	Reactivity
		H	PPE

0	Least
1	Slight
2	Moderate
3	High
4	Severe

SARA Hazard Notification/Reporting
SARA Title III Hazard Category:

Immediate	Y	Fire	Y	Sudden Release of Pressure	N
Delayed	Y	Reactive	N		

Reportable Quantity (RQ) under U.S. CERCLA: n-Butyl Alcohol (CAS: 71-36-3) 5,000 pounds.
SARA, Title III, Section 313: n-Butyl Alcohol (CAS: 71-36-3)
RCRA Waste Code: U031
CA Proposition 65: Not listed.

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. Following is the hazard information as required on the pesticide label:

CAUTION
Harmful if swallowed or absorbed through skin.
Causes moderate eye irritation.
Avoid contact with skin, eyes, or clothing.
Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
Remove contaminated clothing and wash before reuse.

16 OTHER INFORMATION

SDS STATUS: Section 2 revised.

PREPARED BY: Registrations and Regulatory Affairs **REVIEWED BY:** Environmental Health and Safety

EPA REG. NO.: 66222-22-34704

®Pramitol is a registered trademark of Makhteshim-Agan of North America (dba ADAMA)

Propane (Airgas)

SAFETY DATA SHEET

Propane

Section 1. Identification

GHS product identifier : Propane

Chemical name : propane

Other means of identification : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.

Product type : Liquefied gas

Product use : Synthetic/Analytical chemistry.

Synonym : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.

SDS # : 001045

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Liquefied gas

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Extremely flammable gas.
Contains gas under pressure; may explode if heated.
May cause frostbite.
May displace oxygen and cause rapid suffocation.
May form explosive mixtures with air.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. In case of leakage, eliminate all ignition sources.

Storage : Protect from sunlight. Store in a well-ventilated place.

Section 2. Hazards identification

Disposal : Not applicable.

Hazards not otherwise classified : Liquid can cause burns similar to frostbite.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : propane

Other means of identification : Propyl hydride; n-Propane; Dimethyl methane; Bottled gas; propane in gaseous state; propane liquefied, n-Propane; Dimethylmethane; Freon 290; Liquefied petroleum gas; Lpg; Propyl hydride; R 290; C3H8; UN 1075; UN 1978; A-108; Hydrocarbon propellant.

Product code : 001045

CAS number/other identifiers

CAS number : 74-98-6

Ingredient name	%	CAS number
Propane	100	74-98-6

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 : 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 contaminated skin with soap and water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. 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. As this product rapidly becomes a gas when released, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

Section 4. First aid measures

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:, frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:, frostbite

Ingestion : Adverse symptoms may include the following:, frostbite

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 an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. Extremely flammable gas. 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. 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.

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. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

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. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : Accidental releases pose a serious fire or explosion hazard. 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 gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. 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 : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F). Keep container tightly closed and sealed until ready for use. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Propane	**NIOSH REL (United States, 10/2016).** TWA: 1800 mg/m³ 10 hours. TWA: 1000 ppm 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 1800 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. **ACGIH TLV (United States, 3/2019). Oxygen Depletion [Asphyxiant]. Explosive potential.**

Section 8. Exposure controls/personal protection

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.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. 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 : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Thermal hazards : If there is a risk of contact with the liquid, all protective equipment worn should be suitable for use with extremely low temperature materials.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas.

Color : Colorless.

Odor : Odorless.BUT MAY HAVE SKUNK ODOR ADDED.

Odor threshold : Not available.

pH : Not available.

Melting point : -187.6°C (-305.7°F)

Boiling point : -42.1°C (-43.8°F)

Section 9. Physical and chemical properties

Critical temperature	:	96.55°C (205.8°F)
Flash point	:	Closed cup: -104°C (-155.2°F) Open cup: -104°C (-155.2°F)
Evaporation rate	:	Not available.
Flammability (solid, gas)	:	Extremely flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.
Lower and upper explosive (flammable) limits	:	Lower: 1.8% Upper: 8.4%
Vapor pressure	:	109 (psig)
Vapor density	:	1.6 (Air = 1)
Specific Volume (ft ^{3}/lb)	:	8.6206
Gas Density (lb/ft ^{3})	:	0.116 (25°C / 77 to °F)
Relative density	:	Not applicable.
Solubility	:	Not available.
Solubility in water	:	0.0244 g/l
Partition coefficient: n-octanol/water	:	1.09
Auto-ignition temperature	:	287°C (548.6°F)
Decomposition temperature	:	Not available.
Viscosity	:	Not applicable.
Flow time (ISO 2431)	:	Not available.
Molecular weight	:	44.11 g/mole
Aerosol product		
Heat of combustion	:	-46012932 J/kg

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 gas to accumulate in low or confined areas.
Incompatible materials	:	Oxidizers
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:, frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:, frostbite

Ingestion : Adverse symptoms may include the following:, frostbite

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.

Section 11. Toxicological information

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Propane	1.09	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1978	UN1978	UN1978	UN1978	UN1978
UN proper shipping name	PROPANE SEE ALSO PETROLEUM GASES, LIQUEFIED	PROPANE	PROPANE SEE ALSO PETROLEUM GASES, LIQUEFIED (propane)	PROPANE	PROPANE
Transport hazard class(es)	2.1 	2.1 	2.1 	2.1 	2.1 
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Additional information

DOT Classification : **Limited quantity**
Yes.

Packaging instruction
Passenger aircraft
Quantity limitation: Forbidden.

Cargo aircraft
Quantity limitation: 150 kg

Special provisions
19, T50

For domestic transportation only, UN1075 may be substituted for the UN number shown as long as the substitution is consistent on package markings, shipping papers, and emergency response information. See 49 CFR 172.102 Special Provision 19.
Containers of NON-ODORIZED liquefied petroleum gas must be marked either NON-ODORIZED or NOT ODORIZED as of September 30, 2006. [49 CFR 172.301(f), 326(d), 330(c) and 338(e)]

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).
Explosive Limit and Limited Quantity Index 0.125
ERAP Index 3000
Passenger Carrying Vessel Index 65
Passenger Carrying Road or Rail Index Forbidden
Special provisions 29, 42

IATA : **Quantity limitation** Passenger and Cargo Aircraft: Forbidden. Cargo Aircraft Only: 150 kg.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

Clean Air Act (CAA) 112 regulated flammable substances: propane

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 : Refer to Section 2: Hazards Identification of this SDS for classification of substance.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : This material is listed or exempted.

Canada : This material is listed or exempted.

China : This material is listed or exempted.

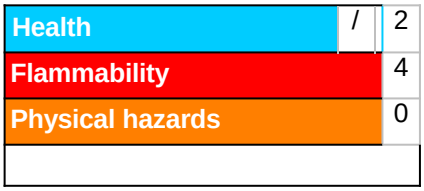
Europe : This material is listed or exempted.

Section 15. Regulatory information

Japan	:	**Japan inventory (ENCS)**: This material is listed or exempted. **Japan inventory (ISHL)**: This material is listed or exempted.
New Zealand	:	This material is listed or exempted.
Philippines	:	This material is listed or exempted.
Republic of Korea	:	This material is listed or exempted.
Taiwan	:	This material is listed or exempted.
Thailand	:	Not determined.
Turkey	:	This material is listed or exempted.
United States	:	This material is active or exempted.
Viet Nam	:	This material is listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

Classification	Justification
FLAMMABLE GASES - Category 1 GASES UNDER PRESSURE - Liquefied gas	Expert judgment Expert judgment

History

Date of printing	:	11/15/2020
Date of issue/Date of revision	:	11/15/2020
Date of previous issue	:	10/5/2020
Version	:	1.02

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available.

Other special considerations : The information below is given to call attention to the issue of “Naturally occurring radioactive materials”. Although Radon-222 levels in the product represented by this MSDS do not present any direct Radon exposure hazard, customers should be aware of the potential for Radon daughter build up within their processing systems, whatever the source of their product streams. Radon-222 is a naturally occurring radioactive gas which can be a contaminant in natural gas. During subsequent processing , Radon tends to be concentrated in Liquefied Petroleum Gas streams and in product streams having a similar boiling point range. Industry experience has shown that this product may contain small amounts of Radon-222 and its radioactive decay products, called Radon “daughters”. The actual concentration of Radon-222 and radioactive daughters in the delivered product is dependent on the geographical source of the natural gas and storage time prior to delivery. Process equipment (i.e. lines, filters, pumps and reaction units) may accumulate significant levels of radioactive daughters and show a gamma radiation reading during operation. A potential external radiation hazard exists at or near any pipe valve or vessel containing a Radon enriched stream, or containing internal deposits of radioactive material due to the transmission of gamma radiation through its wall. Field studies reported in the literature have not shown any conditions that subject workers to cumulative exposures in excess of general population limits. Equipment emitting gamma radiation should be presumed to be internally contaminated with alpha emitting decay products which may be a hazard if inhaled or ingested. Protective equipment such as coveralls, gloves, and respirator (NIOSH/MHSA approved for high efficiency particulates and radionuclides, or supplied air) should be worn by personnel entering a vessel or working on contaminated process equipment to prevent skin contamination, ingestion, or inhalation of any residues containing alpha radiation. Airborne contamination may be minimized by handling scale and/or contaminated materials in a wet state.

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.

RTV Silicone (Permatex)

SAFETY DATA SHEET

Revision Date 08-Apr-2019 **Version** 9

1. IDENTIFICATION

Product identifier
Product Name PX 16BR BLACK RTV SILICONE 3 OZ.

Other means of identification
Product Code 81158

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
6875 Parkland Blvd.
Solon, Ohio 44139 USA
Telephone: 1-87-Permatex
(866) 732-9502

May Also Be Distributed by:
ITW Permatex Canada
101-2360 Bristol Circle
Oakville, ON Canada L6H 6M5
Telephone: (800) 924-6994

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)

Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Carcinogenicity	Category 2

Label elements

Emergency Overview

Signal word
Warning

Causes serious eye irritation
May cause an allergic skin reaction
Suspected of causing cancer

Appearance Black **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
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace

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
Not applicable

Unknown acute toxicity 29.274 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT	64742-47-8	3 - 7
2-BUTANONE OXIME	96-29-7	1 - 5

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 with soap and water. If skin irritation or rash occurs: Get medical advice/attention. 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 May cause allergic skin reaction.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

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.

