Safety Data Sheets

Field

Gradex Inc.

01/21/2015
<table>
<thead>
<tr>
<th>Product Name</th>
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<td>Chemtool Incorporated</td>
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<td>Dielectric Tune-Up Grease</td>
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<td>PRO CHEM, INC.</td>
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<td>DuraMAX Windshield Washer Solvent (NF) (-20 Degree)</td>
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<td>Hot Shot Wasp &amp; Hornet Killer 3</td>
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<td>CHEMSICO DIV OF UNITED INDUSTRIES CORP</td>
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<td>Inter-Lube Delayed Viscosity Penetrating Grease</td>
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<td>KIMBALL-MIDWEST</td>
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<td>KRYLON CONTRACTOR Marking Paint, Fluorescent Orange</td>
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<td>Krylon Products Group</td>
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<td>Low Fuming Bronze Bare and Low Fuming Bronze Flux Coated</td>
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<td>.W. Harris Company, Inc.</td>
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<td>Marathon Dexron-III/Mercon Automatic Transmission Fluid</td>
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<td>AGS COMPANY</td>
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<td>NAPA/MAC'S STARTING FLUID No. 7216</td>
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<td>ASHLAND PETROLEUM COMPANY</td>
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For U.S. Manufactured or Distributed Welding Consumables and Related Products. May be used to comply with OSHA’s Hazard Communication Standard, 29 CFR 1910.1200 and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499. Standard must be consulted for specific requirements.

SECTION 1 - IDENTIFICATION

Manufacturer/Supplier Name: Hobart Brothers Company
Address: 101 Trade Square East, Troy, Ohio 45373

Trade Name For: "GROUP A": E6010, E6011
"GROUP B": E7018, E7018-1

Product Type For: "GROUP A" SHIELDED METAL ARC WELDING (SMAW) CARBON STEEL
"GROUP B" SHIELDED METAL ARC WELDING (SMAW) LOW HYDROGEN CARBON STEEL

SECTION 2 - HAZARDOUS INGREDIENTS

IMPORTANT - This section covers the hazardous materials from which this product is manufactured. The fumes and gases produced during welding with normal use of this product are also addressed in Section 5. The term "hazardous" in this section should be interpreted as a term required and defined in OSHA Hazard Communication Standard (29 CFR Part 1910.1200).

<table>
<thead>
<tr>
<th>HAZARDOUS INGREDIENTS</th>
<th>GROUP - % WEIGHT</th>
<th>CAS NO.</th>
<th>EXPOSURE LIMIT (mg/m³)</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
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<td>IRON</td>
<td>70-90</td>
<td>70-90</td>
<td>7439-89-6</td>
<td>5 R, 10 (Oxide Fume)</td>
<td>5 R* (Fe) (A4)</td>
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<td>MANGANESE#</td>
<td>1.5</td>
<td>1.5</td>
<td>7439-96-5</td>
<td>1, 3 STEL**, 5 CL** (Fume)</td>
<td>0.2 (As inorganic Compounds of Mn)</td>
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<td>ALUMINUM OXIDE#</td>
<td>&lt;5</td>
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<td>1344-62-8</td>
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<td>1 R* (A4)</td>
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<td>1317-65-3</td>
<td>5 R, 5 (as CaO)</td>
<td>3 R, 2 (as CaO)</td>
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<td>CELLULOSE</td>
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<td>9004-36-6</td>
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<td>MICA</td>
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<td>12002-26-2</td>
<td>3 R*</td>
<td>3 R*</td>
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<td>SILICA++</td>
<td>&lt;5</td>
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<td>14805-60-7</td>
<td>0.1 R*</td>
<td>0.025 R* (A2)</td>
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<td>Silica Fume</td>
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<td>69021-64-2</td>
<td>0.8</td>
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<td>Silica</td>
<td>&lt;2</td>
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<td>7440-21-3</td>
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<td>TITANIUM OXIDE</td>
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<td>13462-67-7</td>
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<td>FLUORSPAR</td>
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<td>7789-75-5</td>
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<td>2.5 (as F) (A4)</td>
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<td>MAGNESIUM CARBONATE</td>
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<td>STRONTIUM CARBONATE+++</td>
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<td>1633-05-2</td>
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<tr>
<td>SILICATE BINDERS+++</td>
<td>&lt;10</td>
<td>&lt;10</td>
<td>0.1 R* (As SiO₂ - Crystalline)</td>
<td>0.025 R* (As SiO₂ - Crystalline) (A2)</td>
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</table>

R* - Respirable Fraction  I* - Inhalable Fraction  ** - Ceiling Limit  *** - Short term Exposure Limit  + - As a nuisance particulate covered under "Particulates Not Otherwise Regulated" by OSHA or "Particulates Not Otherwise Classified" per ACGIH  ++ - Crystalline silica is bound within the product as it exists in the package. However, research indicates silica is present in welding fume in the amorphous (noncrystalline) form  +++ - Silicate binders are bound within the product as it exists in the package. Research indicates any welding fume created is in the amorphous (noncrystalline) form  # - Reportable material under Section 313 of SARA  ## - Reportable material under Section 313 of SARA only in fibrous form  (A2) - Suspected Human Carcinogen per ACGIH  (A4) - Not Classifiable as a Human Carcinogen per ACGIH

The exposure limit for welding fume has been established at 5 mg/m³ with OSHA's PEL. The individual complex compounds within the fume may have lower exposure limits than the general welding fume PEL. An Industrial Hygienist, the OSHA Permissible Exposure Limits for Air Contaminants (29 CFR 1910.1000), and the ACGIH Threshold Limit Values should be consulted to determine the specific fume constituents present and their respective exposure limits.

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

Welding consumables applicable to this sheet are solid and nonvolatile as shipped.

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

Welding consumables applicable to this sheet as shipped are nonreactive, nonflammable, nonexplosive and essentially nonhazardous until welded. Welding arcs and sparks can ignite combustibles and flammable products. See American National Standard 249.1 referenced in Section 7.

SECTION 5 - REACTIVITY DATA

HAZARDOUS DECOMPOSITION PRODUCTS

Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedures and electrodes used. Most fume ingredients are present as complex oxides and compounds and not as pure metals.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, priming or galvanizing), the number of welders and the volume of the work area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 2. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in Section 2, plus those from the base metal and coating, etc., as noted above.
Reasonably expected constituents of the fume would include: Primarily - complex iron oxides and fluorides. Secondarily - complex oxides of calcium, manganese, aluminum, silicon, magnesium, and titanium.

Monitor for the materials identified in Section 2. Fumes from the use of this product may contain fluorides, manganese, calcium oxide, mica and amorphous silica fume whose exposure limits are lower than the 5 mg/m^3 PEL for general welding fume.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample inside the welder's helmet if worn or in the worker's breathing zone. [See ANSI/AWS F1.1, available from the "American Welding Society", P.O. Box 351040, Miami, FL 33135. Also, from AWS is F1.3 "Evaluating Contaminants in the Welding Environment - A Sampling Strategy Guide", which gives additional advice on sampling.]

SECTION 6 - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:
Electric arc welding may create one or more of the following health hazards:
- Arc rays can injure eyes and burn skin.
- Electric shock can kill. See Section 7.
- Fumes and gases can be dangerous to your health.
- Primary routes of entry are the respiratory system, eyes and/or skin.

SHORT-TERM (ACUTE) OVEREXPOSURE EFFECTS:
- Welding Fumes - May result in discomfort such as dizziness, nausea or dryness or irritation of nose, throat or eyes. **Iron, Iron Oxide** - None are known. Treat as nuisance dust or fume. **Manganese** - Metal fume fever characterized by chills, fever, upset stomach, vomiting, irritation of the throat and aching of body. Recovery is generally complete within 48 hours of the overexposure. **Aluminum Oxide** - Irritation of the respiratory system. **Calcium Oxide** - Dust or fumes may cause irritation of the respiratory system, skin and eyes. **Silica (Amorphous)** - Dust and fumes may cause irritation of the respiratory system, skin and eyes. **Titanium Dioxide** - Irritation of respiratory system.

LONG-TERM (CHRONIC) OVEREXPOSURE EFFECTS:
- Welding Fumes - Excess levels may cause bronchial asthma, lung fibrosis, pneumoconiosis or "siderosis." **Iron, Iron Oxide Fumes** - Can cause siderosis (deposits of iron in lungs) which some researchers believe may affect pulmonary function. Lungs will clear in time when exposure to iron and its compounds ceases. Iron and magnetite (FeO) are not regarded as fibrogenic materials. **Manganese** - Long-term exposure to manganese compounds may affect the central nervous system. Symptoms may be similar to Parkinson's disease and can include slowness, changes in handwriting, gait impairment, muscle spasms and cramps and less commonly, tremor and behavioral changes. Employees who are exposed to manganese compounds should be seen by a physician for early detection of neurologic problems. **Aluminum Oxide** - Pulmonary fibrosis and emphysema. **Calcium Oxide** - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia. **Silica (Amorphous)** - Research indicates that silica is present in welding fume in the amorphous form. Long term overexposure may cause pneumoconiosis. Noncrystalline forms of silica (amorphous silica) are considered to have little fibrotic potential. **Titanium Dioxide** - Pulmonary irritation and slight fibrosis. **Fluorides** - Serious bone erosion (Osteoporosis) and molting of teeth. **Magnesium, Magnesium Oxide** - No adverse long term health effects have been reported in the literature. **Silicate Binders (Silica (Amorphous))** - Research indicates that silica is present in welding fume in the amorphous form. Long term overexposure may cause pneumoconiosis. Noncrystalline forms of silica (amorphous silica) are considered to have little fibrotic potential.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing impaired lung conditions (asthma-like conditions). Persons with a pacemaker should not go near welding and cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device. Respirators are to be worn only after being medically cleared by your company-designated physician.

EMERGENCY AND FIRST AID PROCEDURES: Call for medical aid. Employ first aid techniques recommended by the American Red Cross.

Eyes & Skin: If irritation or flash burns develop after exposure, consult a physician.

CARCINOGENICITY: Titanium dioxide compounds are classified as IARC Group 2B carcinogen. Silica (crystalline quartz) is classified as an IARC Group 1 and NTP Group K carcinogen. Silica (crystalline quartz) must be considered as a carcinogen under OSHA (29 CFR 1910.1200). Welding fumes must be considered as possible carcinogens under OSHA (29 CFR 1910.1200).

CALIFORNIA PROPOSITION 65: For Group A and B products: WARNING: This product contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.)

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING & USE/APPLICABLE CONTROL MEASURES

Read and understand the manufacturer's instructions and the precautionary label on the product. See American National Standard 249.1; Safety in Welding and Cutting published by the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA Publication 226/ (29 CFR 1910), U.S. Government Printing Office, Washington, DC 20402 for more detail on any of the following.

VENTILATION: Use enough ventilation, local exhaust at the arc or both to keep the fumes and gases below PEL/TLVs in the worker's breathing zone and the general area. Train the welder to keep his head out of the fumes.

RESPIRATORY PROTECTION: Use NIOSH approved or equivalent fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below PEL/TLVs.

EYE PROTECTION: Wear helmet or use face shield with filter lens. As a rule of thumb begin with Shade Number 14. Adjust if needed by selecting the next lighter and/or darker shade number. Provide protective screens and flash goggles, if necessary, to shield others.
PROTECTIVE CLOTHING: Wear hand, head and body protection which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection as well as dark nonsynthetic clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

PROCEDURE FOR CLEANUP OF SPILLS OR LEAKS: Not applicable

WASTE DISPOSAL: Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, State and Local regulations.

SPECIAL PRECAUTIONS (IMPORTANT): Maintain exposure below the PEL/TLVs. Use industrial hygiene monitoring to ensure that your use of this material does not create exposures which exceed PEL/TLVs. Always use exhaust ventilation. Refer to the following sources for important additional information: ANSI Z49.1 from the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA (29 CFR 1910) from the U.S. Department of Labor, Washington, DC 20210.

Hobart Brothers Company believes this data to be accurate and to reflect qualified expert opinion regarding current research. However, Hobart Brothers Company cannot make any expressed or implied warranty as to this information.
1. PRODUCT IDENTIFICATION

Product Name: 16BR BLACK SILICONE ADHESIVE SEALANT 3 OZ
Item No: 81158
Product Type: Elastomeric rubber

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>ACGIH; TLV-TWA</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLY (DIMETHYLSILOXANE), HYDROXY TERMINATED</td>
<td>70131-67-8</td>
<td>30-50</td>
<td>Not listed</td>
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<tr>
<td>LIMESTONE</td>
<td>1317-65-3</td>
<td>20-40</td>
<td>Not listed</td>
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<tr>
<td>CALCIUM CARBONATE</td>
<td>471-34-1</td>
<td>15-40</td>
<td>10 mg/m³</td>
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<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED LIGHT</td>
<td>64742-47-8</td>
<td>&lt;5</td>
<td>Not listed</td>
</tr>
<tr>
<td>VINYL OXIMINOSILANE</td>
<td>2224-33-1</td>
<td>&lt;5</td>
<td>Not listed</td>
</tr>
<tr>
<td>CARBON BLACK</td>
<td>1333-86-4</td>
<td>&lt;3</td>
<td>3.5 mg/m³</td>
</tr>
<tr>
<td>STEARIC ACID</td>
<td>57-11-4</td>
<td>&lt;2</td>
<td>Not listed</td>
</tr>
<tr>
<td>2-BUTANONE OXIME</td>
<td>96-29-7</td>
<td>0.5-2.0</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Toxicity: May cause eye and skin irritation. When this product if exposed to moisture, butanone oxime may be formed. May be harmful if swallowed. May irritate lips, gums, tongue, mouth, nose and throat.

Primary Routes of Entry:
- Eye and skin contact
- Ingestion
- Inhalation

Signs and Symptoms of Exposure:
- Butanone oxime produced during curing is toxic and irritates eyes, nose and throat. Overexposure to the silane may cause coma and respiratory failure.

Aggravated Medical Condition: Preexisting eye, skin and respiratory disorders may be aggravated by overexposure to this product.

4. FIRST AID MEASURES

Ingestion:
- Rinse mouth. Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation:
- Move to fresh air in case of accidental inhalation of vapours. Obtain medical attention.

Skin Contact:
- Wipe off material with paper towel or cloth Wash off with soap and water If skin irritation persists, call a physician

Eye Contact:
- In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flash Point °F(°C):
- >200°F TCC

Recommended Extinguishing Media:
- Carbon Dioxide, Dry Chemicals, Foam.

Special Fire-Fighting Procedures:
- Water spray may be ineffective on flames but should be used to keep fire-exposed containers cool.
5. FIRE FIGHTING MEASURES

Hazardous Products of Combustion: Oxides of carbon, Oxides of nitrogen, Methyl ethyl ketone, possibly methyl ethyl ketoxime, Silica fume, Formaldehyde

Unusual Fire/Explosion Hazards: None.

Lower Explosive Limit: Not determined
Upper Explosive Limit: Not determined

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Wipe or scrape up spill material. Maintain good ventilation for large spills. Place scrap material in a well-ventilated area and allow to cure to rubber. Clean up spills thoroughly as residue is slippery.

7. HANDLING AND STORAGE

Storage: Store in a dry area below 90 degrees F. Keep container closed when not in use.
Handling: Do not take internally. Do not inhale vapors. Avoid contact with skin and eyes. Do not wear contact lenses. Wash hands before eating and smoking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eyes: Safety glasses.
Skin: Neoprene or nitrile gloves recommended.
Ventilation: General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.
Respiratory Protection: An approved organic vapor respirator should be worn when exposures are expected to exceed the applicable limits.
Comments: When heated to temperatures above 300 degrees F. in the presence of air, this product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard and a known skin and respiratory sensitizer. Safe handling conditions may be maintained by keeping vapor concentrations below the OSHA permissible limit for formaldehyde.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Black paste
Odor: Mild
Boiling Point: Not applicable, polymeric material
pH: Does not apply
Solubility in Water: Polymerized
Specific Gravity: 1.43
VOC(Wt.%): 3.2%, 45.87 g/l
Vapor Pressure: <5 mm Hg
Vapor Density (Air=1): 3.0
Evaporation Rate: Not Determined

10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal conditions
Hazardous Polymerization: Will not occur
Incompatibilities: Polymerized by contact with moisture., Strong oxidizers, Acids, Iron
Conditions to Avoid: Exposure to moisture.
Hazardous Products of Combustion: Oxides of carbon, Oxides of nitrogen, Methyl ethyl ketone, possibly methyl ethyl ketoxime, Silica fume, Formaldehyde

11. TOXICOLOGICAL INFORMATION

See Section 3

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations.
US EPA Waste Number: NH - Not a RCRA Hazardous Waste Material
14. TRANSPORTATION INFORMATION

DOT (49CFR 172)

U.S. Department of Transportation - DOT - 49 CFR (Ground)

DOT Shipping Name: Not regulated
Hazard Class: None
UN/ID Number: None

IATA (Air)

Proper Shipping Name: Not regulated
Class or Division: None
UN/ID Number: None

IMDG (Vessel)

Proper Shipping Name: Not regulated
Hazard Class: None
UN Number: None
Marine Pollutant: None

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

NONE

California Proposition 65: No California Prop 65 chemicals are known to be present at or above the No Significant Risk Level

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

Estimated NFPA Rating: HEALTH 1, FLAMMABILITY 1, REACTIVITY 0.
Estimated HMIS Classification: HEALTH 1, FLAMMABILITY 1, PHYSICAL HAZARD 0
(NFPA is a registered trademark of the National Fire Protection Association)
HMIS is a registered trademark of the National Paint and Coatings Association

Prepared By: Denise Boyd, Manager-Environmental, Health & Safety
Company: ITW Permatex 10 Columbus Blvd. Hartford, CT USA 06106
Telephone No.: 1-87-Permatex (877) 376-2839

Revision Date: June 11, 2012
Revision Number: 3
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: 272 Threadlocker High Strength  
Product type: Anaerobic Adhesive  
Company address: Henkel Loctite Corporation  
1001 Trout Brook Crossing  
Rocky Hill, Connecticut 06067  

Item number: 27270  
Region: United States  
Contact Information:  
Telephone: 860.571.5100  
Emergency telephone: 860.571.5100  
Internet: www.loctite.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>%</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromatic dimethacrylate ester</td>
<td>60-100</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Maleimide Resin 3006-93-7</td>
<td>10-30</td>
<td>None</td>
<td>None</td>
<td>None</td>
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<td>Methacrylate ester</td>
<td>5-10</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>1-5</td>
<td>None</td>
<td>None</td>
<td>1 ppm (6 mg/m³) Skin (WEEL)</td>
</tr>
<tr>
<td>Hydroxyalkyl methacrylate 27813-02-1</td>
<td>1-5</td>
<td>None</td>
<td>None</td>
<td>1 ppm TWA; 3 ppm STEL</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystalline-free 112945-52-5</td>
<td>1-5</td>
<td>6 mg/m³ TWA</td>
<td>10 mg/m³ TWA</td>
<td>3 mg/m³ TWA respirable dust</td>
</tr>
<tr>
<td>1-Acetyl-2-phenylhydrazine 114-83-0</td>
<td>0.1-1</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HMIS:  
Physical state: Liquid  
Color: Red  
Odor: Mild  

HEALTH: 1*  
FLAMMABILITY: 1  
PHYSICAL HAZARD: 1  
Personal Protection: See Section 8  

WARNING:  
CAUSES EYE IRRITATION.  
MAY CAUSE RESPIRATORY TRACT IRRITATION.  
MAY CAUSE ALLERGIC SKIN REACTION.  
MAY BE HARMFUL IF SWALLOWED.  

Relevant routes of exposure: Skin, Inhalation, Eyes  

Potential Health Effects  

Item number: 27270  
Product name: 272 Threadlocker High Strength
Inhalation: May cause respiratory tract irritation.
Skin contact: May cause allergic skin reaction.
Eye contact: Contact with eyes will cause irritation.
Ingestion: May be harmful if swallowed.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

See Section 11 for additional toxicological information.

### 4. FIRST AID MEASURES

**Inhalation:** Remove to fresh air. If symptoms develop and persist, get medical attention.

**Skin contact:** Wash with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms occur.

**Eye contact:** Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.

**Ingestion:** Do not induce vomiting. Keep individual calm. Obtain medical attention.

### 5. FIRE-FIGHTING MEASURES

**Flash point:** Greater than 93 C (200 F) Taigiabue closed cup

**Autoignition temperature:** Not available

**Flammable/Explosive limits-lower %:** Not available

**Flammable/Explosive limits-upper %:** Not available

**Extinguishing media:** Foam, dry chemical or carbon dioxide.

**Special fire fighting procedures:** None

**Unusual fire or explosion hazards:** None


### 6. ACCIDENTAL RELEASE MEASURES

**Environmental precautions:** Prevent product from entering drains or open waters.

**Clean-up methods:** Ensure adequate ventilation. Soak up with inert absorbent. Store in a partly filled, closed container until disposal.

### 7. HANDLING AND STORAGE

**Handling:** Use only with adequate ventilation. Avoid contact with eyes, skin and clothing.

**Storage:** For safe storage, store at or below 38°C (100°F).

**Incompatible products:** Refer to Section 10.

For information on product shelf life contact Henkel Loctite Customer Service at (800) 243-4874.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: No specific ventilation requirements noted, but forced ventilation may still be required if concentrations exceed occupational exposure limits.

Respiratory protection: Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

Skin protection: Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves. Butyl rubber gloves. Natural rubber gloves.

Eye/face protection: Safety goggles or safety glasses with side shields.

See Section 2 for exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid
Color: Red
Odor: Mild
Vapor pressure: Less than 5 mm Hg at 27ºC (80ºF)
Boiling point/range: Greater than 149ºC (300ºF)
Melting point/range: Not available
Specific gravity: 1.11
Vapour density: Not available
Evaporation rate: Not available
Solubility in water: Slight
Partition coefficient (n-octanol/water): Not available
VOC content: 8.1%; 89.9 grams/liter (EPA Method 24)

10. STABILITY AND REACTIVITY

Stability: Stable.
Hazardous polymerization: Will not occur.
Incompatibility: Strong oxidizers.
Conditions to avoid: See “Handling and Storage” (Section 7) and “Incompatibility” (Section 10).

11. TOXICOLOGICAL INFORMATION

Product toxicity data: Acute oral LD50 greater than 10,000 mg/kg (rat). Acute LD50 (dermal): More than 1500 (rabbit).

Carcinogen Status

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>NTP Carcinogen</th>
<th>IARC Carcinogen</th>
<th>OSHA Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromatic dimethacrylate ester</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Maleimide Resin</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Methacrylate ester</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hydroxyalkyl methacrylate</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystalline-free</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1-Acetyl-2-phenylhydrazine</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Literature Referenced Target Organ & Other Health Effects

Item number: 27270

Product name: 272 Threadlocker High Strength
<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>Health Effects/Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aromatic dimethacrylate ester</td>
<td>Allergen, Irritant</td>
</tr>
<tr>
<td>Maleimide Resin</td>
<td>No Target Organs</td>
</tr>
<tr>
<td>Methacrylate ester</td>
<td>No data</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>Allergen, Central nervous system, Corrosive, Irritant, Mutagen</td>
</tr>
<tr>
<td>Hydroxyalkyl methacrylate</td>
<td>Allergen, Irritant</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystalline-free</td>
<td>Nuisance dust</td>
</tr>
<tr>
<td>1-Acetyl-2-phenylhydrazine</td>
<td>Allergen, Blood, Kidney, Mutagen, Some evidence of carcinogenicity</td>
</tr>
</tbody>
</table>

**12. ECOLOGICAL INFORMATION**

Ecological information: Not available

**13. DISPOSAL CONSIDERATIONS**

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

EPA hazardous waste number: Not a RCRA hazardous waste.

**14. TRANSPORT INFORMATION**

**U.S. Department of Transportation Ground (49 CFR):**

- Proper shipping name: Unrestricted
- Hazard class or division: None
- Identification number: None
- Packing group: None

**International Air Transportation (ICAO/IATA):**

- Proper shipping name: Unrestricted
- Hazard class or division: None
- Identification number: None
- Packing group: None

**WaterTransportation (IMO/IMDG):**

- Proper shipping name: Unrestricted
- Hazard class or division: None
- Identification number: None
- Packing group: None
- Marine pollutant: None
15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12 (b) Export Notification: None.
CERCLA/SARA Section 302 EHS: None above reporting de minimus.
CERCLA/SARA Section 311/312: Immediate Health Hazard, Delayed Health Hazard
CERCLA/SARA 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Cumene hydroperoxide (CAS 80-15-9).
California Proposition 65: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. o-Toluidine (CAS 95-53-4). Propylene oxide (CAS 75-56-9). Toluene (CAS 108-88-3).

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Domestic Substances List.

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections:
Expanded chemical information in Section 2 and related sections.

Prepared by: Kyra Kozak Woods, Health and Regulatory Affairs Specialist

DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Henkel Loctite Corporation does not assume responsibility for any results obtained by persons over whose methods Henkel Loctite Corporation has no control. It is the user’s responsibility to determine the suitability of Henkel Loctite’s products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Henkel Loctite Corporation’s products. In light of the foregoing, Henkel Loctite Corporation specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Henkel Loctite Corporation’s products. Henkel Loctite Corporation further disclaims any liability for consequential or incidental damages of any kind, including lost profits.
Material Safety Data Sheet

SECTION I - Material Identity
SECTION II - Manufacturer's Information
SECTION III - Physical/Chemical Characteristics
SECTION IV - Fire and Explosion Hazard Data
SECTION V - Reactivity Data
SECTION VI - Health Hazard Data
SECTION VII - Precautions for Safe Handling and Use
SECTION VIII - Control Measures
SECTION IX - Label Data
SECTION X - Transportation Data
SECTION XI - Site Specific/Reporting Information
SECTION XII - Ingredients/Identity Information

SECTION I - Material Identity

<table>
<thead>
<tr>
<th>Item Name</th>
<th>30756 OATEY PURPLE PRIMER NSF</th>
</tr>
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<tbody>
<tr>
<td>Part Number/Trade Name</td>
<td>30756 OATEY PURPLE PRIMER NSF</td>
</tr>
<tr>
<td>National Stock Number</td>
<td>6850P30756</td>
</tr>
<tr>
<td>CAGE Code</td>
<td>53472</td>
</tr>
<tr>
<td>Part Number Indicator</td>
<td>A</td>
</tr>
<tr>
<td>MSDS Number</td>
<td>192499</td>
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<tr>
<td>HAZ Code</td>
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SECTION II - Manufacturer's Information

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<tr>
<th>Manufacturer Name</th>
<th>OATEY CO</th>
</tr>
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<tbody>
<tr>
<td>P.O. Box</td>
<td>35906</td>
</tr>
<tr>
<td>Street</td>
<td>4700 WEST 160TH STREET</td>
</tr>
<tr>
<td>City</td>
<td>CLEVELAND</td>
</tr>
<tr>
<td>State</td>
<td>OH</td>
</tr>
<tr>
<td>Country</td>
<td>US</td>
</tr>
<tr>
<td>Zip Code</td>
<td>44135</td>
</tr>
<tr>
<td>Emergency Phone</td>
<td>303-623-5716 / 800-424-9300</td>
</tr>
<tr>
<td>Information Phone</td>
<td>216-267-7100</td>
</tr>
</tbody>
</table>
MSDS Preparer's Information

Date MSDS Prepared/Revised 29FEB00
Active Indicator N

Alternate Vendors

SECTION III - Physical/Chemical Characteristics

Appearance/Odor PURPLE LIQUID, SHARP ETHER ODOR
Boiling Point 174°F/66°C
Melting Point NA
Vapor Pressure 70
Vapor Density 2.5
Specific Gravity 0.807
Evaporation Rate 5.5-8.0
Solubility in Water 28 PARTS
Percent Volatiles by Volume 100%
Chemical pH NA
Container Pressure Code 1
Temperature Code 4
Product State Code L

SECTION IV - Fire and Explosion Hazard Data

Flash Point 0
Flash Point Method PHCC
Lower Explosion Limit 1.0
Upper Explosion Limit 10.0
Extinguishing Media [SMALL] USE DRY CHEMICAL, CO2, WATER OR FOAM EXTINGUISHER. [LARGE] EVACUATE AREA AND CALL FIRE DEPARTMENT IMMEDIATELY

Special Fire Fighting Procedures NR
Unusual Fire/Explosion Hazards NR

SECTION V - Reactivity Data

Stability YES
Stability Conditions to Avoid HEAT, SPARKS AND OPEN FLAME
Materials to Avoid ACIDS, OXIDIZING MATERIALS, ALKALIS, CHLORINATED INORGANICS (POTASSIUM, CALCIUM AND SODIUM HYPOCHLORITE), COPPER OR COPPER ALLOYS
Hazardous Decomposition Products
CARBON MONOXIDE, CARBON DIOXIDE,
HYDROGEN CHLORIDE, SMOKE
NO
WILL NOT OCCUR

Hazardous Polymerization
Polymerization Conditions to Avoid

SECTION VI - Health Hazard Data

Route of Entry: Skin
YES
Route of Entry: Ingestion
YES
Route of Entry: Inhalation
YES

Health Hazards - Acute and Chronic

[Skin] MAY CAUSE IRRITATION OF MUCOUS MEMBRANES, NOSE & THROAT, HEADACHE, DIZZINESS, NAUSEA, NUMBNESS OF THE EXTREMITIES AND NARCOSIS IN HIGH CONCENTRATIONS. HAS CAUSED CNS DEPRESSION & LIVER DAMAGE. [Skin] CHRONIC CONTACT MAY LEAD TO IRRITATION & DERMATITIS. CHRONIC EXPOSURE TO VAPOURS OF HIGH CONCENTRATION MAY CAUSE DERMATITIS. MAY BE ABSORBED THROUGH SKIN. [Eyes] VAPOURS OR DIRECT CONTACT MAY CAUSE IRRITATION [INGEST] MAY BE ASPIRATED INTO THE LUNGS OR CAUSE SYSTEMIC EFFECTS DESCRIBED IN INHALE

SYMPTOMS OF OVEREXPOSURE
SEE ABOVE

MEDICAL CONDL. AGGRAVATED BY EXPOSE
NR

EMERGENCY/FIRST AID PROCEDURES

[Skin] IF IRRITATION ARISES, WASH THOROUGHLY WITH SOAP AND WATER. SEEK MED ATTENTION IF IRRITATION PERSISTS. [Eyes] IF FUMES CAUSE IRRITATION, MOVE TO FRESH AIR AND IRRIGATE EYES WITH WATER FOR 15 MIN. IF IRRITATION PERSIST, SEEK MED ATTEN. [Inhal] MOVE TO FRESH AIR. GIVE OXYGEN OR ARTIFICIAL RESPIRATION AS NEEDED. KEEP VICTIM QUIET AND WARM. CALL A POISON CONTROL CENTER OR PHYSICIAN IMMEDIATELY. [Ingest] DRINK WATER AND CALL A POISON CONTROL CENTER OR PHYSICIAN IMMEDIATELY. AVOID ALCOHOLIC BEVERAGES. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON

SECTION VII - Precautions for Safe Handling and Use

Steps if Material Released/Spilled
VENTILATE AREA, STOP LEAK IF IT CAN BE DONE WITHOUT RISK. TAKE UP WITH SAND, EARTH, OR OTHER NON COMBUSTIBLE ABSORBING MATERIAL
Waste Disposal Method
DISPOSE ACCORDING TO LOCAL, STATE, AND FEDERAL REGULATIONS
KEEP AWAY FROM HEAT, SPARKS, AND FLAMES. STORE IN COOL, DRY PLACE
CONTAINERS, EVEN EMPTIES WILL RETAIN RESIDUE AND VAPOR

Handling and Storage Precautions

Other Precautions

SECTION VIII - Control Measures

Respiratory Protection
NIOSEH APPROVED CANISTER RESPIRATOR IN ABSENCE OF ADEQUATE VENTILATION

Ventilation
OPEN DOORS & WINDOWS. LOCAL EXHAUST

Protective Gloves
RUBBER GLOVES

Eye Protection
SAFETY GLASSES WITH SIDE SHIELDS

Other Protective Equipment
EYE WASH WITH SAFETY SHOWER

Work Hygienic Practices
WASH THOROUGHLY AFTER HANDLING

SECTION IX - Label Data

Protect Eye
NO

Protect Skin
NO

Protect Respiratory
NO

Chronic Indicator
UNKNOWN

Contact Code
UNKNOWN

Fire Code
UNKNOWN

Health Code
UNKNOWN

React Code
UNKNOWN

SECTION X - Transportation Data

SECTION XI - Site Specific/Reporting Information

Volatile Organic Compounds (P/G) 6.2584
Volatile Organic Compounds (G/L) 749.9994

SECTION XII - Ingredients/Identity Information

Ingredient # 01
Ingredient Name FURAN, TETRAHYDRO- (10-15%)
CAS Number 109999
Proprietary NO
Percent 15
<table>
<thead>
<tr>
<th>Ingredient Name</th>
<th>CAS Number</th>
<th>Proprietary</th>
<th>Percent</th>
<th>Ingredient Name</th>
<th>CAS Number</th>
<th>Proprietary</th>
<th>Percent</th>
<th>Ingredient Name</th>
<th>CAS Number</th>
<th>Proprietary</th>
<th>Percent</th>
<th>Ingredient Name</th>
<th>CAS Number</th>
<th>Proprietary</th>
<th>Percent</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Recommended Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-BUTANONE (70-80%)</td>
<td>78933</td>
<td>NO</td>
<td>80</td>
<td>CYCLOHEXANONE (15-20%)</td>
<td>108941</td>
<td>NO</td>
<td>20</td>
<td>2-PROPANONE (&lt;1%)</td>
<td>67641</td>
<td>NO</td>
<td>1</td>
<td>VIOLET DYE (&lt;1%)</td>
<td>81481</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NR</td>
<td>NONE SPECIFIED</td>
</tr>
<tr>
<td>RED DYE (&lt;1%)</td>
<td>4477796</td>
<td>NO</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NR</td>
<td>NR</td>
<td>NONE SPECIFIED</td>
</tr>
</tbody>
</table>
Material Safety Data Sheet

1. PRODUCT IDENTIFICATION
Product Name: 66BR CLEAR RTV SILICONE ADHESIVE SEALANT 3 OZ
Item No: 80050
Product Type: Silicone

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>ACGIH; TLV-TWA</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLY (DIMETHYLSILOXANE), HYDROXY TERMINATED</td>
<td>&gt;60</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>AMORPHOUS SILICA</td>
<td>&lt;10</td>
<td>Not listed</td>
<td>20 mppcf</td>
</tr>
<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED MIDDLE</td>
<td>&lt;7</td>
<td>5 mg/m³</td>
<td>Not listed</td>
</tr>
<tr>
<td>ETHYLTRIACETOXYLISILANE</td>
<td>&lt;5</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>METHYLTRIACETOXYLISILANE</td>
<td>&lt;5</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>ACETIC ACID</td>
<td>0.5-2.0</td>
<td>5 mg/m³</td>
<td>10 ppm; 25 mg/m³</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION
Toxicity: May cause eye and skin irritation. May irritate lips, gums, tongue, mouth, nose and throat. May irritate respiratory system upon frequent or prolonged use. ***When this product is exposed to moisture, acetic acid may be formed. Note: This product does not contain microcrystalline silica.

Primary Routes of Entry: Eye and skin contact, ingestion, inhalation

Signs and Symptoms of Exposure: Acetic acid produced during curing irritates eyes, nose and throat.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>NTP</th>
<th>ACGIH</th>
<th>Carcinogens</th>
<th>IARC</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMORPHOUS SILICA</td>
<td>&lt;10</td>
<td>NTP</td>
<td>ACGIH</td>
<td>Carcinogens</td>
<td>IARC</td>
</tr>
<tr>
<td>7631-86-9</td>
<td>Group 3 Monograph 68, 1997</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Medical Conditions Recognized as Being Aggravated by Exposure: Methyltriacetoxyisilane: Eye, skin and pulmonary disorders.

4. FIRST AID MEASURES

Ingestion: Rinse mouth. If swallowed, DO NOT induce vomiting. Keep individual calm. Obtain medical attention.

Inhalation: Move to fresh air in case of accidental inhalation of vapours. Obtain medical attention.

Skin Contact: Wipe off material with paper towel or cloth. Wash off with soap and water. If skin irritation persists, call a physician.

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flash Point °F(°C): >200°F (TCC)
Recommended Extinguishing Media: Carbon Dioxide, Dry Chemicals, Foam.
Special Fire-Fighting Procedures: Water spray may be ineffective on flames but should be used to keep fire-exposed containers cool.

Hazardous Products of Combustion: Oxides of carbon, Silica fume, Formaldehyde, Acetic acid
Unusual Fire/Explosion Hazards: None.

Lower Explosive Limit: Not determined
5. FIRE FIGHTING MEASURES
Upper Explosive Limit: Not determined

6. ACCIDENTAL RELEASE MEASURES
Spill Procedures: Wipe or scrape up spill material. Maintain good ventilation for large spills. Place scrap material in a well-ventilated area and allow to cure to rubber. Clean up spills thoroughly as residue is slippery.

7. HANDLING AND STORAGE
Storage: Store away from water or moisture. Keep away from oxidizers.
Handling: Avoid contact with skin and eyes. Do not wear contact lenses. Use only in a well-ventilated area. Do not take internally. Wash thoroughly after handling.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Eyes: Safety glasses.
Skin: Neoprene or nitrile gloves recommended.
Ventilation: General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.
Respiratory Protection: An approved organic vapor respirator should be worn when exposures are expected to exceed the applicable limits.
Comments: When heated to temperatures above 300 degrees F. in the presence of air, this product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard and a known skin and respiratory sensitizer. Safe handling conditions may be maintained by keeping vapor concentrations below the OSHA permissible limit for formaldehyde.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance: Clear paste
Odor: Acetic acid
Boiling Point: Not applicable, polymeric material
pH: Does not apply
Solubility in Water: Polymerized
Specific Gravity: 1.01
VOC(Wt.%): 3.0%; 30 g/l
Vapor Pressure: 10 mm Hg @ 80°F
Vapor Density (Air=1): Not Determined
Evaporation Rate: Not Determined

10. STABILITY AND REACTIVITY
Chemical Stability: Stable at normal conditions
Hazardous Polymerization: Will not occur
Incompatibilities: Polymerized by contact with moisture. Acetic acid liberated.
Conditions to Avoid: Exposure to moisture.
Hazardous Products of Combustion: Oxides of carbon, Silica fume, Formaldehyde, Acetic acid

11. TOXICOLOGICAL INFORMATION
See Section 3

12. ECOLOGICAL INFORMATION
No data available

13. DISPOSAL CONSIDERATIONS
Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations.
US EPA Waste Number: NH - Not a RCRA Hazardous Waste Material

14. TRANSPORTATION INFORMATION
DOT (49CFR 172)
Ground Transport (DOT)
DOT Shipping Name: Not regulated
Hazard Class: None
14. TRANSPORTATION INFORMATION

UN/ID Number: None

IATA
Proper Shipping Name: Not regulated
Class or Division: None
UN/ID Number: None

IMDG
Proper Shipping: Not regulated
Hazard Class: None
UN Number: None
Marine Pollutant: None

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

NONE

California Proposition 65: No California Prop 65 chemicals are known to be present at or above the No Significant Risk Level

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

Estimated NFPA Rating: HEALTH 2, FLAMMABILITY 1, REACTIVITY 1.
Estimated HMIS Classification: HEALTH 2, FLAMMABILITY 1, PHYSICAL HAZARD 0
NFPA is a registered trademark of the National Fire Protection Assn.
HMIS is a registered trademark of the National Paint and Coatings Assn.

Prepared By: Denise Boyd, Manager-Environmental, Health & Safety
Company: Permatex. Inc. 10 Columbus Blvd. Hartford, CT USA 06106
Telephone No.: 1-877-Permatex (877) 376-2839
Revision Date: June 01, 2011
Revision Number: 3
Material Safety Data Sheet

1. PRODUCT IDENTIFICATION

Product Name: 765-1221 NAPA HIGH TACK GASKET SEALANT(PTX80062) 4 FL. OZ
Item No: 21146
Product Type: Sealant

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>ACGIH; TLV-TWA</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACETONE</td>
<td>35-45</td>
<td>500 ppm</td>
<td>1000 ppm; 2400 mg/m³</td>
</tr>
<tr>
<td>METHYL ESTER OF ROSIN</td>
<td>20-30</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>N-HEXANE</td>
<td>15-25</td>
<td>50 ppm</td>
<td>500 ppm; 1800 mg/m³</td>
</tr>
<tr>
<td>ROSIN</td>
<td>5-15</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>ACRYLONITRILE-BUTADIENE POLYMER</td>
<td>&lt;10</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Toxicity: May cause eye, skin and respiratory irritation. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as "solvent" or "painter's syndrome"). Symptoms include fatigue, concentration difficulties, anxiety, depression, rapid mood swings, and short-term memory loss. Aspiration hazard if swallowed. Prolonged and repeated exposure to methyl ethyl ketone and/or n-hexane may cause peripheral neuropathy by damaging peripheral nerve tissue (that of arms and legs) and result in muscular weakness and loss of sensation.

Primary Routes of Entry: Eye and skin contact, ingestion, inhalation

Excessive overexposure may cause giddiness, dizziness, headache, nausea and in extreme cases, unconsciousness and respiratory depression. Overexposure may cause eye and skin redness, difficulty breathing and vomiting.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>NTP</th>
<th>ACGIH Carcinogens</th>
<th>IARC Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACETONE</td>
<td>35-45</td>
<td>Not known</td>
<td>A4 - Not Classifiable as a Human Carcinogen</td>
<td></td>
</tr>
</tbody>
</table>

Aggravated Medical Condition: Persons with preexisting respiratory, liver, kidney, eye or skin diseases may be adversely affected.

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation: Move to fresh air in case of accidental inhalation of vapours. Oxygen or artificial respiration if needed.

Skin Contact: Wash off with soap and water. If skin irritation persists, call a physician.

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flash Point °F(C): 0°F
Recommended Extinguishing Media: Carbon Dioxide, Dry Chemicals, Foam.
Special Fire-Fighting Procedures: Firefighters should wear self-contained breathing apparatus. Water spray may be ineffective on flames but should be used to keep fire-exposed containers cool.
5. FIRE FIGHTING MEASURES

Hazardous Products of Combustion:
- Oxides of carbon

Unusual Fire/Explosion Hazards:
- Closed containers may rupture or explode when exposed to extreme heat.
- Keep containers cool.

Lower Explosive Limit: 2.0
Upper Explosive Limit: 13.0

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures:
- Eliminate all sources of ignition. Maintain good ventilation. Take up with an inert absorbent. Store in a closed waste container until disposal.

7. HANDLING AND STORAGE

Storage:
- Store away from heat, sparks or open flame. Do not store at temperatures above 100°F (38°C).

Handling:
- Do not use near heat, sparks or open flame. Vapors may accumulate readily and may ignite explosively. Use only in a well ventilated area. Do not take internally. Avoid contact with skin and eyes. Wash hands before eating and smoking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eyes:
- Safety glasses.

Skin:
- Neoprene or nitrile gloves recommended.

Ventilation:
- General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.

Respiratory Protection:
- An approved organic vapor respirator should be worn when exposures are expected to exceed the applicable limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
- Red, tacky liquid

Odor:
- Solvent

Boiling Point:
- 135°F

pH:
- Does not apply

Solubility in Water:
- Partial

Specific Gravity:
- 0.872

VOC(Wt.%):
- 16.6 %

Vapor Pressure:
- 400 mm Hg

Vapor Density (Air=1):
- 2.5

Evaporation Rate:
- Faster than ether

10. STABILITY AND REACTIVITY

Chemical Stability:
- Stable at normal conditions

Hazardous Polymerization:
- Will not occur

Incompatibilities:
- Strong oxidizers

Conditions to Avoid:
- Keep away from heat, sparks and open flame. - No smoking.

Hazardous Products of Combustion:
- Oxides of carbon

11. TOXICOLOGICAL INFORMATION

See Section 3

12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended Method of Disposal:
- Disposal should be made in accordance with federal, state and local regulations.

US EPA Waste Number:
- D001 as per 40CFR 261.21

14. TRANSPORTATION INFORMATION

DOT (49CFR 172)
- U.S. Department of Transportation - DOT - 49 CFR (Ground)

DOT Shipping Name: Adhesives, Limited Quantity
Hazard Class: Class 3, PG II
14. TRANSPORTATION INFORMATION

UN/ID Number: UN 1133

IATA (Air)
Proper Shipping Name: Consumer Commodity
Class or Division: Class 9
UN/ID Number: ID 8000

IMDG (Vessel)
Proper Shipping Name: Adhesives, Limited Quantity
Hazard Class: Class 3, PG II
UN Number: UN 1133

Marine Pollutant: None

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

N-HEXANE

California Proposition 65: WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

Estimated NFPA Rating: HEALTH 2, FLAMMABILITY 3, REACTIVITY 0.
Estimated HMIS Classification: HEALTH 2, FLAMMABILITY 3, PHYSICAL HAZARD 0
(NFPA is a registered trademark of the National Fire Protection Association)
HMIS is a registered trademark of the National Paint and Coatings Association

Prepared By: Denise Boyd, Manager-Environmental, Health & Safety
Company: ITW Permatex 10 Columbus Blvd. Hartford, CT USA 06106
Telephone No.: 1-87-Permatex (877) 376-2839
Revision Date: January 26, 2012
Revision Number: 7
SECTION I. Chemical Product and Company Identification

Product Name: ABC Dry Chemical Fire Extinguishant
Synonym: Multi-purpose Dry Chemical
Manufacturer: Buckeye Fire Equipment Company
110 Kings Road
Kings Mountain, NC 28086
Telephone: 704.739.7415
Emergency: CHEMTREC 1.800.424.9300

Revision Date: 6/13

SECTION II. Hazard Identification and Emergency Overview

Emergency Overview: Product is a light yellow, fine solid powder that is odorless.

Adverse Health Effects and Symptoms: Product is a moderate irritant to the respiratory system and eyes; a mild irritant to the skin. Symptoms may include shortness of breath, coughing, and irritation to the eyes, lungs, and skin. Ingestion may cause gastric irritation, nausea, and diarrhea.

Exposure Guidelines:

<table>
<thead>
<tr>
<th></th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Particulates Not</td>
<td>Particulates Not</td>
</tr>
<tr>
<td></td>
<td>Otherwise</td>
<td>Otherwise</td>
</tr>
<tr>
<td></td>
<td>Classified</td>
<td>Classified</td>
</tr>
<tr>
<td></td>
<td>Total Dust - 15</td>
<td>Total Dust - 10</td>
</tr>
<tr>
<td></td>
<td>mg/m³</td>
<td>mg/m³</td>
</tr>
<tr>
<td></td>
<td>Respirable Fraction- 5 mg/m³</td>
<td>Respirable Fraction- 3 mg/m³</td>
</tr>
<tr>
<td>Monoammonium</td>
<td>Particulates Not</td>
<td>Particulates Not</td>
</tr>
<tr>
<td>phosphate</td>
<td>Otherwise</td>
<td>Otherwise</td>
</tr>
<tr>
<td></td>
<td>Total Dust - 15</td>
<td>Total Dust - 10</td>
</tr>
<tr>
<td></td>
<td>mg/m³</td>
<td>mg/m³</td>
</tr>
<tr>
<td></td>
<td>Respirable Fraction- 5 mg/m³</td>
<td>Respirable Fraction- 3 mg/m³</td>
</tr>
<tr>
<td>Barium sulfate</td>
<td>Particulates Not</td>
<td>Particulates Not</td>
</tr>
<tr>
<td></td>
<td>Otherwise</td>
<td>Otherwise</td>
</tr>
<tr>
<td></td>
<td>Total Dust - 15</td>
<td>Total Dust - 10</td>
</tr>
<tr>
<td></td>
<td>mg/m³</td>
<td>mg/m³</td>
</tr>
<tr>
<td></td>
<td>Respirable Fraction- 5 mg/m³</td>
<td>Respirable Fraction- 3 mg/m³</td>
</tr>
<tr>
<td>Mica</td>
<td>6 mg/m³</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>Silica</td>
<td>6 mg/m³</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Stannous octoate</td>
<td>.1 mg/m³</td>
<td>.1 mg/m³</td>
</tr>
<tr>
<td>Silicone</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
<tr>
<td>Pigment</td>
<td>Not Regulated</td>
<td>Not Regulated</td>
</tr>
</tbody>
</table>

Hazard Symbols:

HMIS RATINGS:

Health 1
Flammability 0
Reactivity 0

Personal Protective Equipment: use N-95 dust mask (See Section 8)

WHMIS (Canadian Workplace Hazardous Materials Identification)
D2B- May irritate eyes, mucous membranes, and/or skin

SECTION III. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th></th>
<th>Weight %*</th>
<th>CAS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoammonium phosphate</td>
<td>85</td>
<td>7722-76-1</td>
</tr>
<tr>
<td>Barium Sulfate</td>
<td>10</td>
<td>7727-43-7</td>
</tr>
<tr>
<td>Mica</td>
<td>&lt; 3</td>
<td>12001-26-2</td>
</tr>
<tr>
<td>Silica</td>
<td>&lt; 2</td>
<td>7631-86-9</td>
</tr>
<tr>
<td>Stannous octoate</td>
<td>&lt; .3</td>
<td>301-10-0</td>
</tr>
<tr>
<td>Silicone</td>
<td>&lt; .1</td>
<td>63148-57-2</td>
</tr>
<tr>
<td>Pigment</td>
<td>&lt; .1</td>
<td>6358-31-2</td>
</tr>
</tbody>
</table>

* % is rounded to the nearest appropriate number. Values are not to be considered product specifications.
SECTION IV. First Aid Measures

Eye Exposure- Flush eyes with water until pain-free. If irritation develops or persists, seek medical attention.

Skin Exposure- Wash with plenty of soap and water. If irritation develops or persists, seek medical attention.

Inhalation- Move victim to fresh air. If irritation develops or persists, seek medical attention.

Ingestion- If victim is conscious and alert, give 2-3 glasses of water to drink. Do not induce vomiting. If vomiting occurs and the victim is conscious, give additional water to further dilute the chemical. Prevent aspiration of swallowed product by laying victim on side with head lower than their waist. Seek medical attention. Do not leave victim unattended.

Medical Conditions Possibly Aggravated by Exposure- Inhalation of the product may aggravate existing chronic respiratory conditions such as asthma, emphysema, or bronchitis. Contact with the skin may aggravate an existing skin disease. Chronic overexposure may cause pneumoconiosis (“Dusty Lung” disease).

SECTION V. Firefighting Measures

Extinguishing Media: N/A. This product is an extinguishing agent. It is nonflammable and noncombustible.

Special Firefighting Procedures: N/A

Unusual Fire and Explosion Hazards: This product may decompose in fire and release oxides of carbon, potassium, and nitrogen (Refer to Section X).

Sensitivity to Mechanical Impact or Static Discharge: None

SECTION VI. Accidental Release Measures

In case of accidental release, use the appropriate respiratory protection. Clean up the product using a vacuum or wet sweep and shovel to minimize the generation of dust. Bag or drum the product for disposal. If the product is used and/or contaminated, use personal protective equipment and containment means that are appropriate for the composition of the mixture. Product should be prevented from entering waterways.

SECTION VII. Handling and Storage

Avoid eye, respiratory, and skin exposure. Use the appropriate personal protective equipment when handling. Wash thoroughly after handling (Refer to Section VIII). Product should be stored in its original container or extinguisher. When the product is contained under pressure (e.g., an extinguisher), inspect the container for rust or damage that may compromise the container integrity. Do not store the product in high humidity and do not mix with other extinguishing agents, particularly potassium bicarbonate based agents.

SECTION VIII. Exposure Controls and Personal Protection

During the use of this product on fires, exhaust gases and products of incomplete combustion are the main respiratory hazards. In the manufacture of this product, employers and employees must use their collective judgment in determining the on-the-job settings where the use of a dust mask or respirator is prudent. The need for respiratory protection is not likely for short-term use in well-ventilated areas.

Respiratory Protection: Use an N-95 dust mask for limited exposures and use air-purifying respirators with high efficiency particulate air filters (HEPA filters) for prolonged exposures.

Eye Protection: Wear chemical goggles or full-face air-purifying respirator.

Skin Protection: Use nitrile, latex, or similar gloves and coveralls. Good personal hygiene practices are essential. After handling the product, avoid food, tobacco products, or other means of transferring the product from hand to mouth until after thoroughly washing.
SECTION IX. Physical and Chemical Properties

**Appearance and Odor:** Light yellow fine powder that is odorless.
**Apparent Density:** 0.82
**Solubility:** The product is coated with water repellant silicone. Not immediately soluble in water.
**pH:** Approximately 4 -5
**Flash Point:** N/A
**Flammability:** N/A
**Vapor Pressure:** N/A
**Boiling Point:** N/A
**Explosive or Oxidizing Properties:** None

SECTION X. Stability and Reactivity

**Stability:** Stable
**Incompatibles:** Magnesium, strong oxidizers such as calcium hypochlorite (pool chlorine), strong alkalis, and isocyanuric acids.
**Decomposition Products:** This product may decompose in fire and release carbon monoxide, carbon dioxide, and sulfur dioxide. Oxides of phosphorous and ammonia have been reported.
**Hazardous Polymerization:** Will not occur
**Hazardous Reactions:** None

SECTION XI. Toxicological Information

**Acute Toxicity:** Monoammonium phosphate LD50 (rat): > 1000mg/kg body weight.
Target organs in humans: respiratory system, eyes, and skin. This product is an irritant to epithelial tissue and may aggravate dermatitis. No indication that the product causes sensitization.

**Chronic Toxicity:** Pneumoconiosis, or “Dusty Lung” disease, may result from chronic exposure to any dust.

**Reproductive Toxicity:** This product is not known to have any reproductive effects.

SECTION XII. Ecological Information

**Ecotoxicity:** Negative effects are unknown. Provides nutrient nitrogen and phosphorous to plant life.
**Degradability:** Degrades rapidly in wet or humid environment.
**Bioaccumulation:** Unknown extent.
**Mobility in Soil:** Water-soluble. May leech into groundwater.

SECTION XIII. Considerations for Disposal

This product is not a RCRA characteristically hazardous or listed hazardous waste. Dispose of according to state or local laws, which may be more restrictive than federal regulations. Be aware that product used on a fire may be altered or contaminated and thereby require different disposal considerations.

SECTION XIV. Transportation Information

This product is not defined as a hazardous material under U.S. Department of Transportation 49 CFR 172, or by Transport Canada “Transportation of Dangerous Goods” regulations.

Please Note: Although this material is not considered hazardous, when contained in a stored pressure fire extinguisher pressurized with a nonflammable gas, the extinguisher itself is considered hazardous material by the U.S. Department of Transportation (USDOT) and Transport Canada (TC). Packaging of the fire extinguisher shall be identified with the Proper Shipping Name (Fire Extinguisher) and the UN Identification Number (UN 1044). The USDOT hazard class/division is 2.2 Nonflammable Gas. Packing Group = N/A
SECTION XV. Regulatory Information

International Inventory Status: All ingredients are on the following inventories

<table>
<thead>
<tr>
<th>Country</th>
<th>Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.A.</td>
<td>TSCA</td>
</tr>
<tr>
<td>Canada</td>
<td>DSL</td>
</tr>
<tr>
<td>Europe</td>
<td>EINECS/ELINCS</td>
</tr>
<tr>
<td>Australia</td>
<td>AICS</td>
</tr>
<tr>
<td>Japan</td>
<td>MITI</td>
</tr>
<tr>
<td>South Korea</td>
<td>KECL</td>
</tr>
</tbody>
</table>

European Risk and Safety Phrases:

- EU Classification: Harmful
  - R Phrases: 22 Harmful if swallowed
  - 36/37/38 Irritating to eyes, respiratory system, and skin.
  - S Phrases: 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
  - 36 Wear suitable protective clothing

U.S. Federal Regulatory Information:

None of the chemicals in this product are under SARA reporting requirements or have SARA Threshold Planning Quantities or CERCLA Reportable Quantities, or are regulated under TSCA 8(d).

State Regulatory Information:

Chemicals in this product are covered under the specific State regulations noted:

- Alaska: Designated Toxic and Hazardous Substances- None
- California: Permissible Exposure Limits for Chemical Contaminants- None
- Florida: Substance list- Mica dust
- Illinois: Toxic Substance List- None
- Kansas: Section 302/303 List- None
- Massachusetts: Substance list- Mica dust
- Minnesota: List of Hazardous Substances- None
- Missouri: Employer Information/Toxic Substance List- None
- New Jersey: Right to Know Hazardous Substance List- None
- North Dakota: List of Hazardous Chemicals, Reportable Quantities- None
- Pennsylvania: Hazardous Substance List- None
- Rhode Island: Hazardous Substance List- Mica dust
- Texas: Hazardous Substance List- No
- West Virginia: Hazardous Substance List- None
- Wisconsin: Toxic and Hazardous Substances- None

California Proposition 65: No component is listed on the California Proposition 65 List

SECTION XVI. Other Information

This MSDS conforms to the requirements under U.S., U.K., Canadian, Australian, and EU Regulations or Standards. It conforms to the proposed 2003 ANSI Z400.1 format.

The information contained herein is given in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made.
# Praxair Material Safety Data Sheet

## 1. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Product Name: Acetylene, dissolved (MSDS No. P-6201-F)</th>
<th>Trade Names: Acetylene in DMF, Trailer Acetylene, Cylinder Acetylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name: Acetylene</td>
<td>Synonyms: Acetylen, ethine, ethyne, nercylene</td>
</tr>
<tr>
<td>Chemical Family: Alkyne</td>
<td>Product Grades: Not applicable.</td>
</tr>
<tr>
<td>Telephone: Emergencies: 1-800-645-4633*</td>
<td>Company Name: Praxair, Inc.</td>
</tr>
<tr>
<td>CHEMTREC: 1-800-424-9300*</td>
<td>39 Old Ridgebury Road</td>
</tr>
<tr>
<td>Routine: 1-800-PRAXAIR</td>
<td>Danbury, CT 06810-5113</td>
</tr>
</tbody>
</table>

*Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier, Praxair sales representative, or call 1-800-PRAXAIR (1-800-772-9247).

## 2. Hazards Identification

### EMERGENCY OVERVIEW

**DANGER!** Flammable gas under pressure. Can form explosive mixtures with air. Fusible plugs in top or valve melt at 208-224°F (98-107°C). Do not discharge at pressures above 15 psig (103 kPa). May cause dizziness and drowsiness. Self-contained breathing apparatus may be required by rescue workers. At normal temperature and pressure, commercial acetylene is a colorless gas with a distinctive garlic-like odor.

### OSHA REGULATORY STATUS:

This material is considered hazardous by the OSHA Hazard Communications Standard (29 CFR 1910.1200).

### POTENTIAL HEALTH EFFECTS:

#### Effects of a Single (Acute) Overexposure

**Inhalation.** Asphyxiant. Effects are due to lack of oxygen. Moderate concentrations may cause headache, drowsiness, dizziness, excitation, excess salivation, nausea, vomiting, and unconsciousness. The vapor from a liquid release may also cause incoordination, abdominal pain, and possible liver damage. Effects may be delayed. Lack of oxygen can kill.

**Skin Contact.** No harm expected from vapor. Liquid may cause frostbite and irritation. Affected skin may turn red and become dried out. With prolonged or widespread contact with the liquid, the body may absorb potentially harmful amounts of material. Signs and symptoms are the same as from swallowing.
Swallowing. An unlikely route of exposure, but frostbite of the lips and mouth may result from contact with the liquid. If swallowed, the liquid may cause headache, dizziness, incoordination, abdominal pain, and possible liver damage. Effects may be delayed.

Eye Contact. Vapors irritate the eyes. Liquid may cause frostbite and more severe irritation, seen as excess redness and swelling of the conjunctiva (the connective tissues surrounding the eyes), with possible corneal injury.

Effects of Repeated (Chronic) Overexposure. Exposure to the liquid may cause loss of appetite, dermatitis, and liver damage.

Other Effects of Overexposure. Exposure to high concentrations of the liquid has been shown to cause birth defects in laboratory animals.

Medical Conditions Aggravated by Overexposure. Because of its defatting properties, the liquid may aggravate an existing dermatitis.

CARCINOGENICITY: Acetylene is not listed by NTP, OSHA, or IARC. DMF (see section 3) is listed by IARC as Group 3, Unclassifiable as to carcinogenicity to humans.

POTENTIAL ENVIRONMENTAL EFFECTS: None expected. For further information, see section 12, Ecological Information.

3. Composition/Information on Ingredients

This section covers materials of manufacture only. See sections 8, 10, 11, 15, and 16 for information on by-products generated during use, especially use in welding and cutting. See section 18 for important information about mixtures.

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAS NUMBER</th>
<th>CONCENTRATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetylene</td>
<td>74-86-2</td>
<td>&gt;99%</td>
</tr>
</tbody>
</table>

*The symbol > means "greater than."

NOTE: Acetylene cylinders are filled with a porous material containing dimethylformamide (DMF, CAS 68-12-2) into which the acetylene is dissolved.

4. First Aid Measures

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, qualified personnel may give oxygen. Call a physician.

SKIN CONTACT: For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). In case of massive exposure, remove contaminated clothing while showering with warm water. Call a physician.

SWALLOWING: If liquid is swallowed, immediately give two glasses of water and induce vomiting if victim is conscious. Call a physician.

EYE CONTACT: In case of splash contamination, immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. See a physician, preferably an ophthalmologist, immediately.

NOTES TO PHYSICIAN: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.
5. Fire Fighting Measures

FLAMMABLE PROPERTIES: Extremely flammable gas. Forms explosive mixtures with air and oxidizing agents.

SUITABLE EXTINGUISHING MEDIA: See the following paragraphs. See CGA Pamphlet SB-4, Handling Acetylene Cylinders in Fire Situations, listed in section 16, for further information.

PRODUCTS OF COMBUSTION: Carbon monoxide, carbon dioxide

PROTECTION OF FIREFIGHTERS: DANGER! Flammable gas under pressure. Evacuate all personnel from danger area. Immediately cool cylinders with water spray from maximum distance taking care not to extinguish flames. If flames are accidentally extinguished, explosive re-ignition may occur. Use self-contained breathing apparatus. Remove ignition sources if without risk. Stop flow of gas if without risk while continuing cooling water spray. Remove all cylinders from area of fire if without risk. Allow fire to burn out. On-site fire brigades must comply with OSHA 29 CFR 1910.156.

Specific Physical and Chemical Hazards. Heat of fire can build pressure in cylinder and cause it to rupture. Acetylene cylinders are provided with pressure relief devices designed to vent contents when exposed to elevated temperature. No part of a cylinder should be subjected to a temperature higher than 125°F (52°C). If venting or leaking acetylene catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an approved explosion meter.

Protective Equipment and Precautions for Firefighters. Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

DANGER! Flammable gas under pressure.

Personal Precautions. These mixtures are asphyxiants. Lack of oxygen can kill. Evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Shut off leak if you can do so without risk. Ventilate area or move cylinder to a well-ventilated area. Test for sufficient oxygen, especially in confined spaces, before allowing reentry.

Environmental Precautions. Prevent waste from contaminating the surrounding environment. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local supplier for assistance.

7. Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING: Keep away from heat, sparks, and open flame. Use only spark-proof tools and explosion-proof equipment. Never use acetylene at pressures exceeding 15 psig (103.5 kPa). Can cause rapid suffocation due to oxygen deficiency. Close supply valve after each use; keep closed even when empty. Arcs and sparks can ignite combustible materials. Prevent fires. For more information on fire prevention in welding and cutting, see NFPA 51B, Standard for Fire Prevention During Welding,
Cutting, and Other Hotwork, published by the National Fire Protection Association, 1 Battery March Park, PO Box 9101, Quincy, MA 02269-9101; 1-800-344-3555; www.nfpa.org.

Do not strike an arc on a compressed gas cylinder. The defect produced by an arc burn could lead to cylinder rupture.

PRECAUTIONS TO BE TAKEN IN STORAGE: Acetylene trailers are designed and intended for outdoor use. Acetylene storage in excess of 2,500 cu ft (70.79 m³) is prohibited in buildings with other occupancies. Store and use with adequate ventilation. Separate acetylene cylinders from oxygen and other oxidizers by at least 20 ft (6.1 m), or use a barricade of noncombustible material. This barricade should be at least 5 ft (1.53 m) high and have a fire resistance rating of at least ½ hour. Post "No Smoking or Open Flames" signs in storage and use areas. There must be no sources of ignition. All electrical equipment in storage areas must be explosion-proof. Storage areas must meet national electric codes for Class I hazardous areas. Store only where temperature will not exceed 125°F (52°C). For other precautions in using acetylene, see section 16.

RECOMMENDED PUBLICATIONS: For further information on storage, handling, and use, see Praxair publication P-14-153, Guidelines for Handling Gas Cylinders and Containers. Obtain from your local supplier.

### 8. Exposure Controls/Personal Protection

See section 16 for important information on by-products generated during use in welding and cutting.

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>OSHA PEL</th>
<th>ACGIH TLV-TWA (2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetylene</td>
<td>N.E.*</td>
<td>Simple asphyxiant</td>
</tr>
</tbody>
</table>

*N.E.—Not Established.

**NOTE:** DMF (see section 3), used as a solvent, has a TLV-TWA of 10 ppm (skin) for DMF (ACGIH, 2008). OSHA PEL 10 ppm, skin, 30 mg/m³.

TLV-TWAs should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations.

**IDLH = Not available.**

**ENGINEERING CONTROLS:**

**Local Exhaust.** Use a local exhaust system, if necessary, to prevent oxygen deficiency and to keep hazardous fumes and gases in the worker's breathing zone below any applicable exposure limits.

**Mechanical (General).** General exhaust ventilation may be acceptable if it can maintain an adequate supply of air and keep hazardous fumes and gases in the worker's breathing zone below any applicable exposure limits.

**Special.** None

**Other.** None

**PERSONAL PROTECTIVE EQUIPMENT:**

**Skin Protection.** Wear work gloves when handling cylinders; welding gloves for welding and cutting.
Eye/Face Protection. Wear goggles with filter lenses selected as per ANSI Z49.1. Provide protective screens and goggles, if necessary, to protect others. Select as per OSHA 29 CFR 1910.33. For welding, see section 16.

Respiratory Protection. Use air-purifying or air-supplied respirators, as appropriate, where local or general exhaust ventilation is inadequate. Adequate ventilation must keep worker exposure below applicable limits for fumes, gases, and other by-products of welding with acetylene. See sections 3, 10, and 16 for details. An air-supplied respirator must be used in confined spaces. Respiratory protection must conform to OSHA rules as specified in 29 CFR 1910.134. Select per OSHA 29 CFR 1910.134 and ANSI Z88.2.

Other Protective Equipment. As needed, wear hand, head, and body protection, which help to prevent injury from radiation and sparks. See ANSI Z49.1. At a minimum, this includes welder’s gloves and protective goggles, and may include arm protectors, aprons, hats, and shoulder protection, as well as substantial clothing. Regardless of protective equipment, never touch live electrical parts.

### 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>APPEARANCE:</strong></td>
<td>Colorless gas</td>
</tr>
<tr>
<td><strong>ODOR:</strong></td>
<td>Acetylene of 100% purity is odorless, but commercial acetylene has a distinctive, garlic-like odor.</td>
</tr>
<tr>
<td><strong>ODOR THRESHOLD:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>PHYSICAL STATE:</strong></td>
<td>Gas at normal temperature and pressure</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>SUBLIMATION POINT at 1 atm:</strong></td>
<td>-118°F (-83.3°C)</td>
</tr>
<tr>
<td><strong>MELTING POINT at 10 psig (170 kPa abs):</strong></td>
<td>-116°F (-82.2°C)</td>
</tr>
<tr>
<td><strong>BOILING POINT at 10 psig (170 kPa abs):</strong></td>
<td>-103.4°F (-75.2°C)</td>
</tr>
<tr>
<td><strong>FLASH POINT:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>EVAPORATION RATE (Butyl Acetate = 1):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>FLAMMABILITY:</strong></td>
<td>Flammable</td>
</tr>
<tr>
<td><strong>FLAMMABLE LIMITS IN AIR, % by volume:</strong></td>
<td>LOWER: 2.5% UPPER: 100%</td>
</tr>
<tr>
<td><strong>VAPOR PRESSURE at 70°F (21.1°C):</strong></td>
<td>649.5 psia (4479 kPa abs)*</td>
</tr>
<tr>
<td><strong>VAPOR DENSITY at 32°F (0°C) and 1 atm:</strong></td>
<td>0.07314 lb/ft³ (1.1716 kg/m³)</td>
</tr>
<tr>
<td><strong>SPECIFIC GRAVITY (H₂O = 1):</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>SPECIFIC GRAVITY (Air = 1) at 32°F (0°C) and 1 atm:</strong></td>
<td>0.906</td>
</tr>
<tr>
<td><strong>SOLUBILITY IN WATER vol/vol at 32°F (0°C):</strong></td>
<td>1.7</td>
</tr>
<tr>
<td><strong>PARTITION COEFFICIENT: n-octanol/water:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>AUTOIGNITION TEMPERATURE:</strong></td>
<td>591°F (305°C) at 1 atm</td>
</tr>
<tr>
<td><strong>DECOMPOSITION TEMPERATURE:</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>PERCENT VOLATILES BY VOLUME:</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>MOLECULAR WEIGHT:</strong></td>
<td>26.04</td>
</tr>
<tr>
<td><strong>MOLECULAR FORMULA:</strong></td>
<td>C₂H₂</td>
</tr>
</tbody>
</table>

*Maximum cylinder pressure: 250 psig (kPa) at 70°F (21.1°C)*
10. Stability and Reactivity

CHEMICAL STABILITY:  ☑ Unstable  ☐ Stable

Acetylene is stable as shipped. Avoid use at pressures above 15 psig (103 kPa).

CONDITIONS TO AVOID: Elevated temperature and pressure and/or the presence of a catalyst.

INCOMPATIBLE MATERIALS: Copper, silver, mercury, or their alloys; oxidizing agents; acids; halogens; moisture.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition or burning may produce CO/CO₂/H₂. The welding and cutting process may form reaction products such as carbon monoxide and carbon dioxide. Other decomposition products of normal operation originate from the volatilization, reaction, or oxidation of the material being worked.

POSSIBILITY OF HAZARDOUS REACTIONS:  ☑ May Occur  ☐ Will Not Occur

Fire or explosion may result from use at elevated temperatures and pressures or from use with incompatible materials.

11. Toxicological Information

ACUTE DOSE EFFECTS: No known effects from acetylene gas. The welding process may generate hazardous fumes and gases. (See sections 8, 10, 15, and 16.)

INGESTION EFFECTS: In a 90-day feeding study, slight anemia leukocytosis was seen in rats ingesting 5000 ppm of DMF. The relevance of this information to humans is not known.

12. Ecological Information

ECOTOXICITY: No adverse ecological effects expected.

OTHER ADVERSE EFFECTS: None known. Acetylene does not contain any Class I or Class II ozone-depleting chemicals.

13. Disposal Considerations

WASTE DISPOSAL METHOD: Do not attempt to dispose of residual or unused quantities. Return cylinder to supplier.

14. Transport Information

DOT/ISO SHIPPING NAME: Acetylene, dissolved.

HAZARD CLASS: 2.1  PACKING GROUP/Zone: None  IDENTIFICATION NUMBER: UN1001  PRODUCT_rq: None

SHIPPING LABEL(s): FLAMMABLE GAS

PLACARD (when required): FLAMMABLE GAS

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. Cylinders transported in an enclosed, nonventilated compartment of a vehicle can present serious safety hazards.
Shipment of compressed gas cylinders that have been filled without the owner's consent is a violation of federal law [49 CFR 173.301(b)].

MARINE POLLUTANTS: Acetylene is not listed as a marine pollutant by DOT.

15. Regulatory Information

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state, and local regulations.

U.S. FEDERAL REGULATIONS:

EPA (ENVIRONMENTAL PROTECTION AGENCY)


Reportable Quantity (RQ): None

SARA: SUPERFUND AMENDMENT AND REAUTHORIZATION ACT:

SECTION 302/304: Require emergency planning based on Threshold Planning Quantity (TPQ) and release reporting based on Reportable Quantities (RQ) of Extremely Hazardous Substances (EHS) (40 CFR Part 355):

TPQ: None
EHS RQ (40 CFR 355): None

SECTION 311/312: Require submission of MSDSs and reporting of chemical inventories with identification of EPA hazard categories. The hazard categories for this product are as follows:

IMMEDIATE: Yes
DELAYED: Yes
PRESSURE: Yes
REACTIVITY: Yes
FIRE: Yes

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

Acetylene is not subject to reporting under Section 313.

40 CFR 68: RISK MANAGEMENT PROGRAM FOR CHEMICAL ACCIDENTAL RELEASE PREVENTION: Requires development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

Acetylene is listed as a regulated substance in quantities of 10,000 lb (4536 kg) or greater.

TSCA: TOXIC SUBSTANCES CONTROL ACT: Acetylene is listed on the TSCA inventory.

OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR 1910.119: PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS: Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals.

Acetylene is not listed in Appendix A as a highly hazardous chemical. However, any process that involves a flammable gas on site in one location in quantities of 10,000 lb (4536 kg) or greater is covered under this regulation unless the gas is used as a fuel.
STATE REGULATIONS:

CALIFORNIA: Acetylene is not listed by California under the SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (Proposition 85).
PENNSYLVANIA: Acetylene is subject to the PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW ACT (35 P.S. Sections 7301-7320).

16. Other Information

Be sure to read and understand all labels and instructions supplied with all containers of this product.


FUMES AND GASES can be dangerous to your health and may cause serious lung disease.

- Keep your head out of fumes. Do not breathe fumes and gases. Use enough ventilation, local exhaust, or both to keep fumes and gases from your breathing zone and the general area. Short-term overexposure to fumes may cause dizziness, nausea, and dryness or irritation of the nose, throat, and eyes or may cause other similar discomfort.

Fumes and gases cannot be classified simply. The amount and type depend on the metal being worked and the process, procedure, equipment, and supplies used. Possible dangerous materials may be found in fluxes, electrodes, and other materials. Get an MSDS for every material you use.

Contaminants in the air may add to the hazard of fumes and gases. One such contaminant, chlorinated hydrocarbon vapors from cleaning and degreasing activities, poses a special risk.

To find the quantity and content of fumes and gases, you can take air samples. By analyzing these samples, you can find out what respiratory protection you need. One recommended sampling method is to take air from inside the worker's helmet or from the worker's breathing zone. See AWS F1.1, Methods for Sampling and Analyzing Gases for Welding and Allied Processes, available from the American Welding Society, 550 N.W. Le Jeune Rd., Miami, FL 33126.

NOTES TO PHYSICIAN:

Acute: Gases, fumes, and dusts may cause irritation to the eyes, lungs, nose, and throat. Some toxic gases associated with welding and related processes may cause pulmonary edema, asphyxiation, and death. Acute overexposure may include signs and
symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty breathing, frequent coughing, or chest pains.

Chronic: Protracted inhalation of air contaminants may lead to their accumulation in the lungs, a condition that may be seen as dense areas on chest x-rays. The severity of change is proportional to the length of exposure. The changes seen are not necessarily associated with symptoms or signs of reduced lung function or disease. In addition, the changes on x-rays may be caused by non-work-related factors such as smoking, etc.

PROTECTIVE CLOTHING AND EQUIPMENT FOR WELDING OPERATIONS:

PROTECTIVE GLOVES: Wear welding gloves.

EYE PROTECTION: Wear a helmet or use a face shield with a filter lens. Select lens per ANSI Z49.1. Provide protective screens and flash goggles if needed to protect others; select per OSHA 29 CFR 1910.133.

OTHER PROTECTIVE EQUIPMENT: Wear head, head, and body protection. (See ANSI Z49.1.) Worn as needed; these help prevent injury from radiation, sparks, and electrical shock. Minimum protection includes welder’s gloves and a face shield. For added protection, consider arm protectors, aprons, hats, shoulder protection, and dark, substantial clothing.

OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE: Flammable gas under pressure. Use piping and equipment adequately designed to withstand pressures to be encountered. Acetylene systems should be installed only by persons knowledgeable of the unique properties of acetylene and trained and experienced in such installation. All piped acetylene systems and associated equipment must be grounded. Electrical equipment must be non-sparking or explosion-proof. Leak check with soap and water; never use a flame. Use a backflow prevention device in any piping. In choosing tools and equipment, avoid materials incompatible with acetylene. Copper, silver, and mercury and their salts, compounds, and high-concentration alloys can form explosive compounds with acetylene. Never use copper piping for acetylene service; use only steel or wrought iron. Brass containing less than 65% copper and certain nickel alloys are generally acceptable for use in acetylene service but may not be adequate if high corrosion or excess moisture is present. Never work on a pressurized system. If there is a leak, close the cylinder valve. Blow the system down in an environmentally safe manner in compliance with all federal, state, and local laws; then repair the leak. Never place a compressed gas cylinder where it may become part of an electrical circuit.

Mixtures. When you mix two or more gases or liquefied gases, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Remember, gases and liquids have properties that can cause serious injury or death.

HAZARD RATING SYSTEMS:

NFPA RATINGS:

| HEALTH | 0 |
| FLAMMABILITY | 4 |
| INSTABILITY | 2 |
| SPECIAL | None |

HMIS RATINGS:

| HEALTH | 2 |
| FLAMMABILITY | 4 |
| PHYSICAL HAZARD | 2 |
STANDARD VALVE CONNECTIONS FOR U.S. AND CANADA:

THREADED:

1-inch (2.54 cm) size, 6000 psi (41,368 kPa), O-ring union. The CGA-510 connection is standard for acetylene cylinders manifolds for use through the trailer connection.

PIN-INDEXED YOKE:

Not applicable.

ULTRA-HIGH-INTEGRITY CONNECTION:

Not applicable.

Use the proper CGA connections. **DO NOT USE ADAPTERS.** Additional limited-standard connections may apply. See CGA pamphlet V-1 listed below. Ask your supplier about free Praxair safety literature as referred to in this MSDS and on the label for this product. Further information can be found in the following materials published by the Compressed Gas Association, Inc. (CGA), 4221 Walney Road, 5th Floor, Chantilly, VA 20151-2923, Telephone (703) 788-2700, http://www.cganet.com/Publication.asp.

AV-1 Safe Handling and Storage of Compressed Gases
G-1 Acetylene
G-1.1 Commodity Specification for Acetylene
G-1.6 Recommended Practices for Mobile Acetylene Trailer Systems
P-1 Safe Handling of Compressed Gases In Containers
SB-4 Handling Acetylene Cylinders in Fire Situations
SB-8 Use of Oxy-Fuel Gas Welding and Cutting Apparatus
V-1 Compressed Gas Cylinder Valve Inlet and Outlet Connections
— Handbook of Compressed Gases, Fourth Edition

Praxair asks users of this product to study this MSDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this MSDS and any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair, Inc., it is the user’s obligation to determine the conditions of safe use of the product.

Praxair MSDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current MSDSs for these products, contact your Praxair sales representative or local distributor or supplier, or download from www.praxair.com. If you have questions regarding Praxair MSDSs, would like the form number and date of the latest MSDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR; Address: Praxair Call Center, Praxair, Inc., PO Box 44, Tonawanda, NY 14151-0044).

**Praxair and the Flowing Airstream design are trademarks or registered trademarks of Praxair Technology, Inc. in the United States and/or other countries.**

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113
MATERIAL SAFETY DATA SHEET
AIR BRAKE ANTI FREEZE

SECTION I – MANUFACTURER’S NAME AND CONTACT INFORMATION

Manufacturer
E-Zoil Products, Inc.     Emergency 1-800-424-9300 Chemtrec
2355 Bailey Avenue     Information  716-892-4632
Buffalo, NY 14215     Date prepared July 1, 2005

NFPA Code:   Health  3 Fire  3 Reactivity  0

SECTION II – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Methanol, Methyl Alcohol, Carinol         CAS# 67-56-1
Alcohol Methylhydrate
CH3OH

SECTION III – PHYSICAL & CHEMICAL CHARACTERISTICS

Boiling point  148°F   Specific gravity 0.7080 @ 77°F
Vapor pressure 268mm @ 104°F Melting point minus 144°F
Vapor density 1.11   Colorless liquid mild alcohol odor

SECTION IV – FIRE & EXPLOSION HAZARD DATA

Flammable/Combustible:  Yes
In the presence of an ignition source.  Water spray, dry powder, AFFF (Aqueous Film Forming foam).  Alcohol resistant type with a 6% foam proportioning equipment or CO2.
Methanol burns with a clean clear flame which is almost invisible in daylight. Concentrations of greater than 20% methanol in water can be ignited. Water may be ineffective depending upon depth of methanol burning. Use fine water spray or fog to control fire spread and cool structures or containers. Fire fighters must wear full face, positive pressure, self-contained breathing apparatus or airline and appropriate protective clothing.
Flash point 54°F tag closed LEL 6% UEL 36.5% tag open 61°F
Special fire fighting procedures:  Use water spray or fog. Avoid spreading fire by flooding. Use alcohol type foam for larger spills. Exposure to heat builds up pressure in closed drums. Cool with water and avoid sparks. Bulk vessels should be grounded. Dispose of drum in accordance with proper local, state, and/or federal regulations.

SECTION V – REACTIVITY DATA

Stable
Conditions to avoid:  Keep away from heat, sparks or open flame. Vapor flammable keep container closed.
Materials to avoid: Incompatible with strong oxidizers, strong acids, strong bases. May be corrosive to lead and aluminum.
Hazardous decomposition:  Burning may produce carbon monoxide

SECTION VI – HEALTH HAZARD DATA

Routes of entry:  Inhalation – Yes Skin – Yes Ingestion – Yes
Swallowing even small amounts of methanol can cause blindness and death other effects may be nausea, headache, abdominal pain, vomiting and visual disturbances ranging from blurred vision to light sensitivity.  If conscious give large amount of water or milk and induce vomiting. Get medical attention immediately. Inhalation of high airborne concentration can also irritate mucous membranes, cause headaches, sleepiness, nausea, confusion, loss of consciousness, digestive and visual disturbances and death.
Note:  May be absorbed through the skin in toxic or lethal amounts. Causes mild irritation, redness, cracking and drying.
First Aid:
**Inhalation**: Remove to fresh air. Keep individual quiet. For respiratory distress give oxygen and or CPR. Obtain medical attention.

**Eye**: Flush with plenty of low-pressure water for at least 15 minutes. Retract eyelids often. Obtain emergency medical attention.

**Skin**: Immediately remove contaminated clothing. Wash skin with soap and water. If irritation persists seek medical attention. Wash clothing before reuse. Wash or discard contaminated leather shoes or gloves.

**Ingestion**: Induce vomiting by forcing finger down throat or give soapy water to drink. Repeat until vomit is clear. Get immediate medical attention.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND USE

**Storage**: Store in totally enclosed equipment, designed to avoid ignition and human contact. Tanks must be grounded and vented and should be nitrogen blanketed. Tanks must be diked. Avoid storage with incompatible materials.

**Handling**: No smoking or open flame in storage, use or handling areas. Use explosion proof electrical equipment. Ensure proper electrical grounding procedures are in place.

SECTION VIII – CONTROL MEASURES

Extremely flammable liquid. Release can cause an immediate fire/explosion hazard. Eliminate all ignition sources, stop spill and use absorbent materials. If necessary, contain spill by diking. Maximize methanol recovery for recycling or reuse if applicable. Collect liquid with explosion proof pumps. For small spills, collect with a non-combustible sorbent. Recover methanol or dilute with water to reduce fire hazard. Prevent it from entering sewer, confined spaces, drains or waterways. Restrict access to unprotected personnel. Full-face, positive pressure self-contained breathing apparatus or airline and protective clothing must be worn.

SECTION IX – TRANSPORT INFORMATION

Chemical Family – Aliphatic alcohol

Proper shipping name – Methyl alcohol methanol

Hazardous class # (Flammable Liquid) PG II

UN 1230

Disclaimer of liability: the information in this msds was obtained from sources we believe are reliable, however the information is provided without any warranty expressed or implied regarding its correctness. The conditions or methods of handling, storage, use of, disposal of the product may be beyond our control or knowledge. For this reason 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.
Material Safety Data Sheet (MSDS)

533,SL2539 MATERIAL SAFETY DATA SHEET

Section 1: Product & Company Identification

Product Name: Air Tool Oil
Product Number(s) SL2531-SL2533,SL2539

Manufactured By: CRC Industries, Inc.                      (215) 674-4300
885 Louis Drive, Warminster, PA 18974
24-Hour Emergency Information: CHEMTREC   (800)424-9300

Section 2: Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>OTHER</th>
<th>%</th>
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<tbody>
<tr>
<td></td>
<td>NUMBER</td>
<td>TLV</td>
<td>PEL</td>
<td>LIMITS</td>
<td></td>
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<tr>
<td>Mineral Oil (heavy)</td>
<td>64741-96-4</td>
<td>5 mg/m3</td>
<td>5 mg/m3</td>
<td>(mist)</td>
<td>&gt;90</td>
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<tr>
<td>Zinc Dithiophosphate</td>
<td>68649-42-3</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>&lt;1</td>
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<tr>
<td>Carboxylic Acid Amine Soap Complex</td>
<td>Mixture</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>1</td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

Emergency Overview
Appearance & Odor: Dark amber, semi-solid to solid material with faint odor

Potential Health Effects:
Inhalation: Irritation to nose, throat or upper respiratory tract
Eyes: Irritation
Skin: Irritation
Ingestion: NA

Carcinogenicity: OSHA: No IAARC: No NTP: No
Chronic Overexposure: NA
Medical Conditions Aggravated by Exposure: Pre-existing skin and pre-respiratory conditions.

Section 4: First Aid Measures

Inhalation: Remove to fresh air. Give artificial respiration if necessary.
Eyes: Flush with large amounts of water for 15 minutes.
Skin: Remove contaminated clothing and wash area with soap and water.
Ingestion: Call a physician. Do not induce vomiting.
Section 5: Fire-Fighting Measures

Flashpoint: >300 °F Method: TCC LEL: ND UEL: ND
Extinguishing Media: Carbon dioxide, dry chemical and foam
Hazardous Combustion Products: CO2 and carbon monoxide
Fire-Fighting Instructions: Remove containers from fire area if possible. Use self-contained breathing apparatus for fire fighting.

NFPA: Health: 1 Flammability: 1 Reactivity: 0
HMIS: Health: 1 Flammability: 1 Reactivity: 0 PPE: B

Section 6: Accidental Release Measures

Spill/Leak Procedures: Area should be ventilated. Absorbant should be used to pick up excess material. All used and unused product should be disposed of in accordance with federal, state and local regulations.

Section 7: Handling and Storage

Handling Procedures: Store in a cool, dry area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Adequate to prevent accumulation of vapors. Use mechanical means if necessary to maintain levels below the exposure limits. If working in a confined space, follow applicable OSHA regulations.


Protective Clothing/Equipment: Wear chemically protective gloves and safety glasses. Use a splash apron and boots if splashing occurs.

Section 9: Physical & Chemical Properties

Physical State: Semi-solid Appearance & Odor: Dark amber, semi-solid to solid material w/ faint odor.
Specific Gravity: 0.85-.95 Boiling Point: >600 °F
Freezing Point: ND Vapor Pressure: Neg.
Evaporation Rate: Neg. Vapor density (air=1) >air
pH: NA Solubility: Neg.

Volatile Organic Compounds: %: 3 g/L 27 lbs./gal: 0.23

Section 10: Stability and Reactivity

Stability: Stable Hazardous Polymerization: No
Chemical Incompatibilities: Strong oxidizers
Materials to Avoid: Strong oxidizing agents. water.
Hazardous Decomposition Products: None

Section 11: Toxicological Information

Long-term toxicological studies have not been conducted for this product. See section 3 of this MSDS for acute symptoms of overexposure and carcinogenicity information.

Section 12: Ecological Information

Ecotoxicity: No data available.
Environmental Fate: No data available for biodegradation.
Section 13: Disposal Considerations

Disposal: This material if discarded may be hazardous waste under U.S. EPA RCRA regulations. All disposal activities must comply with federal, state and local regulations. Contact your local or state environmental agency for specific rules. Do not dump into sewers, on the ground or into body of water.

Section 14: Transportation Information

Shipping Name: Not regulated
Hazard Class: NA UN Number: NA Packing Group: NA
Label: NA Placard: NA
Special Provisions: NA

Section 15: Regulatory Information

TSCA: All components are either listed under TSCA or are exempt.
SARA Title III: Section 311/312: NA
Section 313*: None
CERCLA/Superfund (RQ): NA
Extremely Hazardous Substances: No
California Prop 65: No

*See section 2 for percentage

Section 16: Additional Information

Prepared By: Adam M. Selisker Date: March 29, 1999
Technical Information: (800) 521-3168 CRC #: SL2531
This information is accurate to the best CRC Industries' knowledge or obtained from sources believed by CRC to be accurate. Before using any product, read all warnings and directions on the label.

CAS: Chemical Abstract Service NA: Not Applicable
ppm: Parts per Million ND: Not Determined
TCC: Tag Closed Cup NE: Not Established
LEL: Lower Exposure Limit g/L: grams per Liter
UEL: Upper Exposure Limit lbs./gal: pounds per gallon
PPE: Personal Protection Equipment RQ: Reportable Quantity
COC: Cleveland Closed Cup

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This site is best viewed using JavaScript-enabled Internet Explorer Version 5.0 and above.
For best printing results, please use Internet Explorer.
Section 1 IDENTIFY OF MATERIAL

TRADE NAME OATEY CLEAR CLEANER

PRODUCT NUMBERS 30766, 30779, 30782, 30795, 30805

FORMULA CH(3)COC(2)H(5)+CH(3)COCH(3)

SYNONYMS Methyl Ethyl Ketone and Acetone

SECTION 2 HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>%</th>
<th>CAS NUMBER</th>
<th>SEC 313</th>
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<tr>
<td>Methyl Ethyl Ketone</td>
<td>60-80%</td>
<td>78-93-3</td>
<td>Yes</td>
</tr>
<tr>
<td>Acetone</td>
<td>20-40%</td>
<td>67-64-1</td>
<td>No</td>
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SECTION 3 KNOWN HAZARDS UNDER 29 CFR 1910.1200

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<tr>
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<tr>
<td>Combustible Liquid</td>
<td>X</td>
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<td>Skin Hazard</td>
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<td>Flammable Liquid</td>
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<td>Eye Hazard</td>
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<tr>
<td>Pyrophoric Material</td>
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<td>Toxic Agent</td>
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<td>Explosive Material</td>
<td>X</td>
<td></td>
<td>Highly Toxic Agent</td>
<td>X</td>
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<td>Unstable Material</td>
<td>X</td>
<td></td>
<td>Sensitizer</td>
<td>X</td>
<td></td>
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<tr>
<td>Water Reactive Material</td>
<td>X</td>
<td></td>
<td>Kidney Toxin</td>
<td>X</td>
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<td>Oxidizer</td>
<td>X</td>
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<td>Reproductive Toxin</td>
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<td>X</td>
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<td>Blood Toxin</td>
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<td>Corrosive Material</td>
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<td>Nervous System Toxin</td>
<td>X</td>
<td></td>
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<td>Compressed Gas</td>
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<td>Lung Toxin</td>
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<tr>
<td>Irritant</td>
<td>X</td>
<td></td>
<td>Liver Toxin</td>
<td>X</td>
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<tr>
<td>Carcinogen NTP/IARC/OSHA</td>
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<td>(see SECTION 6)</td>
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SECTION 4 REGULATION

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<tr>
<th>CHEMICAL</th>
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<th>PEL</th>
<th>STEL</th>
<th>Hazard Action Level</th>
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<td>Methyl Ethyl Ketone</td>
<td>200 ppm</td>
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<td>300 ppm</td>
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<tr>
<td></td>
<td>590 mg/cu m</td>
<td>590 mg/cu m</td>
<td>885 mg/cum</td>
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</tr>
<tr>
<td>Acetone</td>
<td>500 ppm</td>
<td>1000 ppm</td>
<td>750 ppm</td>
<td>N/A</td>
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<tr>
<td></td>
<td>1200 mg/cu m</td>
<td>2400 mg/cu m</td>
<td>1800 mg/cu m</td>
<td></td>
</tr>
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</table>

SECTION 5 REGULATED IDENTIFICATION

DOT PROPER SHIPPING NAME  CONSUMER COMMODITY ORM-D; For Gallons: Flammable Liquid, N.O.S., 3, UN1993, PG II

DOT HAZARD CLASS  Class 3 Flammable Liquid

SHIPPING ID NUMBER  UN 1993 (Gallons Only)

EPA HAZARDOUS WASTE ID NUMBER  F-003 & F-005

EPA HAZARD WASTE CLASS  Ignitable Waste/Toxic Waste

SECTION 6 EFFECTS OF EXPOSURE

ENTRY ROUTE  INHALE - YES  INGEST - YES  SKIN - YES  EYE - YES

INHALATION  May cause irritation of mucous membranes, nose & throat, headache, dizziness, nausea, numbness of the extremities and narcosis in high concentrations. Has caused CNS depression & liver damage in animals, & high concentrations have caused retardation of fetal development in rats.

TARGET ORGANS  Eye, Skin, Lung, Central Nervous System

SKIN  Chronic contact may lead to irritation & dermatitis. Chronic exposure to vapors of high concentration may cause dermatitis. May possibly be absorbed through the skin.

EYE  Vapors or direct contact may cause irritation.

INGESTION  May be aspirated into the lungs or cause systemic effects described under inhalation.

SECTION 7 EMERGENCY AND FIRST AID PROCEDURES - 303/623-5716 COLLECT

SKIN  If irritation arises, wash thoroughly with soap and water. Seek medical attention if irritation persists.

EYES  If fumes cause irritation, move to fresh air and irrigate eyes with water for 15 minutes. If irritation persists, seek medical attention. If eye is struck with wire, seek medical attention.
INHALATION  Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.

INGESTION  Drink water and call a poison control center or physician immediately. Avoid alcoholic beverages. Never give anything by mouth to an unconscious person.

SECTION 8  PHYSICAL AND CHEMICAL PROPERTIES

NFPA HAZARD SIGNAL  HEALTH 2 STABILITY 1 FLAMMABILITY 3 SPECIAL NONE

BOILING POINT  133 Degrees F / 66 C

MELTING POINT  N/A

VAPOR PRESSURE  186 mmHg @ 20 Degrees C

VAPOR DENSITY (AIR = 1)  2.0

VOLATILE COMPONENTS  100%

SOLUBILITY IN WATER  27.1% @ 20 degrees C

PH  N/A

SPECIFIC GRAVITY  0.793

EVAPORATION RATE  (BUAC = 1) = 7.7

APPEARANCE  Clear Liquid

ODOR  Sharp, ether odor

WILL DISSOLVE IN  Water, organic solvents

MATERIAL IS  Liquid

SECTION 9  FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY  LEL = 2.15 % Volume UEL = 13.0 % Volume

FLASHPOINT AND METHOD USED  0-3 Degrees F. / PMCC


HAZARDOUS POLYMERIZATION  Will Not Occur. CONDITIONS TO AVOID: None

INCOMPATIBILITY/ MAT. TO AVOID  Acids, oxidizing materials, alkalis, chlorinated inorganics (potassium, calcium and sodium hypochlorite), copper or copper alloys.
SPECIAL FIRE FIGHTING PROCEDURE

FOR SMALL FIRES: Use dry chemical, CO2, water or foam extinguisher.
FOR LARGE FIRES: Evacuate area and call Fire Department immediately.

SECTION 10 SPILL AND DISPOSAL INFORMATION

SPILL OR LEAK PROCEDURES
Ventilate area, stop leak if it can be done without risk. Take up with sand, earth, or other non-combustible absorbing material.

WASTE DISPOSAL
Dispose of according to local, state, and Federal regulations.

SECTION 11 SAFE USAGE DATA

PROTECTIVE EQUIPMENT TYPES
EYES: Safety glasses with side shields. RESPIRATORY: NIOSH-approved canister respirator in absence of adequate ventilation. GLOVES: Rubber gloves. OTHER: Eye wash and safety shower should be available.

VENTILATION
LOCAL EXHAUST: Open doors & windows. Exhaust ventilation capable of maintaining emissions at the point of use below PEL. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that explosive concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.

PRECAUTIONS
HANDLING & STORAGE: Keep away from heat, sparks and flames; store in cool, dry place.
OTHER: Containers, even empties will retain residue and vapors.

SECTION 12 MANUFACTURER OR SUPPLIER DATA

FIRM NAME & MAILING ADDRESS
OATEY CO., 4700 West 160th Street, P.O. Box 35906 Cleveland, Ohio 44135

OATEY PHONE NUMBER
(216) 267-7100

EMERGENCY PHONE NUMBER
For Emergency First Aid call (303) 623-5716 COLLECT For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300

SECTION 13 DISCLAIMER

The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.
Material Safety Data Sheet – Battery Cleaner (Spray)

SECTION I

Manufacturer’s Name: Sprayon Products
Distributor’s Name: East Penn Manufacturing Co., Inc.
26300 Fargo Avenue, Bedford Heights, OH 44146
Deka Road, Lyon Station, PA 19536

Telephone Number for Information: (610) 682-6361

Emergency Telephone Number: CHEMTREC: 1-800-424-9300,
In Washington D.C. or outside continental U.S., call 1-202-483-7616

SECTION II

HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>Specific Chemical Identity (Common Name(s))</th>
<th>CAS #</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Percent</th>
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<tr>
<td>Sodium Bicarbonate</td>
<td>#144-55-8</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>&lt;10.0</td>
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<td>Water</td>
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<td>N/A</td>
<td>N/A</td>
<td>&gt;90.0</td>
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<td>Propellant:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isobutane</td>
<td>#75-28-5</td>
<td>N/A</td>
<td>N/A</td>
<td>&lt;10.0</td>
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<tr>
<td>Butane</td>
<td>#106-97-8</td>
<td>800 ppm</td>
<td>800 ppm</td>
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<td>Propane</td>
<td>#74-98-6</td>
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<td>2500 ppm</td>
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<tr>
<td>Detergents</td>
<td>Mixture</td>
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<td>N/A</td>
<td>&lt;10.0</td>
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<tr>
<td>2-Butoxy Ethanol</td>
<td>#111-76-2</td>
<td>25 ppm</td>
<td>25 ppm</td>
<td>&lt;10</td>
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</table>

SECTION III

PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance and Odor: A quick breaking foam
Solubility in Water: Soluble in water
Freezing Point: 32°F/Not Determined
Boiling Point: 212°F/-213°F
Evaporation Rate: Not Determined

SECTION IV

FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): Propellant below 20°F (TOC)
Extinguishing Media: Carbon dioxide, foam, dry chemicals
Unusual Fire and Explosion Hazards: Do not spray near open flame. Aerosol cans may explode. Flammable material.
Special Fire Fighting Procedures: Remove aerosol containers from fire area if possible.

SECTION V

REACTIVITY DATA

Stability: Stable
Conditions to Avoid: Do not store above 120°F to prevent cans from exploding
Hazardous Decomposition of By-Products: Carbon monoxide, carbon dioxide
SECTION VI
HEALTH HAZARD DATA

Primary Route(s) of Entry: Inhalation, skin and ingestion

Signs and Symptoms of Exposure: 
- Inhalation: Over-exposure may result in light-headedness, staggering gait, giddiness, and possible nausea.  
- Skin and Eyes: May cause irritation.  
- Ingestion: Harmful or fatal if swallowed.

Chronic Overexposure: Reports have associated repeated and prolong overexposure to solvents with permanent brain and nervous system damage.

Medical Conditions Generally Aggravated by Exposure: None identified

Emergency and First Aid Procedures:
- Inhalation: Remove to fresh air. Give artificial respiration if necessary.  
- Ingestion: Induce vomiting on the advice of a physician.  
- Eyes: Flush with water for 15 minutes.  
- Skin: Remove contaminated clothing and wash with soap and water.

SECTION VII
PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled: Remove all sources of ignition, ventilate, avoid breathing vapors, and remove with inert absorbent.

Waste Disposal Method: Dispose of in accordance with local, state or applicable federal regulations.

Precautions to be Taken in Handling and Storing: Do not store above 120°F. Keep away from children.  DO not puncture or incinerate.  Do not spray near fire or open flame.

SECTION VIII
CONTROL MEASURES

Respiratory Protection (Specific Type): Use NIOSH/MSHA compliant respirators or self contained breathing apparatus above exposure limits.

Ventilation: Adequate to prevent accumulation of vapors.

Protective Clothing: Wear chemically protective gloves and safety glasses. Use splash aprons and boots if splashing occurs.

Eye and Face Protection: Safety glasses, face shield if splashing occurs.

Other Protective Equipment: Not needed.