Environmental precautions

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 cleaning up Ensure adequate ventilation. Flood with water to complete polymerization and scrape off floor. Sweep up and shovel into suitable containers for disposal. Slippery, can cause falls if walked on.

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.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Protect from moisture. Store locked up.

Incompatible materials Strong oxidizing agents, Acids, Water

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines .
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).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

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

9.1. Information on basic physical and chemical properties

Physical state	Paste
Appearance	Blac k
Odor	Mild
Odor threshold	No information available

Property	**Values**	**Remarks • Method**
pH	No information available	
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	Polymerization
Flash point	> 95 °C / > 203 °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	Air = 1
Vapor density	3.0	
Relative density	1.43	

Water solubility	Not applicable	Polymerization
Solubility(ies)	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 (%)	3.2%, 45.87 g/l
Density	No information available
Bulk density	No information available
SADT (self-accelerating decomposition temperature)	No information available

10. STABILITY AND REACTIVITY

Reactivity
No information available

Chemical stability
Stable under normal conditions

Possibility of Hazardous Reactions
None under normal processing.

Conditions to avoid
Excessive heat.

Incompatible materials
Strong oxidizing agents, Acids, Water

Hazardous Decomposition Products
Carbon oxides
Nitrogen oxides (NOx)
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
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
2-BUTANONE OXIME 96-29-7	= 930 mg/kg (Rat)	1000 - 1800 mg/kg (Rabbit)	> 4.83 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.

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Target Organ Effects Eyes, Lymphatic System, Respiratory system, Skin.

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

ATEmix (oral) 14090 mg/kg
ATEmix (dermal) 9616 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

95.074 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

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
Proper shipping name: Not regulated

IATA

Proper shipping name: Not regulated

IMDG

Proper shipping name: Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Not determined
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Not determined

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

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 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

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
CARBON BLACK - 1333-86-4	*Carcinogen (airborne, unbound particles of respirable size)

• *The asterisked chemical(s) listed are not subject to Proposition 65 because they are not airborne in the finished product

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania

LIMESTON E 1317-65-3	X	X	X
CARBON BLACK 1333-86-4	X	X	X

U.S. EPA Label Information
EPA Pesticide Registration Number Not applicable

WHMIS Hazard Class
D2A - Very toxic materials

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

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 08-Apr-2019

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

Starting Fluid (CRC)

SAFETY DATA SHEET

1. Identification

Product identifier **Jump Start® Starting Fluid**

Other means of identification

Product Code No. 05671 (Item# 1003843)

Recommended use Starting fluid

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufactured or sold by:

Company name CRC Industries, Inc.

Address 885 Louis Dr.
Warminster, PA 18974 US

Telephone

General Information 215-674-4300

Technical Assistance 800-521-3168

Customer Service 800-272-4620

24-Hour Emergency (CHEMTREC) 800-424-9300 (US)
703-527-3887 (International)

Website www.crcindustries.com

2. Hazard(s) identification

Physical hazards	Flammable aerosols	Category 1
	Gases under pressure	Compressed gas
Health hazards	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 3

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Extremely flammable aerosol. Contains gas under pressure; may explode if heated. May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness. Suspected of causing cancer. Toxic to aquatic life. 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. 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 apply while equipment is energized. Extinguish all flames, pilot lights and heaters. Vapors will accumulate readily and may ignite. Use only with adequate ventilation; maintain ventilation during use and until all vapors are gone. Open doors and windows or use other means to ensure a fresh air supply during use and while product is drying. If you experience any symptoms listed on this label, increase ventilation or leave the area. Avoid breathing mist or vapor. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.
Response	If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin: Wash with plenty of 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/doctor if you feel unwell. If exposed or concerned: Get medical advice/attention.
Storage	Store in a well-ventilated place. Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Exposure to high temperature may cause can to burst.
Disposal	Dispose of contents/container in accordance with local/regional/national regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
heptane, branched, cyclic and linear		426260-76-6	70 - 80
diethyl ether		60-29-7	10 - 20
carbon dioxide		124-38-9	5 - 10
ethanol		64-17-5	< 1.5
chloroethane		75-00-3	< 1
distillates (petroleum), hydrotreated light		64742-47-8	< 1

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. Rinse skin with water/shower. 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.
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. 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. Alcohol resistant foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may rupture 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. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up.
General fire hazards	Extremely flammable aerosol. Contents under pressure. Pressurized container may rupture 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 mist or vapor. 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	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Prevent product from entering drains. Stop the flow of material, if this is without risk. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. 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. 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. Use caution around energized equipment. The metal container will conduct electricity if it contacts a live source. This may result in injury to the user from electrical shock and/or flash fire. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. 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. For product usage instructions, see the product label.
Conditions for safe storage, including any incompatibilities	Level 3 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. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

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.

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
chloroethane (CAS 75-00-3)	PEL	2600 mg/m3 1000 ppm
diethyl ether (CAS 60-29-7)	PEL	1200 mg/m3 400 ppm
distillates (petroleum), hydrotreated light (CAS 64742-47-8)	PEL	400 mg/m3 100 ppm
ethanol (CAS 64-17-5)	PEL	1900 mg/m3 1000 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
carbon dioxide (CAS 124-38-9)	STEL	30000 ppm
	TWA	5000 ppm
chloroethane (CAS 75-00-3)	TWA	100 ppm
diethyl ether (CAS 60-29-7)	STEL	500 ppm
	TWA	400 ppm
ethanol (CAS 64-17-5)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
carbon dioxide (CAS 124-38-9)	STEL	54000 mg/m3
		30000 ppm
	TWA	9000 mg/m3
		5000 ppm
distillates (petroleum), hydrotreated light (CAS 64742-47-8)	TWA	100 mg/m3
ethanol (CAS 64-17-5)	TWA	1900 mg/m3
		1000 ppm

Biological limit values No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - California OELs: Skin designation

chloroethane (CAS 75-00-3) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

chloroethane (CAS 75-00-3) 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 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 protective gloves such as: Nitrile. Butyl rubber.

Other Wear appropriate chemical resistant clothing.

Respiratory protection If engineering controls are not feasible or if exposure exceeds the applicable exposure limits, use a NIOSH-approved cartridge respirator with an organic vapor cartridge. Use a self-contained breathing apparatus in confined spaces and for emergencies. Air monitoring is needed to determine actual employee exposure levels.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Observe any medical surveillance requirements. When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state Liquid.

Form Aerosol.

Color Colorless.

Odor Hydrocarbon-like.

Odor threshold Not available.

pH Not available.

Melting point/freezing point -189.9 °F (-123.3 °C) estimated

Initial boiling point and boiling range	94.3 °F (34.6 °C) estimated
Flash point	< 20 °F (< -6.7 °C) Tag Closed Cup
Evaporation rate	Fast.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	0.5 % estimated
Flammability limit - upper (%)	36.5 % estimated
Vapor pressure	5024.7 hPa estimated
Vapor density	> 1 (air = 1)
Relative density	0.7
Solubility (water)	Slightly soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	320 °F (160 °C) estimated
Decomposition temperature	Not available.
Viscosity (kinematic)	< 20 cSt (104 °F (40 °C))
Percent volatile	100 %

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	Heat, flames and sparks. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Aluminum.
Hazardous decomposition products	Carbon oxides. Acrid smoke.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause drowsiness and 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	Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.
Symptoms related to the physical, chemical and toxicological characteristics	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity May be fatal if swallowed and enters airways.

Components	Species	Test Results
diethyl ether (CAS 60-29-7)		
Acute		
Inhalation		
LC50	Rat	32000 ppm, 4 Hours
Oral		
LD50	Rat	3230 - 3920 mg/kg

Components	Species	Test Results
distillates (petroleum), hydrotreated light (CAS 64742-47-8)		
Acute		
Dermal		
LD50	Rat	> 2000 mg/kg
ethanol (CAS 64-17-5)		
Acute		
Dermal		
LD50	Rabbit	20 g/kg
Inhalation		
LC50	Rat	8000 mg/l, 4 hours
Oral		
LD50	Rat	6.2 g/kg
heptane, branched, cyclic and linear (CAS 426260-76-6)		
Acute		
Dermal		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
LC50	Rat	> 60 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 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

chloroethane (CAS 75-00-3)	3 Not classifiable as to carcinogenicity to humans.
diethyl ether (CAS 60-29-7)	3 Not classifiable as to carcinogenicity to humans.

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 May cause drowsiness and dizziness.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed and enters airways. If aspirated into lungs during swallowing or vomiting, may cause chemical pneumonia, pulmonary injury or death.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Components		Species	Test Results
diethyl ether (CAS 60-29-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2560 mg/l, 96 hours

Components		Species	Test Results
distillates (petroleum), hydrotreated light (CAS 64742-47-8)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	1.1 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	3 mg/l, 96 hours
ethanol (CAS 64-17-5)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	7.7 - 11.2 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
heptane, branched, cyclic and linear (CAS 426260-76-6)			
Aquatic			
Acute			
Crustacea	EC50	Water flea (Daphnia magna)	1.5 mg/l, 48 hours

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

Persistence and degradability

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)	
chloroethane	1.43
diethyl ether	0.89
ethanol	-0.31

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 of waste from residues / unused products If discarded, this product is considered a RCRA ignitable waste, D001. 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 in accordance with all applicable regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F

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 UN1950
UN proper shipping name Aerosols, flammable, Limited Quantity
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

IATA

UN number UN1950
UN proper shipping name Aerosols, flammable, Limited Quantity
Transport hazard class(es)
Class 2.1
Subsidiary risk -

Packing group	Not applicable.
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, Limited Quantity
Transport hazard class(es)	
Class	2.1
Subsidiary risk	-
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.

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.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

chloroethane (CAS 75-00-3)

CERCLA Hazardous Substance List (40 CFR 302.4)

chloroethane (CAS 75-00-3)	Listed.
diethyl ether (CAS 60-29-7)	Listed.

CERCLA Hazardous Substances: Reportable quantity

chloroethane (CAS 75-00-3)	100 LBS
diethyl ether (CAS 60-29-7)	100 LBS

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center (800-424-8802) and to your Local Emergency Planning Committee.

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)

chloroethane (CAS 75-00-3)
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

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

diethyl ether (CAS 60-29-7)	35 %WV

DEA Exempt Chemical Mixtures Code Number

diethyl ether (CAS 60-29-7)	6584

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

ethanol (CAS 64-17-5)	Low priority

Food and Drug Administration (FDA) Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No
SARA 302 Extremely hazardous substance	No

US state regulations

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

chloroethane (CAS 75-00-3)

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

carbon dioxide (CAS 124-38-9)
chloroethane (CAS 75-00-3)
diethyl ether (CAS 60-29-7)
ethanol (CAS 64-17-5)

US. Massachusetts RTK - Substance List

carbon dioxide (CAS 124-38-9)
chloroethane (CAS 75-00-3)
diethyl ether (CAS 60-29-7)
ethanol (CAS 64-17-5)

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

carbon dioxide (CAS 124-38-9)
chloroethane (CAS 75-00-3)
diethyl ether (CAS 60-29-7)
distillates (petroleum), hydrotreated light (CAS 64742-47-8)
ethanol (CAS 64-17-5)

US. Rhode Island RTK

carbon dioxide (CAS 124-38-9)
chloroethane (CAS 75-00-3)
diethyl ether (CAS 60-29-7)
ethanol (CAS 64-17-5)

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

chloroethane (CAS 75-00-3)	Listed: July 1, 1990

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

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

Volatile organic compounds (VOC) regulations

EPA

VOC content (40 CFR 51.100(s))	94.5 %
Consumer products (40 CFR 59, Subpt. C)	Not regulated

State

Consumer products	Not regulated
VOC content (CA)	94.5 %
VOC content (OTC)	94.5 %

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)	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)	No

Country(s) or region	Inventory name	On inventory (yes/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)	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 08-29-2017

Prepared by Allison Yoon

Version # 01

Further information Not available.

HMIS® ratings Health: 1*
Flammability: 4
Physical hazard: 0
Personal protection: B

NFPA ratings Health: 1
Flammability: 4
Instability: 0

NFPA ratings

Disclaimer 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. This information is accurate to the best of CRC's knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label. For further clarification of any information contained on this (M)SDS consult your supervisor, a health & safety professional, or CRC Industries, Inc..

Revision Information This document has undergone significant changes and should be reviewed in its entirety.

S-722 Hand Cleaner (BRC)

SAFETY DATA SHEET

S-722

Section 1. Identification

GHS product identifier : S-722

Other means of identification : 250247, 250249, 250245, 250246, 250248, 250250, 900005

Product type : Liquid

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

Not applicable

Supplier's details : Beaver Research
3700 E. Kilgore Road
Portage, MI 49002
Phone: 269-382-0133

Emergency telephone number (with hours of operation) : 1-800-535-5053 (INFOTRAC)

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 CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Causes serious eye irritation. Risk of serious damage to eyes. 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. Wear protective clothing. Wash hands thoroughly after handling.

Response : IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Wash with plenty of soap and water. Take off contaminated clothing and wash 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. Get immediate medical advice/attention.

Storage : Not applicable

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available

CAS number/other identifiers

CAS number : Not applicable

Product code : 250245, 250246, 250247, 250248, 250249, 250250, 250770

Ingredient name	%	CAS number
2-butoxyethanol	5 - 10	111-76-2
2-aminoethanol	1 - 5	141-43-5

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 : 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 immediately.

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 if irritation develops. 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. 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. Risk of serious damage to eyes.

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 : Causes skin irritation.

Ingestion : May cause burns to mouth, throat and stomach.

Section 4. First aid measures

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness

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 8)

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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

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. 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 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). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. 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 and food and drink. Store locked up. Separate from acids. 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
2-butoxyethanol	**ACGIH TLV (United States, 6/2013).** TWA: 20 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** **Absorbed through skin.** TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours. **NIOSH REL (United States, 10/2013).** **Absorbed through skin.** TWA: 5 ppm 10 hours. TWA: 24 mg/m³ 10 hours. **OSHA PEL (United States, 2/2013).** **Absorbed through skin.** TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours.
2-aminoethanol	**ACGIH TLV (United States, 6/2013).** TWA: 3 ppm 8 hours. TWA: 7.5 mg/m³ 8 hours. STEL: 6 ppm 15 minutes. STEL: 15 mg/m³ 15 minutes. **OSHA PEL 1989 (United States, 3/1989).** TWA: 3 ppm 8 hours. TWA: 8 mg/m³ 8 hours. STEL: 6 ppm 15 minutes. STEL: 15 mg/m³ 15 minutes. **NIOSH REL (United States, 10/2013).** TWA: 3 ppm 10 hours. TWA: 8 mg/m³ 10 hours. STEL: 6 ppm 15 minutes. STEL: 15 mg/m³ 15 minutes. **OSHA PEL (United States, 2/2013).** TWA: 3 ppm 8 hours. TWA: 6 mg/m³ 8 hours.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants. 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.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/ or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, 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 : Purple

Odor : Lemon

Odor threshold : Not available

pH : 12.7

Melting point : 0°C (32°F)

Boiling point : 100°C (212°F)

Flash point : Closed cup: >93.334°C (>200°F)

Evaporation rate : Not available

Flammability (solid, gas) : Not available

Lower and upper explosive (flammable) limits : Not available

Vapor pressure : <4 kPa (<30 mm Hg) [room temperature]

Vapor density : <1 [Air = 1]

Specific gravity : 1.01 g/cm³

Solubility : Not available

Partition coefficient: n-octanol/water : Not available

Auto-ignition temperature : Not available

Viscosity : Not available

VOC content : 5.3%

VOCs are calculated following the requirements under 40 CFR, Part 59, Subpart C for Consumer Products and Subpart D for Architectural Coatings.

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
2-butoxyethanol	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	1300 mg/kg	-
2-aminoethanol	LD50 Oral	Rat	1720 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2-butoxyethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
2-aminoethanol	Eyes - Severe irritant	Rabbit	-	250 Micrograms	-
	Skin - Moderate irritant	Rabbit	-	505 milligrams	-

Sensitization

Not available

Mutagenicity

Not available

Carcinogenicity

Not available

Classification

Product/ingredient name	OSHA	IARC	NTP
2-butoxyethanol	-	3	-

Reproductive toxicity

Not available

Section 11. Toxicological information

Teratogenicity

Not available

Specific target organ toxicity (single exposure)

Not available

Specific target organ toxicity (repeated exposure)

Not available

Aspiration hazard

Not available

Information on the likely routes of exposure : Not available

Potential acute health effects

Eye contact : Causes serious eye irritation. Risk of serious damage to eyes.

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 : Causes 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 : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness

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 : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Section 11. Toxicological information

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	20668.8 mg/kg

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
2-butoxyethanol	Acute EC50 1000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 800000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 1250000 µg/l Marine water	Fish - Menidia beryllina	96 hours
2-aminoethanol	Acute EC50 8.42 mg/l Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute LC50 100000 µg/l Marine water	Crustaceans - Crangon crangon - Adult	48 hours
	Acute LC50 170000 µg/l Fresh water	Fish - Carassius auratus	96 hours

Persistence and degradability

Not available

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
2-butoxyethanol	0.81	-	low
2-aminoethanol	-1.31	-	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. 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	Not regulated	Not controlled.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	Non.	Non.
Additional information	-	-	-

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 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 Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

SARA 311/312

Classification : Immediate (acute) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
2-butoxyethanol	5 - 10	Yes.	No.	No.	Yes.	No.
2-aminoethanol	1 - 5	Yes.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	2-butoxyethanol	111-76-2	5.3

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

International regulations

Section 15. Regulatory information

Canada inventory : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	2
Flammability		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 10/18/2019

Date of issue/Date of revision : 10/18/2019

Date of previous issue : 10/22/2018

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

References : Not available

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.

Tarpedo (BioChem)

Safety Data Sheet
Tarpedo®

1. Identification

PRODUCT IDENTIFIER

Product Identity Tarpedo

RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Intended use See Technical Data Sheet.

Application Method See Technical Data Sheet.

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company Name BioChem Systems, Inc.
P.O Box 8098
The Woodlands, TX 77387-8098

24 hour Emergency Telephone No. PERS: (800) 633-8253

Customer Service: (Business) 800-777-7870

2. Hazard(s) Identification

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Combustible Liquid;H227	Combustible Liquid.
Acute Tox. 5;H303	May be harmful if swallowed. (Not adopted by US OSHA)
Acute Tox. 3;H331	Toxic if inhaled.
Skin Irrit. 3;H316	Causes mild skin irritation. (Not adopted by US OSHA)
Eye Dam. 1;H318	Causes serious eye damage.
Carc. 2;H351	Suspected of causing cancer.
Asp. Tox. 1;H304	May be fatal if swallowed and enters airways.
Aquatic Chronic 2;H411	Toxic to aquatic life with long lasting effects.

LABEL ELEMENTS

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Danger

H227 Combustible liquid.
H303 May be harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H316 Causes mild skin irritation.