SECTION IX
OTHER REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
</tr>
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<tbody>
<tr>
<td>Health (Blue)</td>
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</tr>
<tr>
<td>Flammability (Red)</td>
<td>4</td>
</tr>
<tr>
<td>Reactivity (Yellow)</td>
<td>0</td>
</tr>
</tbody>
</table>

SARA Title III:  
- Section 311/312: Acute  
- Section 313: 2 Butoxy Ethanol

Extremely Hazardous Substance: No

For additional information concerning East Penn Manufacturing Co., Inc. products or questions concerning the content of this MSDS please contact your East Penn representative.

This information is accurate to the best of East Penn Mfg. Co.’s knowledge or obtained from sources believed by East Penn to be accurate.  Before using any product, read all warnings and directions on the label.
**IDENTITY (As Used on Label and List)**

**BernzOmatic BF55 Butane Fuel**

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

### Section I

<table>
<thead>
<tr>
<th>Manufacturer's Name</th>
<th>Emergency Telephone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>BernzOmatic</td>
<td>800-654-9011</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address (Number, Street, City, State, and ZIP Code)</th>
<th>Telephone Number for Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bernzomatic Drive Medina, NY 14103</td>
<td>800-424-9300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date Prepared</th>
<th>Signature of Preparer (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 2010</td>
<td></td>
</tr>
</tbody>
</table>

### Section II - Hazard Ingredients/Identity Information

<table>
<thead>
<tr>
<th>Hazardous Components (Specific Chemical Identity; Common Name(s))</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits Recommended</th>
<th>% (optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquefied Petroleum Gas N,Butane, volume (CAS #106-97-8)</td>
<td>1000 ppm</td>
<td>1000 ppm</td>
<td></td>
<td>22%</td>
</tr>
<tr>
<td>Isobutane, volume (CAS #75-28-5)</td>
<td>1000 ppm</td>
<td>1000 ppm</td>
<td></td>
<td>78%</td>
</tr>
</tbody>
</table>

### Section III - Physical/Chemical Characteristics

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>Specific Gravity (H₂O = 1)</th>
<th>0.5676</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Vapor Pressure (mm Hg.)</th>
<th>Approx. 28 psig</th>
<th>Percent Volatile by Weight</th>
<th>100%</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Vapor Density (AIR = 1)</th>
<th>Greater than 2</th>
<th>Evaporation Rate (Butyl Acetate = 1)</th>
<th>Gas</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Solubility in Water</th>
<th>Less than 0.1% by weight @70°F</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Appearance and Odor</th>
<th>Liquefied compressed gas, flash evaporates at room temperature when released from can, colorless gas with essentially no odor.</th>
</tr>
</thead>
</table>
### Section IV - Fire and Explosion Hazard Data

<table>
<thead>
<tr>
<th>Flash Point (Method Used)</th>
<th>Flammable Limits</th>
<th>LEL</th>
<th>UEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than -117</td>
<td>Extremely Flammable</td>
<td>LEL% 1.8</td>
<td>UEL% 8.4</td>
</tr>
</tbody>
</table>

#### Extinguishing Media
If feasible, stop flow of gas. Use water to cool fire-exposed cans, surroundings and to protect personnel working on shut off. Water spray, dry powder or carbon dioxide can be directed at flame area, if gas flow cannot be stopped, to reduce fire intensity. **DO NOT COMPLETELY EXTINGUISH FLAME UNLESS GAS FLOW IS SHUT OFF!**

#### Special Fire Fighting Procedures
Avoid possible accumulations of vapors at floor level, as vapor is heavier than air. Self-contained breathing apparatus and protective clothing should be worn in fighting fires involving chemicals. This product is extremely flammable at all times. Keep away from any sources of inadvertent ignition, including heat, fire, sparks, or flame.

#### Unusual Fire and Explosion Hazards
This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches.

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing Apparatus against the hazardous effects of normal products of combustion of oxygen deficiency. Petroleum gases are heavier than air and travel along the ground or into drains to possible distant ignition sources, causing an explosive flash back.

### Section V - Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>Unstable</th>
<th>Conditions to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable</td>
<td>Stable when stored as a liquid in cans under its own pressure.</td>
<td>Contact with sparks, open flame or any source of ignition.</td>
</tr>
</tbody>
</table>

#### Incompatibility (Materials to Avoid)

**Hazardous Decomposition or Byproducts**
May produce carbon monoxide when oxidized with deficiency of oxygen.

<table>
<thead>
<tr>
<th>Hazardous Polymerization</th>
<th>May Occur</th>
<th>Conditions to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will Not Occur</td>
<td>X</td>
<td>N/A</td>
</tr>
</tbody>
</table>
## Section VI - Health Hazard Data

<table>
<thead>
<tr>
<th>Route(s) of Entry: Inhalation, skin contact, eye contact</th>
<th>Inhalation? YES</th>
<th>Skin? YES</th>
<th>Ingestion? NO</th>
</tr>
</thead>
</table>

### Health Hazards *(Acute and Chronic)*

### Carcinogenicity:
- NTP: NO
- IARC Monographs: NO
- OSHA Regulated: NO

None of the components in this material are listed by IARC, NTP, OSHA, or ACGIH as a carcinogen.

### Signs and Symptoms of Exposure

<table>
<thead>
<tr>
<th>Route(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>This product is an asphyxiate and may exhibit anesthetic properties at very high concentrations. Initial symptoms of exposure at these concentrations are disorientation, lack of coordination, rapid respiration, headache, and nausea. Continued exposure May result in unconsciousness, coma, and possible death.</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Vapors are not irritating. Freeze burns or frostbite possible if skin is in prolonged contact with vaporizing liquid.</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Same as skin contact.</td>
</tr>
</tbody>
</table>

### Medical Conditions

**Generally Aggravated by Exposure**

- Respiratory related chronic illnesses (i.e. asthma etc.)

### Emergency and First Aid Procedures

<table>
<thead>
<tr>
<th>Route(s)</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Remove to fresh air. Artificial respiration, consult physician.</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Wash with soap and water. Remove soaked clothing to avoid prolonged skin contact.</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Flush eyes well with running water for 15 minutes.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>NA, product is gaseous at normal temperature and pressure.</td>
</tr>
</tbody>
</table>
Section VII - Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

Protect from any ignition source, keep away from heat, fire, sparks, or flame. Ventilate area well. Avoid accumulation of vapor at low levels.

Waste Disposal Method

Dispose of in accordance with all local, state and federal regulations. Do not puncture or incinerate.

Precautions to Be taken in Handling and Storing

Do not store where temperature may exceed 120°F. Store away from, fire, sparks, or flame. Store in suitable area for hazardous materials storage.

Other Precautions

<table>
<thead>
<tr>
<th>D.O.T. Shipping</th>
<th>Butane, 2.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class</td>
<td>2.1</td>
</tr>
<tr>
<td>ID Number</td>
<td>UN1011</td>
</tr>
<tr>
<td>Label Required</td>
<td>Flammable Gas</td>
</tr>
</tbody>
</table>

TSCA Statement: All the components of this product are in compliance with the Toxic Substances Control Act (TSCA) and are either listed on the TSCA Inventory or otherwise exempted from listing.
Section VIII - Control Measures

Respiratory Protection (Specify Type)
If TLV is exceeded wear NIOSH-approved self-contained breathing device or respirator.

<table>
<thead>
<tr>
<th>Ventilation</th>
<th>Local Exhaust</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must be adequate to maintaining airborne concentrations below established exposure limits, particularly at floor level as vapors are heavier than air.</td>
<td>Mechanical (General)</td>
<td>Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protective Gloves</th>
<th>Eye Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>None needed for normal use. Thermal insulated gloves when handling if prolonged exposure expected.</td>
<td>Safety glasses or goggles recommended</td>
</tr>
</tbody>
</table>

Other Protective Clothing or Equipment

Work/Hygienic Practices

Section IX - Special Precautions

Precautions to be taken in Handling and Storing
Do not use near heat, fire, flame or sparks. Avoid excessive breathing of vapor.
Do not spray in direction of body.
Use only in accordance with directions.

Other Precautions

Each MSDS must be reviewed for correctness and completeness every three years.

Reviewed by ________________________   Reviewed by ________________________

Revision date ________________________   Revision date ________________________
1. **Product and company identification**

<table>
<thead>
<tr>
<th>Material uses</th>
<th>Other non-specified industry: Lubricant additives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>BG Products Inc.</td>
</tr>
<tr>
<td></td>
<td>701 S. Wichita Street</td>
</tr>
<tr>
<td></td>
<td>Wichita, KS, 67213, USA</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.bgprod.com">www.bgprod.com</a></td>
</tr>
<tr>
<td>MSDS #</td>
<td>109</td>
</tr>
<tr>
<td>Validation date</td>
<td>12/30/2010.</td>
</tr>
<tr>
<td>Responsible name</td>
<td>Kolin Anglin, Environmental Coordinator</td>
</tr>
<tr>
<td></td>
<td>316-265-2686</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:msds@bgprod.com">msds@bgprod.com</a></td>
</tr>
<tr>
<td>In case of emergency</td>
<td>(800) 424-9300 (CHEMTREC)</td>
</tr>
</tbody>
</table>

2. **Hazards identification**

**Physical state**: Liquid.

**Odor**: oil

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

**Emergency overview**: WARNING!

> FLAMMABLE LIQUID AND VAPOR. COMBUSTIBLE. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

> Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Keep away from heat, sparks and flame. Keep container tightly closed. Wash thoroughly after handling.

**Potential acute health effects**

- **Ingestion**: Harmful if swallowed.
- **Skin**: May cause skin irritation.
- **Eyes**: May cause eye irritation.

**Potential chronic health effects**

- **Chronic effects**: Contains material that may cause target organ damage, based on animal data.
- **Target organs**: Contains material which may cause damage to the following organs: kidneys, liver, mucous membranes, upper respiratory tract, skin, eyes, central nervous system (CNS).

**Over-exposure signs/symptoms**

No known significant effects or critical hazards.

**Medical conditions aggravated by over-exposure**: Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. **Composition/information on ingredients**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated light paraffinic</td>
<td>64742-55-8</td>
<td>30 - 60</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>64742-54-7</td>
<td>30 - 60</td>
</tr>
<tr>
<td>Cyclohexanone</td>
<td>108-94-1</td>
<td>15 - 40</td>
</tr>
<tr>
<td>4-methylpentan-2-ol</td>
<td>108-11-2</td>
<td>1 - 5</td>
</tr>
</tbody>
</table>
3. Composition/information on ingredients

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.

4. First aid measures

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

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.

Notes to physician: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product: Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable: Use dry chemical, CO₂, water spray (fog) or foam.

Not suitable: Do not use water jet.

Special exposure hazards: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous thermal decomposition products: Decomposition products may include the following materials: carbon dioxide carbon monoxide

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.

6. Accidental release measures

Personal precautions: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
6. Accidental release measures

**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. Use spark-proof tools and explosion-proof equipment. 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). Use spark-proof tools and explosion-proof equipment. 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.

7. Handling and storage

**Handling**
- Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Storage**
- Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. 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.

8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| Distillates (petroleum), hydrotreated light paraffinic | **ACGIH TLV (United States, 2/2010).**  
TWA: 5 mg/m³ 8 hour(s). Form: Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM–TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.  
**NIOSH REL (United States, 6/2009).**  
TWA: 5 mg/m³ 10 hour(s). Form: Mist  
STEL: 10 mg/m³ 15 minute(s). Form: Mist  
**OSHA PEL (United States, 11/2006).**  
TWA: 5 mg/m³ 8 hour(s). |
| Distillates (petroleum), hydrotreated heavy paraffinic | **ACGIH TLV (United States, 2/2010).**  
TWA: 5 mg/m³ 8 hour(s). Form: Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM–TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.  
**NIOSH REL (United States, 6/2009).**  
TWA: 5 mg/m³ 10 hour(s). Form: Mist  
STEL: 10 mg/m³ 15 minute(s). Form: Mist |

12/30/2010.
8. Exposure controls/personal protection

### Cyclohexanone
- **OSHA PEL (United States, 11/2006).**
  - TWA: 5 mg/m³ 8 hour(s).
  - STEL: 10 mg/m³ 15 minute(s).
- **ACGIH TLV (United States, 2/2010).** Absorbed through skin.
  - TWA: 20 ppm 8 hour(s).
  - STEL: 50 ppm 15 minute(s).
  - TWA: 25 ppm 8 hour(s).
  - TWA: 100 mg/m³ 8 hour(s).
- **NIOSH REL (United States, 6/2009).** Absorbed through skin.
  - TWA: 25 ppm 8 hour(s).
  - TWA: 100 mg/m³ 8 hour(s).

### 4-methylpentan-2-ol
- **ACGIH TLV (United States, 2/2010).** Absorbed through skin.
  - TWA: 25 ppm 8 hour(s).
  - TWA: 104 mg/m³ 8 hour(s).
  - STEL: 40 ppm 15 minute(s).
  - STEL: 167 mg/m³ 15 minute(s).
  - TWA: 25 ppm 8 hour(s).
  - TWA: 100 mg/m³ 8 hour(s).
  - STEL: 40 ppm 15 minute(s).
  - STEL: 165 mg/m³ 15 minute(s).
- **NIOSH REL (United States, 6/2009).** Absorbed through skin.
  - TWA: 25 ppm 10 hour(s).
  - TWA: 100 mg/m³ 10 hour(s).
  - STEL: 40 ppm 15 minute(s).
  - STEL: 165 mg/m³ 15 minute(s).
- **OSHA PEL (United States, 11/2006).** Absorbed through skin.
  - TWA: 25 ppm 8 hour(s).
  - TWA: 100 mg/m³ 8 hour(s).

Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures:** If this product contains ingredients with exposure limits, personal, workplace atmosphere 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.

**Engineering measures:** 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.

**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.

**Personal protection**

**Respiratory:** 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.

**Hands:** 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.
8. Exposure controls/personal protection

**Eyes**
- Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

**Skin**
- 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.

**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.

9. Physical and chemical properties

**Physical state**
- Liquid.

**Flash point**
- Closed cup: 43°C (109.4°F)

**Auto-ignition temperature**
- Not available.

**Flammable limits**
- Not available.

**Color**
- Amber.

**Odor**
- Oil

**pH**
- Not available.

**Boiling/condensation point**
- Not available.

**Melting/freezing point**
- Not available.

**Specific gravity**
- 0.8767

**Vapor pressure**
- Not available.

**Vapor density**
- >1 [Air = 1]

**Odor threshold**
- Not available.

**Evaporation rate**
- Not available.

**Solubility**
- Insoluble in the following materials: cold water and hot water.

**Pour point**
- -21°C (-5.8°F)

**Density**
- 7.312 (lbs/gal)

10. Stability and reactivity

**Chemical stability**
- The product is stable.

**Conditions to avoid**
- Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

**Materials to avoid**
- Reactive or incompatible with the following materials: oxidizing materials

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

**Possibility of hazardous reactions**
- Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12/30/2010.  109
11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LC50 Inhalation Vapor</th>
<th>LC50 Inhalation Gas.</th>
<th>LD50 Oral</th>
<th>LD50 Oral</th>
<th>Rat</th>
<th>4 hours</th>
<th>3900 mg/m3</th>
<th>8000 ppm</th>
<th>1800 mg/kg</th>
<th>2590 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated light paraffinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rat</td>
<td>4 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclohexanone</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rat</td>
<td>4 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-methylpentan-2-ol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rat</td>
<td>4 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Carcinogenicity Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>EPA</th>
<th>NIOSH</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated light paraffinic</td>
<td>A4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated heavy paraffinic</td>
<td>A4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cyclohexanone</td>
<td>A3</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclohexanone</td>
<td>Acute LC50 527000 ug/L Fresh water</td>
<td>Fish - Pimephales promelas - 30 days - 20.2 mm - 0.127 g</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Partition coefficient: n-octanol/water: Not available.

13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>UN1993</td>
<td>FLAMMABLE LIQUIDS, N.O.S. (4-methylpentan-2-ol)</td>
<td>3</td>
<td>III</td>
<td></td>
<td>Emergency schedules (EmS) F-E, S-E</td>
</tr>
<tr>
<td>IMDG Class</td>
<td>UN1993</td>
<td>FLAMMABLE LIQUIDS, N.O.S. (4-methylpentan-2-ol)</td>
<td>3</td>
<td>III</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. Transport information

| IATA-DGR Class | UN1993 | FLAMMABLE LIQUIDS, N.O.S. (4-methylpentan-2-ol) | 3 | III | Passenger and Cargo Aircraft
| | | | | | Quantity limitation: 60 L
| | | | | | Cargo Aircraft Only
| | | | | | Quantity limitation: 220 L
| | | | | | Limited Quantities - Passenger Aircraft
| | | | | | Quantity limitation: 10 L

PG*: Packing group

15. Regulatory information

**United States**

**HCS Classification**: Combustible liquid
Target organ effects

**U.S. Federal regulations**

- **TSCA 8(a) IUR Exempt/Partial exemption**: Not determined
- **United States inventory (TSCA 8b)**: All components are listed or exempted.
- **SARA 302/304/311/312 extremely hazardous substances**: No products were found.
- **SARA 302/304 emergency planning and notification**: No products were found.
- **SARA 302/304/311/312 hazardous chemicals**: 4-methylpentan-2-ol; Cyclohexanone
- **SARA 311/312 MSDS distribution - chemical inventory - hazard identification**: 4-methylpentan-2-ol: Fire hazard, Immediate (acute) health hazard; Cyclohexanone: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

**Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)**: Listed

**SARA 313**

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(propyloxy)ethanol</td>
<td>2807-30-9</td>
<td>5 - 10</td>
</tr>
<tr>
<td>2-(propyloxy)ethanol</td>
<td>2807-30-9</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

**State regulations**

**Massachusetts**: The following components are listed: MINERAL OIL, PETROLEUM DISTILLATES, HYDROTREATED LIGHT PARAFFINIC; CYCLOHEXANONE; METHYL ISOBUTYL CARBINOL

**New York**: The following components are listed: Cyclohexanone

**New Jersey**: The following components are listed: GLYCOL ETHERS; CYCLOHEXANONE; METHYL AMYL ALCOHOL; 2-PENTANOL, 4-METHYL-

**Pennsylvania**: The following components are listed: GLYCOL ETHERS; CYCLOHEXANONE; 2-PENTANOL, 4-METHYL-

**Rhode Island**: None of the components are listed.

**United States inventory (TSCA 8b)**: All components are listed or exempted.

**Canada**
BG 109 - Compression Performance Restoration (CPR)

15. Regulatory information

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-1B: Material causing immediate and serious toxic effects (Toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Australian inventory (AICS) : All components are listed or exempted.
China inventory (IECSC) : All components are listed or exempted.
Japan inventory : Not determined.
Korea inventory : All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC) : All components are listed or exempted.
Philippines inventory (PICCS) : All components are listed or exempted.

International regulations

International lists :
Australia inventory (AICS) : All components are listed or exempted.
China inventory (IECSC) : All components are listed or exempted.
Japan inventory : Not determined.
Korea inventory : All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC) : All components are listed or exempted.
Philippines inventory (PICCS) : All components are listed or exempted.

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

16. Other information

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

Health : 0
Flammability : 0
Physical hazards : 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Date of issue : 12/30/2010.
Date of previous issue : No previous validation.
Version : 1

12/30/2010. 109
16. Other information

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.
SAFETY DATA SHEET
BG 244

1. Product and company identification

Manufacturer: BG Products Inc.
701 S. Wichita Street
Wichita, KS, 67213, USA
www.bgprod.com

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

<table>
<thead>
<tr>
<th>Identified uses</th>
<th>Fuel additives</th>
</tr>
</thead>
</table>

MSDS #: 244
Validation date: 8/12/2014.
Responsible name: Kolin Anglin, Environmental Coordinator
316-265-2686
msds@bgprod.com

In case of emergency: (800) 424-9300 (CHEMTREC)

2. Hazards identification

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

Classification of the substance or mixture:
- FLAMMABLE LIQUIDS - Category 3
- ACUTE TOXICITY (inhalation) - Category 4
- SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
- CARCINOGENICITY - Category 2
- ASPIRATION HAZARD - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 85%

GHS label elements

Hazard pictograms:

Signal word: Danger

Hazard statements:
- Flammable liquid and vapor.
- Harmful if inhaled.
- Causes serious eye irritation.
- Suspected of causing cancer.
- May be fatal if swallowed and enters airways.

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. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

Date of issue/Date of revision: 8/12/2014.
Date of previous issue: 9/6/2013.
Version: 3.1
2. Hazards identification

Response: IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage: Store locked up. Store in a well-ventilated place. Keep cool.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified: None known.

3. Composition/information on ingredients

Substance/mixture: Mixture
Other means of identification: Not available.

CAS number/other identifiers
- CAS number: Not applicable.
- Product code: 244

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy</td>
<td>15 - 40</td>
<td>64742-48-9</td>
</tr>
<tr>
<td>Stoddard solvent</td>
<td>10 - 30</td>
<td>8052-41-3</td>
</tr>
<tr>
<td>naphthalene</td>
<td>1 - 5</td>
<td>91-20-3</td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>0.5 - 1.5</td>
<td>95-63-6</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>0.1 - 1</td>
<td>100-41-4</td>
</tr>
</tbody>
</table>

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

There are no 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.

4. First aid measures

Description of necessary first aid measures

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

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. 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.
4. First aid measures

Ingestion: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects:

- **Eye contact**: Causes serious eye irritation.
- **Inhalation**: Harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Skin contact**: No known significant effects or critical hazards.
- **Ingestion**: May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms:

- **Eye contact**: Adverse symptoms may include the following: pain or irritation, watering, redness.
- **Inhalation**: No specific data.
- **Skin contact**: No specific data.
- **Ingestion**: Adverse symptoms may include the following: nausea or vomiting.

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.

See toxicological information (Section 11)

5. Fire-fighting measures

**Extinguishing media**

- **Suitable extinguishing media**: Use dry chemical, CO₂, water spray (fog) or foam.
- **Unsuitable extinguishing media**: Do not use water jet.

**Specific hazards arising from the chemical**

- Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**

- Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides.
### 5. Fire-fighting measures

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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

**Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

#### Methods and materials for containment and cleaning up

**Small spill**: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill**: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

### 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 swallow. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not store in storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparkling tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
7. Handling and storage

Advice on general occupational hygiene

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

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. 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.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| Stoddard solvent             | ACGIH TLV (United States, 6/2013).  
TWA: 100 ppm 8 hours.  
TWA: 525 mg/m³ 8 hours.  
TWA: 100 ppm 8 hours.  
TWA: 525 mg/m³ 8 hours.  
NIOSH REL (United States, 4/2013).  
TWA: 350 mg/m³ 10 hours.  
CEIL: 1800 mg/m³ 15 minutes.  
OSHA PEL (United States, 2/2013).  
TWA: 500 ppm 8 hours.  
TWA: 2900 mg/m³ 8 hours.  
ACGIH TLV (United States, 6/2013).  
Absorbed through skin.  
TWA: 10 ppm 8 hours.  
TWA: 52 mg/m³ 8 hours.  
STEL: 15 ppm 15 minutes.  
STEL: 79 mg/m³ 15 minutes.  
TWA: 10 ppm 8 hours.  
TWA: 50 mg/m³ 8 hours.  
STEL: 15 ppm 15 minutes.  
STEL: 75 mg/m³ 15 minutes.  
NIOSH REL (United States, 4/2013).  
TWA: 10 ppm 10 hours.  
TWA: 50 mg/m³ 10 hours.  
STEL: 15 ppm 15 minutes.  
STEL: 75 mg/m³ 15 minutes.  
OSHA PEL (United States, 2/2013).  
TWA: 10 ppm 8 hours.  
TWA: 50 mg/m³ 8 hours.  
STEL: 15 ppm 15 minutes.  
STEL: 75 mg/m³ 15 minutes.  |
| Naphthalene                  | ACGIH TLV (United States, 6/2013).  
TWA: 25 ppm 8 hours.  
TWA: 123 mg/m³ 8 hours.  
TWA: 25 ppm 8 hours.  
TWA: 125 mg/m³ 8 hours.  
NIOSH REL (United States, 4/2013).                 |
| 1,2,4-trimethylbenzene       | ACGIH TLV (United States, 6/2013).  
TWA: 25 ppm 8 hours.  
TWA: 123 mg/m³ 8 hours.  
TWA: 25 ppm 8 hours.  
TWA: 125 mg/m³ 8 hours.  
NIOSH REL (United States, 4/2013).                 |
8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Substance</th>
<th>TWA: 25 ppm 10 hours.</th>
<th>TWA: 125 mg/m³ 10 hours.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethylbenzene</td>
<td><strong>ACGIH TLV (United States, 6/2013).</strong></td>
<td><strong>OSHA PEL 1989 (United States, 3/1989).</strong></td>
</tr>
<tr>
<td></td>
<td>TWA: 20 ppm 8 hours.</td>
<td>TWA: 100 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV (United States, 6/2013).</td>
<td>NIOSH REL (United States, 4/2013).</td>
</tr>
<tr>
<td></td>
<td>TWA: 43 mg/m³ 10 hours.</td>
<td>TWA: 100 ppm 10 hours.</td>
</tr>
<tr>
<td></td>
<td>STEL: 125 ppm 15 minutes.</td>
<td>TWA: 100 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>STEL: 545 mg/m³ 15 minutes.</td>
<td>TWA: 100 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td><strong>OSHA PEL (United States, 2/2013).</strong></td>
<td><strong>OSHA PEL (United States, 2/2013).</strong></td>
</tr>
<tr>
<td></td>
<td>TWA: 435 mg/m³ 10 hours.</td>
<td>TWA: 435 mg/m³ 10 hours.</td>
</tr>
<tr>
<td></td>
<td>STEL: 125 ppm 15 minutes.</td>
<td>STEL: 125 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>STEL: 545 mg/m³ 15 minutes.</td>
<td>STEL: 545 mg/m³ 15 minutes.</td>
</tr>
</tbody>
</table>

**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.

**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.

**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.

**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. 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.

9. Physical and chemical properties

**Physical state**: Liquid.

**Flash point**: Closed cup: 50°C (122°F) [Pensky-Martens.]

**Auto-ignition temperature**: Not available.

**Flammable limits**: Not available.

**Color**: Amber.

**Odor**: Solvents
9. Physical and chemical properties

- **pH**: Not available.
- **Boiling/condensation point**: Not available.
- **Melting/freezing point**: Not available.
- **Specific gravity**: 0.883
- **Vapor pressure**: Not available.
- **Vapor density**: Not available.
- **Odor threshold**: Not available.
- **Evaporation rate**: Not available.
- **Viscosity**: Kinematic (40°C (104°F)): 0.0488 cm²/s (4.88 cSt)
- **Solubility**: Insoluble in the following materials: cold water and hot water.
- **Pour point**: <-40°C (<-40°F)
- **Density**: 7.37 (lbs/gal)

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**: Reactive or incompatible with the following materials: oxidizing materials
- **Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

### Section 11. Toxicological information

#### Information on toxicological effects

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>8500 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;6 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;20 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>490 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>Naphthalene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>18000 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>3500 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stoddard solvent</td>
<td>Eyes - Mild irritant</td>
<td>Human</td>
<td>-</td>
<td>100 parts per million</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td></td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>495 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td></td>
<td>-</td>
<td>24 hours 0.05 milliliters</td>
<td>-</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>Eyes - Severe irritant</td>
<td></td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Sensitization</th>
<th>Skin - Mild irritant</th>
<th>Rabbit</th>
<th>24 hours 15 milligrams</th>
<th>-</th>
</tr>
</thead>
</table>

**Carcinogenicity**
Not available.

**Mutagenicity**
Not available.

**Carcinogenicity**
Not available.

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
<th>Reasonably anticipated to be a human carcinogen.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>-</td>
<td>2B</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>-</td>
<td>2B</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

**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**

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy ethylbenzene</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy ethylbenzene</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

**Information on the likely routes of exposure**

<table>
<thead>
<tr>
<th>Information on the likely routes of exposure</th>
<th>Not available.</th>
</tr>
</thead>
</table>

**Potential acute health effects**

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Causes serious eye irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Harmful if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.</td>
</tr>
</tbody>
</table>

**Symptoms related to the physical, chemical and toxicological characteristics**

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Adverse symptoms may include the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>pain or irritation | watering | redness</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Adverse symptoms may include the following:</td>
</tr>
<tr>
<td></td>
<td>nausea or vomiting</td>
</tr>
</tbody>
</table>

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

**Short term exposure**
Section 11. Toxicological information

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Long term exposure

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Potential chronic health effects

Not available.

General: No known significant effects or critical hazards.

Carcinogenicity: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>4100.8 mg/kg</td>
</tr>
<tr>
<td>Inhalation (vapors)</td>
<td>10.47 mg/l</td>
</tr>
</tbody>
</table>

12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene</td>
<td>Acute EC50 1600 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2350 µg/l Marine water</td>
<td>Crustaceans - Palaemonetes pugio</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 213 µg/l Fresh water</td>
<td>Fish - Melanotaenia fluviatilis - Larvae</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.67 ppm Fresh water</td>
<td>Fish - Oncorhynchus kisutch</td>
<td>40 days</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4910 µg/l Marine water</td>
<td>Crustaceans - Elasmopus pectenicirus - Adult</td>
<td>48 hours</td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>Acute LC50 7720 µg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 4600 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>72 hours</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>Acute EC50 3600 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 2930 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 5200 µg/l Marine water</td>
<td>Crustaceans - Americamysis bahia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4200 µg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1000 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability

Not available.

Bioaccumulative potential

Date of issue/Date of revision: 8/12/2014. Date of previous issue: 9/6/2013. Version: 3.1
12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphtha (petroleum), hydrotreated heavy</td>
<td>-</td>
<td>10 to 2500</td>
<td>high</td>
</tr>
<tr>
<td>Stoddard solvent</td>
<td>3.16 to 7.06</td>
<td>-</td>
<td>high</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>3.4</td>
<td>36.5 to 168</td>
<td>low</td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>3.63</td>
<td>243</td>
<td>low</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>3.6</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

- Soil/water partition coefficient (K<sub>OC</sub>): Not available.
- Other adverse effects: No known significant effects or critical hazards.

13. Disposal considerations

Disposal methods:
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN1993</td>
<td>UN1993</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>FLAMMABLE LIQUIDS, N.O. S. (Stoddard solvent, 2-ethylhexyl nitrate). Marine pollutant (2-ethylhexyl nitrate, Stoddard solvent)</td>
<td>FLAMMABLE LIQUIDS, N.O.S. (Stoddard solvent, 2-ethylhexyl nitrate). Marine pollutant (2-ethylhexyl nitrate, Stoddard solvent)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>Yes.</td>
</tr>
</tbody>
</table>
## 14. Transport information

### Additional information

- **This product may be re-classified as "Combustible Liquid," unless transported by vessel or aircraft.** Non-bulk packages (less than or equal to 119 gal) of combustible liquids, that are marine pollutants, are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by vessel.

- The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes.

- The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

### Emergency schedules (EmS)

- F-E, S-E

### Special precautions for user

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

- **Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not available.

### Remarks

- Marine Pollutant:

## 15. Regulatory information

### U.S. Federal regulations

- **TSCA 8(a) PAIR:** naphthalene
- **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined
- **United States inventory (TSCA 8b):** Not determined.
- **Clean Water Act (CWA) 307:** naphthalene; ethylbenzene; toluene; benzene
- **Clean Water Act (CWA) 311:** naphthalene; ethylbenzene; xylene; toluene; benzene

### Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)

- **SARA 302/304**
- **Composition/information on ingredients**
  - No products were found.

### SARA 304 RQ

- **SARA 304 RQ:** Not applicable.

### SARA 311/312

- **Classification**
  - Fire hazard
  - Immediate (acute) health hazard
  - Delayed (chronic) health hazard

### Composition/information on ingredients
### 15. Regulatory information

<table>
<thead>
<tr>
<th>Name</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stoddard solvent</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>Distillates (petroleum),</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>hydrotreated light 1,2,4-</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>trimethylbenzene</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
<tr>
<td>cumene</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

#### SARA 313

<table>
<thead>
<tr>
<th>Form R - Reporting requirements</th>
<th>Product name</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>naphthalene</td>
<td>91-20-3</td>
<td></td>
</tr>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>95-63-6</td>
<td></td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>100-41-4</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplier notification</th>
<th>naphthalene</th>
<th>91-20-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2,4-trimethylbenzene</td>
<td>95-63-6</td>
<td></td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>100-41-4</td>
<td></td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

#### State regulations

- **Massachusetts**: The following components are listed: NAPHTHALENE; PSEUDOCUMENE; STODDARD SOLVENT
- **New York**: The following components are listed: Naphthalene; Ethylbenzene; Cumene; Benzene, 1-methylethyl-
- **New Jersey**: The following components are listed: NAPHTHALENE; MOTH FLAKES; ETHYL BENZENE; BENZENE, ETHYL-; PSEUDOCUMENE; 1,2,4-TRIMETHYL BENZENE; STODDARD SOLVENT; CUMENE; BENZENE, (1-METHYLETHYL)-
- **Pennsylvania**: The following components are listed: NAPHTHALENE; BENZENE, ETHYL-; PSEUDOCUMENE; STODDARD SOLVENT; BENZENE, (1-METHYLETHYL)-

#### California Prop. 65

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

**WARNING**: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>naphthalene</td>
<td>Yes.</td>
<td>No.</td>
<td>Yes. 41 µg/day (ingestion)</td>
<td>No.</td>
</tr>
<tr>
<td>ethylbenzene</td>
<td>Yes.</td>
<td>No.</td>
<td>54 µg/day (inhalation)</td>
<td>No.</td>
</tr>
<tr>
<td>cumene</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No. 7000 µg/day (ingestion)</td>
</tr>
<tr>
<td>toluene</td>
<td>Yes.</td>
<td>Yes.</td>
<td>No.</td>
<td>24 µg/day (ingestion)</td>
</tr>
<tr>
<td>benzene</td>
<td>Yes.</td>
<td>Yes.</td>
<td>No.</td>
<td>6.4 µg/day (ingestion)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No.</td>
<td>13 µg/day (inhalation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No.</td>
<td>49 µg/day (inhalation)</td>
</tr>
</tbody>
</table>

**United States inventory (TSCA 8b)**: Not determined.

**Canada**
15. Regulatory information

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists

Canadian NPRI : The following components are listed: Heavy aromatic solvent naphtha; Naphthalene; Hydrotreated heavy naphtha; 1,2,4-Trimethylbenzene; Stoddard solvent; Hydrotreated light distillate

CEPA Toxic substances : The following components are listed: Naphthalene

Canada inventory : Not determined.

International regulations

International lists : Australia inventory (AICS): Not determined.
China inventory (IECSC): Not determined.
Japan inventory: Not determined.
Korea inventory: Not determined.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): Not determined.
Philippines inventory (PICCS): Not determined.
Taiwan inventory (CSNN): Not determined.

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

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 MSDSs 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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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 8/12/2014. Date of previous issue : 9/6/2013. Version : 3.1 13/14
16. Other information

Date of printing : 8/12/2014.
Date of issue/Date of revision : 8/12/2014.
Date of previous issue : 9/6/2013.
Version : 3.1

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
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.
Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

1.1 **Product Code:** C116C
**Product Name:** Brake & Parts Clean, Non-Chlorinated, 55 Gallon Drum

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

1.3 **Details of the Supplier of the Safety Data Sheet:**
**Company Name:** CYCLO INDUSTRIES, INC.
902 SOUTH US HIGHWAY 1
JUPITER, FL 33477
**Phone Number:** (800)843-7813
**Web site address:** www.cyclo.com
**Information:** First Aid Emergency (Outside U.S.) (312)906-6194

1.4 **Emergency telephone number:**
**Emergency Contact:** First Aid Emergency
CHEMTREC (703) 527-3887 (800)424-9300

Section 2. Hazards Identification

2.1 **Classification of the Substance or Mixture:**

2.1.1 **Classification according to Regulation (EC) No 1272/2008 [CLP]:**
Flammable Liquids, Category 2
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Eye Irritation, Category 2A
Toxic To Reproduction, Category 2
Target Organ Systemic Toxicity (single exposure), Category 3
Target Organ Systemic Toxicity (repeated exposure), Category 2
Aspiration Toxicity, Category 1
Aquatic Toxicity (Acute), Category 2
Aquatic Toxicity (Chronic), Category 2

2.2 **Label Elements:**

2.2.1 **Labeling according to Regulation (EC) No 1272/2008 [CLP]:**

![Danger] [Warning] [Person] [Fire]

**GHS Hazard Phrases:**
H225: Highly flammable liquid and vapor.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H361: Suspected of damaging fertility or the unborn child.
H335: May cause respiratory irritation.
H373: May cause damage to {organs through prolonged or repeated exposure.
H304: May be fatal if swallowed and enters airways.
H411: Toxic to aquatic life with long lasting effects.
EUH066: Repeated exposure may cause skin dryness or cracking.

**GHS Precaution Phrases:**
P233: Keep container tightly closed.
P210: Keep away from heat/sparks/open flames/hot surfaces.
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.
P264: Wash hands thoroughly after handling.
P362+364: Take off contaminated clothing and wash it before reuse.
P271: Use only outdoors or in a well-ventilated area.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P273: Avoid release to the environment.

GHS Response Phrases:
P370+378: In case of fire, use carbon dioxide, dry chemicals or foam to extinguish.
P303+361+353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P302+352: IF ON SKIN: Wash with plenty of soap and water.
P332+313: If skin irritation occurs, get medical advice/attention.
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+313: If eye irritation persists, get medical advice/attention.
P309+311: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331: Do NOT induce vomiting.

GHS Storage and Disposal Phrases:
P501: Dispose of contents/container in accordance with local/regional/national/international regulation.
P403+233: Store container tightly closed in well-ventilated place.

Hazard Rating System:

2.3  Adverse Human Health Effects and Symptoms:

Section 3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>REACH Registration No.</th>
<th>Concentration</th>
<th>EC No./ EC Index No.</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td></td>
<td>40.0 -50.0 %</td>
<td>200-662-2 606-001-00-8</td>
<td>Flam. Liq. 2: H225 Eye Damage 2A: H319 TOST (SE) 3: H335 H336</td>
</tr>
<tr>
<td>142-82-5</td>
<td>Heptane</td>
<td></td>
<td>10.0 -20.0 %</td>
<td>205-563-8 601-008-00-2</td>
<td>Flam. Liq. 2: H225 Asp. Toxic. 1: H304 Skin Corr. 2: H315 TOST (SE) 3: H335 H336 Aquatic (A) 1: H400 Aquatic (C) 1: H410</td>
</tr>
</tbody>
</table>

MIRS MSDS, (c) A V Systems, Inc.
Section 4. First Aid Measures

4.1 Description of First Aid Measures: If ingested, seek medical attention immediately. Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. Do not leave individual unattended. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Wash skin with soap and water. Remove contaminated clothing and shoes, and launder before reuse. Immediately flush eyes with large amounts of water for at least 15 minutes while holding eyelids open. Call physician immediately if adverse reaction occurs.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Media: Carbon dioxide, dry chemicals, foam.

5.2 Flammable Properties and Hazards: No data available.

Flash Point: -4.00 °F (-20.0 °C) Method Used: TAG Closed Cup

Explosive Limits:
- LEL: No data.
- UEL: No data.

Autoignition Point: No data.

5.3 Fire Fighting Instructions: SCBA should be used whenever chemical fires are present. Contents under pressure. Cool exposed containers with water spray to prevent bursting.

Section 6. Accidental Release Measures

6.3 Methods and Material For Containment and Cleaning Up: Wear appropriate protective clothing and equipment to prevent skin and eye contact. Contain any liquid from leaking containers. Remove sources of ignition. Increase area ventilation. Sweep or gather up material and place in proper container for disposal or recovery. Do not allow to enter sanitary drains, sewer or surface and subsurface waters.

Section 7. Handling and Storage

7.1 Precautions To Be Taken in Handling: Danger: Extremely flammable. Keep away from heat and open flame. Use only in a well-ventilated area. Keep out of the reach of children.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>Britain EH40</th>
<th>France VL</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>TWA: 1210 mg/m³ (500 ppm)</td>
<td>TWA: 1210 mg/m³ (500 ppm)</td>
<td>TWA: 1210 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 3620 mg/m³ (1500 ppm)</td>
<td>STEL: 2420 mg/m³ (1000 ppm)</td>
<td></td>
</tr>
<tr>
<td>108-88-3</td>
<td>Toluene</td>
<td>TWA: 191 mg/m³ (50 ppm)</td>
<td>TWA: 192 mg/m³ (50 ppm)</td>
<td>TWA: 192 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 384 mg/m³ (100 ppm)</td>
<td>STEL: 384 mg/m³ (100 ppm)</td>
<td>STEL: 384 mg/m³</td>
</tr>
<tr>
<td>142-82-5</td>
<td>Heptane</td>
<td>TWA: 2085 mg/m³ (500 ppm)</td>
<td>TWA: 1668 mg/m³ (400 ppm)</td>
<td>TWA: 2085 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: ()</td>
<td>STEL: 2085 mg/m³ (500 ppm)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Partial Chemical Name</th>
<th>OSHA TWA</th>
<th>ACGIH TWA</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>PEL: 1000 ppm</td>
<td>TLV: 500 ppm</td>
<td>No data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 750 ppm</td>
<td>TLV: 50 ppm</td>
<td>No data.</td>
</tr>
<tr>
<td>108-88-3</td>
<td>Toluene</td>
<td>PEL: 200 ppm</td>
<td>TLV: 400 ppm</td>
<td>No data.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL: 500 ppm/(10 min)</td>
<td>CEIL: 300 ppm</td>
<td></td>
</tr>
<tr>
<td>142-82-5</td>
<td>Heptane</td>
<td>PEL: 500 ppm</td>
<td>TLV: 500 ppm</td>
<td>No data.</td>
</tr>
</tbody>
</table>
8.2 Exposure Controls:


(Ventilation etc.)

8.2.2 Personal protection equipment:

Eye Protection: Wear safety glasses or goggles to protect against exposure.

Protective Gloves: Use chemical resistant gloves for prolonged skin contact.

Other Protective Clothing: Rubber apron.

Respiratory Equipment: Use and approved NIOSH organic vapor respirator below the TLV. IF TLV is exceeded or overexposure is likely, use positive pressure self contained breathing apparatus.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States: [ ] Gas [ X ] Liquid [ ] Solid

Appearance and Odor: Clear liquid Typical solvent odor.

pH: NP

Melting Point: No data.

Boiling Point: No data.

Flash Pt: -4.00 F (-20.0 C) Method Used: TAG Closed Cup

Evaporation Rate: No data.

Explosive Limits: LEL: No data. UEL: No data.

Vapor Pressure (vs. Air or mm Hg): No data.

Vapor Density (vs. Air = 1): No data.

Specific Gravity (Water = 1): No data.

Solubility in Water: Negligible

Autoignition Pt: No data.

9.2 Other Information

Percent Volatile: 45.0 % by weight.

Section 10. Stability and Reactivity

10.1 Reactivity: No data available.

10.2 Stability: Unstable [ ] Stable [ X ]

10.3 Conditions To Avoid - Hazardous Reactions: No data available.

Possibility of Hazardous Reactions: Will occur [ ] Will not occur [ X ]

10.4 Conditions To Avoid - Instability: Keep away from heat, sparks and flame. Temperature over 120 degrees F.

10.5 Incompatibility - Materials To Avoid: Strong acids. Strong oxidizing agents.

10.6 Hazardous Decomposition Or Byproducts: Carbon monoxide. Carbon dioxide.
Section 11. Toxicological Information

11.1 Information on Toxicological Effects:

No data available.

CAS# 142-82-5:
Other Studies:, TDLo, Oral, Rat, 60.00 GM/KG, 3 W.
Results:
Kidney, Ureter, Bladder: Changes in liver weight.
- National Technical Information Service, Vol/p/yr: OTS0571116,

Other Studies:, TDLo, Oral, Rat, 260.0 GM/KG, 13 W.
Results:
Kidney, Ureter, Bladder: Changes in bladder weight.
Endocrine:Hypoglycemia.
Nutritional and Gross Metabolic:Weight loss or decreased weight gain.
- National Technical Information Service, Vol/p/yr: OTS0571116,

Other Studies:, TCLo, Inhalation, Rat, 4000. PPM, 6 D.
Results:
Brain and Coverings: Recordings from specific areas of CNS.
Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Ear: Changes in cochlear structure or function.
Nutritional and Gross Metabolic:Weight loss or decreased weight gain.
- Pharmacology and Toxicology, Munksgaard International Pub., POB 2148, Copenhagen K Denmark, Vol/p/yr: 76,41, 1995

Other Studies:, TDLo, Intraperitoneal, Rat, 9625. MG/KG, 7 D.
Results:
Liver: Other changes.
Blood:Changes in serum composition (e.g.
Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels: Multiple enzyme effects.

Other Studies:, TDLo, Intraperitoneal, Rat, 8840. MG/KG, 45 D.
Results:
Liver: Other changes.
Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:
Phosphatases.
Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels: Hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.)
- JAT, Journal of Applied Toxicology., John Wiley & Sons Ltd., Baffins Lane, Chichester, W.Sussex PO19 1UD UK, Vol/p/yr: 8,81, 1988

Acute toxicity, TCLo, Inhalation, Human, 1000. PPM, 6 M.
Results:
Behavioral: Hallucinations, distorted perceptions.

Acute toxicity, LC50, Inhalation, Rat, 103.0 GM/M3, 4 H.
Results:
Behavioral: Change in motor activity (specific assay).
Behavioral: Alteration of classical conditioning.
- Gigiena Truda i Professional'nye Zabolevaniya. (Labor Hygiene and Occupational Disease), V/O Mezhdunarodnaya Kniga, Moscow 113095 Russia, Vol/p/yr: 32(10),23, 1988

Acute toxicity, LCLO, Inhalation, Mouse, 59.00 GM/M3, 41 M.
Results:
Behavioral: Convulsions or effect on seizure threshold.
- Biochemische Zeitschrift., For publisher information, see EJBCAI, Berlin Germany, Vol/p/yr: 115,235, 1921

Acute toxicity, LD50, Intravenous, Mouse, 222.0 MG/KG.
Results:
Brain and Coverings: Changes in circulation (hemorrhage, thrombosis, etc.
Lungs, Thorax, or Respiration: Dyspnea.
Gastrointestinal: Nausea or vomiting.

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>n.a.</td>
<td>n.a.</td>
<td>A4</td>
<td>n.a.</td>
</tr>
<tr>
<td>108-88-3</td>
<td>Toluene</td>
<td>n.a.</td>
<td>3</td>
<td>A4</td>
<td>n.a.</td>
</tr>
<tr>
<td>142-82-5</td>
<td>Heptane</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

### Section 12. Ecological Information

### Section 13. Disposal Considerations

**13.1 Waste Disposal Method:**
Disposal should be made in accordance with federal, state and local regulations.

### Section 14. Transport Information

**14.1 LAND TRANSPORT (US DOT):**

- **DOT Proper Shipping Name:** Flammable Liquid, n.o.s (Acetone, Toluene, Heptane)
- **DOT Hazard Class:** 3 - FLAMMABLE LIQUID
- **UN/NA Number:** UN1993

**Packing Group:** II

**14.1 LAND TRANSPORT (European ADR/RID):**

- **ADR/RID Shipping Name:**
- **UN Number:** 1993
- **Packing Group:** II
- **Hazard Class:** 3 - FLAMMABLE LIQUID
14.2 MARINE TRANSPORT (IMDG/IMO):

IMDG/IMO Shipping Name: Flammable Liquid, n.o.s (Acetone, Toluene, Heptane)
UN Number: 1993
Packing Group: II
Hazard Class: 3 - FLAMMABLE LIQUID
IMDG Classification: 3
Marine Pollutant: No

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Hazardous Components (Chemical Name)</th>
<th>S. 302 (EHS)</th>
<th>S. 304 RQ</th>
<th>S. 313 (TRI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>No</td>
<td>Yes 5000 LB</td>
<td>No</td>
</tr>
<tr>
<td>108-88-3</td>
<td>Toluene</td>
<td>No</td>
<td>Yes 1000 LB</td>
<td>Yes</td>
</tr>
<tr>
<td>142-82-5</td>
<td>Heptane</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

CAS # Hazardous Components (Chemical Name) Other US EPA or State Lists

- Acetone
  - CAA HAP, ODC: No; CWA NPDES: No; TSCA: Inventory, 4 Test; CA PROP.65: No; CA TAC, Title 8; Title 8; MA Oil/HazMat: Yes; MI CMR, Part 5; Part 5; NC TAP: No; NJ EHS: Yes - 0006; NY Part 597: Yes; PA HSL: Yes - E; SC TAP: No; WI Air: Yes

- Toluene
  - CAA HAP, ODC: HAP; CWA NPDES: Yes; TSCA: Inventory, 8A CAIR; CA PROP.65: Yes; CA TAC, Title 8; Title 8; MA Oil/HazMat: Yes; MI CMR, Part 5; CMR, Part 5; NC TAP: Yes; NJ EHS: Yes - 1866; NY Part 597: Yes; PA HSL: Yes - E; SC TAP: Yes; WI Air: Yes

- Heptane
  - CAA HAP, ODC: No; CWA NPDES: No; TSCA: Inventory, 4 Test, 8A PAIR; CA PROP.65: No; CA TAC, Title 8; Title 8; MA Oil/HazMat: Yes; MI CMR, Part 5; NC TAP: No; NJ EHS: Yes - 1339; NY Part 597: No; PA HSL: Yes - 1; SC TAP: No; WI Air: No

CAS # Hazardous Components (Chemical Name) International Regulatory Lists

- Acetone
  - Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

- Toluene
  - Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

- Heptane
  - Canadian DSL: Yes; Canadian NDSL: No; Taiwan TCSCA: Yes

Section 16. Other Information

Revision Date: 06/18/2013
Additional Information About This Product: Not for sale in CA.
Company Policy or Disclaimer:
Cyclo Industries, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. Individuals receiving this information must exercise their independent judgment in determining its appropriateness for a particular purpose. Cyclo Industries, Inc. makes no representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose with respect to the information set forth herein or to the product to which the information refers. Accordingly, Cyclo Industries, Inc. will not be responsible for damages resulting from use of or reliance upon this information.
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: CAT ANTI-SEIZE COMPOUND GRAPHITE BASE

PART No.
Chemtool, WXX2811000, Caterpillar, 4C-5591, 4C-5592, 4C-5593

PRODUCT USE: Antiseize Compound

SUPPLIER
Chemtool Incorporated
P.O. Box 538
8200 Ridgefield Road
Crystal Lake, IL 60039-0538 USA
Tel: (815) 459-1250
Fax: (815) 459-1955

EMERGENCY TELEPHONE
Rocky Mountain Poison Center
Denver, Colorado
In USA and Canada: (800) 458-5924
Outside USA and Canada: +01-303-893-1322

2. COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS No.</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*GRAPHITE</td>
<td>7782-42-5</td>
<td>40-60 %</td>
</tr>
<tr>
<td>DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC</td>
<td>64742-52-5</td>
<td>10-30 %</td>
</tr>
<tr>
<td>PETROLATUM</td>
<td>8009-03-8</td>
<td>10-30 %</td>
</tr>
<tr>
<td>PETROLEUM OILS, 150 BRIGHT STOCK (CAS NOS 64742-62-7 &amp; 64742-65-0)</td>
<td>Mixture</td>
<td>7-13 %</td>
</tr>
<tr>
<td>*SILICA, CRYSTALLINE (COMMON NAME: QUARTZ)</td>
<td>14808-60-7</td>
<td>&lt;2 %</td>
</tr>
</tbody>
</table>

* This chemical(s) is hazardous according to OSHA/WHIMIS criteria

COMPOSITION COMMENTS
Refer to section eight for exposure limits on ingredients.
Chemical ingredients not regulated by OSHA or SARA are treated confidentially.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HEALTH HAZARDS, GENERAL
Exposure to vapors generated at high temperatures may cause respiratory irritation.