H318 Causes serious eye damage.
H331 Toxic if inhaled.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

[Prevention]:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.
P261 Avoid breathing dust / fume / gas / mist / vapors / spray.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection / face protection.
[Response]:
P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P308+313 IF exposed or concerned: Get medical advice / attention.
P311 Call a POISON CENTER or doctor / physician.
P321 Specific treatment (see information on this label).
P331 Do NOT induce vomiting.
P332+313 If skin irritation occurs: Get medical advice / attention.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P391 Collect spillage.
[Storage]:
P403+235 Store in a well ventilated place. Keep cool.
P405 Store locked up.
[Disposal]:
P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/Information on Ingredients

MIXTURE

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Solvent naphtha (petroleum), heavy aromatic CAS Number: Proprietary	**75 - 100**	**Asp. Tox. 1;H304 Aquatic Acute 2;H401 Aquatic Chronic 2;H411**	**[1]**
Naphthalene CAS Number: Proprietary	**1.0 - 10**	**Carc. 2;H351 Acute Tox. 4;H302**	**[1][2]**

		Aquatic Acute 1;H400 Aquatic Chronic 1;H410	
Additive Package CAS Number: Proprietary	**1.0 - 10**	**Eye Dam. 1;H318 Acute Tox. 4;H302 Skin Irrit. 2;H315**	**[1]**
Dipropyleneglycol n-butyl ether CAS Number: Proprietary	**1.0 - 10**	**Not Classified**	**[1]**
1-Butoxy-2-propanol CAS Number: Proprietary	**1.0 - 10**	**Eye Irrit. 2;H319 Skin Irrit. 2;H315**	**[1]**
1,2,4-trimethylbenzene CAS Number: Proprietary	**1.0 - 10**	**Flam. Liq. 3;H226 Acute Tox. 4;H332 Eye Irrit. 2;H319 STOT SE 3;H335 Skin Irrit. 2;H315 Aquatic Chronic 2;H411**	**[1][2]**

In accordance with paragraph (i) of §1910.1200, the specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.
1 Substance classified with a health or environmental hazard.
2 Substance with a workplace exposure limit.
3 PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First Aid Measures

DESCRIPTION OF FIRST AID MEASURES

General In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Irrigate copiously with clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.

Skin Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

Ingestion If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Overview Possible cancer hazard. Contains an ingredient which may cause cancer based on animal data (See Section 3 and Section 15 for each ingredient). Risk of cancer depends on duration and level of exposure.
Exposure to solvent vapor concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage. See section 2 for further details.

Inhalation	Toxic if inhaled. May be fatal if swallowed and enters airways.
Eyes	Causes serious eye damage.
Skin	Causes mild skin irritation.
Ingestion	May be harmful if swallowed.

5. Fire-Fighting Measures

FLAMMABILITY

Flammability Flash Point: 145F (TCC)

EXTINGUISHING MEDIA

Dry chemical or foam.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Hazardous decomposition: High temperatures and fires may produce such toxic substances as carbon monoxide and carbon dioxide.

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

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

ADVICE FOR FIRE-FIGHTERS

Use self-contained breathing apparatus and full protective clothing (Bunker gear).

ERG Guide No. ----

6. Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Put on appropriate personal protective equipment (see section 8).

ENVIRONMENTAL PRECAUTIONS

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

Ventilate the area and avoid breathing vapors. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, and vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

Avoid use of any ignition source near spill.

7. Handling and Storage

PRECAUTIONS FOR SAFE HANDLING

Store in accordance with the National Fire Protection Association's publication NFPA 30, Flammable and Combustible Liquids Code. 29 CFR 1910.106 applies to the handling, storage, and use of flammable and combustible liquids.

See section 2 for further details. - [Prevention]:

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Handle containers carefully to prevent damage and spillage.

Store in a cool dry area, away from heat, sparks and open flame. Keep containers sealed when not in use. Store out of direct sunlight.

Incompatible materials: Strong oxidizing agents and acids.

Store in original container in well ventilated areas at temperatures below 140F. Store in closed containers away from heat or sources of ignition and oxidizing materials. Protect against physical damage to containers.

See section 2 for further details. - [Storage]:

8. Exposure Controls and Personal Protection

CONTROL PARAMETERS

Exposure

CAS No.	Ingredient	Source	Value
Proprietary	Naphthalene	OSHA	TWA 10 ppm (50 mg/m3)STEL 15 ppm
		ACGIH	TWA: 10 ppm STEL: 15 ppm Skin 2B
		NIOSH	TWA 10 ppm (50 mg/m3) ST 15 ppm (75 mg/m3)
		Supplier	No Established Limit
Proprietary	1,2,4-trimethylbenzene	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	TWA 25 ppm (125 mg/m3)
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
Proprietary	Naphthalene	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: Yes
		IARC	Group 1: No; Group 2a: No; Group 2b: Yes; Group 3: No; Group 4: No;

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EXPOSURE CONTROLS

Respiratory	If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.
Eyes	Protective safety glasses recommended
Skin	Impervious gloves are recommended.
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	Ensure emergency eye wash and shower stations are available in workplace. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and Chemical Properties

Appearance	Colorless Liquid
Odor	Hydrocarbon
Odor threshold	Not Measured
pH	N/A
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	360F
Flash Point	145F (TCC)
Evaporation rate (Ether = 1)	<0.1 (N-butyl acetate=1)
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** 1.8 **Upper Explosive Limit:** 11.7
Vapor pressure (Pa)	<2mm Hg @20C
Vapor Density	<7 (air=1)
Specific Gravity	0.9 @25C (H2O=1)
Solubility in Water	Dispersible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	<20.5
VOC Content	900 (grams/liter)
Freezing Point	-45F

10. Stability and Reactivity

REACTIVITY

Hazardous Polymerization will not occur.

CHEMICAL STABILITY

Stable under normal circumstances.

POSSIBILITY OF HAZARDOUS REACTIONS

No data available.

CONDITIONS TO AVOID

Excessive heat and open flame.

INCOMPATIBLE MATERIALS

Strong oxidizing agents and acids.

HAZARDOUS DECOMPOSITION PRODUCTS

High temperatures and fires may produce such toxic substances as carbon monoxide and carbon dioxide.

11. Toxicological Information

ACUTE TOXICITY

Exposure to solvent vapor concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

CARCINOGENICITY: Materials in this product have been shown to cause skin tumors in mice after severe skin irritation and sometimes a long latency period.
GENOTOXICITY: Hydrotreated & hydrodesulfurized gas oils range in activity from inactive to weakly-positive in in-vitro bacterial mutagenicity assays.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Solvent naphtha (petroleum), heavy aromatic - (**Proprietary**)	> 5,000.00, Rat - Category: NA	>2,000.00, Rabbit - Category: 5	No data available	No data available	No data available
Naphthalene – (**Proprietary**)	490.00, Rat - Category: 4	20,000.00, Rabbit - Category: NA	No data available	No data available	100.00, Rat - Category: NA
Dipropyleneglycol n-butyl ether – (**Proprietary**)	4,000.00, Rat - Category: 5	2,000.00, Rat - Category: 4	No data available	No data available	No data available

1-Butoxy-2-propanol - (**Proprietary**)	5,009.00, Rat - Category: NA	No data available	No data available	No data available	No data available
1,2,4-trimethylbenzene - (**Proprietary**)	3,400.00, Rat - Category: 5	3,160.00, Rabbit - Category: 5	18.00, Rat - Category: 4	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	5	May be harmful if swallowed. (Not adopted by US OSHA)
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	3	Toxic if inhaled.
Skin corrosion/irritation	3	Causes mild skin irritation. (Not adopted by US OSHA)
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	2	Suspected of causing cancer.
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	1	May be fatal if swallowed and enters airways.

12. Ecological Information

TOXICITY

Toxic to aquatic life with long lasting effects.
No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Solvent naphtha (petroleum), heavy aromatic - (**Proprietary**)	45.00, Pimephales promelas	12.00, Daphnia magna	2.50 (72 hr), Skeletonema costatum
Naphthalene – (**Proprietary**)	0.99, Oncorhynchus gorbuscha	1.60, Daphnia magna	68.21 (96 hr), Scenedesmus subspicatus
Dipropyleneglycol n-butyl ether - (**Proprietary**)	841.00, Poecilia reticulata	1,000.00, Daphnia magna	Not Available
1-Butoxy-2-propanol - (**Proprietary**)	Not Available	Not Available	Not Available

1,2,4-trimethylbenzene - (**Proprietary**)	7.72, Pimephales promelas	3.60, Daphnia magna	Not Available

PERSISTENCE AND DEGRADABILITY

There is no data available on the preparation itself.

BIOACCUMULATIVE POTENTIAL

Not Measured

MOBILITY IN SOIL

No data available.

RESULTS OF PBT AND vPvB ASSESSMENT

This product contains no PBT/vPvB chemicals.

OTHER ADVERSE EFFECTS

No data available.

13. Disposal Considerations

WASTE TREATMENT METHODS

Observe all federal, state and local regulations when disposing of this substance.

14. Transport Information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN NUMBER	Not Applicable	Not Regulated	Not Regulated
UN PROPER SHIPPING NAME	Not Regulated	Not Regulated	Not Regulated
TRANSPORT HAZARD CLASS(ES)	**DOT Hazard Class:** Not Applicable	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable
PACKING GROUP	Not Applicable	Not Applicable	Not Applicable

ENVIRONMENTAL HAZARDS

IMDG Marine Pollutant: Yes (Solvent naphtha (petroleum), heavy aromatic)

SPECIAL PRECAUTIONS FOR USER

No further information

15. Regulatory Information

REGULATORY OVERVIEW The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

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Tarpedo®

TOXIC SUBSTANCE CONTROL ACT (TSCA)
All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS CLASSIFICATION
B3 D1B E

NFPA/HMIS RANKINGS

US EPA TIER II HAZARDS

Fire: Yes

Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): Yes

EPCRA 311/312 CHEMICALS AND RQS (LBS):

Naphthalene (100.00)

EPCRA 302 EXTREMELY HAZARDOUS:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 TOXIC CHEMICALS:

1,2,4-trimethylbenzene

Naphthalene

PROPOSITION 65 - CARCINOGENS (>0.0%):

Naphthalene

PROPOSITION 65 - DEVELOPMENTAL TOXINS (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

PROPOSITION 65 - FEMALE REPRO TOXINS (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

PROPOSITION 65 - MALE REPRO TOXINS (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

NEW JERSEY RTK SUBSTANCES (>1%):

1,2,4-trimethylbenzene

Naphthalene

PENNSYLVANIA RTK SUBSTANCES (>1%):

1,2,4-trimethylbenzene

Naphthalene

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Tarpedo®

16. Other Information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

H400 Very toxic to aquatic life.

H401 Toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

The information contained in the above SDS is intended for the exclusive use of BioChem Systems, Inc. The above data have been compiled primarily from the SDS supplied to BioChem Systems, Inc. by the manufacturer and/or supplier. While the information is believed to be pertinent and current, no warranty expressed or implied is given as to its accuracy. This SDS is to be used as a guideline for safe work practices and emergency response. Any questions regarding the safe use of this material not outlined above should be directed to the BioChem Systems, Inc. Technical Services Department.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

End of Document

Top Tuff, M1100 (SealMaster)

SAFETY DATA SHEET

Issuing Date 20-Jan-2016 **Revision Date** **Revision Number** 0

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

GHS Product Identifier
Product Name: **Top Tuff**

Other Means of Identification
Product Code(s): **M1100**

Synonyms None

Recommended Use of the Chemical and Restrictions on Use
Recommended Use: No Information Available
Uses Advised Against: No information Available

Supplier's Details
Manufacturer Address
ThorWorks Industries, Inc.
2520 S. Campbell St.
Sandusky, OH 44870
www.sealmaster.net
1-800-326-1994

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification
This product is not considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

GHS Label Elements, Including Precautionary Statements

Emergency Overview

Signal Word **None**

The product contains no substances which at their given concentration are considered to be hazardous to health.

Appearance: Pink **Physical State:** Liquid **Odor:** Mild

Precautionary Statements

Prevention	**Inhalation:**	May cause irritation of respiratory tract.
	Eye Contact:	Contact with eyes may cause irritation.
	Skin Contact:	May cause irritation.
	Ingestion:	Ingestion may cause stomach discomfort.
General Advice	● None	
Storage	● Keep container tightly closed	
Disposal	● Dispose of material/containers in accordance with the appropriate state, regional, or local regulations.	

Hazard Not Otherwise Classified (HNOC)
Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %	Trade Secret
Proprietary Polymer	Proprietary	80-100	*

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

4. FIRST AID MEASURES

Description of Necessary First-Aid Measures

Eye Contact	Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water. In the case of skin irritation or allergic reactions, see a physician.
Inhalation	Move to fresh air. If symptoms persist, call a physician.
Ingestion	Drink plenty of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most Important Symptoms/Effects, Acute and Delayed

Most Important Symptoms/Effects No information available

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician Treat Symptomatically. May cause sensitization by skin contact.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Carbon Dioxide (CO_2). Dry Chemical. Foam. Water Fog.

Unsuitable Extinguishing Media: No data available

Specific Hazards Arising from the Chemical

No information available

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. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental Precautions

Environmental Precautions: See Section 12 for additional Ecological Information

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:	Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes, and clothing. Wear personal protective equipment. Avoid breathing vapors or mists. Do not eat, drink, or smoke when using this product. Wash thoroughly after handling.

Conditions for Safe Storage, Including Any Incompatibilities

Storage:	Keep container tightly closed
Incompatible Products:	Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters
Exposure Guidelines No data available

Appropriate Engineering Controls

Engineering Measures:	Showers Eyewash Stations Ventilation Systems

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection:	If splashes are likely to occur, wear: Safety glasses with side shields.
Skin and Body Protection:	Impervious gloves.
Respiratory Protection:	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.
Hygiene Measures:	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
Odor: Mild
Appearance: Pink
Odor Threshold: No Information Available

Property	Values	Remarks/Method
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	100° C	None known
Flash Point	No data available	None known
Evaporation Rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Specific Density	1.08 @ 77 F	None known
Water Solubility	Easily dispersible	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known
Flammable Properties	Not Flammable	
Explosive Properties	No data available	
Oxidizing Properties	No data available	
VOC Content	No data available	

10. STABILITY AND REACTIVITY

Reactivity:	No data available
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:	None known
Incompatible Materials:	Strong oxidizing agents. Acids.
Hazardous Decomposition Products:	Carbon Monoxide (CO), Carbon Dioxide (CO^2)

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure
Product Information

Inhalation:	May cause irritation of respiratory tract.
Eye Contact:	Contact with eyes may cause irritation.
Skin Contact:	May cause irritation.
Ingestion:	Ingestion may cause stomach discomfort.

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics
Symptoms: No information available.

Delayed and Immediate Effects and also Chronic Effects from Short and Long Term Exposure

Sensitization: No information available.
Mutagenic Effects: No information available.
Carcinogenicity: No information available

Reproductive Toxicity: No information available.
STOT - Single Exposure: No information available.
STOT – Repeated Exposure: No information available.
Aspiration Hazard: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Persistence and Degradability: No information available.
Bioaccumulation: No information available.

Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods: 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: Do not re-use empty containers.

14. TRANSPORTATION INFORMATION

DOT: Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA – Complies
DSL/NDSL – Complies

Legend

TSCA – United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL – Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain 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	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
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 requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65: None

U.S. State Right-To-Know Regulations Not applicable

U.S. EPA Label Information
EPA Pesticide Registration Number: Not applicable

16. OTHER INFORMATION

NFPA	**Health Hazard:** 1	**Flammability:** 0	**Instability:** 0	**Physical and Chemical Hazards-**
HMIS	**Health Hazard:** 1	**Flammability:** 0	**Physical Hazard:** 0	**Personal Protection: X**

Revision Date: 20-Jan-2016
Revision Note: N/A

General 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.

Unleaded Gasoline (Valero)

SAFETY DATA SHEET

1. Identification

Product identifier **UNLEADED GASOLINE**

Other means of identification

SDS number 002-GHS

Synonyms Regular/Premium/Midgrade - Unleaded Gasoline, RFG - Reformulated Unleaded Gasoline, Conventional Unleaded Gasoline, Oxygenated Unleaded Gasoline, Non-Oxygenated Unleaded Gasoline, CARB (California Air Resource Board) Unleaded Gasoline, RBOB - Reformulated Blendstock for Oxygenate Blending, CBOB - Conventional Blendstock for Oxygenate Blending, Petrol, Motor Fuel.
See section 16 for complete information.

Recommended use Motor Fuel
Motor fuels.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Valero Marketing & Supply Company and Affiliates
One Valero Way
San Antonio, TX 78269-6000

General Assistance 210-345-4593

E-Mail CorpHSE@valero.com

Contact Person Industrial Hygienist

Emergency Telephone 24 Hour Emergency 866-565-5220
1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 1
Health hazards	Skin corrosion/irritation	Category 2
	Germ cell mutagenicity	Category 1B
	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
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Extremely flammable liquid and vapor. Causes skin irritation. May cause genetic defects. May cause cancer. Suspected of damaging fertility or the unborn child. May cause drowsiness or dizziness. May cause damage to organs (blood, liver, kidney) through prolonged or repeated exposure. May be fatal if swallowed and enters airways. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting// equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe gas/mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment.
Response	If exposed or concerned: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water fog for extinction. Collect spillage.
Storage	Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Gasoline	86290-81-5	80-100
Toluene	108-88-3	0-30
Hexane (Other Isomers)	96-14-0	5-25
Xylene (o, m, p isomers)	1330-20-7	0-25
Octane (All isomers)	111-65-9	0-18.5
Ethanol	64-17-5	0-10
1,2,4, Trimethylbenzene	95-63-6	0-6
n-Heptane	142-82-5	1-5
Pentane	109-66-0	1-5
Cumene	98-82-8	0-5
Ethylbenzene	100-41-4	0-5
Benzene	71-43-2	0-4.9
n-Hexane	110-54-3	0-3
Cyclohexane	110-82-7	0-3

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.
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.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash.

Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	If exposed or concerned: get medical attention/advice. 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 re-use.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire-fighting equipment/instructions	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Vapors may form explosive air mixtures even at room temperature. Prevent buildup of vapors or gases to explosive concentrations. Some of these materials, if spilled, may evaporate leaving a flammable residue. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.
Specific methods	Use water spray to cool unopened containers.
General fire hazards	Extremely flammable liquid and vapor. Containers may explode when heated.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. Use non-sparking tools and explosion-proof equipment. Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment.
Environmental precautions	Gasoline may contain oxygenated blend products (Ethanol, etc.) that are soluble in water and therefore precautions should be taken to protect surface and groundwater sources from contamination. If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Extremely flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802.