SENSITIZATION
No known information.
Carcinogenicity
OSHA: Not regulated. See Section 11 for carcinogenicity data of ingredients.

Teratogenicity
No known information.

Health warnings
SKIN CONTACT. Slightly irritating. Repeated or prolonged contact can result in drying of the skin. EYE CONTACT. Irritating. INHALATION. Heating can generate vapors that may cause respiratory irritation, nausea and headaches. Inhalation hazard at room temperature is unlikely due to the low volatility of this product. INGESTION. Can cause stomach ache and vomiting.

ROUTE OF ENTRY
Inhalation. Skin and/or eye contact. Ingestion.

4. FIRST AID MEASURES

Inhalation
Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor of hot product, immediately remove from source of exposure. Get medical attention if any discomfort continues. For breathing difficulties oxygen may be necessary.

Eyes
Important! Immediately rinse with water for at least 15 minutes. Contact physician if irritation persists.

Skin
Remove contaminated clothing. Wash skin thoroughly with soap and water. Contact physician if irritation persists.

Ingestion
DO NOT INDUCE VOMITING! Remove victim immediately from source of exposure. Get medical attention immediately! Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flash point (°C)
> 204 (400°F) Cd OC (Cleveland open cup).

Flammability limit - lower(%) N/D

Flammability limit - upper(%) N/D

Extinguishing media
Dry chemicals, sand, dolomite etc. Foam. Carbon dioxide (CO2).

Special fire fighting procedures
Use water spray to keep fire exposed containers cool and disperse vapors. Water spray may be used to flush spills away from exposures.

Unusual fire & explosion hazards
Pressure will increase in over heated, closed containers.

Hazardous combustion products

Protective measures in case of fire
Self-contained breathing equipment and chemical resistant clothing recommended.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Minimize skin contact.
PRECAUTIONS TO PROTECT THE ENVIRONMENT

Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with applicable government regulations.

SPILL CLEAN-UP PROCEDURES

Contain spill. Neutralize and absorb small amounts. Collect and return large amounts to shipping container. Rinse spill area with water.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS

Do not reuse container. Keep lid closed when not in use. Keep away from heat, sparks and open flame. Do not use in confined spaces without adequate ventilation and/or respirator.

STORAGE PRECAUTIONS

Keep container closed when not in use. Keep away from heat, sparks and open flame. Store separate from strong acids and oxidizers.

STORAGE CRITERIA

Chemical storage.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>STD</th>
<th>TWA</th>
<th>STEL</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAPHITE</td>
<td>OSHA</td>
<td>15 mppcf</td>
<td></td>
<td>2 mg/m³</td>
<td>except graphite fibers</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>2 mg/m³ (resp)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NIOSH</td>
<td>2.5 mg/m³ (resp)</td>
<td></td>
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<td></td>
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<tr>
<td>DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC</td>
<td>ACGIH</td>
<td>5 mg/m³ (oil mist)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PETROLEUM OILS, 150 BRIGHT STOCK (CAS NOS 64742-62-7 &amp; 64742-65-0)</td>
<td>ACGIH</td>
<td>5 mg/m³ (oil mist)</td>
<td>10 mg/m³ (oil mist)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA</td>
<td>5 mg/m³ (oil mist)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SILICA, CRYSTALLINE (COMMON NAME: QUARTZ)</td>
<td>ACGIH</td>
<td>5 mg/m³ (oil mist)</td>
<td>10 mg/m³ (oil mist)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OSHA</td>
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<td>ACGIH</td>
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<tr>
<td></td>
<td>NIOSH</td>
<td>0.05 mg/m³ **Ca</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>0.05 mg/m³ **Ca</td>
<td></td>
<td></td>
<td>**A2</td>
</tr>
</tbody>
</table>

INGREDIENT COMMENTS

**ACGIH A2: Suspected Human Carcinogen.
**NIOSH Ca: Potential Occupational Carcinogen.

PROTECTIVE EQUIPMENT

ENGINEERING CONTROLS

Use engineering controls to reduce air contamination to permissible exposure level.

VENTILATION

No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.
RESPIRATORS
No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.

PROTECTIVE GLOVES
Chemical resistant gloves required for prolonged or repeated contact.

EYE PROTECTION
Wear splash-proof eye goggles to prevent any possibility of eye contact.

PROTECTIVE CLOTHING
Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES
Wash at the end of each work shift and before eating, smoking and using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE
Liquid.

COLOR
Black.

ODOR
Mild (or faint). Petroleum.

SOLUBILITY DESCRIPTION
Insoluble in water.

DENSITY
1.09
Temperature (°C) 15.6 (60°F)

VAPOR DENSITY (air=1)
> 1

EVAPORATION RATE
< 1
Reference BuAc=1

pH-VALUE, CONC. SOLUTION
N/A

10. STABILITY AND REACTIVITY

STABILITY
Normally stable.

CONDITIONS TO AVOID
Avoid contact with acids. Strong oxidizing agents.

HAZARDOUS POLYMERIZATION
Will not occur.

POLYMERIZATION DESCRIPTION
Not applicable

HAZARDOUS DECOMPOSITION PRODUCTS
Oxides of: Carbon.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION
No experimental toxicological data on the preparation as such is available.

COMPONENT
GRAPHITE

TOXIC DOSE - LD 50
N/A.

TOXIC CONC. - LC 50
N/A.

CARCINOGENICITY
OSHA: Not regulated. NTP: Not listed. IARC: Not listed as a Group 1, 2A, or 2B agent.

COMPONENT
DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC
The petroleum base oil contained in this product has been highly refined to remove aromatics and improve performance characteristics. The base oil is not listed as a carcinogen by NTP, IARC, or OSHA.

The supplier states that product has no carcinogenic effects known in humans, nor would any be expected.

OSHA: Not regulated. IARC Group 1 designation: The agent is carcinogenic to humans with sufficient evidence in humans. NTP-K designation: Known to be a carcinogen with sufficient evidence from studies in humans.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION
There is no ecological data on the product itself.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
Spilled material, unused contents and empty containers must be disposed of in accordance with local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT HAZARD CLASS
Not regulated.

TDGR CLASS
Not Regulated. Non réglementé.

SEA TRANSPORT NOTES
Not regulated per IMDG.

AIR TRANSPORT NOTES
Not regulated per IATA.

15. REGULATORY INFORMATION
### US FEDERAL REGULATIONS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>SARA 302</th>
<th>CERCLA</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAPHITE</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>PETROLATUM</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>PETROLEUM OILS, 150 BRIGHT STOCK (CAS NOS 64742-62-7 &amp; 64742-65-0)</td>
<td>No</td>
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</tr>
<tr>
<td>SILICA, CRYSTALLINE (COMMON NAME: QUARTZ)</td>
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</table>

### CLEAN AIR ACT

### SARA HAZARD CATEGORIES

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>Chronic</th>
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### US STATE REGULATIONS

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<tr>
<th>COMPONENT</th>
<th>CA</th>
<th>MA</th>
<th>FL</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
<th>RI</th>
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</thead>
<tbody>
<tr>
<td>SILICA, CRYSTALLINE (COMMON NAME: QUARTZ)</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### STATE REGULATORY STATUS

PROPOSITION 65: This product may contain the following chemical(s) considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required: Crystalline silica, cancer hazard, CAS# 14808-60-7

### WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

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

### LABEL(S) FOR SUPPLY

![Label](image)

### CONTROLLED PRODUCT CLASSIFICATION

D2A - Chronic Very Toxic Material

### Risk phrases

R-49 May cause cancer by inhalation.

### GLOBAL INVENTORIES

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAN</th>
<th>US</th>
<th>EU</th>
<th>AUS</th>
<th>JAP</th>
<th>KOR</th>
<th>PHLP</th>
<th>CHN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PETROLATUM</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>PETROLEUM OILS, 150 BRIGHT STOCK (CAS NOS 64742-62-7 &amp; 64742-65-0)</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>SILICA, CRYSTALLINE (COMMON NAME: QUARTZ)</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>DISTILLATES, PETROLEUM, HYDROTREATED HEAVY NAPHTHENIC</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>GRAPHITE</td>
<td>DSL</td>
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<td>EINECS</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
All components of this product comply with new substance notification requirements under the Canadian Environmental Protection Act (CEPA).

16. OTHER INFORMATION

NFPA-HMIS HAZARD RATING

HEALTH
Irritation, minor residual injury (1) - HMIS/NFPA

FLAMMABILITY
Burns only if pre-heated (1) - HMIS/NFPA

REACTIVITY
Normally Stable (0) - HMIS/NFPA

PERSONAL PROTECTION INDEX
B - Safety Eyewear and Gloves

REVISION COMMENTS
Section 15: US Regulatory Status.

PREPARED BY
Chemtool Incorporated, Regulatory Dept.

Replacement MSDS of
DATE
2008-10-06
2009-09-22

PRINTING DATE:
2009-09-22

DISCLAIMER
While the information and recommendations set forth herein are believed to be accurate as of the date thereof, the company makes no warranty with respect thereto and disclaims all liability from reliance therein.

* Information revised since previous MSDS version
MATERIAL SAFETY DATA SHEET
CAT ASSEMBLY LUBRICANT

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME
CAT ASSEMBLY LUBRICANT

Product number
Chemtool, 8425300000, Caterpillar, 207-1600, 207-1601

PRODUCT USE
Rubber Lubricant Emulsion

MANUFACTURER
Chemtool Incorporated
P.O. Box 538
8200 Ridgefield Road
Crystal Lake, IL 60039-0538
Tel: (815) 459-1250
Fax: (815) 459-1955

SUPPLIER
Caterpillar, Inc.
100 N. E. Adams Street
Peoria, Illinois 61629 USA
Tel: 01 309-679-1000

*CONTACT PERSON
Chemtool Inc.

EMERGENCY TELEPHONE
Rocky Mountain Poison Center
Denver, Colorado
In USA and Canada - (800) 458-5924
Outside USA and Canada - +01-303-893-1322

*Date of last issue
2009-09-23

2. COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS No.</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td>7732-18-5</td>
<td>70-85 %</td>
</tr>
<tr>
<td>NEOPENTYL GLYCOL ESTER</td>
<td>Proprietary</td>
<td>7-13 %</td>
</tr>
<tr>
<td>GLYCOL MONOTALLATE</td>
<td>Proprietary</td>
<td>3-7 %</td>
</tr>
<tr>
<td>*CASTOR OIL, ETHOXYLATED</td>
<td>61791-12-6</td>
<td>1-5 %</td>
</tr>
<tr>
<td>*1,4-BUTANEDIOL</td>
<td>110-63-4</td>
<td>0.5-1.5 %</td>
</tr>
</tbody>
</table>

* This chemical(s) is hazardous according to OSHA/WHIMIS criteria

COMPOSITION COMMENTS
Refer to section eight for exposure limits on ingredients.
Chemical ingredients not regulated by OSHA, SARA, state or federal agencies are treated confidentially.
3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HEALTH HAZARDS, GENERAL
No specific health warnings noted.

SENSITIZATION
No known information.

CARCINOGENICITY
IARC: Not listed as a Group 1, 2A, or 2B agent. OSHA: Not regulated. NTP: Not listed.

TERATOGENICITY
No known information.

HEALTH WARNINGS
INGESTION. Can cause discomfort. INHALATION. Spray mist can irritate airways and lungs. SKIN CONTACT. EYE CONTACT. Slightly irritating.

ROUTE OF ENTRY
Inhalation. Ingestion. Skin and/or eye contact.

4. FIRST AID MEASURES

INHALATION
Remove victim immediately from source of exposure. When breathing is difficult, properly trained personnel may assist affected person by administering 100% oxygen. Perform artificial respiration if breathing has stopped. Get medical attention.

EYES
Important! Immediately rinse with water for at least 15 minutes. Get medical attention if any discomfort continues.

SKIN
Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.

INGESTION
DO NOT INDUCE VOMITING! Administer large amounts of water. Get medical attention immediately! NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS!

5. FIRE FIGHTING MEASURES

FLASH POINT (°C) > 100 (212 F)

FLAMMABILITY LIMIT - LOWER(%) N/A

FLAMMABILITY LIMIT - UPPER(%) N/A

FLAMMABILITY CLASS No Uniform Fire Code noted.

EXTINGUISHING MEDIA Use: Foam. Carbon dioxide (CO2). Dry chemicals, sand, dolomite etc.

SPECIAL FIRE FIGHTING PROCEDURES Use water to keep fire exposed containers cool and disperse vapors.

UNUSUAL FIRE & EXPLOSION HAZARDS Volume and pressure increases strongly when heated. Risk of container explosion in fire.


PROTECTIVE MEASURES IN CASE OF FIRE Self-contained breathing equipment and chemical resistant clothing recommended.
6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Minimize skin contact.

PRECAUTIONS TO PROTECT THE ENVIRONMENT
Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with applicable government regulations.

SPILL CLEAN-UP PROCEDURES
Absorb with inert, damp, noncombustible material, then flush area with water.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS
Avoid spilling, skin and eye contact. Containers to be kept tightly closed. ***Eye wash must be available at the work place.***

STORAGE PRECAUTIONS
Keep away from heat, sparks and open flame. Store isolated from oxidizing materials.

STORAGE CRITERIA
Chemical storage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

INGREDIENT COMMENTS
Recommended Exposure Limits are based on Oil Mist.

PROTECTIVE EQUIPMENT

ENGINEERING CONTROLS
Use engineering controls to reduce air contamination to permissible exposure level.

VENTILATION
No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.

RESPIRATORS
No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.

PROTECTIVE GLOVES
For prolonged or repeated skin contact use suitable protective gloves. Use protective gloves made of: Neoprene, nitrile, polyethylene or PVC.

EYE PROTECTION
Wear splash-proof eye goggles to prevent any possibility of eye contact.

PROTECTIVE CLOTHING
Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES
Wash at the end of each work shift and before eating, smoking and using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES
12660 - CAT ASSEMBLY LUBRICANT

**APPEARANCE/PHYSICAL STATE**
Liquid.

**COLOR**
Off-white. White. to Light (or pale). Beige.

**ODOR**
Mild (or faint).

**SOLUBILITY DESCRIPTION**
Disperses.

**BOILING POINT (°C, range)**
100 (212°F)  
**Pressure**
760mmHg

**MELT./FREEZ. POINT (°C, interval)**
0 (32°F)

**DENSITY**
0.965

**pH-VALUE, CONC. SOLUTION**
8.7

**pH-VALUE, DILUTED SOLUTION**
8.1

**10. STABILITY AND REACTIVITY**

**STABILITY**
Normally stable.

**CONDITIONS TO AVOID**
Avoid heat, flames and other sources of ignition. Avoid contact with strong oxidizers.

**HAZARDOUS POLYMERIZATION**
Will not polymerize.

**POLYMERIZATION DESCRIPTION**
Not relevant.

**HAZARDOUS DECOMPOSITION PRODUCTS**
Oxides of: Carbon.

**11. TOXICOLOGICAL INFORMATION**

**TOXICOLOGICAL INFORMATION**
No experimental toxicological data on the preparation as such is available.

**COMPONENT**
NEOPENTYL GLYCOL ESTER

**TOXIC DOSE - LD 50**
No Information Available (NIA).

**TOXIC CONC. - LC 50**
No Information Available (NIA).

**COMPONENT**
1,4-BUTANEDIOL

**12. ECOLOGICAL INFORMATION**

**ECOLOGICAL INFORMATION**
No data on possible environmental effects have been found.

**COMPONENT**
1,4-BUTANEDIOL
13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
Confirm disposal procedures with environmental engineer and local regulations.

14. TRANSPORT INFORMATION

DOT HAZARD CLASS Not regulated.
U.S. DOT HAZARD LABEL No DOT label requirement
TDGR CLASS Not Regulated.
SEA TRANSPORT NOTES Not regulated per IMDG.
AIR TRANSPORT NOTES Not regulated per IATA.

15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>SARA 30%</th>
<th>CERCLA</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEOPENTYL GLYCOL ESTER</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>GLYCOL MONOTALLATE</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>CASTOR OIL, ETHOXYLATED</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1,4-BUTANEDIOL</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

CLEAN AIR ACT

*SARA HAZARD CATEGORIES Acute Chronic

US STATE REGULATIONS

STATE REGULATORY STATUS CALIFORNIA PROPOSITION 65: This product ***DOES NOT*** contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

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

*LABEL(S) FOR SUPPLY
**CONTROLLED PRODUCT CLASSIFICATION**

D2B - Irritating and/or Chronically Toxic Materials

**Risk phrases**

R-20 Harmful by inhalation.
R-22 Harmful if swallowed.
R-36 Irritating to eyes.
R-38 Irritating to skin.

**GLOBAL INVENTORIES**

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAN</th>
<th>US</th>
<th>EU</th>
<th>AUS</th>
<th>JAP</th>
<th>KOR</th>
<th>PHLP</th>
<th>CHN</th>
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<tbody>
<tr>
<td>NEOPENTYL GLYCOL ESTER</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>GLYCOL MONOTALLATE</td>
<td>DSL</td>
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<td>EINECS</td>
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<td>Yes</td>
<td>Yes</td>
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<td>1,4-BUTANEDIOL</td>
<td>DSL</td>
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<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

* CANADA CEPA: All components of this product comply with new substance notification requirements under the Canadian Environmental Protection Act (CEPA).

*USA (TSCA)*

All components in this product are listed on the US Toxic Substances Control Act (TSCA) Inventory or are exempt from TSCA Inventory requirements.

*CANADA (DSL)*

All components in this product are listed on the Canada Domestic Substances List (DSL) or are exempt from DSL requirements.

*AUSTRAlia (AICS)*

All components in this product are listed on the Australian Inventory of Chemical Substances (AICS) or are exempt from AICS requirements.

16. OTHER INFORMATION

**NFPA-HMIS HAZARD RATING**

**HEALTH**

Irritation, minor residual injury (1) - HMIS/NFPA

**FLAMMABILITY**

Burns only if pre-heated (1) - HMIS/NFPA

**REACTIVITY**

Normally Stable (0) - HMIS/NFPA

**NPCA HMIS HAZARD INDEX**

Slight: Slightly Toxic - May cause slight irritation (1).

**PERSONAL PROTECTION INDEX**

B - Safety Eyewear and Gloves

**NPCA HMIS FLAMMABILITY INDEX**

Burns only if pre-heated (1).

**NPCA HMIS REACTIVITY INDEX**

Normally stable (0).

**Tariff Code (Schedule B)**

3403.99.0000 Other lubricating preparations, not containing petroleum oils.

**REVISION COMMENTS**

Section 2: Percentage Composition
Section 15: Inventory Status
1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME
CAT BEARING MOUNT COMPOUND

Product number
Chemtool, 8427400000, 8428900000, Caterpillar, 4C-4032, 7M-7456

SUPPLIER
Chemtool Incorporated
P.O. Box 538
8200 Ridgefield Road
Crystal Lake, IL 60039-0538 USA
Tel: (815) 459-1250
Fax: (815) 459-1955

EMERGENCY TELEPHONE
Rocky Mountain Poison Center
Denver, Colorado
In USA and Canada - (800) 458-5924
Outside USA and Canada - +01-303-893-1322

*Date of last issue
2008-11-06

2. COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS No.</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, 1,2-ETHANEDIYLBIS(OXY-2,1-ETHANEDIYL) ESTER</td>
<td>109-16-0</td>
<td>40-60 %</td>
</tr>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER</td>
<td>868-77-9</td>
<td>10-20 %</td>
</tr>
<tr>
<td>1,2-BENZISOTHIAZOL-3(2H)-ONE, 1,1-DIOXIDE (COMMON NAME: SACCHARIN)</td>
<td>81-07-2</td>
<td>1-3 %</td>
</tr>
</tbody>
</table>

* This chemical(s) is hazardous according to OSHA/WHIMIS criteria

*COMPOSITION COMMENTS
Refer to section eight for exposure limits on ingredients.
Chemical ingredients not regulated by OSHA, SARA, state or federal agencies are treated confidentially.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Irritating to eyes and skin. May cause sensitisation by skin contact.

INHALATION

No specific health warnings noted.
12446 - CAT BEARING MOUNT COMPOUND

INFORMATION
No specific health warnings noted.

SKIN
Irritating to skin.

EYES
Irritating to eyes.

SENSITIZATION
May cause sensitization, an allergic reaction, which becomes evident on reexposure to
this chemical.

TERATOBINICITY
No known information.

HEALTH WARNINGS
EYE CONTACT. Irritating. SKIN CONTACT. Mild dermatitis, allergic skin rash.

ROUTE OF ENTRY
Skin and/or eye contact. Inhalation.

4. FIRST AID MEASURES

INHALATION
Remove victim immediately from source of exposure. Get medical attention if any
discomfort continues.

EYES
Important! Immediately rinse with water for at least 15 minutes. Get medical attention if any
discomfort continues.

SKIN
Immediately remove contaminated clothing. Wash skin thoroughly with soap and water.
Get medical attention if irritation persists after washing.

INGESTION
DO NOT induce vomiting. Get medical attention immediately. Do not give victim
anything to drink if he is unconscious.

5. FIRE FIGHTING MEASURES

FLASH POINT (°C)
99 (210 F) TCC (Tag closed cup).

FLAMMABILITY LIMIT - LOWER(%)
N/D

FLAMMABILITY LIMIT - UPPER(%)
N/D

EXTINGUISHING MEDIA
Use: Carbon dioxide (CO2). Foam. Dry chemicals.

SPECIAL FIRE FIGHTING PROCEDURES
Use water to keep fire exposed containers cool and disperse vapors. Water spray may
be used to flush spills away from exposures and dilute spills to non-flammable mixtures.
Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out
of sewers and water sources. Dike for water control.

HAZARDOUS COMBUSTION PRODUCTS

6. ACCIDENTAL RELEASE MEASURES

SPILL CLEAN-UP PROCEDURES
Carefully collect spilled material in closed containers and leave for disposal according to
local regulations. Provide good ventilation. Use appropriate protective clothing. Rinse
area with water. Do not let washing down water contaminate ponds or waterways.

7. HANDLING AND STORAGE
HANDLING PRECAUTIONS
Keep away from heat, sparks and open flame. Provide good ventilation. Containers to be kept tightly closed. Avoid spilling, skin and eye contact.

STORAGE PRECAUTIONS
Keep away from heat, sparks and open flame. Store below 75°F. Store isolated from oxidizing materials.

STORAGE CRITERIA
Chemical storage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

*INGREDIENT COMMENTS
No exposure limits indicated for ingredient(s).

PROTECTIVE EQUIPMENT

VENTILATION
No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.

RESPIRATORS
No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.

PROTECTIVE GLOVES
For prolonged or repeated skin contact use suitable protective gloves.

EYE PROTECTION
Use eye protection.

PROTECTIVE CLOTHING
Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES
Wash at the end of each work shift and before eating, smoking and using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE
Liquid.

COLOR
Green.

ODOR
Mild (or faint).

SOLUBILITY DESCRIPTION
Slightly soluble in water.

BOILING POINT (°C, range)
> 149 (300°F)

MELT./FREEZ. POINT (°C, interval)
N/D

SPECIFIC GRAVITY
1.1

VAPOR DENSITY (air=1)
N/D

VAPOR PRESSURE
< 5 mmHg

EVAPORATION RATE
N/D

Pressure

Temperature (°C)
25 (77°F)

Reference
10. STABILITY AND REACTIVITY

STABILITY
Normally stable.

CONDITIONS TO AVOID
Avoid contact with acids and oxidizing substances.

HAZARDOUS POLYMERIZATION
Will not polymerize.

HAZARDOUS DECOMPOSITION PRODUCTS
No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION
No experimental toxicological data on the preparation as such is available.

COMPONENT
2-PROPENOIC ACID, 2-METHYL-,
1,2-ETHANEDIYLBIS(OXY-2,1-ETHANEDIYL) ESTER

TOXICOLOGICAL DATA
Irritating effects. WHMIS (Canada) D2B - R36/38 Sartomer

TOXIC DOSE - LD 50
No Information Available (NIA).

TOXIC CONC. - LC 50
No Information Available (NIA).

SENSITIZATION
May cause sensitization, an allergic reaction, which becomes evident on reexposure to this chemical.

COMPONENT
2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER

TOXICOLOGICAL DATA
Irritating effects. WHMIS (Canada) D2B - R36/38, R43 csst.qc.ca

TOXIC DOSE - LD 50
> 5000 mg/kg (skin rbt)

TOXIC CONC. - LC 50
No Information Available (NIA).

SENSITIZATION
May cause sensitization, an allergic reaction, which becomes evident on reexposure to this chemical.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION
No data on possible environmental effects have been found.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS
Dispose of in accordance with Local Authority requirements. Confirm disposal procedures with environmental engineer and local regulations.

14. TRANSPORT INFORMATION

DOT HAZARD CLASS
Non-Hazardous (No label required).
15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>SARA 30</th>
<th>CERCLA</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, 1,2-ETHANEDIYL-BIS(OXY-2,1-ETHANEDIYL) ESTER</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>1,2-BENZISOTHIAZOL-3(2H)-ONE, 1,1-DIOXIDE (COMMON NAME: SACCHARIN)</td>
<td>No</td>
<td></td>
<td>100 lbs</td>
</tr>
</tbody>
</table>

See Section 2 for Additional Information

CLEAN AIR ACT

*SARA HAZARD CATEGORIES

Acute Chronic

US STATE REGULATIONS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CA</th>
<th>MA</th>
<th>FL</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
<th>RI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-BENZISOTHIAZOL-3(2H)-ONE, 1,1-DIOXIDE (COMMON NAME: SACCHARIN)</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ESHS</td>
</tr>
</tbody>
</table>

*STATE REGULATORY STATUS

CALIFORNIA PROPOSITION 65: This product ***DOES NOT*** contain chemicals considered by the State of California’s Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

PENNSYLVANIA RIGHT-TO-KNOW: This product contains the following chemicals that the state of Pennsylvania has identified as Special Hazardous Substances (SHS), Environmental Hazards (EH), or both (ESHS). The PA regulations require that the MSDS identify all SHS or EH chemicals by chemical name, common name, and CAS Number if they comprise 0.01% or more.

1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide, Environmental and Special Hazards, CAS# 81-07-2
Hydroperoxide, 1-methyl-1-phenylethyl, Environmental Hazard, CAS# 80-15-9 <1.0%

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

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

*LABEL(S) FOR SUPPLY
CONTROLLED PRODUCT CLASSIFICATION

D2B - Irritating and/or Chronically Toxic Materials

Risk phrases

R-36/38 Irritating to eyes and skin.
R-43 May cause sensitization by skin contact.

GLOBAL INVENTORIES

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAN</th>
<th>US</th>
<th>EU</th>
<th>AUS</th>
<th>JAP</th>
<th>KOR</th>
<th>PHLP</th>
<th>CHN</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, 1,2-ETHANEDIYLBIS(OXY-2,1-ETHANEDIYL) ESTER</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>1,2-BENZISOTHIAZOL-3(2H)-ONE, 1,1-DIOXIDE (COMMON NAME: SACCHARIN)</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

CANADA CEPA: All components of this product comply with new substance notification requirements under the Canadian Environmental Protection Act (CEPA).

16. OTHER INFORMATION

NFPA-HMIS HAZARD RATING

HEALTH
Temporary incapacitation, injury (2) - HMIS/NFPA

FLAMMABILITY
Burns only if pre-heated (1) - HMIS/NFPA

REACTIVITY
Normally Stable (0) - HMIS/NFPA

PERSONAL PROTECTION INDEX
B - Safety Eyewear and Gloves

*Tariff Code (Schedule B)
3214.90.0000 Other non-refractory surfacing preparations for façades, indoor walls, floors, ceilings or the like.

PREPARED BY
James P. McBriarty

*Replacement of MSDS generated
2007-03-22

*DATE
2008-11-06

DISCLAIMER
While the information and recommendations set forth herein are believed to be accurate as of the date thereof, the company makes no warranty with respect thereto and disclaims all liability from reliance therein.

* Information revised since previous MSDS version

PRINTING DATE:
2008-11-06
MATERIAL SAFETY DATA SHEET
CAT CEMENT

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME            CAT CEMENT

PART No.              5H-2471

PRODUCT USE          Contact Adhesive

SUPPLIER
Chemtool Incorporated
8200 Ridgefield Road
Crystal Lake, IL 60039-0538 USA
Tel: (815) 459-1250
Fax: (815) 459-1955

EMERGENCY TELEPHONE
Rocky Mountain Poison Center Denver, Colorado
(800) 458-5924 U.S. and Canada.
(303) 893-1322 Outside U.S.

2. COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS No.</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTANONE, 2- (COMMON NAME: METHYL ETHYL KETONE)</td>
<td>78-93-3</td>
<td>10-30 %</td>
</tr>
<tr>
<td>ACETONE</td>
<td>67-64-1</td>
<td>10-30 %</td>
</tr>
<tr>
<td>HEXANE</td>
<td>110-54-3</td>
<td>10-30 %</td>
</tr>
<tr>
<td>BENZENE, METHYL-</td>
<td>108-88-3</td>
<td>10-30 %</td>
</tr>
<tr>
<td>PHENOL, 2,6-BIS(1,1-DIMETHYLETHYL)-4-METHYL-</td>
<td>128-37-0</td>
<td>1-5 %</td>
</tr>
<tr>
<td>MAGNESIUM OXIDE (MgO)</td>
<td>1309-48-4</td>
<td>1-5 %</td>
</tr>
</tbody>
</table>

COMPOSITION COMMENTS
Refer to section eight for exposure limits on ingredients.
Chemical ingredients not regulated by OSHA or SARA are treated confidentially.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Highly flammable. Harmful by inhalation. Irritating to eyes and skin. Harmful, danger
of serious damage to health by prolonged exposure through inhalation. Harmful to
aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Possible risk of impaired fertility. Repeated exposure may cause skin dryness or
cracking. Vapours may cause drowsiness and dizziness.

ACUTE EFFECTS

HEALTH HAZARDS, GENERAL
Harmful: danger of serious damage to health by prolonged exposure through
inhalation. Irritating to eyes, respiratory system, and skin.
CHRONIC EFFECTS

SENSITIZATION
No known information.

CARCINOGENICITY

TERATOGENICITY
Possible risk of impaired fertility.

HEALTH WARNINGS

INHALATION. Repeated severe exposures or steady prolonged exposure to solvents may cause permanent injury. SKIN CONTACT. Slightly irritating. Repeated or prolonged contact can result in drying of the skin. The product/chemical has a defatting effect on the skin. EYE CONTACT. Strongly irritating. INGESTION. Can cause stomach ache and vomiting. Can cause internal injury.

OTHER INFORMATION

ROUTE OF ENTRY
Inhalation. Ingestion. Skin and/or eye contact. Skin absorption.

4. FIRST AID MEASURES

INHALATION
Remove victim immediately from source of exposure. When breathing is difficult, properly trained personnel may assist affected person by administering 100% oxygen. If breathing stops, provide artificial respiration. Get medical attention.

EYES
Important! Immediately rinse with water for at least 15 minutes. Get medical attention if any discomfort continues.

SKIN
Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.

INGESTION
DO NOT induce vomiting. Get medical attention immediately. Drink large amounts of water. Do not give victim anything to drink of he is unconscious.

5. FIRE FIGHTING MEASURES

FLASH POINT(°C)
< 20 TCC (Tag closed cup).

FLAMMABILITY LIMIT - LOWER(%) N/D

FLAMMABILITY LIMIT - UPPER(%) N/D

EXTINGUISHING MEDIA
Use: Alcohol resistant foam. Carbon dioxide (CO2). Dry chemicals, sand, dolomite etc.

SPECIAL FIRE FIGHTING PROCEDURES
Use water to keep fire exposed containers cool and disperse vapors. Water spray may be used to flush spills away from exposures and dilute spills to non-flammable mixtures. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control.

UNUSUAL FIRE & EXPLOSION HAZARDS
Vapors may ignite. Volume and pressure increases strongly when heated. Risk of container explosion in fire.

HAZARDOUS COMBUSTION PRODUCTS
Carbon dioxide (CO2). Carbon monoxide (CO).

PROTECTIVE MEASURES IN CASE OF FIRE
Firefighters exposed to combustion gases/decomposition products should use a respiratory protective device.
6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Minimize skin contact. Avoid breathing vapors. Wear an appropriate respirator if exposure exceeds recommended guidelines. Remove sources of ignition.

PRECAUTIONS TO PROTECT THE ENVIRONMENT
Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with applicable government regulations.

SPILL CLEAN-UP PROCEDURES
Carefully collect spilled material in closed containers and leave for disposal according to local regulations. Provide good ventilation. Use appropriate protective clothing. Rinse area with water. Do not let washing down water contaminate ponds or waterways.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS
Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Do not use in confined spaces without adequate ventilation and/or respirator. Avoid spilling, skin and eye contact. Keep away from heat, sparks and open flame. Eye wash and emergency shower must be available at the work place.

STORAGE PRECAUTIONS

STORAGE CRITERIA
Flammable liquid storage.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>COMPONENT NAME</th>
<th>STD</th>
<th>TWA</th>
<th>STEL</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTANONE, 2- (COMMON NAME: METHYL ETHYL KETONE)</td>
<td></td>
<td>OSHA</td>
<td>200 ppm</td>
<td>300 ppm</td>
<td>ACGIH</td>
<td>200 ppm</td>
</tr>
<tr>
<td>ACETONE</td>
<td></td>
<td>OSHA</td>
<td>750 ppm</td>
<td>1000 ppm</td>
<td>ACGIH</td>
<td>750 ppm</td>
</tr>
<tr>
<td>HEXANE</td>
<td></td>
<td>OSHA</td>
<td>50 ppm</td>
<td>150 ppm</td>
<td>ACGIH</td>
<td>50 ppm</td>
</tr>
<tr>
<td>BENZENE, METHYL-</td>
<td></td>
<td>OSHA</td>
<td>100 ppm</td>
<td>150 ppm</td>
<td>ACGIH</td>
<td>100 ppm</td>
</tr>
<tr>
<td>PHENOL, 2,6-BIS(1,1-DIMETHYLETHYL)-4-METHYL-</td>
<td></td>
<td>OSHA</td>
<td>10 mg/m3</td>
<td></td>
<td>ACGIH</td>
<td>10 mg/m3</td>
</tr>
<tr>
<td>MAGNESIUM OXIDE (MgO)</td>
<td></td>
<td>OSHA</td>
<td>10 mg/m3</td>
<td></td>
<td>ACGIH</td>
<td>10 mg/m3</td>
</tr>
</tbody>
</table>

PROTECTIVE EQUIPMENT
ENGINEERING CONTROLS
Use engineering controls to reduce air contamination to permissible exposure level.

VENTILATION
No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.

RESPIRATORS
No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.

PROTECTIVE GLOVES
Chemical resistant gloves required for prolonged or repeated contact. Use protective gloves made of: Neoprene, nitrile, polyethylene or PVC.

EYE PROTECTION
Wear splash-proof eye goggles to prevent any possibility of eye contact.

PROTECTIVE CLOTHING
Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES
Wash at the end of each work shift and before eating, smoking and using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE
Liquid.

COLOR
Green.

ODOR
Solvent.

SOLUBILITY DESCRIPTION
Insoluble in water.

DENSITY
0.80

VAPOR DENSITY (air=1)
> 1.0

VAPOR PRESSURE
N/D

EVAPORATION RATE
< 1.0

pH-VALUE, CONC. SOLUTION
N/A

Temperature (°C)
16

Reference
BuAc=1

10. STABILITY AND REACTIVITY

STABILITY
Normally stable.

CONDITIONS TO AVOID
Avoid heat, flames and other sources of ignition. Avoid contact with oxidizers or reducing agents.

HAZARDOUS POLYMERIZATION
Will not polymerize.

POLYMERIZATION DESCRIPTION
Not relevant.

HAZARDOUS DECOMPOSITION PRODUCTS
Oxides of: Carbon.
11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION  No experimental toxicological data on the preparation as such is available.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION  No data on possible environmental effects have been found.
BIOACCUMULATION  Not known.
BIODEGRADABILITY  Not known.
ACUTE AQUATIC TOXICITY  Not determined.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS  Confirm disposal procedures with environmental engineer and local regulations.

14. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME  Consumer Commodity,
DOT HAZARD CLASS  ORM-D (Other Regulated Material D).
LABEL FOR TRANSPORT

UN No. SEA  UN1133
IMDG CLASS  3
IMDG PACK GR.  II
EmS No.  3-05
MFAG TABLE No.  330
SEA TRANSPORT NOTES  Adhesives
UN No., AIR  UN1133
ICAO CLASS  3
AIR PACK GR.  II
15. REGULATORY INFORMATION

US FEDERAL REGULATIONS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>SARA 302</th>
<th>CERCLA</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTANONE, 2- (COMMON NAME: METHYL ETHYL KETONE)</td>
<td>N/A</td>
<td>5 000 lbs</td>
<td>Yes</td>
</tr>
<tr>
<td>ACETONE</td>
<td>N/A</td>
<td>5 000 lbs</td>
<td>N/A</td>
</tr>
<tr>
<td>HEXANE</td>
<td>N/A</td>
<td>1 lb (air)</td>
<td>Yes</td>
</tr>
<tr>
<td>BENZENE, METHYL-</td>
<td>N/A</td>
<td>1 000 lbs</td>
<td>Yes</td>
</tr>
<tr>
<td>PHENOL, 2,6-BIS(1,1-DIMETHYLETHYL)-4-METHYL-</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>MAGNESIUM OXIDE (MgO)</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

See Section 2 for Additional Information

CLEAN AIR ACT

SARA(311/312) HAZARD CATEGORIES Acute Chronic Fire

US STATE REGULATIONS

STATE REGULATORY STATUS

PROPOSITION 65: This product may contain the following chemical(s) considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required:

- Toluene, CAS 108-88-3
- Lead, <1ppm
- Cadmium, <1ppm
- Formaldehyde, CAS 50-00-0
- Benzene, CAS 71-43-2, <100ppm

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHIMIS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>INVENTORIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUTANONE, 2- (COMMON NAME: METHYL ETHYL KETONE)</td>
<td>CAN US EU AUS JAP KOR CHN PHLP</td>
</tr>
<tr>
<td>ACETONE</td>
<td>DSL Yes NAV NAV NAV NAV NAV NAV</td>
</tr>
<tr>
<td>HEXANE</td>
<td>DSL Yes NAV NAV NAV NAV NAV NAV</td>
</tr>
<tr>
<td>PHENOL, 2,6-BIS(1,1-DIMETHYLETHYL)-4-METHYL-</td>
<td>DSL Yes NAV NAV NAV NAV NAV NAV</td>
</tr>
<tr>
<td>MAGNESIUM OXIDE (MgO)</td>
<td>DSL Yes NAV NAV NAV NAV NAV NAV</td>
</tr>
</tbody>
</table>

16. OTHER INFORMATION
HEALTH Temporarily incapacitation, injury (2) - HMIS/NFPA
FLAMMABILITY Ignites easily (3) - HMIS/NFPA
REACTIVITY Normally Stable (0) - HMIS/NFPA
REVISION COMMENTS Section 2: Ingredients
Section 3: Hazard Identification
PREPARED BY John Dingess
ames W. Hermann
REVISION No./Repl. MSDS of 2003-11-17
DATE 2004-06-11
PRINTING DATE: 2004-06-11
DISCLAIMER While the information and recommendations set forth herein are believed to be accurate as of the date thereof, Chemtool Incorporated makes no warranty with respect thereto and disclaims all liability from reliance therein.
1. PRODUCT AND COMPANY IDENTIFICATION

**TRADE NAME**
CAT LIQUID GASKET-A

**PART No.**
Chemtool, 8431000000, Caterpillar, 9U-5839, 138-8436, 3-0029432

**PRODUCT USE**
Gasket Sealer

**SUPPLIER**
Chemtool Incorporated
P.O. Box 538
8200 Ridgefield Road
Crystal Lake, IL 60039-0538 USA
Tel: (815) 459-1250
Fax: (815) 459-1955

**EMERGENCY TELEPHONE**
Rocky Mountain Poison Center
Denver, Colorado
In USA and Canada - (800) 458-5924
Outside USA and Canada - +01-303-893-1322

*Date of last issue
2008-11-06

2. COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS No.</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ACETONE</td>
<td>67-64-1</td>
<td>70-90 %</td>
</tr>
<tr>
<td>2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE</td>
<td>9003-18-3</td>
<td>10-30 %</td>
</tr>
<tr>
<td>*IRON OXIDE (Fe2O3)</td>
<td>1309-37-1</td>
<td>1-3 %</td>
</tr>
<tr>
<td>*DIPHENYLMINE</td>
<td>122-39-4</td>
<td>&lt;0.2</td>
</tr>
</tbody>
</table>

* This chemical(s) is hazardous according to OSHA/WHIMIS criteria

**COMPOSITION COMMENTS**
Refer to section eight for exposure limits on ingredients.
Chemical ingredients not regulated by OSHA, SARA, state or federal agencies are treated confidentially.

3. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**
Highly flammable liquid. Irritating to eyes. Repeated exposure may cause skin
dryness or cracking. Vapours may cause drowsiness and dizziness.

SENSITIZATION
No known information.

CARCINOGENICITY
IARC: Not listed as a Group 1, 2A, or 2B agent. OSHA: Not regulated. NTP: Not listed.

TERATOGENICITY
No known information.

HEALTH WARNINGS
INHALATION. The solvent vapors are harmful and will cause headache, nausea and intoxication. SKIN CONTACT. Irritating. Repeated or prolonged contact can result in drying of the skin. The product/chemical has a defatting effect on the skin. EYE CONTACT. Strongly irritating. INGESTION. Can cause stomach ache and vomiting.

ROUTE OF ENTRY
Skin and/or eye contact. Skin absorption.

4. FIRST AID MEASURES

INHALATION
Remove victim immediately from source of exposure. When breathing is difficult, properly trained personnel may assist affected person by administering 100% oxygen. If breathing stops, provide artificial respiration. Get medical attention.

EYES
Important! Immediately rinse with water for at least 15 minutes. Get medical attention if any discomfort continues.

SKIN
Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.

INGESTION
DO NOT induce vomiting. Get medical attention immediately. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

FLASH POINT (°C)  
-20 (-4 F) TCC (Tag closed cup).

FLAMMABILITY LIMIT - LOWER(%)  
2.2

FLAMMABILITY LIMIT - UPPER(%)  
13.0

EXTINGUISHING MEDIA
Carbon dioxide (CO2). Dry chemicals, sand, dolomite etc. Alcohol resistant foam.

SPECIAL FIRE FIGHTING PROCEDURES
Use water to keep fire exposed containers cool and disperse vapors. Water spray may be used to flush spills away from exposures and dilute spills to non-flammable mixtures. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control. Use special protective clothing. Regular protection may not be safe. Prevent inhalation of fumes and gases.

UNUSUAL FIRE & EXPLOSION HAZARDS
Volume and pressure increases strongly when heated. Risk of container explosion in fire.

HAZARDOUS COMBUSTION PRODUCTS

PROTECTIVE MEASURES IN CASE OF FIRE
Self-contained breathing equipment and chemical resistant clothing recommended.

6. ACCIDENTAL RELEASE MEASURES
PERSONAL PRECAUTIONS
Minimize skin contact. Avoid breathing vapors. Wear an appropriate respirator if exposure exceeds recommended guidelines. Remove sources of ignition.

PRECAUTIONS TO PROTECT THE ENVIRONMENT
Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter sewers, watercourses or extensive land areas. Assure conformity with applicable government regulations.

SPILL CLEAN-UP PROCEDURES
Carefully collect spilled material in closed containers and leave for disposal according to local regulations. Provide good ventilation. Use appropriate protective clothing. Rinse area with water. Do not let washing down water contaminate ponds or waterways.

7. HANDLING AND STORAGE

HANDLING PRECAUTIONS
Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Keep away from heat, sparks and open flame. Avoid spilling, skin and eye contact. Eye wash and emergency shower must be available at the work place. Containers to be kept tightly closed. Do not use in confined spaces without adequate ventilation and/or respirator.

STORAGE PRECAUTIONS
Keep away from heat, sparks and open flame. Store separate from strong acids and oxidizers. Store in accordance with local regulations.

STORAGE CRITERIA
Flammable liquid storage.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>STD OSHA</th>
<th>TWA</th>
<th>STEL N/E</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACETONE</td>
<td></td>
<td>1000 ppm</td>
<td></td>
<td>2400 mg/m3</td>
<td>1782 mg/m3</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>500 ppm</td>
<td>750 ppm</td>
<td>1188 mg/m3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NIOSH</td>
<td>250 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRON OXIDE (Fe2O3)</td>
<td>OSHA</td>
<td>250 ppm</td>
<td>10 mg/m3 (fume)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td></td>
<td></td>
<td>5 mg/m3 as Fe</td>
<td>(dust &amp; fume)</td>
</tr>
</tbody>
</table>

PROTECTIVE EQUIPMENT

ENGINEERING CONTROLS
Use engineering controls to reduce air contamination to permissible exposure level.

VENTILATION
No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.

RESPIRATORS
Respiratory protection must be used if air concentration exceeds acceptable level.

PROTECTIVE GLOVES
Chemical resistant gloves required for prolonged or repeated contact.

EYE PROTECTION
Wear splash-proof eye goggles to prevent any possibility of eye contact.
PROTECTIVE CLOTHING
Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES
Wash at the end of each work shift and before eating, smoking and using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE
Liquid.

COLOR
Red.

ODOR
Solvent.

SOLUBILITY DESCRIPTION
Slightly soluble in water.

BOILING POINT (°C, range)
56 (133°F)

DENSITY
0.8

VAPOR DENSITY (air=1)
> 1.0

VAPOR PRESSURE
N/D

EVAPORATION RATE
< 1.0

pH-VALUE, CONC. SOLUTION
N/A

10. STABILITY AND REACTIVITY

STABILITY
Normally stable.

CONDITIONS TO AVOID
Avoid heat, flames and other sources of ignition. Avoid contact with oxidizers or reducing agents.

HAZARDOUS POLYMERIZATION
Will not polymerize.

HAZARDOUS DECOMPOSITION PRODUCTS

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION
No experimental toxicological data on the preparation as such is available.

COMPONENT
ACETONE

TOXICOLOGICAL DATA
Irritating effects. WHMIS (Canada) Eye. D2B - R36

TOXIC DOSE - LD 50
5800 mg/kg (oral rat)

TOXIC DOSE - LD 50
20000 mg/kg (oral rat)

TOXIC CONC. - LC 50
120 mg/l (inh-rat)

COMPONENT
2-PROPYLENENITRILE, POLYMER WITH 1,3-BUTADIENE

TOXIC DOSE - LD 50
No Information Available (NIA).

TOXIC CONC. - LC 50
No Information Available (NIA).
12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION

No data on possible environmental effects have been found.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Spilled material, unused contents and empty containers must be disposed of in accordance with local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT PROPER SHIPPING NAME

Acetone

DOT HAZARD CLASS

3

IDENTIFICATION No.

UN1090

PACKING GROUP

II

REPORTABLE QUANTITY (RQ)

5,882 pounds due to ACETONE.

LABEL FOR TRANSPORT

UN No. SEA

UN1090

IMDG CLASS

3

IMDG PACK GR.

II

SEA TRANSPORT NOTES

acetone

UN No., AIR

UN1090

ICAO CLASS

3

AIR PACK GR.

II

AIR TRANSPORT NOTES

acetone

15. REGULATORY INFORMATION
US FEDERAL REGULATIONS

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>SARA 302</th>
<th>CERCLA</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACETONE</td>
<td>No</td>
<td>5 000 lbs</td>
<td>No</td>
</tr>
<tr>
<td>2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>IRON OXIDE (Fe2O3)</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>DIPHENYLAMINE</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

See Section 2 for Additional Information

CLEAN AIR ACT

SARA HAZARD CATEGORIES                                      Acute Chronic Fire

US STATE REGULATIONS

STATE REGULATORY STATUS

CALIFORNIA PROPOSITION 65: This product ***DOES NOT*** contain chemicals considered by the State of California’s Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

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

LABEL(S) FOR SUPPLY

CONTROLLED PRODUCT CLASSIFICATION

B2 - Flammable Liquids
D2B - Chronic Toxic Material

Risk phrases

R-11 Highly flammable.
R-36 Irritating to eyes.
R-66 Repeated exposure may cause skin dryness or cracking.
R-67 Vapours may cause drowsiness and dizziness.

GLOBAL INVENTORIES

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>CAN</th>
<th>US</th>
<th>EU</th>
<th>AUS</th>
<th>JAP</th>
<th>KOR</th>
<th>PHLP</th>
<th>CHN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACETONE</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2-PROPENENITRILE, POLYMER WITH 1,3-BUTADIENE</td>
<td>DSL</td>
<td>Yes</td>
<td>Polymer</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>IRON OXIDE (Fe2O3)</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>DIPHENYLAMINE</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

COMPONENT DIPHENYLAMINE has been classified in accordance with the hazard criteria of the Controlled Products Regulations.

TSCA 12(b) Export Notification

Yes
10019 - CAT LIQUID GASKET-A

CANADA CEPA: All components of this product comply with new substance notification requirements under the Canadian Environmental Protection Act (CEPA).

TSCA 12(b) NOTICE: This product contains one or more components that require reporting under TSCA Section 12(b) when exported. This product may be subject to US EPA requirement for one-time export notification per country. Contact the Regulatory Compliance Manager for more information.

16. OTHER INFORMATION

NFPA-HMIS HAZARD RATING

HEALTH
Irritation, minor residual injury (1) - HMIS/NFPA

FLAMMABILITY
Ignites easily (3) - HMIS/NFPA

REACTIVITY
Normally Stable (0) - HMIS/NFPA

PERSONAL PROTECTION INDEX
B - Safety Eyewear and Gloves

*REVISION COMMENTS
Section 1: Name Change

PREPARED BY
John Dingess
James P. McBriarty

Replacement of MSDS generated
2008-10-08

*DATE
2008-11-06

PRINTING DATE:
2008-11-06

DISCLAIMER
While the information and recommendations set forth herein are believed to be accurate as of the date thereof, the company makes no warranty with respect thereto and disclaims all liability from reliance therein.

* Information revised since previous MSDS version
Material Safety Data Sheet
CAT MINERAL SPIRITS

1. Product and company identification

Supplier : Chemtool Incorporated
801 West Rockton Road
Rockton, IL 61072 U.S.A.
Tel: +01 815.957.4140
Fax: +01 815.624.0292

Material uses : Industrial applications: Solvent. Cleaning agent for machinery and equipment.

Product code : 8499000000

MSDS # : 1148

Validation date : 2/6/2014.

In case of emergency : INFOTRAC
U.S. and Canada - 800.535.5053
Outside the U.S. and Canada - +1 352.323.3500

2. Hazards identification

Emergency overview

Physical state : Liquid [Clear.]

Color : Colorless

Odor : Hydrocarbon.

Signal word : WARNING!

Hazard statements : FLAMMABLE LIQUID AND VAPOR. MAY BE HARMFUL IF SWALLOWED. MAY CAUSE EYE AND SKIN IRRITATION.

Precautionary measures : Use only with adequate ventilation. Keep away from heat, sparks and flame. Keep container tightly closed.

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

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Inhalation of high concentrations of vapor may affect the central nervous system.

Ingestion : Aspiration hazard if swallowed. Can enter lungs and cause damage.

Skin : May cause skin irritation. Repeated exposure may cause skin dryness or cracking.

Eyes : May cause eye irritation.

Potential chronic health effects

Validated on 2/6/2014.
2. Hazards identification

**Chronic effects** : 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.

**Over-exposure signs/symptoms**

- **Inhalation** : No specific data.
- **Ingestion** : No specific data.
- **Skin** : No specific data.
- **Eyes** : No specific data.

**Medical conditions aggravated by over-exposure**

None known.

See toxicological information (Section 11)

3. Composition/information on ingredients

**United States**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), medium aliph.</td>
<td>64742-88-7</td>
<td>~100.0</td>
</tr>
</tbody>
</table>

**Canada**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), medium aliph.</td>
<td>64742-88-7</td>
<td>~100.0</td>
</tr>
</tbody>
</table>

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.

4. First aid measures

**Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

**Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

**Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

**Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**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.

Validated on 2/6/2014.
4. First aid measures

**Notes to physician**: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

**Flammability of the product**: Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

**Extinguishing media**

**Suitable**: Use dry chemical, CO₂, water spray (fog) or foam.

**Not suitable**: Do not use water jet.

**Special exposure hazards**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Hazardous thermal decomposition products**: No specific data.

**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.

6. Accidental release measures

**Personal precautions**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

**Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods for cleaning up**

**Small spill**: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill**: Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an efficient 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.
7. Handling and storage

Handling: Put on appropriate personal protective equipment (see Section 8). 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. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. 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.

8. Exposure controls/personal protection

8.1 United States

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA: 100 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 400 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 2/2013).</td>
</tr>
<tr>
<td></td>
<td>TWA: 100 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 400 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>

8.2 Canada

### Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>List name</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), medium aliph.</td>
<td>QC 12/2012</td>
<td>400 ppm</td>
<td>1590 mg/m³</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

8.3 Mexico

### Occupational exposure limits

No exposure limit value known.

Consult local authorities for acceptable exposure limits.
8. Exposure controls/personal protection

**Recommended monitoring procedures**
If this product contains ingredients with exposure limits, personal, workplace atmosphere 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. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Engineering measures**
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.

**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.

**Personal protection**

**Respiratory**
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.

**Hands**
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.

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

**Skin**
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.

**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.

9. Physical and chemical properties

**Physical state**
Liquid [Clear.]

**Flash point**
Closed cup: 41°C (105.8°F) [Pensky-Martens.]

**Auto-ignition temperature**
316°C (600.8°F)

**Flammable limits**
Lower: 1%
Upper: 7%

**Color**
Colorless

Validated on 2/6/2014.
9. Physical and chemical properties

- **Odor**: Hydrocarbon.
- **pH**: Not applicable.
- **Boiling/condensation point**: 179°C (354.2°F)
- **Melting/freezing point**: Not available.
- **Density**: 0.77 to 0.79 g/cm³
- **Vapor pressure**: 0.067 kPa (0.5 mm Hg) [room temperature]
- **Vapor density**: 5.48 [Air = 1]
- **Vapor pressure**: Not available.
- **Evaporation rate**: 151 (ether (anhydrous) = 1)
- **Viscosity**: Kinematic (40°C (104°F)): <0.02 cm²/s (<2 cSt)
- **Dispersibility properties**: Not available.
- **Solubility**: Insoluble in the following materials: cold water.

10. Stability and reactivity

- **Chemical stability**: The product is stable.
- **Conditions to avoid**: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
- **Incompatible materials**: Reactive or incompatible with the following materials: oxidizing materials
- **Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

**United States**

- **Acute toxicity**
  - **Conclusion/Summary**: Aspiration hazard if swallowed. Can enter lungs and cause damage.

- **Chronic toxicity**
  - **Conclusion/Summary**: Inhalation of high concentrations of vapor may affect the central nervous system.

- **Irritation/Corrosion**
  - **Conclusion/Summary**
    - **Skin**: May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
    - **Eyes**: May cause eye irritation.
    - **Respiratory**: Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation. May be harmful if inhaled. Pre-existing respiratory disorders may be aggravated by over-exposure to this product.

- **Sensitizer**
  - **Conclusion/Summary**
    - **Skin**: No specific information is available in our database regarding the skin sensitizing properties of this product. Sensitization not suspected for humans.
    - **Respiratory**: Sensitization not suspected for humans.

Validated on 2/6/2014.
11. Toxicological information

**Carcinogenicity**

**Conclusion/Summary**

: No known effect according to our database. Carcinogenicity not suspected for humans.

**Mutagenicity**

**Conclusion/Summary**

: No known effect according to our database. Mutagenicity not suspected for humans.

**Teratogenicity**

**Conclusion/Summary**

: No known effect according to our database. Teratogenicity not suspected for humans.

**Reproductive toxicity**

**Conclusion/Summary**

: Not considered to be dangerous to humans, according to our database.

**Canada**

**Acute toxicity**

**Conclusion/Summary**

: Aspiration hazard if swallowed. Can enter lungs and cause damage.

**Chronic toxicity**

**Conclusion/Summary**

: Inhalation of high concentrations of vapor may affect the central nervous system.

**Irritation/Corrosion**

**Skin**

: May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Eyes**

: May cause eye irritation.

**Respiratory**

: Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation. May be harmful if inhaled. Pre-existing respiratory disorders may be aggravated by over-exposure to this product.

**Sensitizer**

**Conclusion/Summary**

: No specific information is available in our database regarding the skin sensitizing properties of this product. Sensitization not suspected for humans.

**Respiratory**

: Sensitization not suspected for humans.

**Carcinogenicity**

**Conclusion/Summary**

: No known effect according to our database. Carcinogenicity not suspected for humans.

**Mutagenicity**

**Conclusion/Summary**

: No known effect according to our database. Mutagenicity not suspected for humans.

**Teratogenicity**

**Conclusion/Summary**

: No known effect according to our database. Teratogenicity not suspected for humans.

**Reproductive toxicity**

**Conclusion/Summary**

: Not considered to be dangerous to humans, according to our database.

**Mexico**

**Acute toxicity**

**Conclusion/Summary**

: Aspiration hazard if swallowed. Can enter lungs and cause damage.

**Chronic toxicity**

**Conclusion/Summary**

: Inhalation of high concentrations of vapor may affect the central nervous system.

**Irritation/Corrosion**

**Skin**

: May cause skin irritation. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Validated on 2/6/2014.
## 11. Toxicological information

<table>
<thead>
<tr>
<th>Toxicological Effects</th>
<th>Conclusion/Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eyes</strong></td>
<td>May cause eye irritation.</td>
</tr>
<tr>
<td><strong>Respiratory</strong></td>
<td>Repeated or prolonged inhalation of vapors may lead to chronic respiratory irritation. May be harmful if inhaled. Pre-existing respiratory disorders may be aggravated by over-exposure to this product.</td>
</tr>
<tr>
<td><strong>Sensitizer</strong></td>
<td>No specific information is available in our database regarding the skin sensitizing properties of this product. Sensitization not suspected for humans.</td>
</tr>
<tr>
<td><strong>Skin</strong></td>
<td>Sensitization not suspected for humans.</td>
</tr>
<tr>
<td><strong>Carcinogenicity</strong></td>
<td>No known effect according to our database. Carcinogenicity not suspected for humans.</td>
</tr>
<tr>
<td><strong>Mutagenicity</strong></td>
<td>No known effect according to our database. Mutagenicity not suspected for humans.</td>
</tr>
<tr>
<td><strong>Teratogenicity</strong></td>
<td>No known effect according to our database. Teratogenicity not suspected for humans.</td>
</tr>
<tr>
<td><strong>Reproductive toxicity</strong></td>
<td>Not considered to be dangerous to humans, according to our database.</td>
</tr>
</tbody>
</table>

## 12. Ecological information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>Conclusion/Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ecotoxicity</strong></td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td><strong>United States</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic ecotoxicity</strong></td>
<td>There are no data available on the mixture itself.</td>
</tr>
<tr>
<td><strong>Persistence/degradability</strong></td>
<td>This product has not been tested for biodegradation. This product shows a high bioaccumulation potential.</td>
</tr>
<tr>
<td><strong>Canada</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic ecotoxicity</strong></td>
<td>There are no data available on the mixture itself.</td>
</tr>
<tr>
<td><strong>Persistence/degradability</strong></td>
<td>This product has not been tested for biodegradation. This product shows a high bioaccumulation potential.</td>
</tr>
<tr>
<td><strong>Mexico</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic ecotoxicity</strong></td>
<td>There are no data available on the mixture itself.</td>
</tr>
<tr>
<td><strong>Persistence/degradability</strong></td>
<td>This product has not been tested for biodegradation. This product shows a high bioaccumulation potential.</td>
</tr>
</tbody>
</table>
13. Disposal considerations

Waste disposal: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification: D001 [Ignitable materials]

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Classification</td>
<td>UN1268</td>
<td>Petroleum distillates, n.o.s.</td>
<td>3</td>
<td>III</td>
<td></td>
<td>This product may be re-classified as &quot;Combustible Liquid,&quot; unless transported by vessel or aircraft. Non-bulk packages (less than or equal to 119 gal) of combustible liquids are not regulated as hazardous materials.</td>
</tr>
</tbody>
</table>

Limited quantity
Yes.

Packaging instruction
Passenger aircraft
Quantity limitation: 60 L

Cargo aircraft
Quantity limitation: 220 L

Special provisions
B1, IB3, T4, TP1, TP29

Validated on 2/6/2014.
### 14. Transport information

<table>
<thead>
<tr>
<th>Classification</th>
<th>Code</th>
<th>Description</th>
<th>Class</th>
<th>Hazmat Index</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDG Classification</td>
<td>UN1268</td>
<td>PETROLEUM DISTILLATES, N.O.S.</td>
<td>3</td>
<td>III</td>
<td></td>
</tr>
<tr>
<td>Mexico Classification</td>
<td>UN1268</td>
<td>DESTILADOS DE PETROLEO, N.E.P.</td>
<td>3</td>
<td>III</td>
<td></td>
</tr>
<tr>
<td>ADR/RID Class</td>
<td>UN1268</td>
<td>PETROLEUM DISTILLATES, N.O.S.</td>
<td>3</td>
<td>III</td>
<td></td>
</tr>
<tr>
<td>IMDG Class</td>
<td>UN1268</td>
<td>PETROLEUM DISTILLATES, N.O.S.</td>
<td>3</td>
<td>III</td>
<td></td>
</tr>
<tr>
<td>IATA-DGR Class</td>
<td>UN1268</td>
<td>Petroleum distillates, n.o.s.</td>
<td>3</td>
<td>III</td>
<td></td>
</tr>
</tbody>
</table>

**Explosive Limit and Limited Quantity Index**
- 1

**Passenger Carrying Road or Rail Index**
- 5

**Special provisions**
- 223

**Hazard identification number**
- 30

**Limited quantity**
- 5 L

**Special provisions**
- 640 (E)

**Tunnel code**
- (D/E)

**Emergency schedules (EmS)**
- F-E, S-E

**Special provisions**
- 223, 955

**Emergency schedules (EmS)**
- F-E, S-E

**Special provisions**
- 223

**Passenger and Cargo Aircraft**
- Quantity limitation: 60 L
- Packaging instructions: 355

**Carg Aircraft Only**
- Quantity limitation: 220 L
- Packaging instructions: 366

**Limited Quantities - Passenger Aircraft**
- Quantity limitation: 10 L
- Packaging instructions: Y344

**Special provisions**
- A3

Validated on 2/6/2014.
14. Transport information

PG*: Packing group

15. Regulatory information

**United States**

**HCS Classification**: Combustible liquid

**U.S. Federal regulations**

- **TSCA 8(a) CDR Exempt/Partial exemption**: All components are listed or exempted.
- **United States inventory (TSCA 8b)**: All components are listed or exempted.
- **SARA 302/304**: No products were found.
- **SARA 311/312 Hazards identification**: Fire hazard

**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 313**

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>No listed substance</td>
<td></td>
</tr>
<tr>
<td>Supplier notification</td>
<td>No listed substance</td>
<td></td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

**State regulations**

- **Connecticut Carcinogen Reporting**: None of the components are listed.
- **Connecticut Hazardous Material Survey**: None of the components are listed.
- **Florida substances**: None of the components are listed.
- **Illinois Chemical Safety Act**: None of the components are listed.
- **Illinois Toxic Substances Disclosure to Employee Act**: None of the components are listed.
- **Louisiana Reporting**: None of the components are listed.
- **Louisiana Spill**: None of the components are listed.
- **Massachusetts Spill**: None of the components are listed.
- **Massachusetts Substances**: None of the components are listed.
- **Michigan Critical Material**: None of the components are listed.
- **Minnesota Hazardous Substances**: None of the components are listed.
- **New Jersey Spill**: None of the components are listed.
- **New Jersey Toxic Catastrophe Prevention Act**: None of the components are listed.

Validated on 2/6/2014.
15. Regulatory information

**New Jersey Hazardous Substances** : None of the components are listed.

**New York Acutely Hazardous Substances** : None of the components are listed.

**New York Toxic Chemical Release Reporting** : None of the components are listed.

**Pennsylvania RTK Hazardous Substances** : None of the components are listed.

**Rhode Island Hazardous Substances** : None of the components are listed.

**California Prop. 65**

None of the components are listed.

**United States inventory** (TSCA 8b) : All components are listed or exempted.

**Canada**

**WHMIS (Canada)** : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).

**Canadian lists**

**Canadian NPRI** : The following components are listed: Solvent naphtha medium aliphatic

**CEPA Toxic substances** : None of the components are listed.

**Canada inventory; DSL/NDSL** : All components are listed or exempted.

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

**Mexico**

Classification :

**International regulations**

**International lists** : Australia inventory (AICS): All components are listed or exempted.

China inventory (IECSC): All components are listed or exempted.

Japan inventory: Not determined.

Korea inventory: All components are listed or exempted.

Malaysia Inventory of Chemicals (NZIoC): All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.

Philippines inventory (PICCS): All components are listed or exempted.

Taiwan inventory (CSNN): Not determined.

Europe inventory : All components are listed or exempted.

**Chemical Weapons Convention List Schedule I Chemicals** : Not listed

**Chemical Weapons Convention List Schedule II Chemicals** : Not listed

**Chemical Weapons Convention List Schedule III Chemicals** : Not listed

Validated on 2/6/2014.
16. Other information

Label requirements: FLAMMABLE LIQUID AND VAPOR. MAY BE HARMFUL IF SWALLOWED. MAY CAUSE EYE AND SKIN IRRITATION.

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 MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Date of issue: 2/6/2014.
Date of previous issue: 2/6/2014.
Version: 1.01
Prepared by: Regulatory Department, Chemtool Inc.

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.

Validated on 2/6/2014.
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME
CAT RETAINING COMPOUND

PART No.
Chemtool, 842600, Caterpillar, 4C-9506, 4C-9507

SUPPLIER
Chemtool Incorporated
P.O. Box 538
8200 Ridgefield Road
Crystal Lake, IL  60039-0538 USA
Tel:  (815) 459-1250
Fax:  (815) 459-1955

EMERGENCY TELEPHONE
Rocky Mountain Poison Center Denver, Colorado
(800) 458-5924  U.S. and Canada.
(303) 893-1322  Outside U.S.

2. COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS No.</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>*2-PROPENOIC ACID, 2-METHYL-, OXYBIS(2,1-ETHANEDIYLOXY-2,1-ETHANEDIYL) ESTER</td>
<td>109-17-1</td>
<td>40-60 %</td>
</tr>
<tr>
<td>*2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER</td>
<td>868-77-9</td>
<td>10-20 %</td>
</tr>
</tbody>
</table>

* This chemical(s) is hazardous according to OSHA/WHIMIS criteria

*COMPOSITION COMMENTS
Refer to section eight for exposure limits on ingredients.
Chemical ingredients not regulated by OSHA or SARA are treated confidentially.
MSDS and Label were prepared for product use in United States and Canada except Florida, Massachusetts, Michigan, New  ersey, Pennsylvania, and Rhode Island.
Contact Chemtool Regulatory Compliance Manager for documents for product use in other states.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Irritating to eyes and skin. May cause sensitisation by skin contact.

INHALATION
No specific health warnings noted.

INGESTION
No specific health warnings noted.
SKIN
- Irritating to skin.

EYES
- Irritating to eyes.

SENSITIZATION
- May cause sensitization, an allergic reaction, which becomes evident on reexposure to this chemical.

TERATOGENICITY
- No known information.

HEALTH WARNINGS
- EYE CONTACT. Irritating. SKIN CONTACT. Mild dermatitis, allergic skin rash.

ROUTE OF ENTRY
- Skin and/or eye contact. Inhalation.

4. FIRST AID MEASURES

INHALATION
- Remove victim immediately from source of exposure. Get medical attention if any discomfort continues.

EYES
- Important! Immediately rinse with water for at least 15 minutes. Get medical attention if any discomfort continues.

SKIN
- Immediately remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.

INGESTION
- DO NOT induce vomiting. Get medical attention immediately. Do not give victim anything to drink if he is unconscious.

5. FIRE FIGHTING MEASURES

FLASH POINT (°C)
- 99 (210 F) TCC (Tag closed cup).

FLAMMABILITY LIMIT - LOWER(%)
- N/D

FLAMMABILITY LIMIT - UPPER(%)
- N/D

EXTINGUISHING MEDIA
- Use: Carbon dioxide (CO2). Foam. Dry chemicals.

SPECIAL FIRE FIGHTING PROCEDURES
- Use water to keep fire exposed containers cool and disperse vapors. Water spray may be used to flush spills away from exposures and dilute spills to non-flammable mixtures. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control.

HAZARDOUS COMBUSTION PRODUCTS

6. ACCIDENTAL RELEASE MEASURES

SPILL CLEAN-UP PROCEDURES
- Carefully collect spilled material in closed containers and leave for disposal according to local regulations. Provide good ventilation. Use appropriate protective clothing. Rinse area with water. Do not let washing down water contaminate ponds or waterways.

7. HANDLING AND STORAGE
HANDLING PRECAUTIONS
Keep away from heat, sparks and open flame. Provide good ventilation. Containers to be kept tightly closed. Avoid spilling, skin and eye contact.

STORAGE PRECAUTIONS
Keep away from heat, sparks and open flame. Store below 75°F. Store isolated from oxidizing materials.

STORAGE CRITERIA
Chemical storage.

8.  EXPOSURE CONTROLS, PERSONAL PROTECTION

PROTECTIVE EQUIPMENT

VENTILATION
No specific ventilation requirements noted, but forced ventilation may still be required if air contamination exceeds acceptable level.

RESPIRATORS
No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists.

PROTECTIVE GLOVES
For prolonged or repeated skin contact use suitable protective gloves.

EYE PROTECTION
Use eye protection.

PROTECTIVE CLOTHING
Wear appropriate clothing to prevent repeated or prolonged skin contact.

HYGIENIC WORK PRACTICES
Wash at the end of each work shift and before eating, smoking and using the toilet.

9.  PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE
Liquid.

COLOR
Green.

ODOR
Mild (or faint).

SOLUBILITY DESCRIPTION
Slightly soluble in water.

BOILING POINT (°C, range)
> 149

Pressure
760mmHg

MELT./FREEZ. POINT (°C, interval)
N/D

DENSITY
1.1

Temperature (°C)
20

VAPOR DENSITY (air=1)
N/D

VAPOR PRESSURE
< 5 mmHg

Temperature (°C)
25 (77 F)

EVAPORATION RATE
N/D

Reference
10. STABILITY AND REACTIVITY

STABILITY Normally stable.
CONDITIONS TO AVOID Avoid contact with acids and oxidizing substances.
HAZARDOUS POLYMERIZATION Will not polymerize.
HAZARDOUS DECOMPOSITION PRODUCTS No specific hazardous decomposition products noted.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION No experimental toxicological data on the preparation as such is available.

COMPONENT 2-PROPENOIC ACID, 2-METHYL-, OXYBIS(2,1-ETHANEDIYLOXY-2,1-ETHANEDIYL) ESTER
TOXICOLOGICAL DATA Chronic toxicity. WHMIS: D2B
TOXIC DOSE - LD 50 > 10000 est. mg/kg (oral rat)
TOXIC DOSE - LD 50 SKIN > 5000 est. mg/kg (skin rbt)
TOXIC CONC. - LC 50 N/A.

COMPONENT 2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER
TOXICOLOGICAL DATA Chronic toxicity. WHMIS: D2B
TOXIC DOSE - LD 50 5050 mg/kg (oral rat)
TOXIC CONC. - LC 50 N/A.

12. ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION No data on possible environmental effects have been found.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS Dispose of in accordance with Local Authority requirements. Confirm disposal procedures with environmental engineer and local regulations.

14. TRANSPORT INFORMATION

DOT HAZARD CLASS Non-Hazardous (No label required).
*TDGR CLASS Not Regulated. Non réglementé.
SEA TRANSPORT NOTES Not regulated per IMDG.
AIR TRANSPORT NOTES Not regulated per IATA.
15. REGULATORY INFORMATION

US FEDERAL REGULATIONS: COMPONENT

<table>
<thead>
<tr>
<th>Component</th>
<th>SARA 302</th>
<th>CERCLA</th>
<th>SARA 313</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, OXYBIS(2,1-ETHANEDIYLOXY-2,1-ETHANEDIYL) ESTER</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

*SARA HAZARD CATEGORIES

Acute Chronic

STATE REGULATORY STATUS

PROPOSITION 65: This product ***DOES NOT*** contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

*WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

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

*CONTROLLED PRODUCT CLASSIFICATION

D2B - Chronic Toxic Material

INVENTORIES: COMPONENT

<table>
<thead>
<tr>
<th>Component</th>
<th>CAN</th>
<th>US</th>
<th>EU</th>
<th>AUS</th>
<th>JAP</th>
<th>KOR</th>
<th>CHN</th>
<th>PHLP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, 2-HYDROXYETHYL ESTER</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-PROPENOIC ACID, 2-METHYL-, OXYBIS(2,1-ETHANEDIYLOXY-2,1-ETHANEDIYL) ESTER</td>
<td>DSL</td>
<td>Yes</td>
<td>EINECS</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*All components of this product comply with new substance notification requirements under the Canadian Environmental Protection Act (CEPA).

16. OTHER INFORMATION

HEALTH
Temporary incapacitation, injury (2) - HMIS/NFPA

FLAMMABILITY
Burns only if pre-heated (1) - HMIS/NFPA

REACTIVITY
Normally Stable (0) - HMIS/NFPA

*NPCA HMIS PERS. PROTECT. INDEX
B - Safety Eyewear and Gloves

PREPARED BY
ames W. Hermann

*Replacement MSDS of
2005-03-22

*DATE
2008-04-25

PRINTING DATE:
2008-04-25

DISCLAIMER
While the information and recommendations set forth herein are believed to be accurate as of the date thereof, Chemtool Incorporated makes no warranty with
respect thereto and disclaims all liability from reliance therein.
Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
CIGWELD Arcair DC Gouging Carbons

SYNONYMS
"22043003C, 22053003C, 22063003C, 22082003C DC Carbon Cutting and Gouging Electrodes"

PRODUCT NUMBERS
22043003, 22053003, 22063003, 24104003, 24124003, 35033003, 22155006, 22043003C, 22053003C, 22063003C, 22082003C

PRODUCT USE
Copper coated carbon electrodes for air arc cutting and gouging of steel plate and non-oxidising metals using Direct Current Electrode Positive (DCEP) and Direct Current Electrode Negative (DCEN).

SUPPLIER
Company: Cigweld Pty Ltd
Address:
71 Gower Street
Preston
VIC, 3072
Australia
Telephone: +61 3 9474 7400
Telephone: +1 1300 654 674
Emergency Tel: +61 3 9474 7400
Email: cigweldsales@cigweld.com.au
Website: http://www.cigweld.com.au/

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE
HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

CHEMWATCH HAZARD RATINGS

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Toxicity</th>
<th>Body Contact</th>
<th>Reactivity</th>
<th>Chronic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low=1</td>
<td>Low=1</td>
<td>Low=1</td>
<td>Low=1</td>
<td>Low=1</td>
</tr>
</tbody>
</table>

SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4

RISK
■ Harmful by inhalation.

SAFETY
• Avoid contact with skin.
Limited evidence of a carcinogenic effect.
• Cumulative effects may result following exposure*.
• May produce discomfort of the respiratory system*.
• Possible respiratory sensitizer*.
* (limited evidence).

- Wear suitable protective clothing.
- Wear suitable gloves.
- Use only in well ventilated areas.
- Keep container in a well ventilated place.
- To clean the floor and all objects contaminated by this material, use water and detergent.
- Keep away from food, drink and animal feeding stuffs.
- If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).
- In case of accident by inhalation: remove casualty to fresh air and keep at rest.

---

### Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS RN</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper coated carbon rod upon use generates welding fumes</td>
<td>Not avail.</td>
<td>&gt;60</td>
</tr>
<tr>
<td>as iron oxide fume</td>
<td>1309-37-1</td>
<td></td>
</tr>
<tr>
<td>copper fume action of arc on air may generate ozone</td>
<td>7440-50-8</td>
<td></td>
</tr>
<tr>
<td>nitrogen oxides</td>
<td>10028-15-6</td>
<td></td>
</tr>
</tbody>
</table>

---

### Section 4 - FIRST AID MEASURES

**SWALLOWED**
• Not considered a normal route of entry.

**EYE**
• Particulate bodies from welding spatter may be removed carefully.
• DO NOT attempt to remove particles attached to or embedded in eye.
• Lay victim down, on stretcher if available and pad BOTH eyes, make sure dressing does not press on the injured eye by placing thick pads under dressing, above and below the eye.
• Seek urgent medical assistance, or transport to hospital.
• For "arc eye", i.e. welding flash or UV light burns to the eye:
  - Place eye pads or light clean dressings over both eyes.
  - Seek medical assistance.

**SKIN**
• If skin or hair contact occurs:
  - Flush skin and hair with running water (and soap if available).
  - Seek medical attention in event of irritation.

**INHALED**
• If fumes or combustion products are inhaled remove from contaminated area.
• Lay patient down. Keep warm and rested.
• Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
• Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

**NOTES TO PHYSICIAN**
Copper, magnesium, aluminium, antimony, iron, manganese, nickel, zinc (and their compounds) in welding, brazing, galvanising or smelting operations all give rise to thermally produced particulates of smaller dimension than may be produced if the metals are divided mechanically. Where insufficient ventilation or respiratory protection is available these particulates may produce "metal fume fever" in workers from an acute or long term exposure.
Section 4 - FIRST AID MEASURES

• Onset occurs in 4-6 hours generally on the evening following exposure. Tolerance develops in workers but may be lost over the weekend. (Monday Morning Fever)
• Pulmonary function tests may indicate reduced lung volumes, small airway obstruction and decreased carbon monoxide diffusing capacity but these abnormalities resolve after several months.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
• There is no restriction on the type of extinguisher which may be used.

FIRE FIGHTING
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves in the event of a fire.
• Prevent, by any means available, spillage from entering drains or water courses.
• Use fire fighting procedures suitable for surrounding area.

FIRE/EXPLOSION HAZARD
• Non combustible.
• Not considered to be a significant fire risk, however containers may burn.
• In a fire may decompose on heating and produce toxic / corrosive fumes.

FIRE INCOMPATIBILITY
■ Welding electrodes should not be allowed to come into contact with strong acids or other substances which are corrosive to metals.
Welding arc and metal sparks can ignite combustibles.

HAZCHEM
None

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
Clean up all spills immediately.
Avoid contact with skin and eyes.
Wear impervious gloves and safety glasses.
Use dry clean up procedures and avoid generating dust.
Place in suitable containers for disposal.

MAJOR SPILLS
Minor hazard.
• Clear area of personnel.
• Alert Fire Brigade and tell them location and nature of hazard.
• Control personal contact with the substance, by using protective equipment if risk of overexposure exists.
• Prevent, by any means available, spillage from entering drains or water courses.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
■ Earth all lines and equipment.
• Limit all unnecessary personal contact.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Avoid contact with incompatible materials.

SUITABLE CONTAINER
No restriction on the type of containers.
CIGWELD Arcair DC Gouging Carbons

Section 7 - HANDLING AND STORAGE

- Check that containers are clearly labelled.

STORAGE INCOMPATIBILITY
Avoid storage with oxidisers and strong acids.

STORAGE REQUIREMENTS
- Keep dry.
- Store under cover.
- Protect containers against physical damage.
- Observe manufacturer's storage and handling recommendations contained within this MSDS.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

<table>
<thead>
<tr>
<th>Source</th>
<th>Material</th>
<th>TWA ppm</th>
<th>TWA mg/m³</th>
<th>STEL ppm</th>
<th>STEL mg/m³</th>
<th>Peak ppm</th>
<th>Peak mg/m³</th>
<th>TWA F/C</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>ozone (Ozone)</td>
<td>0.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure</td>
<td>Standards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MATERIAL DATA

NITROGEN OXIDES:
WELDING FUMES:
For nitric oxide:
- Odour Threshold: 0.3 to 1 ppm.
  - NOTE: Detector tubes for nitrogen oxide, measuring in excess of 10 ppm, are commercially available.<</>.

OZONE:
WELDING FUMES:
- for ozone:
  - NOTE: Detector tubes for ozone, measuring in excess of 0.05 ppm, are commercially available.
  - Exposure at 0.2 ppm appears to produce mild acute but not cumulative effects.

CIGWELD ARCAIR DC GOUGING CARBONS:
None assigned. Refer to individual constituents.

WELDING FUMES:
In addition to complying with any individual exposure standards for specific contaminants, where current manual welding processes are used, the fume concentration inside the welder's helmet should not exceed 5 mg/m³, when collected in accordance with the appropriate standard (AS 3640, for example).

ES TWA: 5 mg/m³
TLV* TWA: 5 mg/m³, B2 (a substance of variable composition)
OES* TWA: 5 mg/m³

Most welding, even with primitive ventilation, does not produce exposures inside the welding helmet above 5 mg/m³.
During use the gases nitric oxide, nitrogen peroxide and ozone may be produced by the consumption of the electrode or the action of the welding arc on the atmosphere.
- NOTE: Detector tubes for carbon monoxide, measuring in excess of 2 ppm, are commercially available for detection of carbon monoxide.
  - 200 ppm carbon monoxide in air will produce headache, mental dullness and dizziness in a few hours; 600 ppm will produce identical symptoms in less than half and hour and may produce unconsciousness in 1.5 hours; 4000 ppm is fatal in less than an hour.<</>.

IRON OXIDE FUME:
For iron oxide (ferric oxide):
- Inhalation of iron oxide dust or fume may produce a benign pneumoconiosis (siderosis). The TLV-TWA is recommended to minimise the potential for development of X-ray changes in the lung on long-term exposure.

NITROGEN OXIDES:

continued...
For nitrous oxide:
The human reproductive, haematologic and nervous systems show toxic effects after nitrous oxide exposures. Similarities between epidemiologic and animal studies allow the establishment of a TLV-TWA even in the absence of clearly defined dose-response relationships in humans.

for nitrogen dioxide
Odour Threshold Value: 0.11-0.14 ppm
NOTE: Detector tubes for nitrogen dioxide, measuring in excess of 0.5 ppm, are commercially available.

The TLV-TWA is considered to be sufficiently low to reduce the potential for immediate injury or adverse physiological effects from prolonged daily exposures.

Short exposures of workmen to nitrogen dioxide concentrations averaging 25 to 38 ppm resulted in observable physiological response, but exposures of 3 to 5 minutes at 80 ppm produced tightness of the chest.

PERSONAL PROTECTION

RESPIRATOR
- Type NO Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

EYE
- Welding helmet with suitable filter. Welding hand shield with suitable filter.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent].

For most open welding/brazing operations, goggles, even with appropriate filters, will not afford sufficient facial protection for operators. Where possible use welding helmets or handshields corresponding to AS 1336 and AS 1338 which provide the maximum possible facial protection from flying particles and fragments.

HANDS/FEET
- Welding Gloves
- Safety footwear.

OTHER
- Overalls.
- Eyewash unit.
- Aprons, sleeves, shoulder covers, leggings or spats of pliable flame resistant leather or other suitable materials may also be required in positions where these areas of the body will encounter hot metal.

ENGINEERING CONTROLS
- For manual arc welding operations the nature of ventilation is determined by the location of the work.
  - For outdoor work, natural ventilation is generally sufficient.
  - For indoor work, conducted in open spaces, use mechanical (general exhaust or plenum) ventilation. (Open work spaces exceed 300 cubic metres per welder)
  - For work conducted in limited or confined spaces, mechanical ventilation, using local exhaust systems, is required. (In confined spaces always check that oxygen has not been depleted by excessive rusting of steel or snowflake corrosion of aluminium)

Mechanical or local exhaust ventilation may not be required where the process working time does not exceed 24 mins. If risk of inhalation or overexposure exists, wear SAA approved respirator or work in fume hood.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE
Carbon electrode with copper coating.
PHYSICAL PROPERTIES

Does not mix with water.
Sinks in water.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>Manufactured</td>
</tr>
<tr>
<td>Melting Range (°C)</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Range (°C)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Decomposition Temp (°C)</td>
<td>Not available</td>
</tr>
<tr>
<td>Autoignition Temp (°C)</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Volatile Component (%vol)</td>
<td>Negligible</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Solubility in water (g/L)</td>
<td>Immiscible</td>
</tr>
<tr>
<td>pH (1% solution)</td>
<td>Not applicable</td>
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<tr>
<td>pH (as supplied)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour Pressure (kPa)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>2.0 (bulk)</td>
</tr>
<tr>
<td>Relative Vapour Density</td>
<td>Not available</td>
</tr>
<tr>
<td>(air=1)</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- Not normally a hazard due to physical form of product.

EYE

- Fumes from welding/brazing operations may be irritating to the eyes.
- Arc rays can injure eyes.

SKIN

- Not normally a hazard due to physical form of product.
- Arc rays can burn skin.

INHALED

- Fumes evolved during welding operations may be irritating to the upper-respiratory tract and may be harmful if inhaled.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
- If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.
- Copper poisoning following exposure to copper dusts and fume may result in headache, cold sweat and weak pulse. Capillary, kidney, liver and brain damage are the longer term manifestations of such poisoning.
- Harmful levels of ozone may be found when working in confined spaces. Symptoms of exposure include irritation of the upper membranes of the respiratory tract and lungs as well as pulmonary (lung) changes including irritation, accumulation of fluid (congestion and oedema) and in some cases haemorrhage.

CHRONIC HEALTH EFFECTS

- Principal route of exposure is inhalation of welding fumes from electrodes and workpiece. Reaction products arising from electrode core and flux appear as welding fume depending on welding conditions, relative volatilities of metal oxides and any coatings on the workpiece.
- Welding fume with high levels of ferrous materials may lead to particle deposition in the lungs (siderosis) after long exposure. This clears up when exposure stops.
- Ozone is suspected to produce lung cancer in laboratory animals; no reports of this effect have been documented in exposed human populations.
- Other welding process exposures can arise from radiant energy UV flash burns, thermal burns or electric shock.

continued...
The welding arc emits ultraviolet radiation at wavelengths that have the potential to produce skin tumours in animals and in over-exposed individuals, however, no confirmatory studies of this effect in welders have been reported.

TOXICITY AND IRRITATION
■ Not available. Refer to individual constituents.

CARCINOGEN
iron oxide fume International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs Group 3 Not classifiable as to its carcinogenicity to humans

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
<th>Bioaccumulation</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>welding fumes</td>
<td>No Data</td>
<td>No Data</td>
<td>No Data</td>
<td>No Data</td>
</tr>
<tr>
<td>iron oxide fume</td>
<td>Available</td>
<td>Available</td>
<td>Available</td>
<td>Available</td>
</tr>
<tr>
<td>copper fume</td>
<td>No Data</td>
<td>No Data</td>
<td>LOW</td>
<td>No Data</td>
</tr>
<tr>
<td>ozone</td>
<td>Available</td>
<td>Available</td>
<td>LOW</td>
<td>Available</td>
</tr>
<tr>
<td>nitrogen oxides</td>
<td>No Data</td>
<td>No Data</td>
<td>No Data</td>
<td>No Data</td>
</tr>
</tbody>
</table>

Section 13 - DISPOSAL CONSIDERATIONS

• Recycle wherever possible or consult manufacturer for recycling options.
• Consult State Land Waste Management Authority for disposal.
• Bury residue in an authorised landfill.
• Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM:
None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADG7, IATA, IMDG

Section 15 - REGULATORY INFORMATION

Indications of Danger:
Xn Harmful

POISONS SCHEDULE
None
REGULATIONS

Regulations for ingredients

iron oxide fume (CAS: 1309-37-1) is found on the following regulatory lists;


- copper fume (CAS: 7440-50-8) is found on the following regulatory lists;

ozone (CAS: 10028-15-6) is found on the following regulatory lists;

- "Australia - Victoria Occupational Health and Safety Regulations - Schedule 9: Materials at Major Hazard Facilities (And Their Threshold Quantity) Table 2", "Australia Drinking Water Guideline Values For Physical and Chemical Characteristics", "Australia Exposure Standards", "Australia Hazardous Substances Information System - Consolidated Lists", "Australia National Environment Protection (Ambient Air Quality) Measure - Schedule 1: Pollutants", "Australia National Environment Protection (Ambient Air Quality) Measure - Schedule 2 Table 1: Standards and Goal for Pollutants other than Particles as PM2.5", "Australia Quarantine and Inspection Service List of chemical compounds that are accepted solely for use at establishments registered to prepare meat and meat products for the purpose of the Export Control Act 1982", "OECD List of High Production Volume (HPV) Chemicals", "United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments"

No data for CIGWELD Arcair DC Gouging Carbons (CW: 17929)

No data for welding fumes (CAS: , Not avail)
No data for nitrogen oxides (CAS: , Mixture)

Section 15 - REGULATORY INFORMATION

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.
The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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Issue Date: 5-Dec-2011
Print Date: 16-Apr-2014

This is the end of the MSDS.
NAFA Air Compressors - Schrader Bridgeport International, Inc.

Material Safety Data Sheet
COMPRESSION OIL ISO 100

Telephone Number (24 Hour Emergency Assistance):
Chemtrec: 800-424-9300

Name & Address
Rest Group, 2775 U.S. 22 & 3, Suite 8, Mineville, OH 45309

Section I - Name
Product: Compressor Oil ISO 100
Chemical Name: Hydrotreated Heavy Paraffinic Distillate
Chemical Family: Petroleum Hydrocarbon: Base Stock

Health Hazard: 1 Fire Hazard: 1 Reactivity: 1

Section II - Product/Ingredient

<table>
<thead>
<tr>
<th>No.</th>
<th>Composition</th>
<th>Cas No.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hydrotreated Heavy Paraffinic Distillate</td>
<td>64742-54-7</td>
<td>100</td>
</tr>
</tbody>
</table>

NFFA HAZARD RATING: HEALTH 0 FIRE 1 RRACTIVITY 0

Section III - Health information

The health effects noted below are consistent with requirements under the OSHA hazard communications standard (29 CFR 1910.1200).

EYE CONTACT: Based on essentially similar product testing product is considered practically non-irritating to the eye.

SKIN CONTACT: Based on essentially similar product testing, product is considered slightly irritating to the skin. Prolonged and repeated contact may lead to various skin disorders such as dermatitis, oil acne, or folliculitis.

INHALATION: The inhalation of vapors (generated at high temperatures only) or oil mist may cause a mild irritation of the mucous membranes of the upper respiratory tract.

INGESTION: Based on essentially similar product testing product is considered no more than slightly toxic if swallowed.

SIGNS AND SYMPTOMS: Irritation as noted above.

AGGRAVATED MEDICAL CONDITIONS: Pre-existing skin conditions and respiratory disorders may be aggravated by exposure.

OTHER HEALTH EFFECTS: This product and its components are not classified as carcinogens by International Agency for Research on Cancer (IARC), National toxicology program (NTP) or Occupational Safety and Health Administration (OSHA).

Section IV - Occupational Exposure Limits
Part: 826020  Line: MAC  Desc: OIL

<table>
<thead>
<tr>
<th>P</th>
<th>5 MG/M³*</th>
<th>NONE</th>
<th>5 MG/M³*</th>
<th>10 MG/M³*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil mist, mineral</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section V - Emergency and First Aid Procedures

EYE CONTACT: Flush with Water. If irritation occurs, get medical attention.

SKIN CONTACT: Remove contaminated clothing and wipe off excess oil. Wash with soap and water or a waterless and cleaner followed by soap and water. If irritation occurs, get medical attention.

INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.

NOTE TO PHYSICIAN: In general, emesis induction is unnecessary in high viscosity, low volatility products, i.e., most oils and greases.

Section VI - Supplemental Health Information

Nono identified

Section VII - Physical Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point (Deg F)</td>
<td>&gt;530</td>
</tr>
<tr>
<td>Specific Gravity (H₂O = 1)</td>
<td>0.8927</td>
</tr>
<tr>
<td>Vapour Pressure (MM HG)</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td>Melting Point (Deg F)</td>
<td>&lt;5</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Negligible</td>
</tr>
<tr>
<td>Vapour Density (AIR = 1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>430-600 SUS @ 100 Deg F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>(Normal Butyl Acetate - 1) Not available</td>
</tr>
<tr>
<td>Appearance and Odor</td>
<td>Amber liquid. Slight hydrocarbon odor.</td>
</tr>
</tbody>
</table>

Section VIII - Fire and Explosion Hazards

Flash Point Method: 450 Deg F (COC)

Flammable Limits/Percent Volume in Air: Lower N/AV  Higher N/AV

Extinguishing Media:
Use water fog, foam, dry chemical or CO₂. Do not use a direct stream of water. Product will float and can reignite on surface of water.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS:
Material will not burn unless preheated. Do not enter confined fire-space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive-pressure niosh-approved self contained breathing apparatus. Cool fire exposed containers with water.

Unusual Fire and Explosion Hazards:
Nono identified

Section IX - Reactivity

Stability: Stable  Hazardous Polymerization will not occur
Part: 826020  Linc: MAC  Desc: OIL

CONDITIONS AND MATERIALS TO AVOID:
Avoid heat, open flames and oxidizing materials.

HAZARDOUS DECOMPOSITION PRODUCTS:
Thermal decomposition products are highly dependent on the combustion conditions. A complex mixture of airborne solid, liquid, particulates and gases will evolve when this material undergoes pyrolysis or combustion. Carbon monoxide and other unidentified organic compounds may be formed upon combustion.

Section X - Employee Protection

RESPIRATORY PROTECTION:
If exposure may or does exceed occupational exposure limits (Section XIV), use a niosh-approved respirator to prevent overexposure. To accord with 29 CFR 1910.134 use either an atmosphere supplying respirator or an air-purifying respirator for organic vapors and particulates.

PROTECTIVE CLOTHING:
Wear chemical resistant gloves and other protective clothing as required to minimize skin contact. No special eye protection is routinely necessary. Test data from published literature and/or glove and clothing manufacturers indicate the best protection is provided by nitrile gloves.

ADDITIONAL PROTECTIVE MEASURES:
None identified

Section XI - Environmental Protection

SPILL OR LEAK PROCEEDURES:
May burn although not readily ignitable. Use cautious judgement when cleaning up large spills.

***Large Spills: Wear respirator and protective clothing as appropriate. Shut off source of leak if safe to do so. Dike and contain. Remove with vacuum trucks or pump to storage/salvage vessels. soak up residue with an absorbent such as clay, sand, or other suitable materials. Dispose of properly. Flush area with water to remove trace residue.  
***Small Spills: Take up with an absorbent material and dispose of properly.

Section XII - Special Precautions

Minimize skin contact. Wash with soap and water before eating, drinking, smoking, or using toilet facilities. Launder contaminated clothing before reuse. Properly dispose of contaminated leather articles, including shoes, that cannot be decontaminated. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

Section XIII - Transportation Requirements

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:
Not hazardous by D.O.T. Regulations

DOT PROPER SHIPPING NAME: Not applicable
OTHER REQUIREMENTS: Not applicable

Section XIV - Other Regulatory Controls

This product is listed on the EPA/TSCA inventory of chemical substances.

Protection of stratospheric ozone (pursuant to Section 612 of the Clean Air
nor was it directly manufactured with any Class I or Class II ozone depleting substances.

In accordance with SARA Title III, Section 313, the attached environmental data sheet (EDS) should always be copied and sent with the MSDS.

Section XV - State Regulatory Information

<table>
<thead>
<tr>
<th>STATE LISTED COMPONENT</th>
<th>CAS NO</th>
<th>PERCENT</th>
<th>STATE CODE</th>
</tr>
</thead>
</table>

Based on information available this product does not contain any chemical substance listed on a chemical specific state list.

Section XVI - Special Notes

Information contained herein is based on the data available to us and is believed to be correct. However, we make no warranty, expressed or implied, regarding the accuracy of this data or the results to be obtained from the use thereof.

We assume no responsibility for the injury from the use of the product described herein.

Manufactures indicate the best protection is provided by nitrile gloves.

ADDITIONAL PROTECTIVE MEASURES:
None identified

Section XI - Environmental Protection

SPILL OR LEAK PROCEDURES:
May burn although not readily ignitable. Use cautious judgment when cleaning up large spills.

***Large Spills: Wear respirator and protective clothing as appropriate. Shut off source of leak if safe to do so. Dike and contain. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent "such as clay, sand, or other suitable materials. Dispose of properly. Flush " area with water to remove trace residue.

***Small Spills: Take up with an absorbent material and dispose of properly.

Section X - Special Precautions

"Minimize skin contact. Wash with soap and water before eating, drinking."
"Smoking, or using toilet facilities. Launder contaminated clothing before"
"Reuse. Properly dispose of contaminated leather articles, including shoes."
"That cannot be decontaminated. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures."
Section XIV - Other Regulatory Controls
This product is listed on the EPA/TSCA inventory of chemical substances.

Protection of stratospheric ozone (pursuant to Section 611 of the Clean Air Act "Amendments to 1990) per 40 CFR part 62, this product does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

"In accordance with SARA Title III, Section 313, the attached environmental data sheet (EDS) should always be copied and sent with the MSDS.

Section XV - State Regulatory Information

<table>
<thead>
<tr>
<th>STATE LISTED COMPONENT</th>
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We assume no responsibility for the injury from the use of the product described herein.

*** End of Report ***
Material Safety Data Sheet

1. PRODUCT IDENTIFICATION
Product Name: DIELECTRIC TUNE-UP GREASE 3 OZ
Item No: 22058
Product Type: Lubricant

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Percent</th>
<th>ACGIH 8 Hr. TWA:</th>
<th>OSHA 8 Hr. TWA:</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLYMETHYLISILKONE</td>
<td>85-95</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>SILICON DIOXIDE, AMORPHOUS</td>
<td>5-15</td>
<td>10 mg/m³ TWA</td>
<td>5 mg/m³ TWA</td>
</tr>
<tr>
<td>1/25/945-5,0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Toxicity: Note: This product does not contain microcrystalline silicas. May cause eye and skin irritation.

Primary Routes of Entry: Eye and skin contact. Ingestion, inhalation.

Signs and Symptoms of Exposure: Overexposure may cause eye and skin redness.

4. FIRST AID MEASURES

Ingestion: If swallowed, do NOT induce vomiting. Give victim two glasses of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

Inhalation: Move to fresh air in case of accidental inhalation of vapors.

Skin Contact: Wash off with soap and water. If skin irritation persists, see a physician.

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flash Point [ºF/C]: Greater than 200 degrees F. Method: Tag-Ended Cup

Recommended Extinguishing Media: Carbon Dioxide, Dry Chemical, Foam.

Special Fire-Fighting Procedures: No special procedures.

Hazardous Products Formed by Fire or Thermal Decomposition: Carbon monoxide, Carbon dioxide, Oxides of silicon

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Maintain good ventilation. Take up with an inert absorbent. Store in a closed waste container until disposal. Clean up spills thoroughly as residue is slippery.

7. HANDLING AND STORAGE

Handling: Avoid prolonged skin contact. Keep away from eyes.

Storage: Store below 100 degrees F.

Medical Conditions Recognized as Being Aggravated by Exposure: None known.


Page 154 of 320
8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Eyes: Slightly glasses.
Skin: Neat plastic gloves.
Respiratory Protection: Not required under normal use.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance: White, translucent pearls.
Odor: Mild Odor.
Boiling Point (°F): >300°C.
Solubility in Water: Nil.
Specific Gravity: 0.98.
VOC Content (%): 0.4% by weight; 41.1%.
Vapor Pressure: <1 mmHg @ 25°C.
Evaporation Rate: Heavier than air.