7. Handling and storage

Precautions for safe handling

Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.
Wear personal protective equipment. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is extremely flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

Flammable liquid storage. 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. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure controls/personal protection

Occupational exposure limits

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

Components	Type	Value
Benzene (CAS 71-43-2)	STEL	5 ppm
	TWA	1 ppm

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

Components	Type	Value
Cumene (CAS 98-82-8)	PEL	245 mg/m3
		50 ppm
Cyclohexane (CAS 110-82-7)	PEL	1050 mg/m3
		300 ppm
Ethanol (CAS 64-17-5)	PEL	1900 mg/m3
		1000 ppm
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3
		100 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3
		500 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm
Octane (All isomers) (CAS 111-65-9)	PEL	2350 mg/m3
		500 ppm
Pentane (CAS 109-66-0)	PEL	2950 mg/m3
		1000 ppm
Xylene (o, m, p isomers) (CAS 1330-20-7)	PEL	435 mg/m3
		100 ppm

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

Components	Type	Value
Benzene (CAS 71-43-2)	Ceiling	25 ppm
	TWA	10 ppm
Toluene (CAS 108-88-3)	Ceiling	300 ppm
	TWA	200 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
1,2,4, Trimethylbenzene (CAS 95-63-6)	TWA	25 ppm
Benzene (CAS 71-43-2)	STEL	2.5 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
	TWA	0.5 ppm
Cumene (CAS 98-82-8)	TWA	50 ppm
Cyclohexane (CAS 110-82-7)	TWA	100 ppm
Ethanol (CAS 64-17-5)	STEL	1000 ppm
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm
Gasoline (CAS 86290-81-5)	STEL	500 ppm
	TWA	300 ppm
Hexane (Other Isomers) (CAS 96-14-0)	STEL	1000 ppm
	TWA	500 ppm
n-Heptane (CAS 142-82-5)	STEL	500 ppm
	TWA	400 ppm
n-Hexane (CAS 110-54-3)	TWA	50 ppm
Octane (All isomers) (CAS 111-65-9)	TWA	300 ppm
Pentane (CAS 109-66-0)	TWA	600 ppm
Toluene (CAS 108-88-3)	TWA	20 ppm
Xylene (o, m, p isomers) (CAS 1330-20-7)	STEL	150 ppm
	TWA	100 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
1,2,4, Trimethylbenzene (CAS 95-63-6)	TWA	125 mg/m3
		25 ppm
Benzene (CAS 71-43-2)	STEL	1 ppm
	TWA	0.1 ppm
Cumene (CAS 98-82-8)	TWA	245 mg/m3
		50 ppm
Cyclohexane (CAS 110-82-7)	TWA	1050 mg/m3
		300 ppm
Ethanol (CAS 64-17-5)	TWA	1900 mg/m3
		1000 ppm
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3
		125 ppm
	TWA	435 mg/m3
		100 ppm
Hexane (Other Isomers) (CAS 96-14-0)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 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
Octane (All isomers) (CAS 111-65-9)	Ceiling	1800 mg/m3
		385 ppm
	TWA	350 mg/m3
		75 ppm
Pentane (CAS 109-66-0)	Ceiling	1800 mg/m3

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Toluene (CAS 108-88-3)		610 ppm
	TWA	350 mg/m3
		120 ppm
	STEL	560 mg/m3
		150 ppm
	TWA	375 mg/m3
		100 ppm
Xylene (o, m, p isomers) (CAS 1330-20-7)	STEL	655 mg/m3
		150 ppm
	TWA	435 mg/m3
		100 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Benzene (CAS 71-43-2)	25 µg/g	S-Phenylmercapturic acid	Creatinine in urine	*
Ethylbenzene (CAS 100-41-4)	0.7 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedi- on, without hydrolysis		*
	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	*
Xylene (o, m, p isomers) (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*

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

Exposure guidelines

US - California OELs: Skin designation

Benzene (CAS 71-43-2)	Can be absorbed through the skin.
Cumene (CAS 98-82-8)	Can be absorbed through the skin.
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

Cumene (CAS 98-82-8)	Skin designation applies.
Toluene (CAS 108-88-3)	Skin designation applies.

US - Tennesse OELs: Skin designation

Cumene (CAS 98-82-8)	Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Benzene (CAS 71-43-2)	Can be absorbed through the skin.
n-Hexane (CAS 110-54-3)	Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cumene (CAS 98-82-8)	Can be absorbed through the skin.

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

Cumene (CAS 98-82-8)	Can be absorbed through the skin.

Appropriate engineering controls Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.
Skin protection	
Hand protection	Avoid exposure - obtain special instructions before use. Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
Other	Wear chemical-resistant, impervious gloves. Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.
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. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Light straw to red clear liquid with characteristic strong odor of gasoline.
Physical state	Liquid.
Form	Liquid.
Color	Light straw to red clear.
Odor	Characteristic Gasoline Odor (Strong).
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	44.01 °F (6.67 °C) May start to solidify at this temperature. This is based on data for the following ingredient: Cyclohexane. Weighted average: -91.9 deg C (-133.4 deg F)
Initial boiling point and boiling range	80.06 - 440.06 °F (26.7 - 226.7 °C)
Flash point	-40.0 °F (-40.0 °C) (closed cup)
Evaporation rate	10 - 11 BuAc
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	1.3 %
Flammability limit - upper (%)	7.1 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	60.8 - 101.3 kPa (20°C)
Vapor density	3 - 4 (Air=1)
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Very slightly soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	> 500 °F (> 260 °C)
Decomposition temperature	Not available.
Viscosity	Not available.

Other information

Flash point class	Flammable IA
VOC (Weight %)	100 %

10. Stability and reactivity

Reactivity	None known.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Swallowing or vomiting of the liquid may result in aspiration into the lungs.
Inhalation	In high concentrations, mists/vapors may irritate throat and respiratory system and cause coughing. May cause drowsiness or dizziness.
Skin contact	Causes skin irritation. Prolonged contact may cause dryness of the skin.
Eye contact	May cause eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Cyanosis (blue tissue condition, nails, lips, and/or skin). Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash.

Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

Components	Species	Test Results
1,2,4, Trimethylbenzene (CAS 95-63-6)		
Acute		
Dermal		
LD50	Rabbit	> 3160 mg/kg
Inhalation		
LC50	Rat	> 2000 mg/l, 48 Hours
Oral		
LD50	Rat	6 g/kg
Benzene (CAS 71-43-2)		
Acute		
Oral		
LD50	Rat	3306 mg/kg
Cumene (CAS 98-82-8)		
Acute		
Inhalation		
LC50	Mouse	2000 mg/l, 7 Hours
	Rat	8000 mg/l, 4 Hours
Oral		
LD50	Rat	1400 mg/kg
Cyclohexane (CAS 110-82-7)		
Acute		
Oral		
LD50	Rat	12705 mg/kg

Components	Species	Test Results
Ethanol (CAS 64-17-5)		
Acute		
Inhalation		
LC50	Rat	30000 mg/m3
Ethylbenzene (CAS 100-41-4)		
Acute		
Dermal		
LD50	Rabbit	> 5000 mg/kg
Oral		
LD50	Rat	5.46 g/kg
n-Heptane (CAS 142-82-5)		
Acute		
Inhalation		
LC50	Rat	103 mg/l, 4 Hours
n-Hexane (CAS 110-54-3)		
Acute		
Oral		
LD50	Rat	28710 mg/kg
Octane (All isomers) (CAS 111-65-9)		
Acute		
Inhalation		
LC50	Rat	118 mg/l, 4 Hours
Pentane (CAS 109-66-0)		
Acute		
Inhalation		
LC50	Rat	364 mg/l, 4 Hours
Toluene (CAS 108-88-3)		
Acute		
Dermal		
LD50	Rabbit	14.1 ml/kg
Inhalation		
LC50	Rat	8000 mg/l, 4 Hours
Oral		
LD50	Rat	2.6 g/kg
Xylene (o, m, p isomers) (CAS 1330-20-7)		
Acute		
Oral		
LD50	Rat	4300 mg/kg

Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Respiratory or skin sensitization	
Respiratory sensitization	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met. This substance may have a potential for sensitization which may provoke an allergic reaction among sensitive individuals.
Germ cell mutagenicity	May cause genetic defects. In in-vitro experiments, neither benzene, toluene nor xylene changed the number of sister-chromatid exchanges (SCEs) or the number of chromosomal aberrations in human lymphocytes. However, toluene and xylene caused a significant cell growth inhibition which was not observed with benzene in the same concentrations. In in-vivo experiments, toluene changed the number of sister-chromatid exchanges (SCEs) in human lymphocytes. Toluene may cause heritable genetic damage.

Carcinogenicity May cause cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Benzene (CAS 71-43-2)	1 Carcinogenic to humans.
Cumene (CAS 98-82-8)	2B Possibly carcinogenic to humans.
Ethylbenzene (CAS 100-41-4)	2B Possibly carcinogenic to humans.
Gasoline (CAS 86290-81-5)	2B Possibly carcinogenic to humans.
Toluene (CAS 108-88-3)	3 Not classifiable as to carcinogenicity to humans.
Xylene (o, m, p isomers) (CAS 1330-20-7)	3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Benzene (CAS 71-43-2)	Known To Be Human Carcinogen.

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

Benzene (CAS 71-43-2)	Cancer

Reproductive toxicity Suspected of damaging fertility or the unborn child.
Benzene, xylene and toluene have demonstrated animal effects of reproductive toxicity. Animal studies of benzene have shown testicular effects, alterations in reproductive cycles, chromosomal aberrations and embryo/fetotoxicity. Ethanol has demonstrated human effects of reproductive toxicity. Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility. Avoid exposure to women during early pregnancy. Avoid contact during pregnancy/while nursing.

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

Specific target organ toxicity - repeated exposure May cause damage to the following organs through prolonged or repeated exposure: Blood. Kidneys. Liver.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Repeated exposure of laboratory animals to high concentrations of gasoline vapors has caused kidney damage and cancer in rats and cancer in mice. Gasoline was evaluated for genetic activity in assays using microbial cells, cultured mammalian cells and rat bone marrow cells. The results were all negative so gasoline was considered nonmutagenic under these conditions. Overexposure to this product or its components has been suggested as a cause of liver abnormalities in laboratory animals and humans. Lifetime studies by the American Petroleum Institute have shown that kidney damage and kidney cancer can occur in male rats after prolonged inhalation exposures at elevated concentrations of total gasoline. Kidneys of mice and female rats were unaffected. The U.S. EPA Risk Assessment Forum has concluded that the male rat kidney tumor results are not relevant for humans. Total gasoline exposure also produced liver tumors in female mice only. The implication of these data for humans has not been determined.

Further information Symptoms may be delayed.