10. STABILITY AND REACTIVITY
Chemical Stability: Stable at normal conditions.
Hazardous Polymerization: Will not occur.
Incompatibilities: Acids, strong oxidizers.
Conditions to Avoid: Heat.
Hazardous Products Formed by Fire or Thermal Decomposition: Carbon monoxide, Carbon dioxide, Oxides of silicon.

11. TOXICOLOGICAL INFORMATION
See Section 3.

12. ECOLOGICAL INFORMATION
No data available.

13. DISPOSAL CONSIDERATIONS
Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION
DOT (49CFR 172)
Domestic Ground Transport:
JOT Shipping Name: Unrestricted.
Hazard Class: None.
UN/ID Number: None.
Marine Pollutant: None.

IATA
Proper Shipping Name: Not required.
Class or Division: None.
UN/NA Number: None.

IMDG
Proper Shipping: Unrestricted.
Hazard Class: None.
UN Number: None.

15. REGULATORY INFORMATION
SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.
SARA 313 Information: None.
CALIFORNIA PROP 65:

2 of 3
No California Prop 65 chemicals are known to be present.

TSCA inventory Status: YES All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

Estimated NFPA Rating: HEALTH 1, FLAMMABILITY 1, REACTIVITY 0
Estimated HMIS Classification: HEALTH 1, FLAMMABILITY 1, PHYSICAL HAZARD 0
NFPA is a registered trademark of the National Fire Protection Assoc.
HMIS is a registered trademark of the National Paint and Coatings Assn.

Prepared By: Denise Boyd, Health and Safety Manager
Company: Permatex Inc. 10 Columbus Blvd. Hartford, CT USA 06106
Telephone Number: 1-877-Permatex (877) 376-2639

Revision Date: 01/19/2004
Revision Number: 3
# SAFETY DATA SHEET

## Section 1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Dri-Graph Graphite Lubricant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>19904</td>
</tr>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
<tr>
<td>Product type</td>
<td>Aerosol.</td>
</tr>
</tbody>
</table>

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

Not applicable.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Lawson Products, Inc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>8770 W. Bryan Mawr, Suite 900</td>
</tr>
<tr>
<td></td>
<td>Chicago, IL 60631-3515</td>
</tr>
<tr>
<td></td>
<td>773-304-5050</td>
</tr>
</tbody>
</table>

| Emergency telephone number of the company | (888) 426-4851 |

## Section 2. Hazards identification

### OSHA/HCS status

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

### Classification of the substance or mixture

- FLAMMABLE AEROSOLS - Category 1
- GASES UNDER PRESSURE - Compressed gas
- SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
- TOXIC TO REPRODUCTION (Unborn child) - Category 2
- SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation and Narcotic effects) - Category 3
- SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
- ASPIRATION HAZARD - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 59.5%

### GHS label elements

#### Hazard pictograms

| ![Flammable](image) | ![Explosion](image) | ![Eye Irritation](image) | ![Caution](image) |

#### Signal word

Danger

#### Hazard statements

- Extremely flammable aerosol.
- Contains gas under pressure; may explode if heated.
- Causes serious eye irritation.
- Suspected of damaging the unborn child.
- May be fatal if swallowed and enters airways.
- May cause respiratory irritation.
- May cause drowsiness and dizziness.
- May cause damage to organs through prolonged or repeated exposure.

### Precautionary statements

#### General

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

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Date of issue/Date of revision: 9/19/2014. Date of previous issue: 8/21/2014. Version: 1.06
Section 2. Hazards identification

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Pressurized container: Do not pierce or burn, even after use. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Do not breathe dust or mist. Wash hands thoroughly after handling.

Response: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage: Store locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. Store in a well-ventilated place.

Dispersion: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements: DELAYED EFFECTS FROM LONG TERM OVEREXPOSITION. Contains solvents which can cause permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. FOR INDUSTRIAL USE ONLY. Please refer to the SDS for additional information. Keep upright in a cool, dry place. Do not discard empty can in trash compactor.

Hazards not otherwise classified: None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

Other means of identification: Not available.

CAS number/other identifiers:

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>% by weight</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptane</td>
<td>43.5</td>
<td>64742-49-0</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>23.9</td>
<td>67-63-0</td>
</tr>
<tr>
<td>Propane</td>
<td>14.8</td>
<td>74-98-6</td>
</tr>
<tr>
<td>Butane</td>
<td>14.2</td>
<td>106-97-8</td>
</tr>
<tr>
<td>Toluene</td>
<td>1.5</td>
<td>108-88-3</td>
</tr>
</tbody>
</table>

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.
Section 4. First aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Causes serious eye irritation.

Inhalation: Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.

Skin contact: No known significant effects or critical hazards.

Ingestion: Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following:
- pain or irritation
- watering
- redness

Inhalation: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing
- nausea or vomiting
- headache
- drowsiness/fatigue
- dizziness/vertigo
- unconsciousness
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

Skin contact: Adverse symptoms may include the following:
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

Ingestion: Adverse symptoms may include the following:
- nausea or vomiting
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

Date of issue/Date of revision: 9/19/2014. Date of previous issue: 8/21/2014. Version: 1.06
Section 4. First aid measures

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

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

**Specific treatments**: No specific treatment.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**

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

**Unsuitable extinguishing media**: None known.

**Specific hazards arising from the chemical**: Extremely flammable aerosol. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. Runoff to sewer may create fire or explosion hazard.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials:
- Carbon dioxide
- Carbon monoxide

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**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. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill**
- Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

**Precautions for safe handling**

**Protective measures**
- Put on appropriate personal protective equipment (see Section 8). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

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

**Conditions for safe storage, including any incompatibilities**
- Store in accordance with local regulations. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Protect from sunlight. Store locked up. Eliminate all ignition sources. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| 2-Propanol      | ACGIH TLV (United States, 6/2013).  
TWA: 200 ppm 8 hours.  
STEL: 400 ppm 15 minutes.  
NIOSH REL (United States, 10/2013).  
TWA: 400 ppm 10 hours.  
TWA: 980 mg/m³ 10 hours.  
STEL: 500 ppm 15 minutes.  
STEL: 1225 mg/m³ 15 minutes.  
OSHA PEL (United States, 2/2013).  
TWA: 400 ppm 8 hours.  
TWA: 980 mg/m³ 8 hours.  
NIOSH REL (United States, 10/2013).  
TWA: 1000 ppm 10 hours.  
TWA: 1800 mg/m³ 10 hours. |
| Propane         | |

**Date of issue/Date of revision**: 9/19/2014.  **Date of previous issue**: 8/21/2014.  **Version**: 1.06  5/13
## Section 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Chemical</th>
<th>OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NIOSH REL (United States, 10/2013). TWA: 800 ppm 10 hours. TWA: 1900 mg/m³ 10 hours.</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV (United States, 6/2013). STEL: 1000 ppm 15 minutes.</td>
</tr>
<tr>
<td>Butane</td>
<td>OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes.</td>
</tr>
<tr>
<td></td>
<td>NIOSH REL (United States, 10/2013). TWA: 100 ppm 10 hours. TWA: 375 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 560 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>ACGIH TLV (United States, 6/2013). TWA: 20 ppm 8 hours.</td>
</tr>
<tr>
<td>Toluene</td>
<td></td>
</tr>
</tbody>
</table>

### 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: chemical splash goggles.

#### Skin protection

##### Hand protection
- Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

##### Body protection
- Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

##### Other skin protection
- Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Section 8. Exposure controls/personal protection

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance
Physical state: Liquid.
Color: Not available.
Odor: Not available.
Odor threshold: Not available.
pH: Not available.
Melting point: Not available.
Boiling point: Not available.
Flash point: Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
Evaporation rate: 4.5 (butyl acetate = 1)
Flammability (solid, gas): Not available.
Lower and upper explosive (flammable) limits:
  Lower: 1%
  Upper: 12.7%
Vapor pressure: 13.5 kPa (101.325 mm Hg) [at 20°C]
Vapor density: 1.55 [Air = 1]
Relative density: 0.66
Solubility: Not available.
Partition coefficient: n-octanol/water: Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Kinematic (40°C (104°F)): <0.07 cm²/s (<7 cSt)
Aerosol product
Type of aerosol: Spray
Heat of combustion: 37.75 kJ/g

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).
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

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>12800 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Butane</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>658000 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td>Toluene</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>49 g/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>636 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Toluene</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>0.5 minutes 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>Micrograms 870</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 2 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Pig</td>
<td>-</td>
<td>24 hours 250 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>435 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitization
Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Toluene</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)

Date of issue/Date of revision: 9/19/2014. Date of previous issue: 8/21/2014. Version: 1.06 8/13
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptane</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation and Narcotic effects</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation and Narcotic effects</td>
</tr>
<tr>
<td>Propane</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation and Narcotic effects</td>
</tr>
<tr>
<td>Butane</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation and Narcotic effects</td>
</tr>
<tr>
<td>Toluene</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation and Narcotic effects</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptane</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>2-Propanol</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>Propane</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>Butane</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>Toluene</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

Aspiration hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptane</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation.
Skin contact : No known significant effects or critical hazards.
Ingestion : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Date of issue/Date of revision : 9/19/2014.  Date of previous issue : 8/21/2014.  Version : 1.06
Skin contact: Adverse symptoms may include the following:
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

Ingestion: Adverse symptoms may include the following:
- nausea or vomiting
- reduced fetal weight
- increase in fetal deaths
- skeletal malformations

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

Short term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Long term exposure
Potential immediate effects: Not available.
Potential delayed effects: Not available.

Potential chronic health effects
Not available.

General: May cause damage to organs through prolonged or repeated exposure.
Carcinogenicity: No known significant effects or critical hazards.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: Suspected of damaging the unborn child.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>5691.6 mg/kg</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propanol</td>
<td>Acute LC50 1400000 µg/l Marine water</td>
<td>Crustaceans - Crangon crangon</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1400000 µg/l</td>
<td>Fish - Gambusia affinis</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 433 ppm Marine water</td>
<td>Algae - Skeletonema costatum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 12500 µg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 11600 µg/l Fresh water</td>
<td>Crustaceans - Gammarus subdominatus</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 6000 µg/l Fresh water</td>
<td>Algae - Pseudolimnanea - Adult</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 5500 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 500000 µg/l Fresh water</td>
<td>Fish - Oncorhynchus kisutch - Fry</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Algae - Pseudokirchneriella</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

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Section 12. Ecological information

**Persistence and degradability**
Not available.

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptane</td>
<td>-</td>
<td>10 to 2500</td>
<td>high</td>
</tr>
<tr>
<td>Toluene</td>
<td>-</td>
<td>90</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

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

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

Section 13. Disposal considerations

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

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>IATA</th>
<th>IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN1950</td>
<td>UN1950</td>
<td>UN1950</td>
<td>UN1950</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>AEROSOLS</td>
<td>AEROSOLS</td>
<td>AEROSOLS, flammable</td>
<td>AEROSOLS</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>Additional information</td>
<td>Special provisions LIMITED QUANTITY</td>
<td>Special provisions LIMITED QUANTITY</td>
<td>Special provisions (ERG#126)</td>
<td>Special provisions LIMITED QUANTITY</td>
</tr>
</tbody>
</table>

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Section 14. Transport information

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

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

Section 15. Regulatory information

U.S. Federal regulations:
- SARA 313
  SARA 313 (40 CFR 372.45) supplier notification can be found on the Environmental Data Sheet.

State regulations:
- California Prop. 65
  WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 16. Other information

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

<table>
<thead>
<tr>
<th>Category</th>
<th>HMIS® Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>2</td>
</tr>
<tr>
<td>Flammability</td>
<td>4</td>
</tr>
<tr>
<td>Physical hazards</td>
<td>0</td>
</tr>
</tbody>
</table>

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910, 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA).

The customer is responsible for determining the PPE code for this material.

Notice to reader:

Date of issue/Date of revision: 9/19/2014. Date of previous issue: 8/21/2014. Version: 1.06 12/13
Section 16. Other information

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.
SECTION 1 – Chemical and Company Identification

PRODUCT CLASS: Epoxy Putty
CAS #: Mixture

SECTION 2 – Composition on Ingredients

<table>
<thead>
<tr>
<th>INGREDIENT NAME</th>
<th>CAS #</th>
<th>%</th>
<th>TSCA</th>
<th>HMIS</th>
<th>ACGIH TLV</th>
<th>ACGIH TLV-C</th>
<th>ACGIH STEL</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycidyl Ethers of Bisphenol A Resins</td>
<td>25068-38-6</td>
<td>10-30</td>
<td>Y</td>
<td>H2, F-1, R0, PPI:B</td>
<td>N/EST</td>
<td>N/EST</td>
<td>N/EST</td>
<td>N/EST</td>
</tr>
<tr>
<td>Tri (Dimethylaminomethyl) Phenol</td>
<td>90-72-2</td>
<td>0.5-1.5</td>
<td>Y</td>
<td>H2, F-1, R1, PPI:D</td>
<td>5.00 ppm</td>
<td>N/EST</td>
<td>N/EST</td>
<td>N/EST</td>
</tr>
<tr>
<td>Zinc Sulfide</td>
<td>1314-98-3</td>
<td>0.5-1.5</td>
<td>Y</td>
<td>H2, F-1, R1, PPI:E</td>
<td>5.00 mg/m³</td>
<td>N/EST</td>
<td>N/EST</td>
<td>N/EST</td>
</tr>
</tbody>
</table>

***All ingredients in this product are listed in the TSCA inventory.

SECTION 3 – Hazards Information

PERMISSIBLE EXPOSURE LEVEL: N/A
EFFECTS OF OVEREXPOSURE: N/A

SECTION 4 – First Aid Measures

NOTE: Never give anything by mouth to an unconscious person.

SECTION 5 – Fire Fighting Measures

FLAMMABILITY CLASS: None, Not Applicable
FLASH RANGE: None, Not Applicable
EXTINGUISHING MEDIA: Water spray, foam, CO₂, Dry Chemicals.
UNUSUAL HAZARDS: N/A
FIRE FIGHTING: Fire fighters and others who may be exposed to the products of combustion should be equipped with NIOSH-approved positive pressure self-contained breathing apparatus (SCBA) and full protective clothing.

SECTION 6 – Accidental Release Measures

STEPS TO BE TAKEN: SPILLS OR LEAKS: Dispose of in normal manner.

SECTION 7 – Handling and Storage

STORAGE TEMPERATURE: < 90°F (32°C)
STORAGE CONDITIONS: Store in cool, dry, well-ventilated area.
TRANSFER: No special precautions are needed. Follow good manufacturing and handling practices.
PERSONAL HYGIENE: Wash thoroughly after handling, especially before eating, drinking, smoking, and using restroom facilities. Wash contaminated goggles, faceshield, and gloves. Professionally launder contaminated clothing before re-use.
EMPTY CONTAINER PRECAUTIONS: ATTENTION This container can be hazardous when empty. Follow label cautions even after the container is empty since empty containers could retain product residues. Do not re-use empty containers for food, clothing, or products for human or animal consumption, or where skin contact can occur.

SECTION 8 – Exposure Controls/Personal Protection

PROTECTIVE EQUIPMENT TYPES:
EYES: Safety glasses or goggles.
GLOVES: Appropriate impervious gloves. Consult glove manufacturer to determine the proper type.
OTHER: N/A

VENTILATION:
GENERAL MECHANICAL: None required.
LOCAL EXHAUST: Use to keep exposures below recommendation. Only if heated above 100°F.

SECTION 9 – Physical and Chemical Properties

FORM: Putty
APPEARANCE/COLOR: White/neutral
ODOR: Sulfur, Mercaptan
pH VALUE: Not Applicable
VAPOR PRESSURE (mmHg): Not Applicable
EVAPORATION RATE: None
SPECIFIC GRAVITY: 1.9
VAPOR DENSITY: Non-Volatile
HEAVY ELEMENTS (PPM): 0.

SECTION 10 – Stability and Reactivity

STABILITY: This product is stable.
HAZARDOUS POLYMERIZATION: Will not occur.
INCOMPATIBILITY: None
CONDITIONS TO AVOID: None
HAZARDOUS DECOMPOSITION PRODUCTS: None.

SECTION 11 – Toxicological Information

ROUTE SPECIES EXPOSURE AND DOSE
<table>
<thead>
<tr>
<th>SPECIES</th>
<th>EXPOSURE AND DOSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORAL</td>
<td>RAT, ADULT</td>
</tr>
<tr>
<td>SKIN</td>
<td>RAT, ADULT</td>
</tr>
<tr>
<td>ORAL</td>
<td>RABBIT, ADULT</td>
</tr>
</tbody>
</table>

SECTION 12 – Ecological Information

No data available.

SECTION 13 – Disposal Consideration

WASTE DISPOSAL METHOD: Incinerate in furnace or bury in landfill in accordance with all applicable regulations; not a hazardous waste.
SECTION 14 – Transport Information

DOT HAZARD CLASS: None
SHIPPING NAME: Putty, NMFC 150110

SECTION 15 – Regulatory Information

INGREDIENT NAME: CAS NUMBER PERCENT
Zinc Sulfide 1314-98-3 0.5 – 1.5

SECTION 16 – Other Information

NOTE: User responsibility: A bulletin such as this cannot be expected to cover all possible individual situations. As the user has the responsibility to provide a safe workplace, all aspects of an individual operation should be examined to determine if, or where, precautions – in addition to those described herein – are required. Any health hazard and safety information herein should be passed on to your customers or employees as the case may be.

DISCLAIMER OF LIABILITY: The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. All chemicals may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Final determination of suitability of the chemical is the sole responsibility of the user. No representation or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information refers. It is the responsibility of the user to comply with all applicable federal, state, and local laws and regulations.
Product Name: DuraMAX Windshield Washer Solvent (NF) (-20 Degree)
CAS Number: 
Manufacturer: RelaDyne LLC 
SDS Date: 10/22/2013

To complete your binder, please link a different SDS for this product or print the SDS manually from

http://www.msdsonline.com/Legacy/Partners/Show-Document/Default.aspx?ShowId=AnjORAjcTCo%3d

and add to your binder. We are currently researching solutions to this issue. Thank you for your patience.
SECTION I - PRODUCT IDENTIFICATION

MFG/R'D FOR AND DIST. BY: FLEETGUARD, INC.
ADDRESS: P.O. BOX 6001, COOKEVILLE, TN 38502
REG. PHONE: 615-526-9551
EMERG. PHONE: CHEM TREC 1-800-424-9300
TRADE NAME: FLEETGUARD DCA 4 LIQUID COOLING CONDITIONER
PROD. SYN./PROD. TYPE: ENGINE COOLANT TREATMENT
FLEETGUARD P/N: DCA-60L (PINT), DCA-65L (1/2 GAL.), DCA-70L (1 GAL.), DCA-75L (5 GAL.), DCA-80L (55 GAL.), 85L
HAZARD RATING: HEALTH 2  FIRE 0  REACTIVITY 0

SECTION II - PRODUCT INGREDIENTS

<table>
<thead>
<tr>
<th>MATERIAL OR AGENT</th>
<th>WGT %</th>
</tr>
</thead>
<tbody>
<tr>
<td>WATER</td>
<td>75-85</td>
</tr>
<tr>
<td>POTASSIUM PHOSPHATE</td>
<td>5-15</td>
</tr>
<tr>
<td>CAS 7778-77-0</td>
<td></td>
</tr>
<tr>
<td>POTASSIUM NITRATE</td>
<td>1-5</td>
</tr>
<tr>
<td>CAS 7757-79-1</td>
<td></td>
</tr>
<tr>
<td>SODIUM NITRITE</td>
<td>1-3</td>
</tr>
<tr>
<td>CAS 7632-00-0</td>
<td></td>
</tr>
<tr>
<td>SODIUM MOLYBDATE</td>
<td>0.5-2</td>
</tr>
<tr>
<td>CAS 10102-40-6</td>
<td></td>
</tr>
<tr>
<td>SODIUM SILICATE</td>
<td>0.5-2</td>
</tr>
<tr>
<td>CAS 6834-92-0</td>
<td></td>
</tr>
<tr>
<td>ORGANIC CORROSION INHIBITORS</td>
<td>2-5</td>
</tr>
<tr>
<td>SCALE INHIBITORS AND SURFACTANTS</td>
<td>0.5-1.5</td>
</tr>
<tr>
<td>DYES, DEFOAMER AND STABILIZER</td>
<td>0.5-1.5</td>
</tr>
</tbody>
</table>
SECTION III - PHYSICAL DATA

BOILING POINT @ 760 MM HG : N/K
SPECIFIC GRAVITY (H2O=1) : 1.145
VAPOR PRESSURE (MM HG) : N/K
VAPOR DENSITY (AIR=1) : N/A
SOLUBILITY IN WATER (% WGT.) : N/A
PERCENT VOLATILES BY VOLUME : N/A
EVAPORATION RATE : N/A
APPEARANCE AND ODOR : BLUE; MODERATE
PHYSICAL STATE : LIQUID
pH FACTOR : 11-12 (CONC.), 10-10.5 AT 3%.
COMMENTS : FREEZE POINT 15 F

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT (TEST METHOD) : NONE, AQUEOUS SOLUTION
AUTOIGNITION TEMPERATURE : N/K
FLAMMABLE LIMITS IN AIR, % BY VOL. : N/A
LOWER EXPLOSIVE LIMIT : N/A
UPPER EXPLOSIVE LIMIT : N/A
EXTINGUISHING MEDIA : WATER
SPECIAL FIRE FIGHTING PROCEDURES : N/A
UNUSUAL FIRE AND EXPLOSION HAZARDS : N/A

SECTION V - HEALTH HAZARD INFORMATION

EFFECTS OF EXPOSURE:

INHALATION : NOT EXPECTED FOR AQUEOUS SOLUTIONS. NOT A SENSITIZER.
SKIN CONTACT : IRRITATION UPON PROLONGED OR REPEATED CONTACT. NOT A SENSITIZER
SKIN ABSORPTION : NOT EXPECTED.
EYE CONTACT : IRRITATION OR CHEMICAL BURN DUE TO MILD ALKALINITY.
INGESTION : IRRITATION OR CHEMICAL BURN OF GASTROINTESTINAL TRACT DUE TO MILD ALKALINITY. ALSO NITRATE AND NITRITE CAN PROVE FATAL BY DISRUPTING OXYGEN TRANSPORT BY THE BLOOD.
ACUTE OVEREXPOSURE : AS ABOVE.
CHRONIC OVEREXPOSURE EXISTING CONDITIONS AGGRAVATED BY EXPOSURE

EMERGENCY - FIRST AID PROCEDURES:

INHALATION : REMOVE TO FRESH AIR.
SKIN : WASH WITH WATER. LAUNDER CLOTHING BEFORE REUSE.
EYES : FLUSH WITH WATER AND CALL A PHYSICIAN.
INGESTION

GIVE CITRUS JUICE OR WATER, INDUCE VOMITING AND CALL A PHYSICIAN.

LT6505 FLEETGUARD DCA 4 LIQUID COOLING CONDITIONER

NOTES TO PHYSICIAN : NONE

SECTION VI - REACTIVITY DATA

STABILITY : N/A
INCOMPATIBILITIES : N/A
HAZARDOUS DECOMPOSITION PRODUCTS : OXIDES OF NITROGEN, CARBON MONOXIDE, CARBON DIOXIDE, AND SOME SULFUR OXIDES.
HAZARDOUS POLYMERIZATION : WILL NOT OCCUR.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN : USE INDUSTRIAL ABSORBENT AND BURY OR BURN. IF LARGE AMOUNT IS SPILLED, COLLECT FOR CHEMICAL SCAVENGER SERVICE. FLUSH AREA WITH WATER.

NEUTRALIZING CHEMICALS : BORIC ACID OR SODIUM HYDROGEN PHOSPHATE.
WASTE DISPOSAL METHODS : SOLID WASTE LANDFILL. DRUMS CAN BE RECYCLED OR DISPOSED OF. PLASTIC PINT BOTTLES CAN BE INCINERATED.

SECTION VIII - SPECIAL PROTECTIVE INFORMATION

VENTILATION REQUIREMENTS : AREA VENTILATION.
SPECIFIC PERSONAL PROTECTIVE EQUIPMENT :
RESPIRATORY : N/A
EYE : CHEMICAL GOGGLES.
GLOVES : PVC OR RUBBER.
OTHER PROT. EQUIPMENT : NONE.

SECTION IX - SPECIAL PRECAUTIONS

HANDLING AND STORAGE : NONE.
OTHER PRECAUTIONS : NONE.

PREPARED BY : FLEETGUARD, INC.
ADDRESS : P.O. BOX 6001, COOKEVILLE, TN 38502
DATE PREPARED: 3-JAN-1996
MSDS - Material Safety Data Sheet

Product Name: GUNK INDUSTRIAL GLASS CLEANER

MSDS No.: PDWGC-5G

I. Basic Information:

Manufacturer: RADIATOR SPECIALTY COMPANY
Address: 600 RADIATOR ROAD
City, ST, Zip: INDIAN TRAIL, NC 28079
Country:

Product Name: GUNK INDUSTRIAL GLASS CLEANER
MSDS No.: PDWGC-5G

Issue Date: 04/14/2008
Supersedes Date: Not Available

II. Hazards Identification:

EMERGENCY OVERVIEW
CAUTION: Eye Irritant.

OSHA Regulatory Status
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product.

Potential Health Effects

Route(s) of Entry:
Absorption, Eye, Inhalation, and Ingestion.

Health Hazards (Acute and Chronic):
See signs and symptoms below

Signs and Symptoms:
- Eye Contact: Direct spray of vapors may be irritating or harmful to eyes.
- Skin Contact: Prolonged contact may cause irritation due to defatting of skin.
- Inhalation: High concentration of vapors may irritate nose and throat and cause headaches and nausea.
- Ingestion: Can cause irritation, gastric disturbances, and nausea.

Medical Conditions Generally Aggravated by Exposure:
None Known

Other Health Warnings:
None Known

Potential Environmental Effects
Not Available

III. Composition/Information on Ingredients:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>% Range</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium hydroxide</td>
<td>1336-21-6</td>
<td>0.1 - 1.0</td>
<td></td>
</tr>
<tr>
<td>Tripropylene Glycol Monomethyl Ether</td>
<td>25498-49-1</td>
<td>3.0 - 7.0</td>
<td></td>
</tr>
</tbody>
</table>

IV. First Aid Measures:

Emergency and First Aid Procedures:
- Eye Contact: Flush eyes with water for 15 minutes while lifting upper and lower eyelid. Get prompt medical attention.
- Skin Contact: Wash with soap and water. If irritation persists, get prompt medical attention.
- Inhalation: Move to fresh air. If breathing becomes difficult, give oxygen and get prompt medical attention.
- Ingestion: Drink water or milk. Call Poison Control Center, physician, or hospital emergency room immediately.

Note to Physicians:
N/E
**Product Name:** GUNK INDUSTRIAL GLASS CLEANER  
**MSDS No.:** PDWGC-5G

### V. Fire Fighting Measures:

**Suitable Extinguishing Media:**
Water Fog, Foam, Carbon Dioxide, Dry Chemical

**Unsuitable Extinguishing Media:**
None

**Products of Combustion:**
Carbon dioxide, carbon monoxide

**Protection of Firefighters:**
Wear self-contained positive pressure breathing apparatus and protective clothes. Use shield to protect from rupturing and venting containers. At elevated temperatures containers may vent, rupture or burst, even violently.

### VI. Accidental Release Measures:

**Personal Precautions:**
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

**Environmental Precautions:**
Prevent run-off to sewers, streams, or other bodies of water. If run-off occurs, notify proper authorities as required that a spill has occurred.

**Methods for Containment:**
Dike or contain spill and absorb with inert materials (sand, sawdust, absorbent sweeping compounds, rags, etc).

**Methods for Cleanup:**
Scoop absorbed waste into a chemical waste container. Neutralize remaining traces of material and flush with water followed by liberal covering with sodium bicarbonate. All clean-up material should be removed and placed in approved containers for disposal. Rinse water may be disposed of down a sanitary sewer system if authorized by the local municipality.

**Other Information:**
None

### VII. Handling and Storage:

**Handling Precautions:**
Use with adequate ventilation. Do not take internally.

**Storage Precautions:**
Avoid contact with strong oxidizing agents. Do not store at temperatures above 120 F.

### VIII. Exposure Controls/Personal Protection:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium hydroxide</td>
<td>25 ppm (TWA)</td>
<td>25 ppm</td>
<td>Not Available</td>
</tr>
<tr>
<td>Tripropylene Glycol Monomethyl Ether</td>
<td>N/E</td>
<td>N/E</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**Engineering Controls:**
See above for applicable exposure limits. Use with adequate ventilation. If TLV is exceeded, wear NIOSH approved respirator.

**Personal Protective Equipment:**
For prolonged exposure wear protective safety glasses, gloves, and apron. Wash hands before handling food.
### IX. Physical and Chemical Properties:

| Property                               | Value
|----------------------------------------|-------
| Boiling Point                          | 212 F
| Boiling Range                          | N/D
| Solubility In Water                    | Soluble
| Flash Point                            | None
| Odor Threshold                         | N/D
| Vapor Density (AIR = 1)                | N/D
| pH Range                               | 11 - 12
| Decomposition Temp                     | N/D
| Lower Explosive Limit                  | N/D
| Specific Gravity (H2O = 1)             | 1.00
| Other Information                      | N/D
| Melting Point                          | N/A
| Freezing Point                         | N/D
| Evaporation Rate (Butyl Acetate = 1)   | < 1
| Flash Point Method                     | TCC
| Appearance and Odor                    | Clear liquid with alcohol-ammonia odor.
| Vapor Pressure (mm Hg.)                | N/D
| Partition Coefficient                  | N/D
| Auto-Ignition Temp                     | N/D
| Upper Explosive Limit                  | N/D

### X. Stability and Reactivity:

**Stability:**

Stable

**Conditions to Avoid:**

Avoid heat, sparks, or flames.

**Incompatible Materials:**

Avoid contact with strong oxidizing agents

**Hazardous Decomposition Products:**

Carbon Monoxide, Carbon Dioxide

**Possibility of Hazardous Reactions:**

Will not occur

### XI. Toxicological Information:

No data available.

### XII. Ecological Information:

No data available

### XIII. Disposal Considerations:

DISPOSAL: This container may be recycled in a recycling centers when empty. Before offering for recycling, empty the can or bottle by using the product according to the label. If recycling is not available, wrap the empty container and discard in the trash. Do not dump into sewers, on the ground, or into any body of water. Dispose of unused product in accordance with all local, state government and federal laws and regulations.

### XIV. Transport Information:

**Shipping Name:** Not Available

**DOT Hazard Class:** Not Available

**UN/NA#:** Not Available

**DOT Subsidiary Hazard Class:** Not Available

**Packing Group:** Not Available

**Transportation Information:**
MSDS - Material Safety Data Sheet

Product Name: GUNK INDUSTRIAL GLASS CLEANER

MSDS No.: PDWGC-5G
Shipping Name: Not regulated
DOT Hazard Class: Not regulates

The DOT description is provided to assist in the proper shipping classification of this product and may not be suitable for international and air shipping purposes.

ICAO/IATA (US): Not regulated

International:
ICAO/IATA: Not regulated
IMDG: Not Regulated

XV. Regulatory Information:

See Section 2 for SARA Reportable Chemicals.

USA TSCA: All components of this material are listed on the US TSCA Inventory.

States Right to Know:
Massachusetts: 1336-21-6
Pennsylvania: 1336-21-6

XVI. Other Information:

Chemical State: Liquid Gas Solid

Chemical Type: Pure Mixture

Hazard Category: Acute Chronic Fire Pressure Reactive

Additional Manufacturer Warnings:

Do not used in confined area without proper ventilation. Contact lenses may cause further damage in case of splash into eye. KEEP AWAY FROM CHILDREN AND ANIMALS!

N/E: Not Established
N/D: Not Determine
N/A: Not Applicable
N/AV: Not Available

Additional Product Information:

While Radiator Specialty Company believes this data is accurate as of the revision date, we make no warranty with respect to the data and we expressly disclaim all liability for reliance thereon. The data is offered solely for information, investigation, and verification. Various government agencies may have specific regulations regarding the transportation, handling, storage, use, or disposal of this product which may not be covered by this MSDS. The user is responsible for full compliance.
HARDSURFACING

MATERIAL SAFETY DATA SHEET
For U.S. Manufactured or Distributed Welding Consumables and Related Products. May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200
and Superfund Amendments and Reauthorization Act (SARA) of 1986 Public Law 99-499. Standard must be consulted for specific requirements.

SECTION 1 - IDENTIFICATION

Manufacturer/Supplier Name: HOBART BROTHERS
Address: 400 TRADE SQUARE EAST, TROY, OH 45373
Trade Name: FROGALLOY, HARDALLOY, SMOOTHARC, CHROME-MANG, AND GP HARDSURFACING ELECTRODES
Product Type for: HARDSURFACING ELECTRODES

SECTION 2 - HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>HAZARDOUS INGREDIENTS</th>
<th>% WEIGHT</th>
<th>CAS NO.</th>
<th>OSHA PEL</th>
<th>EXPOSURE LIMIT (mg/m³)</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRON+</td>
<td>40-80</td>
<td>7439-89-6</td>
<td>5 R*</td>
<td>10 (Oxide Fume)</td>
<td>3R*</td>
</tr>
<tr>
<td>CALCIUM CARBONATE</td>
<td>0-10</td>
<td>1317-65-3</td>
<td>5 R*</td>
<td>5 (as CaO)</td>
<td>2 (as CaO)</td>
</tr>
<tr>
<td>FLUORSPAR</td>
<td>0-10</td>
<td>7789-75-5</td>
<td>2.5 (as F)</td>
<td>2.5 (as F)</td>
<td>A4</td>
</tr>
<tr>
<td>TITANIUM DIOXIDE</td>
<td>0-17</td>
<td>13463-67-7</td>
<td>5 R*</td>
<td>10 (A4)</td>
<td></td>
</tr>
<tr>
<td>MOLYBDENUM</td>
<td>0-6</td>
<td>7439-98-7</td>
<td>5 R*</td>
<td>0.5 R* (Soluble Compounds)</td>
<td>A3</td>
</tr>
<tr>
<td>#CHROMIUM</td>
<td>1-30</td>
<td>7440-47-3</td>
<td>1 (Metal)</td>
<td>0.5 (Metal)</td>
<td>A4</td>
</tr>
<tr>
<td>SILICA++ (Amorphous Silica Fume)</td>
<td>1-10</td>
<td>14808-60-7</td>
<td>0.1 R*</td>
<td>0.1 R*</td>
<td></td>
</tr>
<tr>
<td>TUNGSTEN</td>
<td>0-1</td>
<td>7440-33-7</td>
<td>1.3 STEL***</td>
<td>1.3 STEL***</td>
<td></td>
</tr>
<tr>
<td>#MANGANESE</td>
<td>0.5-15</td>
<td>7439-96-5</td>
<td>5 CL** (Dust)</td>
<td>0.2 + ♦</td>
<td></td>
</tr>
<tr>
<td>SILICON</td>
<td>&lt;8</td>
<td>7440-21-3</td>
<td>5 R*</td>
<td>10 (Fume)</td>
<td></td>
</tr>
<tr>
<td>TITANIUM+</td>
<td>0-5</td>
<td>7440-32-6</td>
<td>5 R*</td>
<td>3R*</td>
<td></td>
</tr>
<tr>
<td>##ALUMINUM</td>
<td>0-3</td>
<td>7429-90-5</td>
<td>5 R*</td>
<td>10 (Fume)</td>
<td></td>
</tr>
<tr>
<td>MAGNESIUM CARBONATE</td>
<td>0-5</td>
<td>546-93-0</td>
<td>5 R*</td>
<td>10 (Fume)</td>
<td></td>
</tr>
<tr>
<td>#NICKEL</td>
<td>0-10</td>
<td>7440-02-0</td>
<td>1 (Metal)</td>
<td>1.5 (Metal)</td>
<td>A5</td>
</tr>
<tr>
<td>COLUMBIUM+</td>
<td>0-4</td>
<td>7440-03-1</td>
<td>5 R*</td>
<td>3R*</td>
<td></td>
</tr>
<tr>
<td>SILICATE BINDERS</td>
<td>&lt;5</td>
<td>--------</td>
<td>Not Established</td>
<td>Not Established</td>
<td></td>
</tr>
</tbody>
</table>

R* - Respirable Fraction.  I* - Inhalable Fraction.  ♦ - Ceiling Limit.  ♦♦ - Short Term Exposure Limit.  {A1} - Confirmed Human Carcinogen per ACGIH.  {A2} - Suspected Human Carcinogen.  {A3} - Confirmed Animal Carcinogen with Unknown Relevance to Humans per ACGIH.  {A4} - Not Classifiable as a Human Carcinogen per ACGIH.  {A5} - Not Suspected as a Human Carcinogen per ACGIH.

Welding consumables applicable to this sheet are solid and nonvolatile as shipped.

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

Welding consumables applicable to this sheet are nonreactive, nonflammable, nonexplosive and essentially nonhazardous until welded. Welding arcs and sparks can ignite combustibles and flammable products. See American National Standard Z49.1 referenced in Section 7.

SECTION 5 - REACTIVITY DATA - HAZARDOUS DECOMPOSITION PRODUCTS

Welding fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being welded, the process, procedures and electrodes used. Most fume ingredients are present as complex oxides and compounds and not as pure metals.

Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating or galvanizing), the number of welders and the volume of the work area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

When the electrode is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the materials shown in Section 2, plus those from the base metal and coating, etc., as noted above.

Reasonably expected constituents of the fume would include: Primarily - iron oxides. Secondly - complex oxides of calcium, fluorides, titanium, molybdenum, chromium and nickel compounds, silicon, tungsten, manganese, aluminum, magnesium, and columbium.

Monitor for the materials identified in Section 2. Fumes from the use of these products may contain chromium, nickel, manganese, fluorides, calcium oxides, amorphous silica fume, and tungsten which have exposure limits lower than the 5 mg/m³ PEL/TLV for general welding fume.

Gaseous reaction products may include carbon monoxide and carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc.
EFFECTS OF OVEREXPOSURE:
Electric arc welding may create one or more of the following health hazards:
ARC RAYS can injure eyes and burn skin.
FUMES AND GASES can be dangerous to your health.
ELECTRIC SHOCK can kill. See Section 7.
PRIMARY ROUTES OF ENTRY are the respiratory system, eyes and/or skin.

SHORT-TERM (ACUTE) OVEREXPOSURE EFFECTS:
WELDING FUMES - May result in discomfort such as dizziness, nausea or dryness or irritation of nose, throat or eyes.
IRON, IRON OXIDE - None are known. Treat as nuisance dust or fume.
CALCIUM OXIDE - Dust or fumes may cause irritation of the respiratory system, skin and eyes.
FLUORIDES - Fluoride compounds evoked may cause skin and eye burns, pulmonary edema and bronchitis.
TITANIUM DIOXIDE - Irritation of respiratory system.
MOLYBDENUM - Irritation of the eyes, nose and throats. Chromium - Inhalation of fume with chromium (VI) compounds can cause irritation of the respiratory tract, lung damage and asthma-like symptoms. Swallowing chromium (VI) salts can cause severe injury or death. Dust on skin can form ulcers. Eyes may be burned by chromium (VI) compounds. Allergic reactions may occur in some people.
SILICA (AMORPHOUS) - Dust and fumes may cause irritation of the respiratory system, skin and eyes.
TUNGSTEN - Dust may cause irritation of the skin and eyes. Inhalation of dust may cause acute airway obstructive asthma which is reversible following overexposure. Symptoms are tightening chest and productive cough.
MANGANESE - Metal fume fever characterized by chills, fever, upset stomach, vomiting, irritation of the throat and aching of body. Recovery is generally complete within 48 hours of the overexposure.
ALUMINUM, ALUMINUM OXIDE - Irritation of the respiratory system.
MAGNESIUM, MAGNESIUM OXIDE - Overexposure to the oxide may cause metal fume fever characterized by metallic taste, tightness of chest and fever. Symptoms may last 24 to 48 hours following overexposure.
NICKEL, NICKEL COMPOUNDS - Metallic taste, nausea, tightness in chest, metal fume fever, allergic reaction.
COLUMBIUM - Dust or fumes may cause irritation of the respiratory system, skin and eyes.

LONG-TERM (CHRONIC) OVEREXPOSURE EFFECTS:
WELDING FUMES - Excess levels may cause bronchial asthma, lung fibrosis, pneumoconiosis or "siderosis."
IRON, IRON OXIDE FUMES - Can cause siderosis (deposits of iron in lungs) which some researchers believe may affect pulmonary function. Lungs will clear in time when exposure to iron and its compounds ceases. Iron and magnetite (Fe₃O₄) are not regarded as fibrogenic materials.
CALCIUM OXIDE - Prolonged overexposure may cause ulceration of the skin and perforation of the nasal septum, dermatitis and pneumonia.
FLUORIDES - Serious bone erosion (Osteoporosis) and motting of teeth.
TITANIUM DIOXIDE - Pulmonary irritation and slight fibrosis.
MOLYBDENUM - Prolonged overexposure may result in loss of appetite, weight loss, loss of muscle coordination, difficulty in breathing and anaemia.
CHROMIUM - Ulceration and perforation of nasal septum. Respiratory irritation may occur with symptoms resembling asthma. Studies have shown that chromate production workers exposed to hexavalent chromium compounds have an excess of lung cancers. Chromium (VI) compounds are more readily absorbed through the skin than chromium (III) compounds. Good practice requires the reduction of employee exposure to chromium (III) and (VI) compounds.
SILICA (AMORPHOUS) - Research indicates that silica is present in welding fume in the amorphous form. Long term overexposure may cause pneumoconiosis. Noncrystalline forms of silica (amorphous silica) are considered to have little fibrogenic potential.
TUNGSTEN - Long term overexposure may cause pulmonary fibrosis characterized by a rapid onset of cough, sputum and dyspnea on exertion.
MANGANESE - Long term overexposure to manganese compounds may affect the central nervous system. Symptoms may be similar to Parkinson's Disease and can include slowness, changes in handwriting, gait impairment, muscle spasms and cramps and less commonly, tremor and behavioral changes. Employees who are exposed to manganese compounds should be seen by a physician for early detection of neurologic problems.
ALUMINUM, ALUMINUM OXIDE - Pulmonary fibrosis and emphysema.
MAGNESIUM, MAGNESIUM OXIDE - No adverse long term health effects have been reported in the literature.
NICKEL, NICKEL COMPOUNDS - Lung fibrosis or pneumoconiosis. Studies of nickel refinery workers indicated a higher incidence of lung and nasal cancers.
COLUMBIUM - No adverse long term health effects have been reported in the literature.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
Persons with pre-existing impaired lung functions (asthma-like conditions).

EMERGENCY AND FIRST AID PROCEDURES:
Call for medical aid. Employ first aid techniques recommended by the American Red Cross.
Eyes & Skin: If irritation or flash burns develop after exposure, consult a physician.

CARCINOGENICITY:
Chromium VI and nickel compounds must be considered carcinogens according to OSHA (29 CFR 1910.1200). Chromium VI compounds are classified as IARC Group 1 and NTP Group 1 carcinogens. Nickel compounds are classified as IARC Group 1 and NTP Group 2 carcinogens. Welding fumes must be considered as possible carcinogens under OSHA (29 CFR 1910.1200).

CALIFORNIA PROPOSITION 65:
WARNING: These products contain or produce chemicals known to the State of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code Section 25249.5 et seq.).

SECTION 6 - HEALTH HAZARD DATA
Read and understand the manufacturer's instructions and the precautionary label on the product. See American National Standard Z49.1; Safety in Welding and Cutting published by the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA Publication 2206 (29 CFR 1910), U.S. Government Printing Office, Washington, DC 20402 for more detail on any of the following.

VENTILATION: Use enough ventilation, local exhaust at the arc or both to keep the fumes and gases below PEL/TLVs in the worker's breathing zone and the general area. Train the welder to keep his head out of the flames.

RESPIRATORY PROTECTION: Use NIOSH approved or equivalent fume respirator or air supplied respirator when welding in confined space or where local exhaust or ventilation does not keep exposure below PEL/TLVs.

EYE PROTECTION: Wear helmet or use face shield with filter lens. As a rule of thumb begin with Shade Number 14. Adjust if needed by selecting the next lighter and/or darker shade number. Provide protective screens and flash goggles, if necessary, to shield others.

PROTECTIVE CLOTHING: Wear hand, head and body protection which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z49.1. At a minimum this includes: Inlet welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection as well as dark nonsynthetic clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

PROCEDURE FOR CLEANUP OF SPILLS OR LEAKS: Not applicable
WASTE DISPOSAL: Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with Federal, State and Local regulations.

SPECIAL PRECAUTIONS (IMPORTANT):
Maintain exposure below the PEL/TLVs. Use industrial hygiene monitoring to ensure that your use of this material does not exceed OSHA guidelines. Refer to the following sources for important additional information: ANSI Z49.1 from the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA (29 CFR 1910) from the U.S. Department of Labor, Washington, DC 20210.

Hobart Brothers believes this data to be accurate and to reflect expert opinion regarding current research. However, Hobart Brothers cannot make any expressed or implied warranty as to this information.
I Trade Name: Hot Shot® Wasp & Hornet Killer 3

Product Type: Aerosol insecticide

Product Item Number: 13415.11

Formula Code Number:

EPA Registration Number: 9688-190-8845

Manufacturer: Chemisco Divison of United Industries Corporation
8494 Chapin Industrial Drive
St. Louis, MO 63114

Emergency Telephone Numbers

For Chemical Emergency: 1-800-633-2873
For Information: 1-800-917-5431
Prepared by: Charlie Duckworth
Date Prepared: October 18, 2010

II Hazards Ingredient/Identity Information

<table>
<thead>
<tr>
<th>Chemical</th>
<th>%</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral spirits</td>
<td>4.00</td>
<td>100 ppm</td>
<td>100 ppm</td>
</tr>
<tr>
<td>Propylene glycol monobutyl ether</td>
<td>6.00</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Lambda-cyhalothrin</td>
<td>0.01</td>
<td>NA</td>
<td>2000 mg/kg (skin)</td>
</tr>
<tr>
<td>Pralethrin</td>
<td>0.025</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Hydrocarbon Propellant blend</td>
<td>5.00</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

Chemical ID Numbers:

- CAS# 8012-95-1
- CAS# 5131-66-8
- CAS# 91465-08-6
- CAS# 23031-36-9
- CAS# 75-28-5/106-97-8/74-98-6

III Physical and Chemical Characteristics

- Appearance & Odor: Narrow Jet spray and glycol ether odor.
- Boiling Point: NA
- Melting Point: NA
- Specific Gravity: 0.993 (H2O = 1)
- Vapor Density: Greater than 1 (Air = 1)
- Solubility in Water: Greater than 87%
- Evaporation Rate: Less than 1 (Butyl Acetate = 1)

IV Fire and Explosive Hazards Data

- Flash Point: 119° F (TCC) (liquid portion)
- Flame Extension: 0-inches (Level 1 Aerosol)
- Flammable Limits: NA
- Autoignition Temperature: NA
- Fire Extinguishing Media: Waterfog, Carbon dioxide, Dry chemical
- Decomposition Temperature: NA
- Special Fire-Fighting Procedures: Keep cans cool. Use equipment or shielding to protect personnel against bursting, rupturing or venting cans.
- Unusual Fire & Explosion Hazards: At elevated temperatures (over 54° C/130° F), cans may vent, rupture or burst. Also see Section V.

V Reactivity Data

- Stability: Stable
- Polymerization: Will not occur
- Conditions to Avoid: Temperatures over 130° F
- Incompatible Materials: NA
- Hazardous Decomposition or Byproducts: Carbon dioxide, carbon monoxide

VI Health Hazard Data

- Skin Contact: Avoid contact with skin and clothing. First Aid: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a Poison Control Center or doctor for treatment advice.
- Ingestion: First Aid: Immediately call a Poison Control Center or doctor. Do not induce vomiting unless told to do so by a Poison Control Center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
- Special Notes: Have the product container with you when calling a Poison Control Center or doctor, or going for treatment.
- Health conditions Aggravated by Exposure: None known
- Ingredients listed by NTP, OSHA, or IARC as Carcinogens or Potential Carcinogens: None

VII Precautions for Safe Handling and Use

- Steps to be Taken in Case Material is Released or Spilled: Avoid breathing vapors. Avoid contact with liquid. Remove ignition sources. Soak up spills with absorbent material.
- Waste Disposal: Do not puncture or incinerate containers. If empty: Place in trash or offer for recycling if available. If partly filled: Call local solid waste for disposal instructions.
- Handling & Storage Precautions: Do not store where temperatures can exceed 54° C/130° F.

VIII Control Measures

- Read and follow label directions. They are your best guide to using this product effectively, and give necessary safety precautions to protect your health.

IX Transportation Data

- DOT: Consumer Commodity, ORM-D, UN-1950
- IMDG: UN-1950, Aerosols, 2.1
- IATA: UN-1950, Aerosols, Flammable, 2.1
## 1. PRODUCT IDENTIFICATION

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>80-925</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT NAME</td>
<td>Inter-Lube Delayed Viscosity Penetrating Grease</td>
</tr>
<tr>
<td>CHEMICAL FAMILY</td>
<td>N/A</td>
</tr>
<tr>
<td>DOT SHIPPING</td>
<td>Limited Quantity (LQ)</td>
</tr>
</tbody>
</table>

## 2. HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>SPECIFIC CHEMICAL IDENTITY, COMMON NAMES</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>STEL %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexane (110-54-3)</td>
<td></td>
<td>50ppm</td>
<td>N/A</td>
</tr>
<tr>
<td>Paraffinic Petroleum Distillates (64742-65-0)</td>
<td>5mg/m³</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Propane, Isobutane, n-Butane (68746-76-8)</td>
<td>800ppm</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Aliphatic Hydrocarbon (64742-63-8)</td>
<td>5mg/m³</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

## 3. PHYSICAL DATA

| BOILING POINT (RANGE) | -23 to 500°F |
| VAPOR PRESSURE PSIG @ 70°F | N/A |
| VAPOR DENSITY (AIR = 1) | 1.0 |
| SOLUBILITY IN WATER | Negligible |
| SPECIFIC GRAVITY (H2O = 1) | 0.7065 |
| EVAPORATION RATE (61°F-15°C) | >1 |
| VOC content (by weight) | 45.8% |
| APPEARANCE AND ODOR | Pale Yellow liquid/Solvent odor |

## 4. FIRE AND EXPLOSION DATA

| FLASH POINT | <0°F |
| UPPER EXPLOSIVE LIMIT (%) | 12.8 |
| LOWER EXPLOSIVE LIMIT (%) | 1.0 |
| EXTINGUISHING MEDIA | Dry chemical, CO₂, Water Fog |
| SPECIAL FIREFIGHTING PROCEDURES | Aerosol cans may rupture when heated. As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear. |
| FIRE AND EXPLOSION HAZARDS | Heated cans may burst. |

## 5. HEALTH EFFECTS DATA

### 5.1. SHORT TERM EFFECTS OF EXPOSURE

<table>
<thead>
<tr>
<th>ROUTE OF ENTRY</th>
<th>Skin absorption, Inhalation, Ingestion, Eye contact, Skin contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH HAZARDS (ACUTE AND CHRONIC)</td>
<td>Prolonged and repeated overexposure to hexane may cause damage to nerve tissue of the arms and legs (peripheral neuropathy), resulting in muscular weakness and loss of sensation. Repeated and prolonged overexposure to solvents may cause permanent brain and nervous system damage.</td>
</tr>
<tr>
<td>EYE CONTACT</td>
<td>Eye irritant. Will cause redness and burning sensation.</td>
</tr>
<tr>
<td>INGESTION</td>
<td>Aspiration hazard if swallowed.</td>
</tr>
<tr>
<td>INHALATION</td>
<td>Effects of overexposure include irritation of respiratory tract, headache, dizziness, nausea, and loss of coordination. Extreme overexposure may result in unconsciousness and possibly death.</td>
</tr>
<tr>
<td>SKIN CONTACT</td>
<td>Skin irritant. Will cause defatting of skin. Effects are reversible.</td>
</tr>
</tbody>
</table>

## 6. REACTIVITY

### 6.1. STABILITY

Stable

### 6.2. INCOMPATIBILITIES

None known.