12. Ecological information

Ecotoxicity Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Components		Species	Test Results
1,2,4, Trimethylbenzene (CAS 95-63-6)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	7.19 - 8.28 mg/l, 96 hours
Benzene (CAS 71-43-2)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	8.76 - 15.6 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	7.2 - 11.7 mg/l, 96 hours
Cumene (CAS 98-82-8)			
Aquatic			
Crustacea	EC50	Brine shrimp (Artemia sp.)	3.55 - 11.29 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	2.7 mg/l, 96 hours
Cyclohexane (CAS 110-82-7)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	3.961 - 5.181 mg/l, 96 hours
		Striped bass (Morone saxatilis)	8.3 mg/l, 96 hours

Components		Species	Test Results
Ethanol (CAS 64-17-5)			
Aquatic			
Algae	EC50	Freshwater algae	275 mg/l, 72 Hours
		Marine water algae	1970 mg/l
Fish	LC50	Fathead minnow (Pimephales promelas)	> 100 mg/l, 96 hours
		Freshwater fish	11200 mg/l, 96 Hours
Invertebrate	EC50	Freshwater invertebrate	5012 mg/l, 48 Hours
		Marine water invertebrate	857 mg/l, 48 Hours
Ethylbenzene (CAS 100-41-4)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1 - 4 mg/l, 48 hours
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	4924 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			
Crustacea	EC50	Water flea (Daphnia magna)	5.46 - 9.83 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	6.86 - 8.48 mg/l, 96 hours
Xylene (o, m, p isomers) (CAS 1330-20-7)			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	8 mg/l, 96 Hours

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Benzene (CAS 71-43-2)	2.13
Cumene (CAS 98-82-8)	3.66
Cyclohexane (CAS 110-82-7)	3.44
Ethanol (CAS 64-17-5)	-0.31
Ethylbenzene (CAS 100-41-4)	3.15
Hexane (Other Isomers) (CAS 96-14-0)	3.6
Octane (All isomers) (CAS 111-65-9)	5.18
Pentane (CAS 109-66-0)	3.39
Toluene (CAS 108-88-3)	2.73
Xylene (o, m, p isomers) (CAS 1330-20-7)	3.2
n-Heptane (CAS 142-82-5)	4.66
n-Hexane (CAS 110-54-3)	3.9

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Hazardous waste code D001: Waste Flammable material with a flash point <140 °F
D018: Waste Benzene

US RCRA Hazardous Waste U List: Reference

Benzene (CAS 71-43-2)	U019
Cumene (CAS 98-82-8)	U055
Cyclohexane (CAS 110-82-7)	U056
Toluene (CAS 108-88-3)	U220
Xylene (o, m, p isomers) (CAS 1330-20-7)	U239

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Offer rinsed packaging material to local recycling facilities.

14. Transport information

DOT

- **UN number** UN1203
- **UN proper shipping name** Gasoline
- **Transport hazard class(es)**
  - **Class** 3
  - **Subsidiary risk** -
- **Packing group** II
- **Environmental hazards**
  - **Marine pollutant** Yes
- **Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.
- **Special provisions** 139, B33, B101, T8
- **Packaging exceptions** 150
- **Packaging non bulk** 202
- **Packaging bulk** 242

IATA

- **UN number** UN1203
- **UN proper shipping name** Gasoline
- **Transport hazard class(es)**
  - **Class** 3
  - **Subsidiary risk** -
  - **Label(s)** 3
- **Packing group** II
- **Environmental hazards** Yes
- **ERG Code** 3H
- **Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

IMDG

- **UN number** UN1203
- **UN proper shipping name** Gasoline
- **Transport hazard class(es)**
  - **Class** 3
  - **Subsidiary risk** -
  - **Label(s)** 3
- **Packing group** II
- **Environmental hazards**
  - **Marine pollutant** Yes
- **EmS** F-E, S-E
- **Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

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.

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

Benzene (CAS 71-43-2)	Cancer

Central nervous system
Blood
Aspiration
Skin
Eye
Respiratory tract irritation
Flammability

CERCLA Hazardous Substance List (40 CFR 302.4)

Benzene (CAS 71-43-2)	LISTED
Cumene (CAS 98-82-8)	LISTED
Cyclohexane (CAS 110-82-7)	LISTED
Ethanol (CAS 64-17-5)	LISTED
Ethylbenzene (CAS 100-41-4)	LISTED
Gasoline (CAS 86290-81-5)	LISTED
Hexane (Other Isomers) (CAS 96-14-0)	LISTED
n-Heptane (CAS 142-82-5)	LISTED
n-Hexane (CAS 110-54-3)	LISTED
Octane (All isomers) (CAS 111-65-9)	LISTED
Pentane (CAS 109-66-0)	LISTED
Toluene (CAS 108-88-3)	LISTED
Xylene (o, m, p isomers) (CAS 1330-20-7)	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 Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Toluene	108-88-3	0-30
Xylene (o, m, p isomers)	1330-20-7	0-25
1,2,4, Trimethylbenzene	95-63-6	0-6
Cumene	98-82-8	0-5
Ethylbenzene	100-41-4	0-5
Benzene	71-43-2	0-4.9
n-Hexane	110-54-3	0-3
Cyclohexane	110-82-7	0-3

Other federal regulations

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

Benzene (CAS 71-43-2)
Cumene (CAS 98-82-8)
Ethylbenzene (CAS 100-41-4)
n-Hexane (CAS 110-54-3)
Toluene (CAS 108-88-3)
Xylene (o, m, p isomers) (CAS 1330-20-7)

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

Pentane (CAS 109-66-0)

Safe Drinking Water Act (SDWA) Not regulated.

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

Toluene (CAS 108-88-3) 6594

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

Toluene (CAS 108-88-3) 35 % weight/volumn

DEA Exempt Chemical Mixtures Code Number

Toluene (CAS 108-88-3) 594

US state regulations

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

1,2,4, Trimethylbenzene (CAS 95-63-6)
Benzene (CAS 71-43-2)
Cumene (CAS 98-82-8)
Cyclohexane (CAS 110-82-7)
Ethanol (CAS 64-17-5)
Ethylbenzene (CAS 100-41-4)
Hexane (Other Isomers) (CAS 96-14-0)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
Octane (All isomers) (CAS 111-65-9)
Pentane (CAS 109-66-0)
Toluene (CAS 108-88-3)
Xylene (o, m, p isomers) (CAS 1330-20-7)

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

1,2,4, Trimethylbenzene (CAS 95-63-6)
Benzene (CAS 71-43-2)
Cumene (CAS 98-82-8)
Cyclohexane (CAS 110-82-7)
Ethanol (CAS 64-17-5)
Ethylbenzene (CAS 100-41-4)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
Octane (All isomers) (CAS 111-65-9)
Pentane (CAS 109-66-0)
Toluene (CAS 108-88-3)
Xylene (o, m, p isomers) (CAS 1330-20-7)

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

1,2,4, Trimethylbenzene (CAS 95-63-6)
Benzene (CAS 71-43-2)
Cumene (CAS 98-82-8)
Cyclohexane (CAS 110-82-7)
Ethanol (CAS 64-17-5)
Ethylbenzene (CAS 100-41-4)
Gasoline (CAS 86290-81-5)
Hexane (Other Isomers) (CAS 96-14-0)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
Octane (All isomers) (CAS 111-65-9)
Pentane (CAS 109-66-0)
Toluene (CAS 108-88-3)
Xylene (o, m, p isomers) (CAS 1330-20-7)

US. Rhode Island RTK

1,2,4, Trimethylbenzene (CAS 95-63-6)
Benzene (CAS 71-43-2)
Cumene (CAS 98-82-8)
Cyclohexane (CAS 110-82-7)
Ethylbenzene (CAS 100-41-4)
n-Hexane (CAS 110-54-3)
Pentane (CAS 109-66-0)
Toluene (CAS 108-88-3)
Xylene (o, m, p isomers) (CAS 1330-20-7)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Benzene (CAS 71-43-2)
Cumene (CAS 98-82-8)
Ethylbenzene (CAS 100-41-4)
Toluene (CAS 108-88-3)

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)	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

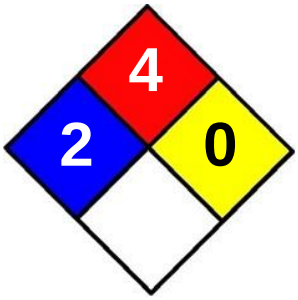
Issue date 13-May-2013

Revision date 23-May-2014

Version # 03

Further information HMIS® is a registered trade and service mark of the NPCA.

NFPA Ratings



References

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

This material Safety Data Sheet (SDS) was prepared in accordance with 29 CFR 1910.1200 by Valero Marketing & Supply Co., ("VALERO"). VALERO does not assume any liability arising out of product use by others. The information, recommendations, and suggestions presented in this SDS are based upon test results and data believed to be reliable. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use , the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all the scientific and study information in the format of this document, plus additional information may be necessary under exceptional conditions of use, or because of applicable laws or government regulations.

Windshield Washer Fluid -25

NAPA Windshield Wash -25 ºF

Safety Data Sheet

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

Revision date: 10/01/2019

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

1.1. Product identifier

Product form : Mixture

Product name : NAPA Windshield Wash -25 ºF

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

Use of the substance/mixture : Windshield washer fluid

1.3. Details of the supplier of the safety data sheet

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

1.4. Emergency telephone number

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Flammable liquids, Category 3	H226	Flammable liquid and vapor
Acute toxicity (oral), Category 3	H301	Toxic if swallowed.
Acute toxicity (dermal), Category 3	H311	Toxic in contact with skin.
Acute toxicity (inhalation:dust,mist) Category 4	H332	Harmful if inhaled.
Specific target organ toxicity — single exposure,	H370	Causes damage to organs (May cause blindness if swallowed)

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS02 GHS06 GHS08

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H226 - Flammable liquid and vapor
H301+H311 - Toxic if swallowed or in contact with skin
H332 - Harmful if inhaled.
H370 - Causes damage to organs (May cause blindness if swallowed)

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use.
P233 - Keep container tightly closed.
P240 - Ground/Bond container and receiving equipment
P241 - Use explosion-proof electrical, lighting, ventilating equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
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.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear personal protective equipment as required.
P301+P310 - If swallowed: Immediately call doctor/physician or poison center. Rinse Mouth

Precautionary statements (GHS-US) *continued* : P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing P312 - Call doctor/physician or poison center if you feel unwell
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use Foam, Sand, Dry powder, Carbon dioxide to extinguish. P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to appropriate waste disposal facility, in accordance with local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	% by wt	GHS-US classification
water	(CAS-No.) 7732-18-5	>= 65	Not classified
methanol	(CAS-No.) 67-56-1	<= 35	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 STOT SE 1, H370

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

SECTION 4: First aid measures

4.1. Description of first aid measures

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

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 : Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents. Remove clothing before washing. Consult a doctor/medical service.