### 6.3. HAZARDOUS POLMERIZATION CONDITIONS

None known.

### 6.4. HAZARDOUS POLMERIZATION

Will not occur under normal conditions.

## 7. PRECAUTIONS FOR SAFE HANDLING & USE

### 7.1. PROTECTIVE EQUIPMENT REQUIREMENTS

Self contained breathing apparatus if above TLV limit. Provide local exhaust to keep TLV of Section 2 ingredients below acceptable limit. Safety glasses or chemical splash goggles.

### 7.2. WASH REQUIREMENTS

Wash with soap and water.

### 7.3. SPILL OR LEAK PROCEDURES

Absorb spill with inert material (e.g. dry sand or earth), then place in chemical waste container. Dispose as hazardous waste.

### 7.4. WASTE DISPOSAL METHODS

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

### 7.5. HANDLING & STORAGE

Wash thoroughly after handling. Keep away from heat, sparks, and flames. Store below 120°F.

### 7.6. OTHER PRECAUTIONS

Use NIOSH approved respirator with an organic vapor cartridge; avoid prolonged breathing of vapors; protection provided by air purifying respirators is limited.

## 8. ADDITIONAL INFORMATION

Use self-contained breathing apparatus if TLV limits are exceeded. Do not eat or smoke while using. Wash hands after use. Use positive pressure air supplied respirator if there is potential for uncontrolled release, if exposure levels are unknown, or in any circumstance where air purifying respirators may not provide adequate protection.

THE INFORMATION GIVEN AND THE RECOMMENDATIONS MADE HEREIN APPLY TO OUR PRODUCT(S) ALONE AND ARE NOT COMBINED WITH OTHER PRODUCTS. SUCH INFORMATION IS BASED UPON OUR RESEARCH AND ON DATA FROM OTHER RELIABLE SOURCES AND IS BELIEVED TO BE ACCURATE. NO GUARANTEE OF ACCURACY IS MADE. IT IS THE PURCHASER'S RESPONSIBILITY BEFORE USING ANY PRODUCT TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS AND TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PURPOSES.
SECTION 1 — PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER
45854

PRODUCT NAME
KRYLON® CONTRACTOR™ Marking Paint, Fluorescent Orange

MANUFACTURER'S NAME
Krylon Products Group
Cleveland, OH 44115

Telephone Numbers and Websites

<table>
<thead>
<tr>
<th>Service</th>
<th>Phone Number</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Information</td>
<td>(800) 247-3268</td>
<td><a href="http://www.krylon.com">www.krylon.com</a></td>
</tr>
<tr>
<td>Regulatory Information</td>
<td>(216) 566-2902</td>
<td><a href="http://www.paintdocs.com">www.paintdocs.com</a></td>
</tr>
<tr>
<td>Medical Emergency</td>
<td>(216) 566-2917</td>
<td></td>
</tr>
<tr>
<td>Transportation Emergency*</td>
<td>(800) 424-9300</td>
<td></td>
</tr>
</tbody>
</table>

*for Chemical Emergency ONLY (spill, leak, fire, exposure, or accident)
### SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>% by Weight</th>
<th>CAS Number</th>
<th>Ingredient</th>
<th>Units</th>
<th>Vapor Pressure</th>
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<tbody>
<tr>
<td>15</td>
<td>74-98-6</td>
<td>Propane</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>1000 PPM</td>
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<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>1000 PPM</td>
</tr>
<tr>
<td>7</td>
<td>106-97-8</td>
<td>Butane</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>1000 PPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>1000 PPM</td>
</tr>
<tr>
<td>8</td>
<td>110-54-3</td>
<td>Hexane</td>
<td></td>
<td></td>
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<td>ACGIH TLV</td>
<td>50 PPM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>50 PPM</td>
</tr>
<tr>
<td>4</td>
<td>107-83-5</td>
<td>2-Methylpentane</td>
<td>Not Available</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>Not Available</td>
</tr>
<tr>
<td>1</td>
<td>96-14-0</td>
<td>3-Methylpentane</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>500 PPM</td>
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<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
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<tr>
<td>1</td>
<td>79-29-8</td>
<td>2,3-Dimethylbutane</td>
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<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
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<td>64742-89-8</td>
<td>Lt. Aliphatic Hydrocarbon Solvent</td>
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<td></td>
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<td></td>
<td>ACGIH TLV</td>
<td>100 PPM</td>
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<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>100 PPM</td>
</tr>
<tr>
<td>0.3</td>
<td>100-41-4</td>
<td>Ethylbenzene</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>20 PPM</td>
</tr>
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<td></td>
<td></td>
<td>OSHA PEL</td>
<td>100 PPM</td>
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<td></td>
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<td>OSHA PEL</td>
<td>125 PPM STEL</td>
</tr>
<tr>
<td>2</td>
<td>1330-20-7</td>
<td>Xylene</td>
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<td>100 PPM</td>
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<td></td>
<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>150 PPM STEL</td>
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<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>100 PPM</td>
</tr>
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<td></td>
<td></td>
<td>OSHA PEL</td>
<td>150 PPM STEL</td>
</tr>
<tr>
<td>10</td>
<td>67-64-1</td>
<td>Acetone</td>
<td></td>
<td></td>
</tr>
<tr>
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<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>500 PPM</td>
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<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>750 PPM STEL</td>
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<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>1000 PPM</td>
</tr>
<tr>
<td>20</td>
<td>14808-60-7</td>
<td>Quartz</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>0.025 mg/m3 as Resp. Dust</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>0.1 mg/m3 as Resp. Dust</td>
</tr>
<tr>
<td>7</td>
<td>7727-43-7</td>
<td>Barium Sulfate</td>
<td></td>
<td></td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>ACGIH TLV</td>
<td>10 mg/m3 as Dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>10 mg/m3 Total Dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OSHA PEL</td>
<td>5 mg/m3 Respirable Fraction</td>
</tr>
</tbody>
</table>

### SECTION 3 — HAZARDS IDENTIFICATION

**ROUTES OF EXPOSURE**
- INHALATION of vapor or spray mist.
- EYE or SKIN contact with the product, vapor or spray mist.

**EFFECTS OF OVEREXPOSURE**

**EYES:** Irritation.

**SKIN:** Prolonged or repeated exposure may cause irritation.

**INHALATION:** Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

Prolonged overexposure to hazardous ingredients in Section 2 may cause adverse chronic effects to the following organs or systems:
- the liver
- the urinary system
- the reproductive system

**SIGNS AND SYMPTOMS OF OVEREXPOSURE**
- Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.
- Redness and itching or burning sensation may indicate eye or excessive skin exposure.

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**
None generally recognized.

**CANCER INFORMATION**
For complete discussion of toxicology data refer to Section 11.
SECTION 4 — FIRST AID MEASURES

**EYES:** Flush eyes with large amounts of water for 15 minutes. Get medical attention.

**SKIN:** Wash affected area thoroughly with soap and water. Remove contaminated clothing and launder before re-use.

**INHALATION:** If affected, remove from exposure. Restore breathing. Keep warm and quiet.

**INGESTION:** Do not induce vomiting. Get medical attention immediately.

SECTION 5 — FIRE FIGHTING MEASURES

**FLASH POINT**
Propellant < 0 °F

**LEL**
1.0

**UEL**
12.8

**EXTINGUISHING MEDIA**
Carbon Dioxide, Dry Chemical, Foam

**UNUSUAL FIRE AND EXPLOSION HAZARDS**
Containers may explode when exposed to extreme heat. Application to hot surfaces requires special precautions. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

**SPECIAL FIRE FIGHTING PROCEDURES**
Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**
Remove all sources of ignition. Ventilate the area.
Remove with inert absorbent.

SECTION 7 — HANDLING AND STORAGE

**STORAGE CATEGORY**
Not Available

**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE**
Keep away from heat, sparks, and open flame. Vapors will accumulate readily and may ignite explosively. During use and until all vapors are gone: Keep area ventilated - Do not smoke - Extinguish all flames, pilot lights, and heaters - Turn off stoves, electric tools and appliances, and any other sources of ignition. Consult NFPA Code. Use approved Bonding and Grounding procedures. Contents under pressure. Do not puncture, incinerate, or expose to temperature above 120F. Heat from sunlight, radiators, stoves, hot water, and other heat sources could cause container to burst. Do not take internally. Keep out of the reach of children.

SECTION 8 — EXPOSURE CONTROLS/PERSONAL PROTECTION

**PRECAUTIONS TO BE TAKEN IN USE**
Use only with adequate ventilation. Avoid contact with skin and eyes. Avoid breathing vapor and spray mist. Wash hands after using. This coating may contain materials classified as nuisance particulates (listed "as Dust" in Section 2) which may be present at hazardous levels only during sanding or abrading of the dried film. If no specific dusts are listed in Section 2, the applicable limits for nuisance dusts are ACGIH TLV 10 mg/m3 (total dust), 3 mg/m3 (respirable fraction), OSHA PEL 15 mg/m3 (total dust), 5 mg/m3 (respirable fraction).

**VENTILATION**
Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

**RESPIRATORY PROTECTION**
If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2. When sanding or abrading the dried film, wear a dust/mist respirator approved by NIOSH/MSHA for dust which may be generated from this product, underlying paint, or the abrasive.

**PROTECTIVE GLOVES**
None required for normal application of aerosol products where minimal skin contact is expected. For long or repeated contact, wear chemical resistant gloves.

**EYE PROTECTION**
Wear safety spectacles with unperforated sideshields.

**OTHER PRECAUTIONS**
Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.
SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT WEIGHT</td>
<td>7.40 lb/gal</td>
</tr>
<tr>
<td>SPECIFIC GRAVITY</td>
<td>0.89</td>
</tr>
<tr>
<td>BOILING POINT</td>
<td>&lt;0 - 292 °F</td>
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<tr>
<td>MELTING POINT</td>
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<tr>
<td>VOLATILE VOLUME</td>
<td>80%</td>
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<tr>
<td>EVAPORATION RATE</td>
<td>Faster than ether</td>
</tr>
<tr>
<td>VAPOR DENSITY</td>
<td>Heavier than air</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH</td>
<td>7.0</td>
</tr>
</tbody>
</table>

VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)

Volatile Weight 47.96% Less Water and Federally Exempt Solvents

SECTION 10 — STABILITY AND REACTIVITY

STABILITY — Stable
CONDITIONS TO AVOID
None known.
INCOMPATIBILITY
None known.
HAZARDOUS DECOMPOSITION PRODUCTS
By fire: Carbon Dioxide, Carbon Monoxide
HAZARDOUS POLYMERIZATION
Will not occur

SECTION 11 — TOXICOLOGICAL INFORMATION

CHRONIC HEALTH HAZARDS
Prolonged and repeated exposure to Hexane may cause damage to nerve tissue of the arms and legs (peripheral neuropathy), resulting in muscular weakness and loss of sensation. This effect may be increased by the presence of Methyl Ethyl Ketone. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Ethylbenzene is classified by IARC as possibly carcinogenic to humans (2B) based on inadequate evidence in humans and sufficient evidence in laboratory animals. Lifetime inhalation exposure of rats and mice to high ethylbenzene concentrations resulted in increases in certain types of cancer, including kidney tumors in rats and lung and liver tumors in mice. These effects were not observed in animals exposed to lower concentrations. There is no evidence that ethylbenzene causes cancer in humans. Crystalline Silica (Quartz, Cristobalite) is listed by IARC and NTP. Long term exposure to high levels of silica dust, which can occur only when sanding or abrading the dry film, may cause lung damage (silicosis) and possibly cancer.
### TOXICOLOGY DATA

<table>
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<tr>
<th>CAS No.</th>
<th>Ingredient Name</th>
<th>LC50 RAT</th>
<th>LD50 RAT</th>
<th>4HR</th>
<th>LD50 RAT</th>
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<tr>
<td>74-98-6</td>
<td>Propane</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>106-97-8</td>
<td>Butane</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Not Available</td>
</tr>
<tr>
<td>110-54-3</td>
<td>Hexane</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>28700 mg/kg</td>
</tr>
<tr>
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<td>2-Methylpentane</td>
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<tr>
<td>79-29-8</td>
<td>2,3-Dimethylbutane</td>
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<td>Not Available</td>
</tr>
<tr>
<td>64742-89-8</td>
<td>Lt. Aliphatic Hydrocarbon Solvent</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
<tr>
<td>100-41-4</td>
<td>Ethylbenzene</td>
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<td>Xylene</td>
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<td>5000 ppm</td>
<td>4300 mg/kg</td>
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<td></td>
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</tr>
</tbody>
</table>

### SECTION 12 — ECOLOGICAL INFORMATION

**ECOTOXICOLOGICAL INFORMATION**

No data available.

### SECTION 13 — DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL METHOD**

Waste from this product may be hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Waste must be tested for ignitability to determine the applicable EPA hazardous waste numbers. Do not incinerate. Depressurize container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

### SECTION 14 — TRANSPORT INFORMATION

Multi-modal shipping descriptions are provided for informational purposes and do not consider container sizes. The presence of a shipping description for a particular mode of transport (ocean, 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.

**US Ground (DOT)**

May be classed as LTD, QTY, OR ORM-D

UN1950, AEROSOLS, 2.1, LIMITED QUANTITY, (ERG#126)

**Canada (TDG)**

May be classed as LTD, QTY, OR ORM-D

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, (ERG#126)

**IMO**

May be shipped as Limited Quantity

UN1950, AEROSOLS, CLASS 2.1, LIMITED QUANTITY, EmS F-D, S-U

**IATA/ICAO**

UN1950, AEROSOLS, FLAMMABLE, 2.1, LIMITED QUANTITY
SECTION 15 — REGULATORY INFORMATION

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>CHEMICAL/COMPOUND</th>
<th>% by WT</th>
<th>% Element</th>
</tr>
</thead>
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<tr>
<td>110-54-3</td>
<td>Hexane</td>
<td>8</td>
<td></td>
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<tr>
<td>100-41-4</td>
<td>Ethylbenzene</td>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>1330-20-7</td>
<td>Xylene</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

TSCA CERTIFICATION
All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

SECTION 16 — OTHER INFORMATION

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

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.
1. PRODUCT AND COMPANY IDENTIFICATION

Product name: LOCTITE® 620™ RETAINING COMPOUND
IDH number: 234768

Product use: Anaerobic Adhesive

Company address:
Henkel Canada Corporation
2515 Meadowpine Boulevard
Mississauga, Ontario L5N 6C3

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Physical state: Liquid
Color: Green
Odor: Mild


WARNING:
- CAUSES EYE IRRITATION.
- MAY CAUSE ALLERGIC SKIN REACTION.
- MAY BE HARMFUL IF SWALLOWED.
- MAY CAUSE RESPIRATORY TRACT IRRITATION.
- MAY CAUSE SKIN IRRITATION.

Relevant routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects
- Inhalation: May cause respiratory tract irritation.
- Skin contact: May cause allergic skin reaction. May cause skin irritation.
- Eye contact: Contact with eyes will cause irritation.
- Ingestion: May be harmful if swallowed.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>CAS NUMBER</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propenoic acid, 2-methyl-, (1-methylethylidene)</td>
<td>24448-20-2</td>
<td>60 - 100</td>
</tr>
<tr>
<td>Maleimide resin</td>
<td>3006-93-7</td>
<td>10 - 30</td>
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<tr>
<td>Hydroxyalkyl methacrylate</td>
<td>27813-02-1</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>80-15-9</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystal-free</td>
<td>112945-52-5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Cumene</td>
<td>98-82-8</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>1-Acetyl-2-phenylhydrazine</td>
<td>114-83-0</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If symptoms develop and persist, get medical attention.
**Skin contact:** Wash with soap and water. Remove contaminated clothing and footwear. Wash clothing before reuse. If symptoms develop and persist, get medical attention.

**Eye contact:** Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.

**Ingestion:** Do not induce vomiting. Keep individual calm. Get medical attention.

---

### 5. FIRE FIGHTING MEASURES

- **Flash point:** > 93.3 °C (> 199.94 °F) Tagliabue closed cup
- **Autoignition temperature:** Not available.
- **Flammable/Explosive limits - lower:** Not available.
- **Flammable/Explosive limits - upper:** Not available.
- **Extinguishing media:** Foam, dry chemical or carbon dioxide.
- **Special firefighting procedures:** None
- **Unusual fire or explosion hazards:** None
- **Sensitivity to Mechanical Impact:** Not available.
- **Sensitivity to static discharge:** Not available.

---

### 6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

- **Environmental precautions:** Do not allow product to enter sewer or waterways.
- **Clean-up methods:** Ensure adequate ventilation. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal.

---

### 7. HANDLING AND STORAGE

- **Handling:** Avoid contact with eyes, skin and clothing. Use only with adequate ventilation.
- **Storage:** For safe storage, store at or below 38 °C (100.4 °F) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Canada Customer Service at 800-263-5043.

---

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.
### Hazardous components

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>AIHA WEEL</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propenoic acid, 2-methyl-, (1-methylethylidene)</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Maleimide resin</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Hydroxyalkyl methacrylate</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>1 ppm TWA 3 ppm STEL</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>None</td>
<td>None</td>
<td>1 ppm (6 mg/m³) TWA (SKIN)</td>
<td>None</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystal-free</td>
<td>10 mg/m³ TWA Inhalable dust. 3 mg/m³ TWA Respirable fraction.</td>
<td>20 MPPCF TWA 0.8 mg/m³ TWA</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Cumene</td>
<td>50 ppm TWA</td>
<td>50 ppm (245 mg/m³) PEL (SKIN)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>1-Acetyl-2-phenylhydrazine</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

**Engineering controls:**
No specific ventilation requirements noted, but forced ventilation may still be required if concentrations exceed occupational exposure limits.

**Respiratory protection:**
Use a NIOSH approved supplied air respirator with an organic cartridge if the potential to exceed established exposure limits exists.

**Eye/face protection:**
Safety goggles or safety glasses with side shields.

**Skin protection:**
Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** Liquid
- **Color:** Green
- **Odor:** Mild
- **Odor threshold:** Not available.
- **pH:** Not applicable
- **Vapor pressure:** < 5 mm hg (27 °C (80.6 °F))
- **Boiling point/.range:** > 149 °C (> 300.2 °F)
- **Melting point/ range:** Not available.
- **Specific gravity:** 1.1
- **Vapor density:** Not available.
- **Flash point:** > 93.3 °C (> 199.94 °F) Tagliabue closed cup
- **Flammable/Explosive limits - lower:** Not available.
- **Flammable/Explosive limits - upper:** Not available.
- **Autoignition temperature:** Not available.
- **Evaporation rate:** Not available.
- **Solubility in water:** Slight
- **Partition coefficient (n-octanol/water):** Not available.
- **VOC content:** 0.19 %; 2.24 g/l

### 10. STABILITY AND REACTIVITY

- **Stability:** Stable
- **Hazardous reactions:** Will not occur.
- **Incompatible materials:** Strong oxidizing agents.
- **Conditions to avoid:** See "Handling and Storage" (Section 7) and "Incompatibility" (Section 10).

### 11. TOXICOLOGICAL INFORMATION

- **Acute oral product toxicity:** LD50 (rat) > 10,000 mg/kg
Acute dermal product toxicity: LD50 (rabbit) > 2,000 mg/kg (Estimated)

Toxicologically synergistic products: Not available.

Refer to the following for Irritancy of Product, Sensitization to Product, Carcinogenicity, Reproductive Toxicity, Teratogenicity, and Mutagenicity.

<table>
<thead>
<tr>
<th>Hazardous Component(s)</th>
<th>NTP Carcinogen</th>
<th>IARC Carcinogen</th>
<th>OSHA Carcinogen (Specifically Regulated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propenoic acid, 2-methyl-, (1-methylethylidene)</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Maleimide resin</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Hydroxyalkyl methacrylate</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystal-free</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Cumene</td>
<td>No</td>
<td>Group 2B</td>
<td>No</td>
</tr>
<tr>
<td>1-Acetyl-2-phenylhydrazine</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>LD50s and LC50s</th>
<th>Health Effects/Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Propenoic acid, 2-methyl-, (1-methylethylidene)</td>
<td>None</td>
<td>Irritant, Allergen</td>
</tr>
<tr>
<td>Maleimide resin</td>
<td>None</td>
<td>No Target Organs</td>
</tr>
<tr>
<td>Hydroxyalkyl methacrylate</td>
<td>None</td>
<td>Irritant, Allergen</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>None</td>
<td>Allergen, Central nervous system, Corrosive, Irritant, Mutagen</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystal-free</td>
<td>None</td>
<td>Nuisance dust</td>
</tr>
<tr>
<td>Cumene</td>
<td>Oral LD50 (RAT) = 2.91 g/kg</td>
<td>Central nervous system, Irritant, Lung</td>
</tr>
<tr>
<td></td>
<td>Oral LD50 (RAT) = 1,400 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inhalation LC50 (RAT, 4 h) = 8,000 mg/l</td>
<td></td>
</tr>
<tr>
<td>1-Acetyl-2-phenylhydrazine</td>
<td>None</td>
<td>Allergen, Blood, Kidney, Mutagen, Some evidence of carcinogenicity</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

14. TRANSPORT INFORMATION

The shipping classification in this section are for bulk packaging only. Shipping classification may be different for non-bulk packaging as exceptions may apply. Refer to shipping documents for package specific transportation classification.

Canada Transportation of Dangerous Goods - Ground

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
Hazard class or division: 9
Identification number: UN 3082
Packing group: III
15. REGULATORY INFORMATION

**Canada Regulatory Information**

**CEPA DSL/NDSL Status:** All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

**United States Regulatory Information**

**TSCA 8 (b) Inventory Status:** All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: 7, 9 and 16

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

**Prepared by:** Diane Annis, Sr. Regulatory Affairs Specialist

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MATERIAL SAFETY DATA SHEET
Welding & Brazing Consumables
Essentially Similar to U.S. Department of Labor Form OSHA-20

SECTION 1 - MATERIAL IDENTIFICATION

MANUFACTURERS NAME
J.W. HARRIS COMPANY, INC.

ADDRESS
10930 Deerfield Road, Cincinnati, Ohio 45242

TRADE NAME
Low Fuming Bronze Bare and Low Fuming Bronze Flux Coated

AWS OR OTHER SPECIFICATION
AWS A5.27-78 RCuZn-C

EMERGENCY TELEPHONE NO.
(513) 891-2000

MSDS REVISION DATE
2/15/85

SECTION 2 - HAZARDOUS* MATERIALS

IMPORTANT!

This section covers the materials from which this product is manufactured. The fumes and gases produced during welding, brazing, or soldering with normal use of this product are covered by Section 6.

*This term “hazardous” in “Hazardous Materials” should be interpreted as a term required and defined in OSHA 2265 and does not necessarily imply the existence of any hazard.

<table>
<thead>
<tr>
<th>CORE WIRE OR FLUX COATING</th>
<th>WEIGHT %</th>
<th>TLV (Source) (Units)</th>
<th>CORE WIRE OR FLUX COATING</th>
<th>WEIGHT %</th>
<th>TLV (Source) (Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Wire</td>
<td></td>
<td></td>
<td>Core Wire</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td>58</td>
<td></td>
<td>Copper</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>Zinc</td>
<td>42</td>
<td></td>
<td>Zinc</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Tin</td>
<td>1</td>
<td></td>
<td>Tin</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Flux Coating</td>
<td></td>
<td></td>
<td>Boric Acid (H₃BO₃)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CAS# 10043-35-3</td>
<td>CAS# 10043-35-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Forms Boron Oxide</td>
<td>Forms Boron Oxide</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(B₂O₃) on heating</td>
<td>(B₂O₃) on heating</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CAS# 1303-86-2</td>
<td>CAS# 1303-86-2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3 - PHYSICAL DATA

Not Applicable

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

(Nonflammable) Welding arc, open flame and sparks can ignite combustibles. See ANSI/ASC Z49.1 Section 6.

SECTION 5 - HEALTH HAZARD DATA

Threshold Limit Value:

The ACGIH recommended general limit for Welding Fume NOC (Not Otherwise Classified) is 5 mg/m³. ACGIH-1980 preface states “The TLV-TWA should be used as guides in the control of health hazards and should not be used as fine lines between safe and dangerous concentrations.” See Section 6 for specific fume constituents which may modify this TLV.

Effects of Overexposure

Electric arc welding, brazing or soldering may create one or more of the following health hazards:

FUMES AND GASES can be dangerous to your health.
Short-term exposure to welding fumes may result in discomfort such as dizziness, nausea, or dryness or irritation of nose, throat, or eyes.
FILLER METALS CONTAINING CADMIUM PRODUCE POISONOUS FUMES UPON HEATING. Do not breath fumes - avoid even brief exposure to high concentrations. For more information refer to bulletin No. 11 “Facts on Cadmium Poisoning” published by The J.W. Harris Co. Inc.
ARC RAYS can injure eyes and burn skin.
ELECTRIC SHOCK can kill.
See Section 6 and 8.
HEAT RAYS (infrared radiation from flame or hot metal) can injure eyes.

Emergency and First Aid Procedures

Call for medical aid. Employ first aid techniques recommended by the American Red Cross.
SECTION 6 - REACTIVITY DATA

Hazardous Decomposition Products

Welding and brazing fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the metal being brazed or welded, the process, procedures, and filler metals used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being welded (such as paint, plating, or galvanizing), the number of welders and the volume of the work area, the quality and amount of ventilation, the position of the operator's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing activities).

When the filler metal is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 2. Decomposition products of normal operation include those originating from the volatilization, reaction, or oxidation of the materials shown in Section 2, plus those from the base metal and coating, etc., as noted above.

Reasonably expected fume constituents of this product would include:

<table>
<thead>
<tr>
<th>Copper (fume)</th>
<th>TLV UNITS mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc (oxide fume)</td>
<td>0.2</td>
</tr>
<tr>
<td>Tin (oxide)</td>
<td>5.0</td>
</tr>
<tr>
<td>Welding fumes (NOx)</td>
<td>2.0</td>
</tr>
</tbody>
</table>

ACGIH THRESHOLD LIMIT VALUES MEASURED IN TIME-WEIGHTED AVERAGES ☐ SHORT TERM EXPOSURE ☐

Gaseous reaction products such as carbon monoxide and carbon dioxide, ozone and nitrogen oxides may be formed by the radiation from the arc during electric arc welding.

One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample from inside the welder's helmet if worn or in the worker's breathing zone. See ANSI/ASW F1.1-78, available from the American Welding Society, P.O. Box 351040, Miami, FL 33135.

SECTION 7 - SPILL OR LEAK PROCEDURES

Not Applicable

SECTION 8 AND 9 - SPECIAL PROTECTION INFORMATION AND PRECAUTIONS

Read and understand the manufacturer's instructions and the precautionary label on the product. See American National Standard Z49.1, Safety in Welding and Cutting published by the American Welding Society, P.O. Box 351040, Miami, FL 33135 and OSHA Publication 2206 (29CFR1910), U.S. Government Printing Office, Washington, D.C. 20402 for more detail on many of the following.

Ventilation

Use enough ventilation, local exhaust at the arc (or flame), or both, to keep the fumes and gases below TLV's in the worker's breathing zone and the general area. Train the employee to keep his head out of the fumes. See ANSI/ASC Z49.1 Section 5.

Respiratory Protection

Use respirable fume respirator or air supplied respirator when welding, brazing, or soldering in confined space or where local exhaust or ventilation does not keep exposure below TLV.

Eye Protection

Wear helmet or use face shield with filter lens or appropriate shade number (see ANSI/ASC Z49.1 - Section 4.2). Provide protective screens and flash goggles, if necessary, to shield others.

Protective Clothing

Wear head and body protection which help to prevent injury from radiation, sparks, flame, and electrical shock. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing. Train the employee not to touch live electrical parts and to insulate himself from work and ground.

The information and recommendations contained in this publication have been compiled from sources believed to be reliable and to represent the best information on the subject at the time of issue. No warranty, guarantee, or representation is made by Unibraze Corp. or J.W. Harris Co., Inc. as to the absolute correctness or sufficiency of any representation contained in this and other publications; Unibraze Corp. and J.W. Harris Co., Inc. assume no responsibility in connection therewith; nor can it be assumed that all acceptable safety measures are contained in this (and other publications), or that other or additional measures may not be required under particular or exceptional conditions or circumstances.
Material Safety Data Sheet

MSDS ID NO.: 0168MAR019
Revision date: 06/02/2006

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product code: MR0270

Product name: Marathon Dexron-III/Mercon Automatic Transmission Fluid
Synonym: Marathon Dexron-II Automatic Transmission Fluid; Marathon Dexron-III/Mercon Automatic Transmission Fluid; Marathon Dexron ATF; Marathon Mercon ATF
Chemical Family: Motor/Lube Oil
Formula: Mixture

Manufacturer: Marathon Petroleum Company LLC
539 South Main Street
Findlay OH 45840

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Automatic Transmission Fluid (ATF) is a complex mixture of highly refined lubricating oil base stocks and additives.

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Dexron-III/Mercon Automatic Transmission Fluid</td>
<td>Mixture</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Component Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>64742-54-7</td>
<td>93-95</td>
<td></td>
<td></td>
<td>Mineral Oil Mist (MOM) = 5 mg/m³ TWA = 10 mg/m³ STEL</td>
</tr>
</tbody>
</table>

Additives Not specified 5-7

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

AUTOMATIC TRANSMISSION FLUID IS A NON-VOLATILE AND NON-COMBUSTIBLE, RED COLORED LIQUID, BUT WILL IGNITE AND BURN AT ELEVATED TEMPERATURES.

OSHA WARNING LABEL:

MSDS ID NO.: 0168MAR019
Product name: Marathon Dexron-III/Mercon Automatic Transmission Fluid
A CONSUMER WARNING LABEL IS NOT APPLICABLE FOR THIS PRODUCT.

Inhalation: No acute effects expected from routine operations. Overheating of product may produce vapors which can cause respiratory irritation, dizziness and nausea.

Ingestion: Product has a low order of acute toxicity. This is based on data from components or similar products.

Skin contact: Prolonged or repeated liquid contact can cause dermatitis, folliculitis or oil acne.

Eye contact: Liquid or vapor contact may result in slight eye irritation.

Carcinogenic Evaluation:

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>IARC Carcinogens:</th>
<th>NTP Carcinogens:</th>
<th>ACGIH - Carcinogens:</th>
<th>OSHA - Select Carcinogens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Dexron-III/Mercon Automatic Transmission Fluid Mixture</td>
<td>NE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The International Agency for Research on Cancer (IARC) has determined that there is no evidence that severely solvent-refined oils are carcinogenic to experimental animals.

Component Information:

4. FIRST AID MEASURES

Inhalation: If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. If symptoms or irritation occur with any exposure, call a physician.

Skin contact: Wash with soap and large amounts of water. Remove contaminated clothing. If symptoms or irritation occur, call a physician.

If product is accidentally injected into or under the skin, regardless of wound size or initial absence of symptoms, the individual should be evaluated immediately by a physician as a surgical emergency.

Ingestion: Not expected to be acutely toxic. If large amounts are swallowed, immediately call a physician.

Eye contact: Flush eyes with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.

Notes to physician: High velocity injection under the skin may result in serious injury. If left untreated the affected area is subject to infection, disfigurement, lack of blood circulation and may require amputation. When dispensed by high pressure equipment this material can easily penetrate the skin and leave a bloodless puncture wound. Material injected into a finger can be deposited into the palm of the hand. Within 24-48 hours the patient may experience swelling, discoloration, and throbbing pain in the affected area. Immediate treatment by a surgical specialist is recommended.
Medical conditions aggravated by exposure:

Skin contact could aggravate an existing skin disorder or dermatitis condition.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:
For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFT/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Specific hazards:
This material is not combustible per the OSHA Hazard Communication Standard, but will ignite and burn at elevated temperatures.

Special protective equipment for firefighters:
Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Use water spray to cool exposed surfaces from as far a distance as possible. Keep run-off water out of sewers and water sources.

Flash point: >365 °F, >185 °C (COC)
Autoignition temperature: No data available.
Flammable limits in air - lower (%): No data available.
Flammable limits in air - upper (%): No data available.

NFPA rating: Health: 1, Flammability: 1, Reactivity: 0, Other: -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:
Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Advise authorities and National Response Center (800-424-8802) if substance has entered a watercourse or sewer. Advise local and state emergency services agencies, if appropriate. Contain liquid with sand or soil. Recover and return free product to proper containers. Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids.

7. HANDLING AND STORAGE

Handling:
Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Do not pressurize or expose to heat, open flames, strong oxidizers or other sources of ignition.

Avoid repeated and prolonged skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

MSDS ID NO.: 0168MAR019
Product name: Marathon Dexron-III/Mercon Automatic Transmission Fluid
Engineering measures: Local or general exhaust required when using at elevated temperatures that generate vapors or mists.

Respiratory protection: Not required under normal conditions and adequate ventilation. Approved organic vapor chemical cartridge or supplied air respirators should be worn when significant vapors are generated. Observe respirator protection factor criteria cited in ANSI Z88.2. Self-contained breathing apparatus should be used for fire fighting.

Skin and body protection: Use chemical resistant gloves such as neoprene, nitrile, or PVA to prevent prolonged or repeated skin contact.

Eye protection: No special eye protection is normally required.

Hygiene measures: No data available.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Red Liquid</td>
</tr>
<tr>
<td>Physical state (Solid/Liquid/Gas):</td>
<td>Liquid</td>
</tr>
<tr>
<td>Substance type (Pure/Mixture):</td>
<td>Mixture</td>
</tr>
<tr>
<td>Color</td>
<td>Red</td>
</tr>
<tr>
<td>Odor</td>
<td>Hydrocarbon</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH</td>
<td>Neutral</td>
</tr>
<tr>
<td>Boiling point/range (5-95%):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point/range:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Not determined</td>
</tr>
<tr>
<td>Density</td>
<td>7.29 lbs/gal @ 60 F</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;1 mm Hg @ 100 F</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Solubility in other solvents:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>No data available.</td>
</tr>
<tr>
<td>VOC content(%)</td>
<td>36.1 cSt @ 40 C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>10. STABILITY AND REACTIVITY</td>
</tr>
<tr>
<td>Stability</td>
<td>The material is stable at 70 F, 760 mm pressure.</td>
</tr>
<tr>
<td>Polymerization</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>Carbon monoxide, carbon dioxide, aldehydes and hydrocarbons.</td>
</tr>
<tr>
<td>Materials to avoid:</td>
<td>Strong oxidizers such as nitrates, chlorates, peroxides.</td>
</tr>
<tr>
<td>Conditions to avoid:</td>
<td>Heat and open flames.</td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Product information:
MSDS ID NO.: 0168MAR019
Product name: Marathon Dexron-III/Mercon Automatic Transmission Fluid
Based on data from components this product is considered to have a low order of acute oral and dermal toxicity. Chronic skin painting studies with severely solvent refined neutral oils did not produce evidence of skin cancer in mice.

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects:**

Water accomated fractions (WAF) of highly refined base oils did not produce acute toxicity in fish (100-1000 mg/l), fresh water algae (500 mg/l) or daphnia (10,000 mg/l) in 48-96 hour LC50 studies.

Used motor and/or lube oils can be toxic to birds and fish.

### 13. DISPOSAL CONSIDERATIONS

**Cleanup Considerations:**

This material as supplied and by itself, when discarded or disposed of, is not an EPA RCRA hazardous waste according to federal regulations. This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

Don't pollute. Conserve resources. Send used product to recycling center. Dispose of cleanup materials in accordance with applicable local, state and federal regulations.

### 14. TRANSPORT INFORMATION

**49 CFR 172.101:**

**DOT:**

Transport Information: This material when transported via US commerce is NOT REGULATED by DOT regulations.

- Packing group: Not applicable.
- DOT reportable quantity (lbs): Not applicable.

**TDG (Canada):**

- Packing group: Not applicable.
- Regulated substances: Not applicable.

### 15. REGULATORY INFORMATION

**Federal Regulatory Information:**

**US TSCA Chemical Inventory Section 8(b):** This product and/or its components are listed on the TSCA Chemical Inventory.

**OSHA Hazard Communication Standard:** This product has been evaluated and determined not to be hazardous as defined in OSHA's Hazard Communication Standard.

**EPA Superfund Amendment & Reauthorization Act (SARA):**

**MSDS ID NO.:** 0168MAR019

**Product name:** Marathon Dexron-III/Mercon Automatic Transmission Fluid
SARA Section 302: This product contains the following component(s) that have been listed on EPA’s Extremely Hazardous Substance (EHS) List:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>NA</td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 304: This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Hazardous Substances and their Reportable Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>NA</td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 311/312: The following EPA hazard categories apply to this product:

None

SARA Section 313: This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA 313 Emission reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>None</td>
</tr>
<tr>
<td>Additives</td>
<td>None</td>
</tr>
</tbody>
</table>

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Petroleum Distillates, Hydrotreated Heavy Paraffinic
- Louisiana Right-To-Know: Not Listed
- California Proposition 65: Not Listed
- New Jersey Right-To-Know: Not Listed.
- Pennsylvania Right-To-Know: Not Listed.
- Massachusetts Right-To-Know: Not Listed.
- Florida substance List: Not Listed.
- Rhode Island Right-To-Know: Not Listed.
- Michigan critical materials register list: Not Listed.
- Massachusetts Extraordinarily Hazardous Substances:
  - California - Regulated Carcinogens: Not Listed
  - Pennsylvania RTK - Special Hazardous Substances: Not Listed
- New jersey - Special Hazardous Substances: Not Listed
- New Jersey - Environmental Hazardous Substances List:
- Illinois - Toxic Air Contaminants Not Listed
- New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Additives
- Louisiana Right-To-Know: Not Listed
- California Proposition 65: Not Listed
- New Jersey Right-To-Know: Not Listed.
- Pennsylvania Right-To-Know: Not Listed.
- Massachusetts Right-To-Know: Not Listed.

MSDS ID NO.: 0168MAR019  Product name: Marathon Dexron-III/Mercon Automatic Transmission Fluid
Canadian Regulatory Information:

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Other Information:

Additional Information: No data available.

Prepared by: Craig M. Parker Manager, Toxicology and Product Safety

The information and recommendations contained herein are based upon tests believed to be reliable. However, Marathon Petroleum Company LLC (MPC) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. MPC assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet
1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product code: MR1621, MR1623, MR1625

Product name: Marathon Marafluid 4 Transmission & Drive Train Fluid
Synonym: Marafluid 4; SAE 30 Marafluid 4; SAE 50 Marafluid 4; 10W Marafluid 4
Chemical Family: Motor/Lube Oil
Formula: Mixture

Manufacturer:
Marathon Petroleum Company LLC
539 South Main Street
Findlay OH 45840

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Lube oil is a complex mixture of highly refined lubricating base stocks and additives.

## Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Marafluid 4 Transmission &amp; Drive Train Fluid</td>
<td>Mixture</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Component Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-Refined Heavy Paraffinic</td>
<td>64741-88-4</td>
<td>0-80</td>
<td></td>
<td></td>
<td>Mineral Oil Mist (MOM) =5 mg/m³ TWA = 10 mg/m³ STEL</td>
</tr>
<tr>
<td>Residual Oils (Petroleum). Solvent Refined</td>
<td>64742-01-4</td>
<td>0-70</td>
<td></td>
<td></td>
<td>Mineral Oil Mist (MOM) =5 mg/m³ TWA = 10 mg/m³ STEL</td>
</tr>
<tr>
<td>Additives</td>
<td>Not specified</td>
<td>5-7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc Alkyl Dithiophosphate</td>
<td>68649-42-3</td>
<td>1.1-1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.
## 3. HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

THIS LUBRICANT IS A NON-VOLATILE AND NON-COMBUSTIBLE, AMBER COLORED LIQUID, BUT WILL IGNITE AND BURN AT ELEVATED TEMPERATURES.

### OSHA WARNING LABEL:

THIS PRODUCT HAS BEEN EVALUATED AND DOES NOT REQUIRE ANY HAZARD WARNING LABEL UNDER THE OSHA HAZARD COMMUNICATION STANDARD.

### CONSUMER WARNING LABEL:

A CONSUMER WARNING LABEL IS NOT APPLICABLE FOR THIS PRODUCT.

<table>
<thead>
<tr>
<th>Inhalation:</th>
<th>No acute effects expected from routine operations. Overheating of product may produce vapors which can cause respiratory irritation, dizziness and nausea.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion:</td>
<td>Product has a low order of acute toxicity. This is based on data from components or similar products.</td>
</tr>
<tr>
<td>Skin contact:</td>
<td>Prolonged or repeated liquid contact can cause dermatitis, folliculitis or oil acne.</td>
</tr>
<tr>
<td>Eye contact:</td>
<td>Liquid or vapor contact may result in slight eye irritation.</td>
</tr>
</tbody>
</table>

### Carcinogenic Evaluation:

<table>
<thead>
<tr>
<th>Carcinogens:</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH - Carcinogens:</th>
<th>OSHA - Select Carcinogens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Marafluid 4 Transmission &amp; Drive Train Fluid Mixture</td>
<td>NE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

The International Agency for Research on Cancer (IARC) has determined that there is no evidence that severely solvent-refined oils are carcinogenic to experimental animals.

### Component Information:

## 4. FIRST AID MEASURES

### Inhalation:

If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. If symptoms or irritation occur with any exposure, call a physician.

### Skin contact:

Wash with soap and large amounts of water. Remove contaminated clothing. If symptoms or irritation occur, call a physician.

If product is accidentally injected into or under the skin, regardless of wound size or initial absence of symptoms, the individual should be evaluated immediately by a physician as a surgical emergency.

### Ingestion:

Not expected to be acutely toxic. If large amounts are swallowed, immediately call a physician.

### Eye contact:

Flush eyes with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.
Notes to physician: High velocity injection under the skin may result in serious injury. If left untreated the affected area is subject to infection, disfigurement, lack of blood circulation and may require amputation. When dispensed by high pressure equipment this material can easily penetrate the skin and leave a bloodless puncture wound. Material injected into a finger can be deposited into the palm of the hand. Within 24-48 hours the patient may experience swelling, discoloration, and throbbing pain in the affected area. Immediate treatment by a surgical specialist is recommended.

Medical conditions aggravated by exposure: Skin contact could aggravate an existing skin disorder or dermatitis condition.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Specific hazards: This material is not combustible per the OSHA Hazard Communication Standard, but will ignite and burn at elevated temperatures.

Special protective equipment for firefighters: Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Use water spray to cool exposed surfaces from as far a distance as possible. Keep run-off water out of sewers and water sources.

Flash point: 440, 480, 500  F (COC)
Autoignition temperature: No data available.
Flammable limits in air - lower (%): No data available.
Flammable limits in air - upper (%): No data available.

NFPA rating:
Health:  1
Flammability:  1
Reactivity:  0
Other:  -

HMIS classification:
Health:  1
Flammability:  1
Reactivity:  0
Special:  *See Section 8 for guidance in selection of personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Advise authorities and National Response Center (800-424-8802) if substance has entered a watercourse or sewer. Advise local and state emergency services agencies, if appropriate. Contain liquid with sand or soil. Recover and return free product to proper containers. Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids.

7. HANDLING AND STORAGE

Handling:
Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Do not pressurize or expose to heat, open flames, strong oxidizers or other sources of ignition.

Avoid repeated and prolonged skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

**8. EXPOSURE CONTROLS/ PERSONAL PROTECTION**

**PERSONAL PROTECTIVE EQUIPMENT**

**Engineering measures:** Local or general exhaust required when using at elevated temperatures that generate vapors or mists.

**Respiratory protection:** Not required under normal conditions and adequate ventilation. Approved organic vapor chemical cartridge or supplied air respirators should be worn when significant vapors are generated. Observe respirator protection factor criteria cited in ANSI Z88.2. Self-contained breathing apparatus should be used for fire fighting.

**Skin and body protection:** Use chemical resistant gloves such as neoprene, nitrile, or PVA to prevent prolonged or repeated skin contact.

**Eye protection:** No special eye protection is normally required.

**9. PHYSICAL AND CHEMICAL PROPERTIES:**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Amber Liquid</td>
</tr>
<tr>
<td>Physical state (Solid/Liquid/Gas)</td>
<td>Liquid</td>
</tr>
<tr>
<td>Substance type (Pure/Mixture)</td>
<td>Mixture</td>
</tr>
<tr>
<td>Color</td>
<td>Amber</td>
</tr>
<tr>
<td>Odor</td>
<td>Hydrocarbon</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH</td>
<td>Neutral</td>
</tr>
<tr>
<td>Boiling point/range (5-95%)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>Not determined</td>
</tr>
<tr>
<td>Density</td>
<td>7.37, 7.46 or 7.53 lbs/gal @ 60 F</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;1 mm Hg @ 100 F</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No data available.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>&gt;4.9</td>
</tr>
<tr>
<td>VOC content(%)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>48.5, 97.5 or 241 cSt @40 C</td>
</tr>
<tr>
<td></td>
<td>7.0, 10.9 or 19.8 cSt @ 100 C</td>
</tr>
</tbody>
</table>

**10. STABILITY AND REACTIVITY**

**Stability:** The material is stable at 70 F, 760 mm pressure.

**Polymerization:** Will not occur.

MSDS ID NO.: 0191MAR019  
Product name: Marathon Marafluid 4  
Transmission & Drive Train Fluid
Hazardous decomposition products: Carbon monoxide, carbon dioxide, aldehydes, hydrogen sulfide, oxides of sulfur and oxides of nitrogen.

Materials to avoid: Strong oxidizers such as nitrates, chlorates, peroxides.

Conditions to avoid: Heat and open flames.

### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:**

**Product information:**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Inhalation:</th>
<th>Dermal:</th>
<th>Oral:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Marafluid 4 Transmission &amp; Drive Train Fluid</td>
<td>Mixture</td>
<td>LD50 = 2.18 to &gt;4 mg/l [Rat]</td>
<td>LD50 &gt;2 gm/kg [Rabbit]</td>
<td>LD50 &gt;5 ml/kg [Rat]</td>
</tr>
</tbody>
</table>

Based on data from components this product is considered to have a low order of acute oral and dermal toxicity. Chronic skin painting studies with severely solvent refined neutral oils did not produce evidence of skin cancer in mice.

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects:** Water accommodated fractions (WAF) of highly refined base oils did not produce acute toxicity in fish (100-1000 mg/l), fresh water algae (500 mg/l) or daphnia (10,000 mg/l) in 48-96 hour LC50 studies.

Used motor and/or lube oils can be toxic to birds and fish.

### 13. DISPOSAL CONSIDERATIONS

**Cleanup Considerations:** This material as supplied and by itself, when discarded or disposed of, is not an EPA RCRA hazardous waste according to federal regulations. This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

Don't pollute. Conserve resources. Send used product to recycling center. Dispose of cleanup materials in accordance with applicable local, state and federal regulations.

### 14. TRANSPORT INFORMATION

**49 CFR 172.101:**

**DOT:**

**Transport Information:** This material when transported via US commerce is NOT REGULATED by DOT regulations.

**Packing group:** Not applicable.

**DOT reportable quantity (lbs):** Not applicable.

**TDG (Canada):**

**Packing group:** Not applicable.

**Regulated substances:** Not applicable.
Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard: This product has been evaluated and determined not to be hazardous as defined in OSHA's Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

<table>
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<tr>
<th>Name</th>
<th>CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-Refined Heavy Paraffinic</td>
<td>NA</td>
</tr>
<tr>
<td>Residual Oils (Petroleum). Solvent Refined</td>
<td>NA</td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
<tr>
<td>Zinc Alkyl Dithiophosphate</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 304: This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Hazardous Substances and their Reportable Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-Refined Heavy Paraffinic</td>
<td>NA</td>
</tr>
<tr>
<td>Residual Oils (Petroleum). Solvent Refined</td>
<td>NA</td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
<tr>
<td>Zinc Alkyl Dithiophosphate</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 311/312: The following EPA hazard categories apply to this product:

None

SARA Section 313: This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA 313 Emission reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-Refined Heavy Paraffinic</td>
<td>None</td>
</tr>
<tr>
<td>Residual Oils (Petroleum). Solvent Refined</td>
<td>None</td>
</tr>
<tr>
<td>Additives</td>
<td>None</td>
</tr>
<tr>
<td>Zinc Alkyl Dithiophosphate</td>
<td>None</td>
</tr>
</tbody>
</table>

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Distillates, Petroleum Solvent-Refined Heavy Paraffinic

<table>
<thead>
<tr>
<th>State or Community</th>
<th>Right-To-Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Louisiana Right-To-Know:</td>
<td>Not Listed</td>
</tr>
<tr>
<td>California Proposition 65:</td>
<td>Not Listed</td>
</tr>
<tr>
<td>New Jersey Right-To-Know:</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Pennsylvania Right-To-Know:</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Massachusetts Right-To-Know:</td>
<td>Not Listed</td>
</tr>
<tr>
<td>Florida substance List:</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

MSDS ID NO.: 0191MAR019  Product name: Marathon Marafluid 4 Transmission & Drive Train Fluid
Rhode Island Right-To-Know: Not Listed
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances: Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances: Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List: Not Listed
Rhode Island Right-To-Know: Not Listed

Residual Oils (Petroleum). Solvent Refined
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed.
Pennsylvania Right-To-Know: Not Listed.
Massachusetts Right-To Know: Not Listed.
Florida substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances: Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List: Not Listed
Rhode Island Right-To-Know: Not Listed
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances: Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List: Not Listed
Rhode Island Right-To-Know: Not Listed

Additives
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed.
Pennsylvania Right-To-Know: Not Listed.
Massachusetts Right-To Know: Not Listed.
Florida substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances: Not Listed
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List: Not Listed
Rhode Island Right-To-Know: Not Listed

Zinc Alkyl Dithiophosphate
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed

MSDS ID NO.: 0191MAR019 Product name: Marathon Marafluid 4 Transmission & Drive Train Fluid
Canadian Regulatory Information:

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

16. OTHER INFORMATION

Additional Information: No data available.