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. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Obtain emergency medical attention. Rinse mouth. Never give anything by mouth to an unconscious person.

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

Symptoms/effects after inhalation : May cause irritation of the nose and throat. High concentrations may cause acute central nervous system depression characterized by headaches, dizziness, nausea and confusion.

Symptoms/effects after skin contact : Prolonged exposure to skin may cause skin irritation experienced as burning, dryness, cracking and redness.

Symptoms/effects after eye contact : May cause severe irritation.

Symptoms/effects after ingestion : May cause nausea, abdominal pain, headache, shortness of breath, visual impairment and blindness. Severe poisoning can lead to coma and death.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin. Skin rash/inflammation. Headache. Feeling of weakness. Disturbed tactile sensibility. Visual disturbances. Sleeplessness. Gastrointestinal complaints. Cardiac and blood circulation effects

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

This product contains methanol which can cause intoxication and depression of the central nervous system. Methanol is metabolized to formic acid and formaldehyde. These metabolites can cause metabolic acidosis, visual disturbances and blindness. Since metabolism is required for these toxic symptoms, their onset may be delayed from 6 to 30 hours following ingestion.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : ABC powder. Foam. Dry powder. Carbon dioxide. 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. Vapors are heavier than air and may travel along the ground or may be moved by ventilation.

Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Special protective equipment and precautions for fire-fighters

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

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

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges. Do not breathe vapor or mist. Wear appropriate respirator when ventilation is inadequate.

1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel. Keep upwind. Mark the danger area.

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 : Contain released product, pump into suitable containers. Dam up the liquid spill. Plug the leak, cut off the supply. Try to reduce evaporation. Take account of toxic/corrosive precipitation water. Dilute combustible/toxic gases/vapors with water spray.

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 : In use, may form flammable vapor-air mixture.

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 : Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Use explosion-proof electrical, lighting, ventilating equipment. Ground/bond container and receiving equipment. Proper grounding procedures to avoid static electricity should be followed.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat sources, hot surfaces, open flames, sparks. Keep container closed when not in use. 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

methanol (67-56-1)		
ACGIH	Local name	Methanol
ACGIH	ACGIH TWA (ppm)	200 ppm (Skin)
ACGIH	ACGIH STEL (ppm)	250 ppm (Skin)
ACGIH	Remark (ACGIH)	Headache; eye dam; dizziness; nausea
OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³ (Skin)
OSHA	OSHA PEL (TWA) (ppm)	200 ppm (Skin)

water (7732-18-5)
Not applicable

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure. Gloves. Safety glasses.

Hand protection:

Wear protective gloves.

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of inadequate ventilation wear 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
Color	:	Blue
Odor	:	alcohol
Odor threshold	:	No data available
Relative evaporation rate (butylacetate=1)	:	Greater then n-butyl acetate
Freezing point	:	-31.7 °C (-25 ºF)
Boiling point	:	80.6 °C (177 ºF)
Flash point	:	32 °C (89 ºF)
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	44 mm Hg @ 20 C
Relative vapor density at 20 °C	:	Heavier than air

Specific Gravity	:	0.94 @ 20 C
Solubility	:	Water: Complete
Log Pow	:	No data available
Log Kow	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	6 - 36 vol %
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

VOC content : 35 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Keep away from ignition sources/sparks.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

NAPA Windshield Wash -25 ºF	
ATE US (oral)	285.714 mg/kg bodyweight
ATE US (dermal)	857.143 mg/kg bodyweight
ATE US (dust,mist)	1.429 mg/l/4h
methanol (67-56-1)	
LD50 oral rat	1187 - 2769 mg/kg bodyweight (BASF test, Rat, Male / female, Weight of evidence, Aqueous solution, Oral, 7 day(s))
LD50 dermal rabbit	17100 mg/kg (Rabbit, Inconclusive, insufficient data, Dermal)
LC50 inhalation rat (mg/l)	128.2 mg/l/4h (BASF test, 4 h, Rat, Male/female, Weight of evidence)
ATE US (oral)	100 mg/kg bodyweight
ATE US (dermal)	300 mg/kg bodyweight
ATE US (gases)	700 ppmv/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust,mist)	0.5 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
STOT-single exposure	:	Causes damage to organs (May cause blindness if swallowed) .
STOT-repeated exposure	:	Not classified

Aspiration hazard	:	Not classified
Symptoms/effects after inhalation	:	May cause irritation of the nose and throat. High concentrations may cause acute central nervous system depression characterized by headaches, dizziness, nausea and confusion.
Symptoms/effects after skin contact	:	Prolonged exposure to skin may cause skin irritation experienced as burning, dryness, cracking and redness.
Symptoms/effects after eye contact	:	May cause severe irritation.
Symptoms/effects after ingestion	:	May cause nausea, abdominal pain, headache, shortness of breath, visual impairment and blindness. Severe poisoning can lead to coma and death.
Chronic symptoms	:	ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin. Skin rash/inflammation. Headache. Feeling of weakness. Disturbed tactile sensibility. Visual disturbances. Sleeplessness. Gastrointestinal complaints. Cardiac and blood circulation effects.

SECTION 12: Ecological information

12.1. Toxicity

methanol (67-56-1)	
LC50 fish 1	15,400.00 mg/l (EPA 660/3 - 75/009, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, Lethal)
EC50 Daphnia 1	18,260.00 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 96 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Locomotor effect)
ErC50 (algae)	22,000.00 mg/l (OECD 201: Alga, Growth Inhibition Test, 96 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value)

12.2. Persistence and degradability

methanol (67-56-1)	
Persistence and degradability	Readily biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.6 - 1.12 g O_2/g substance
Chemical oxygen demand (COD)	1.42 g O_2/g substance
ThOD	1.50 g O_2/g substance

12.3. Bioaccumulative potential

methanol (67-56-1)	
BCF fish 1	1 - 4.5 (72 h, Cyprinus carpio, Static system, Fresh water, Experimental value)
Log Pow	-0.77 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

12.4. Mobility in soil

methanol (67-56-1)	
Surface tension	0.02 N/m (20 °C)
Log Koc	0.09 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to 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	:	UN1993 Flammable liquids, n.o.s. (Methanol), 3, III
UN-No.(DOT)	:	UN1993
Proper Shipping Name (DOT)	:	Flammable liquids, n.o.s. (Methanol)
Class (DOT)	:	3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT)	:	III - Minor Danger
Hazard labels (DOT)	:	3 - Flammable liquid

DOT Packaging Non Bulk (49 CFR 173.xxx)	:	203
DOT Packaging Bulk (49 CFR 173.xxx)	:	242
DOT Symbols	:	G - Identifies PSN requiring a technical name
DOT Packaging Exceptions (49 CFR 173.xxx)	:	150
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	220 L
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	:	In inner packaging no more than 5.0 L: Proper Shipping Name: Limited Quantity of Class III Per 49 CFR Part 173.10 (PG III, inner packaging no more than 5.0L).

Transportation of Dangerous Goods

Refer to current TDG Canada for further Canadian regulations

Transport by sea

In accordance with IMDG / IMO

Transport document description (IMDG)	:	UN 1993 FLAMMABLE LIQUID, N.O.S. (Methanol), 3, III
UN-No. (IMDG)	:	1993
Proper Shipping Name (IMDG)	:	FLAMMABLE LIQUID, N.O.S. (Methanol)
Class (IMDG)	:	3 - Flammable liquids
Packing group (IMDG)	:	III - substances presenting low danger
Limited quantities (IMDG)	:	In Non-Bulk quantities with inner packaging no more than 5.0L: Proper Shipping Name: Dangerous Goods in Limited Class 3 (Windshield Wash Containing Methanol) Packages or pallets must be marked "Dangerous Goods in Limited Quantities of Class 3" Outer Package cannot weigh more than 30 kg.
Limited quantities (IMDG)	:	5 L

Air transport

In accordance with IATA / ICAO

Transport document description (IATA)	:	UN 1993 FLAMMABLE LIQUID, N.O.S. (Methanol), 3, III
UN-No. (IATA)	:	1993
Proper Shipping Name (IATA)	:	FLAMMABLE LIQUID, N.O.S. (Methanol)
Class (IATA)	:	3 - Flammable Liquids
Packing group (IATA)	:	III - Minor Danger
Instruction "passenger" - Limited quantities (ICAO)	:	Y309 (Max qty. per package 10L) Special Provision A3

SECTION 15: Regulatory information

15.1. US Federal regulations

NAPA Windshield Wash -25 ºF	
EPA TSCA Regulatory Flag	Toxic Substances Control Act (TSCA): The intentional ingredients of this product are listed
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Fire hazard
SARA Section 313 - Emission Reporting	35 % Methanol (67-56-1)

methanol (67-56-1)	
CERCLA RQ	5000 lb(s) (2270 kg)
water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. International regulations

CANADA

NAPA Windshield Wash -25 ºF	
WHMIS Classification	This SDS has been prepared according to the criteria of the Hazardous Products Regulations (HPR) (WHMIS 2015) and the SDS contains all of the information required by the HPR. Applicable GHS information is listed in section 2.2 of this SDS.

15.3. US State regulations

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

methanol (67-56-1)					
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
No	Yes	No	No		47000 µg/day (inhalation); 23,000 µg/day (oral)

methanol (67-56-1)
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

Revision date : 10/01/2019

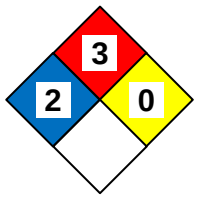
Full text of H-statements:

H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H370	Causes damage to organs

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 3 - Liquids and solids (including finely divided suspended solids) that can be ignited under almost all ambient temperature conditions.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



NAPA Windshield Wash -25 ºF

Safety Data Sheet

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

SDS GHS US (GHS HazCom 2012) OWI