Prepared by: Craig M. Parker Manager, Toxicology and Product Safety

The information and recommendations contained herein are based upon tests believed to be reliable. However, Marathon Petroleum Company LLC (MPC) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. MPC assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet
1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product code: MR0346, MR0350, MR0355, MR0357,

Product name: Marathon Multi-Purpose Hydraulic Oil
Synonym: Marathon Multipurpose Hydraulic Oil; ISO 32 Multi-Purpose Hydraulic Oil; ISO 46 Multi-Purpose Hydraulic Oil; ISO 68 Multi-Purpose Hydraulic Oil; ISO 100 Multi-Purpose Hydraulic Oil
Chemical Family: Motor/Lube Oil
Formula: Mixture

Manufacturer:
Marathon Petroleum Company LLC
539 South Main Street
Findlay OH 45840

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/INFORMATION ON INGREDIENTS

Lube oil is a complex mixture of highly refined lubricating base stocks and additives.

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Multi-Purpose Hydraulic Oil</td>
<td>Mixture</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Component Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-Refined Heavy Paraffinic</td>
<td>64741-88-4</td>
<td>30-99</td>
<td></td>
<td></td>
<td>Mineral Oil Mist (MOM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>=5 mg/m³ TWA = 10 mg/m³ STEL</td>
</tr>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>64742-54-7</td>
<td>0-70</td>
<td></td>
<td></td>
<td>Mineral Oil Mist (MOM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>=5 mg/m³ TWA = 10 mg/m³ STEL</td>
</tr>
<tr>
<td>Additives</td>
<td>Not specified</td>
<td>&lt;1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.
3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
THIS PRODUCT IS A NON-VOLATILE AND NON-COMBUSTIBLE, YELLOW BROWN COLORED LIQUID, BUT WILL IGNITE AND BURN AT ELEVATED TEMPERATURES.

OSHA WARNING LABEL:
THIS PRODUCT HAS BEEN EVALUATED AND DOES NOT REQUIRE ANY HAZARD WARNING LABEL UNDER THE OSHA HAZARD COMMUNICATION STANDARD.

CONSUMER WARNING LABEL:
A CONSUMER WARNING LABEL IS NOT APPLICABLE FOR THIS PRODUCT.

Inhalation: No acute effects expected from routine operations. Overheating of product may produce vapors which can cause respiratory irritation, dizziness and nausea.

Ingestion: Product has a low order of acute toxicity. This is based on data from components or similar products.

Skin contact: Prolonged or repeated liquid contact can cause dermatitis, folliculitis or oil acne.

Eye contact: Liquid or vapor contact may result in slight eye irritation.

Carcinogenic Evaluation:

<table>
<thead>
<tr>
<th>Product Information:</th>
<th>IARC Carcinogens:</th>
<th>NTP Carcinogens:</th>
<th>ACGIH - Carcinogens:</th>
<th>OSHA - Select Carcinogens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Multi-Purpose Hydraulic Oil Mixture</td>
<td>NE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The International Agency for Research on Cancer (IARC) has determined that there is no evidence that severely solvent-refined oils are carcinogenic to experimental animals.

Component Information:

4. FIRST AID MEASURES

Inhalation: If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. If symptoms or irritation occur with any exposure, call a physician.

Skin contact: Wash with soap and large amounts of water. Remove contaminated clothing. If symptoms or irritation occur, call a physician.

If product is accidentally injected into or under the skin, regardless of wound size or initial absence of symptoms, the individual should be evaluated immediately by a physician as a surgical emergency.

Ingestion: Not expected to be acutely toxic. If large amounts are swallowed, immediately call a physician.

Eye contact: Flush eyes with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.
Notes to physician: High velocity injection under the skin may result in serious injury. If left untreated the affected area is subject to infection, disfigurement, lack of blood circulation and may require amputation. When dispensed by high pressure equipment this material can easily penetrate the skin and leave a bloodless puncture wound. Material injected into a finger can be deposited into the palm of the hand. Within 24-48 hours the patient may experience swelling, discoloration, and throbbing pain in the affected area. Immediate treatment by a surgical specialist is recommended.

Medical conditions aggravated by exposure: Skin contact could aggravate an existing skin disorder or dermatitis condition.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Specific hazards: This material is not combustible per the OSHA Hazard Communication Standard, but will ignite and burn at elevated temperatures.

Special protective equipment for firefighters: Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Use water spray to cool exposed surfaces from as far a distance as possible. Keep run-off water out of sewers and water sources.

Flash point: 400, 405, 410 or >420 F
Autoignition temperature:
Flammable limits in air - lower (%): No data available.
Flammable limits in air - upper (%): No data available.

NFPA rating:
Health: 1
Flammability: 1
Reactivity: 0
Other: -

HMIS classification:
Health: 1
Flammability: 1
Reactivity: 0
Special: *See Section 8 for guidance in selection of personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Advise authorities and National Response Center (800-424-8802) if substance has entered a watercourse or sewer. Advise local and state emergency services agencies, if appropriate. Contain liquid with sand or soil. Recover and return free product to proper containers. Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids.

7. HANDLING AND STORAGE

Handling:

MSDS ID NO.: 0170MAR019
Product name: Marathon Multi-Purpose Hydraulic Oil
Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Do not pressurize or expose to heat, open flames, strong oxidizers or other sources of ignition.

Avoid repeated and prolonged skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

Engineering measures: Local or general exhaust required when using at elevated temperatures that generate vapors or mists.

Respiratory protection: Not required under normal conditions and adequate ventilation. Approved organic vapor chemical cartridge or supplied air respirators should be worn when significant vapors are generated. Observe respirator protection factor criteria cited in ANSI Z88.2. Self-contained breathing apparatus should be used for fire fighting.

Skin and body protection: Use chemical resistant gloves such as neoprene, nitrile, or PVA to prevent prolonged or repeated skin contact.

Eye protection: No special eye protection is normally required.

Hygiene measures: No data available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Yellow Brown Liquid
Physical state (Solid/Liquid/Gas): Liquid
Substance type (Pure/Mixture): Mixture
Color: Yellow-brown
Odor: Hydrocarbon
Molecular weight: Not determined.
pH: Neutral
Boiling point/range (5-95%): >425 F
Melting point/range: Not determined.
Decomposition temperature: Not applicable.
Specific gravity: Not determined
Density: 7.28, 7.32, 7.36 or 7.39 lbs/gal @ 60 F
Bulk density: No data available.
Vapor density: No data available.
Vapor pressure: <1 mm Hg @ 100 F
Evaporation rate: No data available.
Solubility: <1%
Solubility in other solvents: No data available.
Partition coefficient (n-octanol/water): >4.9
VOC content(%): No data available.
Viscosity: 32.5, 46.0, 69.8 or 100.0 cSt @ 40 C
5.2, 6.6, 8.3 or 11.2 cSt @ 100 C

10. STABILITY AND REACTIVITY

Stability: The material is stable at 70 F, 760 mm pressure.
Polymerization: Will not occur.
Hazardous decomposition products: Carbon monoxide, carbon dioxide, aldehydes, hydrogen sulfide, oxides of sulfur, oxides of nitrogen and oxides of phosphorous.

Materials to avoid: Strong oxidizers such as nitrates, chlorates, peroxides.

Conditions to avoid: Heat and open flames.

### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity:**

**Product information:**

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Inhalation:</th>
<th>Dermal:</th>
<th>Oral:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Multi-Purpose Hydraulic Oil Mixture</td>
<td></td>
<td>LD50 = 2.16 to &gt;4 mg/l [Rat]</td>
<td>LD50 &gt;2 gm/kg [Rabbit]</td>
<td>LD50 &gt; 5 ml/kg [Rat]</td>
</tr>
</tbody>
</table>

Based on data from components this product is considered to have a low order of acute oral and dermal toxicity. Chronic skin painting studies with severely solvent refined neutral oils did not produce evidence of skin cancer in mice.

### 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects:** Water accommodated fractions (WAF) of highly refined base oils did not produce acute toxicity in fish (100-1000 mg/l), fresh water algae (500 mg/l) or daphnia (10,000 mg/l) in 48-96 hour LC₅₀ studies.

Used motor and/or lube oils can be toxic to birds and fish.

### 13. DISPOSAL CONSIDERATIONS

**Cleanup Considerations:** This material as supplied and by itself, when discarded or disposed of, is not an EPA RCRA hazardous waste according to federal regulations. This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

Don't pollute. Conserve resources. Send used product to recycling center. Dispose of cleanup materials in accordance with applicable local, state and federal regulations.

### 14. TRANSPORT INFORMATION

**49 CFR 172.101:**

**DOT:**

Transport Information: This material when transported via US commerce is NOT REGULATED by DOT regulations.

Packing group: Not applicable.

DOT reportable quantity (lbs): Not applicable.

**TDG (Canada):**

Packing group: Not applicable.

MSDS ID NO.: 0170MAR019  
Product name: Marathon Multi-Purpose Hydraulic Oil
Regulated substances: Not applicable.

**15 REGULATORY INFORMATION**

Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard: This product has been evaluated and determined not to be hazardous as defined in OSHA's Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):

**SARA Section 302:** This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-</td>
<td>NA</td>
</tr>
<tr>
<td>Refined Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Petroleum Distillates, Hydrotreated</td>
<td>NA</td>
</tr>
<tr>
<td>Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
</tbody>
</table>

**SARA Section 304:** This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Hazardous Substances and their Reportable Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-</td>
<td>NA</td>
</tr>
<tr>
<td>Refined Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Petroleum Distillates, Hydrotreated</td>
<td>NA</td>
</tr>
<tr>
<td>Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
</tbody>
</table>

**SARA Section 311/312:** The following EPA hazard categories apply to this product:

None

**SARA Section 313:** This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA 313 Emission reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-</td>
<td>None</td>
</tr>
<tr>
<td>Refined Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Petroleum Distillates, Hydrotreated</td>
<td>None</td>
</tr>
<tr>
<td>Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Additives</td>
<td>None</td>
</tr>
</tbody>
</table>

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Distillates, Petroleum Solvent-Refined Heavy Paraffinic
- Louisiana Right-To-Know: Not Listed
- California Proposition 65: Not Listed
- New Jersey Right-To-Know: Not Listed.
- Pennsylvania Right-To-Know: Not Listed.
- Massachusetts Right-To Know: Not Listed.
- Florida substance List: Not Listed.
- Rhode Island Right-To-Know: Not Listed.

MSDS ID NO.: 0170MAR019  
Product name: Marathon Multi-Purpose Hydraulic Oil
Marijuana materials register list: Not Listed.
Pennsylvania RTK - Special Hazardous Substances:
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Petroleum Distillates, Hydrotreated Heavy Paraffinic
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed.
Florida substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed.
Massachusetts Extraordinarily Hazardous Substances:
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:
Additives
Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed.
Florida substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed.
Massachusetts Extraordinarily Hazardous Substances:
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances:
New Jersey - Special Hazardous Substances: Not Listed
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Canadian Regulatory Information:
Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

MSDS ID NO.: 0170MAR019  
Product name: Marathon Multi-Purpose Hydraulic Oil
Additional Information: No data available.

Prepared by: Craig M. Parker Manager, Toxicology and Product Safety

The information and recommendations contained herein are based upon tests believed to be reliable. However, Marathon Petroleum Company LLC (MPC) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. MPC assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet
Material Safety Data Sheet

Product name: Marathon Multipower-3 15W-40 Motor Oil
Synonym: Multipower-3 15W-40 Motor Oil; Multipower-3 15W-40 Heavy Duty Motor Oil
Chemical Family: Motor/Lube Oil
Formula: Mixture

Manufacturer:
Marathon Petroleum Company LP
539 South Main Street
Findlay OH 45840

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/INFORMATION ON INGREDIENTS

Motor oil is a complex mixture of highly refined lubricating oil base stocks and additives.

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Multipower-3 15W-40 Motor Oil</td>
<td>Mixture</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Component Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent- Refined Heavy Paraffinic</td>
<td>64741-88-4</td>
<td>89-93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additives</td>
<td>Not specified</td>
<td>7-11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc Dialkyl Dithiophosphate</td>
<td>68457-79-4</td>
<td>1.2-1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.
3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

MOTOR OIL IS A NON-VOLATILE AND NON-COMBUSTIBLE, AMBER COLORED LIQUID, BUT WILL IGNITE AND BURN AT ELEVATED TEMPERATURES.

Inhalation:
No acute effects expected from routine operations. Overheating of product may produce vapors which can cause respiratory irritation, dizziness and nausea.

Ingestion:
Product has a low order of acute toxicity. This is based on data from components or similar products.

Skin contact:
Prolonged or repeated liquid contact can cause dermatitis, folliculitis or oil acne.

Eye contact:
Liquid or vapor contact may result in slight eye irritation.

Carcinogenic Evaluation:

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>IARC Carcinogens:</th>
<th>NTP Carcinogens:</th>
<th>ACGIH - Carcinogens:</th>
<th>OSHA - Select Carcinogens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Multipower-3 15W-40 Motor Oil Mixture</td>
<td>NE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
The International Agency for Research on Cancer (IARC) has determined that there is no evidence that severely solvent-refined oils are carcinogenic to experimental animals.

Component Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>IARC Carcinogens:</th>
<th>NTP Carcinogens:</th>
<th>ACGIH - Carcinogens:</th>
<th>OSHA - Select Carcinogens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-Refined Heavy Paraffinic 64741-88-4</td>
<td>Supplement 7 [1987], Monograph 33 [1984]</td>
<td></td>
<td></td>
<td>Present</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye Contact:
Flush eyes with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.

Skin Contact:
Wash with soap and large amounts of water. Remove contaminated clothing. If symptoms or irritation occur, call a physician.

If product is accidentally injected into or under the skin, regardless of wound size or initial absence of symptoms, the individual should be evaluated immediately by a physician as a surgical emergency.

Ingestion:
Not expected to be acutely toxic. If large amounts are swallowed, immediately call a physician.

Inhalation:
4. FIRST AID MEASURES

If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. If symptoms or irritation occur with any exposure, call a physician.

NOTES TO PHYSICIAN:

No data available.

Medical Conditions
Aggravated
By Exposure:

Skin contact could aggravate an existing skin disorder or dermatitis condition.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Specific hazards: This material is not combustible per the OSHA Hazard Communication Standard, but will ignite and burn at elevated temperatures.

Special protective equipment for firefighters: Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Use water spray to cool exposed surfaces from as far a distance as possible. Keep run-off water out of sewers and water sources.

Flash point: >425 F, 218.3 C
Autoignition temperature: No data available.
Flammable limits in air - lower (%): No data available.
Flammable limits in air - upper (%): No data available.

NFPA rating:
Health: 1
Flammability: 1
Instability: 0
Other: -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Advise local and state emergency services agencies, if appropriate. Contain liquid with sand or soil. Recover and return free product to proper containers. Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids.

7. HANDLING AND STORAGE

Handling:

MSDS ID NO.: 0162MAR019
Product name: Marathon Multipower-3 15W-40 Motor Oil
7. HANDLING AND STORAGE
Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Do not pressurize or expose to heat, open flames, strong oxidizers or other sources of ignition.

Avoid repeated and prolonged skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT

Engineering measures: Local or general exhaust required when using at elevated temperatures that generate vapors or mists.

Respiratory protection: Not required under normal conditions and adequate ventilation. Approved organic vapor chemical cartridge or supplied air respirators should be worn when significant vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 1910.134. Self-contained breathing apparatus should be used for fire fighting.

Skin and body protection: Use chemical resistant gloves such as neoprene, nitrile, or PVA to prevent prolonged or repeated skin contact.

Eye protection: No special eye protection is normally required.

Hygiene measures: No data available.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance: Amber Liquid
Physical state (Solid/Liquid/Gas): Liquid
Substance type (Pure/Mixture): Mixture
Color: Amber
Odor: Hydrocarbon
Molecular weight: Not determined.
PH: Neutral
Boiling point/range (5-95%): >425 F, >218.3 C
Melting point/range: Not determined.
Decomposition temperature: Not applicable.
Specific gravity: 0.890 @ 60 F
Density: 7.44 lbs/gal @ 60 F
Bulk density: No data available.
Vapor density: No data available.
Vapor pressure: <1 mm Hg @ 100 F
Evaporation rate: No data available.
Solubility: <1%
Solubility in other solvents: No data available.
Partition coefficient (n-octanol/water): >4.9
VOC content(%): No data available.
Viscosity: 118.1 cSt @ 40 C
15.0 cSt @ 100 C

10. STABILITY AND REACTIVITY
10. STABILITY AND REACTIVITY

Stability: The material is stable at 70 F, 760 mm pressure.

Polymerization: Will not occur.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, hydrogen sulfide, oxides of sulfur, oxides of nitrogen, oxides of phosphorous, oxides of magnesium, boric oxide, calcium oxide and zinc oxide. Thermal decomposition may produce hydrogen sulfide and other sulfur-containing gases at temperatures greater than 150 F.

Materials to avoid: Strong oxidizers such as nitrates, chlorates, peroxides.

Conditions to avoid: Heat and open flames.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

<table>
<thead>
<tr>
<th>Product information:</th>
<th>CAS Number</th>
<th>Inhalation:</th>
<th>Dermal:</th>
<th>Oral:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Mixture</td>
<td>LD50 = 2.18 to &gt; 4mg/l [Rat]</td>
<td>LD50 &gt; 2 gm/kg [Rabbit]</td>
<td>LD50 &gt; 5 ml/kg [Rat]</td>
</tr>
<tr>
<td>Marathon Multipower-3 15W-40 Motor Oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Toxicology Information:

Based on data from components this product is considered to have a low order of acute oral and dermal toxicity. Chronic skin painting studies with severely solvent refined neutral oils did not produce evidence of skin cancer in mice.

This product contains approximately 0-1.5% of a zinc alkyl dithiophosphate (ZDDP) additive. ZDDP has been found to have weak mutagenic activity in cultured cells. Repeated dermal exposures of ZDDP produced severe skin irritation, significant weight loss and testicular atrophy in male rabbits but not male rats at high concentrations. Subsequent research showed that the testicular effect was due to the severe stress and weight loss as seen with other caustic materials and not a direct effect of ZDDP. The concentration of ZDDP in this product is significantly lower than exposure levels that produced these effects in rabbits.

Used motor oil applied to the skin of rabbits at doses of 8 ml/kg/day, 5 days/wk, for two weeks, produced significant weight loss and skin irritation but no mortality. Used motor oil was found to produce skin tumors in mice in lifetime skin painting studies. Solvent extracts of used motor oils were found to be positive in the Ames mutagenicity test.

12. ECOTOXICOLOGICAL INFORMATION

Mobility: No data available.

Ecotoxicity: No data available.

Bioaccumulation: No data available.
12. ECOTOXICOLOGICAL INFORMATION

Persistence/Biodegradation:

Water accommodated fractions (WAF) of highly refined base oils did not produce acute toxicity in fish (100-1000 mg/l), fresh water algae (500 mg/l) or daphnia (10,000 mg/l) in 48-96 hour LC50 studies.

Used motor and/or lube oils can be toxic to birds and fish.

13. DISPOSAL CONSIDERATIONS

Cleanup Considerations:

This material as supplied and by itself, when discarded or disposed of, is not an EPA RCRA hazardous waste according to federal regulations. This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

Don't pollute. Conserve resources. Send used product to recycling center. Dispose of cleanup materials in accordance with applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

49 CFR 172.101:

DOT:

Transport Information: This material when transported via US commerce is NOT REGULATED by DOT regulations.

Packing group: Not applicable.

DOT reportable quantity (lbs): Not applicable.

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard: This product has been evaluated and determined not to be hazardous as defined in OSHA’s Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):
SARA Section 302: This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-</td>
<td>NA</td>
</tr>
<tr>
<td>Refined Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
<tr>
<td>Zinc Dialkyl Dithiophosphate</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 304: This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA - Hazardous Substances and their Reportable Quantities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-</td>
<td>NA</td>
</tr>
<tr>
<td>Refined Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
<tr>
<td>Zinc Dialkyl Dithiophosphate</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 311/312 The following EPA hazard categories apply to this product:

None

SARA Section 313: This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA 313 Emission reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Petroleum Solvent-</td>
<td>None</td>
</tr>
<tr>
<td>Refined Heavy Paraffinic</td>
<td></td>
</tr>
<tr>
<td>Additives</td>
<td>None</td>
</tr>
<tr>
<td>Zinc Dialkyl Dithiophosphate</td>
<td>= 1.0 % de minimis concentration</td>
</tr>
</tbody>
</table>

State and Community Right-To-Know Regulations: The following component(s) of this material are identified on the regulatory lists below:

Distillates, Petroleum Solvent-Refined Heavy Paraffinic

Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
New Jersey Right-To-Know: Not Listed.
Pennsylvania Right-To-Know: Not Listed.
Massachusetts Right-To-Know: Not Listed.
Florida substance List: Not Listed.
Rhode Island Right-To-Know: Not Listed
Michigan critical materials register list: Not Listed.
Massachusetts Extraordinarily Hazardous Substances: Not Listed
California - Regulated Carcinogens: Not Listed
Pennsylvania RTK - Special Hazardous Substances: Not Listed
New Jersey - Special Hazardous Substances: carcinogen
New Jersey - Environmental Hazardous Substances List:
Illinois - Toxic Air Contaminants Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:

Additives

Louisiana Right-To-Know: Not Listed
California Proposition 65: Not Listed
Canadian Regulatory Information:

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

NOTE: Not Applicable.

16. OTHER INFORMATION

Additional Information: No data available.
Prepared by: Mark S. Swanson, Manager, Toxicology and Product Safety
The information and recommendations contained herein are based upon tests believed to be reliable. However, Marathon Petroleum Company LP (MPC) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. MPC assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet
Material Safety Data Sheet

MSDS ID NO.: 0163MAR019
Revision date: 06/02/2006

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product code: MR0211, MR0222, MR0230, MR0242, MR0246

Product name: Marathon Multipower-3 Motor Oil
Synonym: Multipower-3 Heavy Duty Motor Oil; 10W Multipower-3 HD Motor Oil; 20W Multipower-3 HD Motor Oil; 30 Multipower-3 HD Motor Oil; 40 Multipower-3 HD Motor Oil; 50 Multipower 3 HD Motor Oil

Chemical Family: Motor/Lube Oil

Formula: Mixture

Manufacturer:
Marathon Petroleum Company LLC
539 South Main Street
Findlay OH 45840

Other information: 419-421-3070
Emergency telephone number: 877-627-5463

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Motor oil is a complex mixture of highly refined lubricating oil base stocks and additives.

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Multipower-3 Motor Oil</td>
<td>Mixture</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Component Information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>ACGIH Exposure Limits:</th>
<th>OSHA - Vacated PELs - Time Weighted Ave</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Solvent-refined Heavy Paraffinic</td>
<td>64741-88-4</td>
<td>20-93</td>
<td></td>
<td></td>
<td>Mineral Oil Mist (MOM) =5 mg/m³ TWA = 10 mg/m³ STEL</td>
</tr>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>64742-54-7</td>
<td>0-70</td>
<td></td>
<td></td>
<td>Mineral Oil Mist (MOM) =5 mg/m³ TWA = 10 mg/m³ STEL</td>
</tr>
<tr>
<td>Additives</td>
<td>Not specified</td>
<td>7-10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc Dialkyl Dithiophosphate</td>
<td>68457-79-4</td>
<td>1.2-1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The manufacturer has voluntarily elected to reflect exposure limits contained in OSHA's 1989 air contaminants standard in its MSDS's, even though certain of those exposure limits were vacated in 1992.
3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
MOTOR OIL IS A NON-VOLATILE AND NON-COMBUSTIBLE, AMBER COLORED LIQUID, BUT WILL IGNITE AND BURN AT ELEVATED TEMPERATURES.

OSHA WARNING LABEL:
THIS PRODUCT HAS BEEN EVALUATED AND DOES NOT REQUIRE ANY HAZARD WARNING LABEL UNDER THE OSHA HAZARD COMMUNICATION STANDARD.

CONSUMER WARNING LABEL:
A CONSUMER WARNING LABEL IS NOT APPLICABLE FOR THIS PRODUCT.

Inhalation: No acute effects expected from routine operations. Overheating of product may produce vapors which can cause respiratory irritation, dizziness and nausea.

Ingestion: Product has a low order of acute toxicity. This is based on data from components or similar products.

Skin contact: Prolonged or repeated liquid contact can cause dermatitis, folliculitis or oil acne.

Eye contact: Liquid or vapor contact may result in slight eye irritation.

Carcinogenic Evaluation:

<table>
<thead>
<tr>
<th>Product information:</th>
<th>IARC Carcinogens:</th>
<th>NTP Carcinogens:</th>
<th>ACGIH - Carcinogens:</th>
<th>OSHA - Select Carcinogens:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Multipower-3 Motor Oil</td>
<td>NE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixture</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: The International Agency for Research on Cancer (IARC) has determined that there is no evidence that severely solvent-refined oils are carcinogenic to experimental animals.

Component Information:

4. FIRST AID MEASURES

Inhalation: If affected, move person to fresh air. If breathing is difficult, administer oxygen. If not breathing or if no heartbeat, give artificial respiration or cardiopulmonary resuscitation (CPR). Immediately call a physician. If symptoms or irritation occur with any exposure, call a physician.

Skin contact: Wash with soap and large amounts of water. Remove contaminated clothing. If symptoms or irritation occur, call a physician.

If product is accidentally injected into or under the skin, regardless of wound size or initial absence of symptoms, the individual should be evaluated immediately by a physician as a surgical emergency.

Ingestion: Not expected to be acutely toxic. If large amounts are swallowed, immediately call a physician.

Eye contact: Flush eyes with large amounts of tepid water for at least 15 minutes. If symptoms or irritation occur, call a physician.
Notes to physician:
High velocity injection under the skin may result in serious injury. If left untreated the affected area is subject to infection, disfigurement, lack of blood circulation and may require amputation. When dispensed by high pressure equipment this material can easily penetrate the skin and leave a bloodless puncture wound. Material injected into a finger can be deposited into the palm of the hand. Within 24-48 hours the patient may experience swelling, discoloration, and throbbing pain in the affected area. Immediate treatment by a surgical specialist is recommended.

Medical conditions aggravated by exposure:
Skin contact could aggravate an existing skin disorder or dermatitis condition.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Fire fighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Specific hazards: This material is not combustible per the OSHA Hazard Communication Standard, but will ignite and burn at elevated temperatures.

Special protective equipment for firefighters: Avoid using straight water streams. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Avoid excessive water spray application. Use water spray to cool exposed surfaces from as far a distance as possible. Keep run-off water out of sewers and water sources.

Flash point: >425 F, 218.3 C
Autoignition temperature: No data available.
Flammable limits in air - lower (%): No data available.
Flammable limits in air - upper (%): No data available.

NFPA rating:
Health: 1
Flammability: 1
Reactivity: 0
Other: -

HMIS classification:
Health: 1
Flammability: 1
Reactivity: 0
Special: *See Section 8 for guidance in selection of personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Advise authorities and National Response Center (800-424-8802) if substance has entered a watercourse or sewer. Advise local and state emergency services agencies, if appropriate. Contain liquid with sand or soil. Recover and return free product to proper containers. Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids.

7. HANDLING AND STORAGE

Handling:
Comply with all applicable EPA, OSHA, NFPA and consistent state and local requirements. Use appropriate grounding and bonding practices. Store in properly closed containers that are appropriately labeled and in a cool well-ventilated area. Do not cut, drill, grind or weld on empty containers since they may contain explosive residues. Do not pressurize or expose to heat, open flames, strong oxidizers or other sources of ignition.

Avoid repeated and prolonged skin contact. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water.

**8. EXPOSURE CONTROLS/ PERSONAL PROTECTION**

**PERSONAL PROTECTIVE EQUIPMENT**

---

**Engineering measures:** Local or general exhaust required when using at elevated temperatures that generate vapors or mists.

**Respiratory protection:** Not required under normal conditions and adequate ventilation. Approved organic vapor chemical cartridge or supplied air respirators should be worn when significant vapors are generated. Observe respirator protection factor criteria cited in ANSI Z88.2. Self-contained breathing apparatus should be used for fire fighting.

**Skin and body protection:** Use chemical resistant gloves such as neoprene, nitrile, or PVA to prevent prolonged or repeated skin contact.

**Eye protection:** No special eye protection is normally required.

**Hygiene measures:** No data available.

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**9. PHYSICAL AND CHEMICAL PROPERTIES:**

**Appearance:** Amber Liquid

**Physical state (Solid/Liquid/Gas):** Liquid

**Substance type (Pure/Mixture):** Mixture

**Color:** Amber

**Odor:** Hydrocarbon

**Molecular weight:** Not determined.

**pH:** Neutral

**Boiling point/range (5-95%):** No data available.

**Melting point/range:** Not determined.

**Decomposition temperature:** Not applicable.

**Specific gravity:** Not determined

**Density:** 7.31, 7.37, 7.42, 7.46 or 7.50 lbs/gal @ 60 F

**Bulk density:** No data available.

**Vapor density:** No data available.

**Vapor pressure:** <1 mm Hg @ 100 F

**Evaporation rate:** No data available.

**Solubility:** <1%

**Solubility in other solvents:** No data available.

**Partition coefficient (n-octanol/water):** >4.9

**VOC content(%):** No data available.

**Viscosity:** 37.5, 52.2, 86.9, 138.3, 203.9 cSt @ 40 C

6.4, 8.0, 11.0, 14.6, 20.0 cSt @ 100 C

---

**10. STABILITY AND REACTIVITY**

**Stability:** The material is stable at 70 F, 760 mm pressure.

**Polymerization:** Will not occur.
Hazardous decomposition products: Carbon monoxide, carbon dioxide, hydrogen sulfide, oxides of sulfur, oxides of nitrogen, oxides of phosphorous, oxides of magnesium, boric oxide, calcium oxide and zinc oxide. Thermal decomposition may produce hydrogen sulfide and other sulfur-containing gases at temperatures greater than 150 F.

Materials to avoid: Strong oxidizers such as nitrates, chlorates, peroxides.

Conditions to avoid: Heat and open flames.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Product information:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Inhalation:</th>
<th>Dermal:</th>
<th>Oral:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marathon Multipower-3 Motor Oil</td>
<td>Mixture</td>
<td>LD50 = 2.16 to &gt;4 mg/l [Rat]</td>
<td>LD50 &gt; 2 gm/kg [Rabbit]</td>
<td>LD50 &gt; 5 ml/kg [Rat]</td>
</tr>
</tbody>
</table>

Based on data from components this product is considered to have a low order of acute oral and dermal toxicity. Chronic skin painting studies with severely solvent refined neutral oils did not produce evidence of skin cancer in mice.

This product contains approximately 0-1.5% of a zinc alkyl dithiophosphate (ZDDP) additive. ZDDP has been found to have weak mutagenic activity in cultured cells. Repeated dermal exposures of ZDDP produced severe skin irritation, significant weight loss and testicular atrophy in male rabbits but not male rats at high concentrations. Subsequent research showed that the testicular effect was due to the severe stress and weight loss as seen with other caustic materials and not a direct effect of ZDDP. The concentration of ZDDP in this product is significantly lower than exposure levels that produced these effects in rabbits.

Used motor oil applied to the skin of rabbits at doses of 8 ml/kg/day, 5 days/wk, for two weeks, produced significant weight loss and skin irritation but no mortality. Used motor oil was found to produce skin tumors in mice in lifetime skin painting studies. Solvent extracts of used motor oils were found to be positive in the Ames mutagenicity test.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects: Water acclimated fractions (WAF) of highly refined base oils did not produce acute toxicity in fish (100-1000 mg/l), fresh water algae (500 mg/l) or daphnia (10,000 mg/l) in 48-96 hour LC50 studies.

Used motor and/or lube oils can be toxic to birds and fish.

13. DISPOSAL CONSIDERATIONS

Cleanup Considerations: This material as supplied and by itself, when discarded or disposed of, is not an EPA RCRA hazardous waste according to federal regulations. This material could become a hazardous waste if mixed or contaminated with a hazardous waste or other substance(s). It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

Don't pollute. Conserve resources. Send used product to recycling center. Dispose of cleanup materials in accordance with applicable local, state and federal regulations.
14. TRANSPORT INFORMATION

49 CFR 172.101:

DOT:

Transport Information: This material when transported via US commerce is NOT REGULATED by DOT regulations.

- Packing group: Not applicable.
- DOT reportable quantity (lbs): Not applicable.

TDG (Canada):

- Packing group: Not applicable.
- Regulated substances: Not applicable.

15. REGULATORY INFORMATION

Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

OSHA Hazard Communication Standard: This product has been evaluated and determined not to be hazardous as defined in OSHA's Hazard Communication Standard.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product contains the following component(s) that have been listed on EPA's Extremely Hazardous Substance (EHS) List:

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<tr>
<th>Name</th>
<th>CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Solvent-refined Heavy Paraffinic</td>
<td>NA</td>
</tr>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>NA</td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
<tr>
<td>Zinc Dialkyl Dithiophosphate</td>
<td>NA</td>
</tr>
</tbody>
</table>

SARA Section 304: This product contains the following component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

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<tr>
<th>Name</th>
<th>CERCLA/SARA - Hazardous Substances and their Reportable Quantities</th>
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<td>NA</td>
</tr>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>NA</td>
</tr>
<tr>
<td>Additives</td>
<td>NA</td>
</tr>
<tr>
<td>Zinc Dialkyl Dithiophosphate</td>
<td>= 1000 lb final RQ no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches</td>
</tr>
<tr>
<td></td>
<td>= 454 kg final RQ no reporting of releases of this hazardous substance is required if the diameter of the solid metal released is equal to or exceeds 0.004 inches</td>
</tr>
</tbody>
</table>

SARA Section 311/312: The following EPA hazard categories apply to this product:

- None

SARA Section 313: This product contains the following component(s) that may be subject to reporting on the Toxic Release Inventory (TRI) From R:

MSDS ID NO.: 0163MAR019  Product name: Marathon Multipower-3 Motor Oil
<table>
<thead>
<tr>
<th>Name</th>
<th>CERCLA/SARA 313 Emission reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates, Solvent-refined Heavy Paraffinic</td>
<td>None</td>
</tr>
<tr>
<td>Petroleum Distillates, Hydrotreated Heavy Paraffinic</td>
<td>None</td>
</tr>
<tr>
<td>Additives</td>
<td>None</td>
</tr>
<tr>
<td>Zinc Dialkyl Dithiophosphate</td>
<td>= 1.0 percent de minimis concentration Chemical Category N982 = 1.0 percent de minimis concentration only fume or dust</td>
</tr>
</tbody>
</table>

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

**Distillates, Solvent-refined Heavy Paraffinic**
- Louisiana Right-To-Know: Not Listed
- California Proposition 65: Not Listed
- New Jersey Right-To-Know: Not Listed
- Pennsylvania Right-To-Know: Not Listed
- Massachusetts Right-To-Know: Not Listed
- Florida substance List: Not Listed
- Rhode Island Right-To-Know: Not Listed
- Michigan critical materials register list: Not Listed
- Massachusetts Extraordinarily Hazardous Substances: Not Listed
- California - Regulated Carcinogens: Not Listed
- Pennsylvania RTK - Special Hazardous Substances: Not Listed
- New Jersey - Special Hazardous Substances: Not Listed
- New Jersey - Environmental Hazardous Substances List: Not Listed
- Illinois - Toxic Air Contaminants: Not Listed
- New York - Reporting of Releases Part 597 - List of Hazardous Substances: Not Listed

**Petroleum Distillates, Hydrotreated Heavy Paraffinic**
- Louisiana Right-To-Know: Not Listed
- California Proposition 65: Not Listed
- New Jersey Right-To-Know: Not Listed
- Pennsylvania Right-To-Know: Not Listed
- Massachusetts Right-To-Know: Not Listed
- Florida substance List: Not Listed
- Rhode Island Right-To-Know: Not Listed
- Michigan critical materials register list: Not Listed
- Massachusetts Extraordinarily Hazardous Substances: Not Listed
- California - Regulated Carcinogens: Not Listed
- Pennsylvania RTK - Special Hazardous Substances: Not Listed
- New Jersey - Special Hazardous Substances: Not Listed
- New Jersey - Environmental Hazardous Substances List: Not Listed
- Illinois - Toxic Air Contaminants: Not Listed
- New York - Reporting of Releases Part 597 - List of Hazardous Substances: Not Listed

**Additives**
- Louisiana Right-To-Know: Not Listed
- California Proposition 65: Not Listed
- New Jersey Right-To-Know: Not Listed
- Pennsylvania Right-To-Know: Not Listed
- Massachusetts Right-To-Know: Not Listed
- Florida substance List: Not Listed

MSDS ID NO.: 0163MAR019
**Product name:** Marathon Multipower-3 Motor Oil

Page 7 of 9
Zinc Dialkyl Dithiophosphate

**Additional Information:**
No data available.

**Prepared by:**
Craig M. Parker Manager, Toxicology and Product Safety

The information and recommendations contained herein are based upon tests believed to be reliable. However, Marathon Petroleum Company LLC (MPC) does not guarantee their accuracy or completeness nor shall any of this information constitute a warranty, whether expressed or implied, as to the safety of the goods, the merchantability of the goods, or the fitness of the goods for a particular purpose. Adjustment to conform to actual conditions of usage maybe required. MPC assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.
End of Safety Data Sheet
MULTI-PURPOSE GEAR COMPOUND

*** SECTION 1 PRODUCT IDENTIFICATION ***

MARATHON OIL COMPANY
537 SOUTH MAIN STREET
FINDLAY, OH 45840

CAS REGISTRY NO: MIXTURE
PRODUCT CODE: 
U.N. NUMBER: 
CHEM FORMULA: MIXTURE
CHEM FAMILY: PETROLEUM MINERAL OIL
VENDOR PH: 419-421-3070
INFO SUPPLIER: CRAIG N. PARKER

--- SYNONYMS (ALIASES)
COMPOUND 85W-140
MULTI-PURPOSE GEAR COMPOUND 80W-90
571 MULTI-PURPOSE GEAR COMPOUND
573 MULTI-PURPOSE GEAR COMPOUND

*** SECTION 2 PHYSICAL PROPERTIES ***

BOILING PT: 761-1000 F
C VAPOR PRESSURE: C.A. 15 MM HG @ 100F

MELTING PT: N.A.
C VAPOR DENS. (AIR=1): N.O.A.
PH: AT 6/8 H2O
SOLUBILITY IN WATER: NEGLIGIBLE

SPECIFIC GRAVITY (H2O=1): C.A. 0.90

HYDROCARBON

EVAPORATION RATE:

*** SECTION 3 FIRE & EXPLOSION HAZARD DATA ***

FLASH PT: C.A. 338 F,
AUTOIGNITION TEMP: C.A. 695 F,
LOWER EXPLOSIVE LIMIT (LEL): N.O.A.
UPPER EXPLOSIVE LIMIT (UEL):

--NFPA CLASS--
HEALTH: 1
FIRE: 1
REACTIVITY: 1
OTHER:

EXTINGUISHING MEDIA:

CLASS B FIRE EXTINGUISHING MEDIA SUCH AS HALON, CO2, DRY CHEMICAL OR WATER SPRAY CAN BE USED. FIRE FIGHTING SHOULD BE ATTEMPTED ONLY BY THOSE WHO ARE ADEQUATELY TRAINED.

SPECIAL FIRE FIGHTING INSTRUCTIONS:

AVOID USING SOLID WATER STREAMS. WATER SPRAY AND FOAM MUST BE APPLIED CAREFULLY TO AVOID FROTHING. AVOID EXCESSIVE APPLICATION. USE WATER SPRAY TO COOL EXPOSED SURFACES.
MULTI-PURPOSE GEAR COMPOUND

STABILITY: STABLE
CONDITIONS TO AVOID: SEE ADDITIONAL COMMENTS

INCOMPATIBLE MATERIALS: STRONG OXIDIZERS

HAZARDOUS DECOMPOSITION PRODUCTS: SEE ADDITIONAL COMMENTS

POLYMERIZATION: WILL NOT OCCUR
CONDITIONS TO AVOID:

------------------- ADDITIONAL COMMENTS -------------------

------------------- ADDITIONAL COMMENTS -------------------

CONDITIONS TO AVOID:

HEAT AND OPEN FLAMES. "EMPTY" PRODUCT CONTAINERS MAY RETAIN
PRODUCT RESIDUE. DO NOT PRESSURIZE, CUT, HEAT, WELD OR EXPOSE TO
FLAME; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE, CARBON DIOXIDE, ALDEHYDES, HYDROCARBONS, NITROGEN
OXIDES, SULFUR OXIDES, PHOSPHOROUS OXIDES, HYDROGEN CHLORIDE, AND
HYDROGEN SULFIDE

******************************************************************************
*** SECTION 4 COMPONENTS WITH EXPOSURE LIMITS  
******************************************************************************

A=ACGIH  O=OSHA  N=NIOSH  S=STATE OSHA  M=MARATHON  R=NRC  C=CORPORATE  9=OTHER

COMPONENTS -------- PERCENT RANGE--- EXP. LIMIT UNITS

BLENDED MINERAL OIL  93.0000  5.0000  A MG/M3  8 HR
                      10.0000  A MG/M3 STEL
                      5.0000  D MG/M3  8 HR

(SEVERELY SOLVENT REFINED
PARAFFINIC BASE STOCK)

ADDITIONS  7.0000

***

(SULFURIZED OLEFIN, ALKENYL
DITHIOPHOSPHATE, BORONATED
SUBSTITUTED SUCCHIMIDE AND
AMINE PHOSPHOROTHIOIC ACID
ESTER)

PRODUCT EXPOSURE LIMITS ---

F 5.0000  STEL 10.0000
8 HR 5.0000

PPM FOR ACGIH.

PPM FOR OSHA.
ADDITIONAL TOXICITY INFORMATION:

USED MOTOR OIL WAS FOUND TO PRODUCE SKIN TUMORS IN MICE IN LIFETIME SKIN PAINTING STUDIES. SOLVENT EXTRACTS OF USED MOTOR OILS WERE FOUND TO BE POSITIVE IN THE Ames MUTAGENICITY TEST.

EYE:

SHORT-TERM LIQUID OR VAPOR CONTACT MAY RESULT IN SLIGHT EYE IRRITATION.

SKIN:

PROLONGED OR REPEATED LIQUID CONTACT CAN CAUSE DERMATITIS, FOLLICULITIS OR OIL ACNE. MULTI-PURPOSE GEAR COMPOUND (80W-90) AND SIMILAR PRODUCTS HAVE DERMAL LD50 VALUES >2 ML/KG.

INHALATION:

EXPOSURE TO VAPORS OR NISTS OF THIS PRODUCT MAY CAUSE PULMONARY IRRITATION, DIZZINESS AND NAUSEA. PROLONGED OVEREXPOSURE TO VAPORS OR NISTS MAY PRODUCE CHEMICAL PNEUMONITIS.

INGESTION:

LUBE OIL HAS A LOW ORDER OF ACUTE TOXICITY. THIS IS BASED ON DATA FROM COMPONENTS OR SIMILAR PRODUCTS. A SIMILAR PRODUCT HAS AN ORAL LD50 VALUE >5 GM/KG.

EYE:

FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. IF SYMPTOMS OR IRRITATION OCCUR, CALL A PHYSICIAN.

SKIN:

WASH WITH SOAP AND LARGE AMOUNTS OF WATER. REMOVE CONTAMINATED CLOTHING. IF SYMPTOMS OR IRRITATION OCCUR, CALL A PHYSICIAN.

INHALATION:

MOVE PERSON TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IMMEDIATELY CALL A PHYSICIAN. IF SYMPTOMS OR IRRITATION OCCUR WITH ANY EXPOSURE, CALL A PHYSICIAN.

INGESTION:
NOT EXPECTED TO BE ACUTELY TOXIC. IF LARGE AMOUNTS ARE SWALLOWED,
IMMEDIATELY CALL A PHYSICIAN.

VENTILATION:
LOCAL OR GENERAL EXHAUST REQUIRED WHEN USING AT ELEVATED
TEMPERATURES THAT GENERATE VAPORS OR MISTS.

RESPIRATORY PROTECTION:
NOT NORMALLY REQUIRED FOR ROUTINE OPERATIONS. APPROVED ORGANIC
VAPOR CHEMICAL CARTRIDGE OR SUPPLIED AIR RESPIRATORS SHOULD BE WORN
WHEN EXCESSIVE VAPORS OR MISTS ARE GENERATED. OBSERVE RESPIRATOR
PROTECTION FACTOR CRITERIA CITED IN ANSI Z88.2 (1980). SELF-
CONTAINED BREATHING APPARATUS SHOULD BE USED FOR FIRE FIGHTING.

PROTECTIVE GLOVES:
NEOPRENE, NITRILE OR PVA GLOVES TO PREVENT SKIN CONTACT.

ENVIRONMENTAL EFFECTS:
NEW AND USED MOTOR AND/OR LUBE OILS MAY BE TOXIC TO BIRDS AND FISH.

STEPS TO BE TAKEN IN CASE OF SPILL, LEAK OR RELEASE:
KEEP PUBLIC AWAY. SHUT OFF SOURCE OF LEAK IF POSSIBLE TO DO SO
WITHOUT HAZARD. ELIMINATE ALL IGNITION SOURCES. ADVISE NATIONAL
RESPONSE CENTER (800-424-8802) IF PRODUCT HAS ENTERED A WATER
COURSE. ADVISE LOCAL AND STATE EMERGENCY SERVICES AGENCIES, IF
APPROPRIATE. CONTAIN LIQUID WITH SAND OR SOIL. RECOVER AND RETURN
FREE LIQUID TO SOURCE. USE SUITABLE SORBENTS TO CLEAN UP RESIDUAL
LIQUIDS.

WASTE DISPOSAL METHOD:
DISPOSE OF CLEANUP MATERIALS IN ACCORDANCE WITH APPLICABLE LOCAL,
STATE AND FEDERAL REGULATIONS.
**SECTION 8  HANDLING & STORAGE PRECAUTIONS**

PRODUCT SHOULD BE HANDLED AND STORED IN ACCORDANCE WITH INDUSTRY ACCEPTED PRACTICES. COMPLY WITH ALL APPLICABLE OSHA, NFPA AND CONSISTENT LOCAL REQUIREMENTS. USE APPROPRIATE GROUNDING AND BONDING PRACTICES. STORE IN PROPERLY CLOSED CONTAINERS THAT ARE APPROPRIATELY LABELED. DO NOT EXPOSE TO HEAT, OPEN FLAME, STRONG OXIDIZERS OR OTHER SOURCES OF IGNITION. AVOID REPEATED OR PROLONGED SKIN CONTACT. EXERCISE GOOD PERSONAL HYGIENE INCLUDING REMOVAL OF SOILED CLOTHING AND PROMPT WASHING WITH SOAP AND WATER.

**SECTION 9  HAZARD WARNING**

NONE REQUIRED.

**SECTION 10  COMMENTS**

**SECTION 11  REGULATORY INFORMATION**

SARA TITLE III/SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 — SECTIONS 302, 304, 311, 312, AND 313.

THE FOLLOWING REGULATIONS APPLY TO THIS PRODUCT:


DEPARTMENT OF TRANSPORTATION:

1. PRODUCT IDENTIFICATION

**Product Name:** NAPA 765-1188 THREAD SEALANT W/PTFE 4 FL.OZ  
**Item No:** 21127  
**Product Type:** Sealant

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>ACGIH; TLV-TWA</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOL 64-17-5</td>
<td>20-40</td>
<td>1000 ppm</td>
<td>1000 ppm; 1900 mg/m³</td>
</tr>
<tr>
<td>TALC 14807-96-6</td>
<td>20-40</td>
<td>2 mg/m³</td>
<td>20 mppcf</td>
</tr>
<tr>
<td>CASTOR OIL 8001-79-4</td>
<td>20-40</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>POLYVINYL RESIN 63148-65-2</td>
<td>&lt;10</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>2-PROPANOL 67-63-0</td>
<td>&lt;5</td>
<td>200 ppm</td>
<td>400 ppm; 980 mg/m³</td>
</tr>
<tr>
<td>TITANIUM DIOXIDE 13463-67-7</td>
<td>&lt;3</td>
<td>10 mg/m³</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>METHANOL 87-56-1</td>
<td>&lt;2</td>
<td>200 ppm</td>
<td>200 ppm; 260 mg/m³</td>
</tr>
<tr>
<td>POLYTETRAFLUOROETHYLENE 9002-84-0</td>
<td>&lt;2</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

**Toxicity:** May cause eye, skin and respiratory irritation. Methanol may cause blindness or death if swallowed.

**Primary Routes of Entry:** Eye and skin contact, ingestion, inhalation

**Signs and Symptoms of Exposure:** Excessive accidental exposure may cause headache, dizziness, nausea and mild respiratory irritation. Overexposure may cause eye and skin redness.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>NTP</th>
<th>ACGIH Carcinogens</th>
<th>IARC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOL 64-17-5</td>
<td>20-40</td>
<td>A4</td>
<td>Not Classifiable as a Human Carcinogen</td>
<td>Group 3 Supplement 7, 1987 Monograph 42, 1987</td>
</tr>
<tr>
<td>2-PROPANOL 67-63-0</td>
<td>&lt;5</td>
<td>A4</td>
<td>Not classifiable as a human carcinogen</td>
<td>Group 3 Monograph 71, 1999; Supp.7, 1987; Monograph 15, 1977</td>
</tr>
<tr>
<td>TITANIUM DIOXIDE 13463-67-7</td>
<td>&lt;3</td>
<td>male rat-negative, female rat-negative, male mouse-negative, female mouse-negative</td>
<td>A4</td>
<td>Group 2B; Vol 93,2006; Vol 47,1989</td>
</tr>
<tr>
<td>POLYTETRAFLUOROETHYLENE 9002-84-0</td>
<td>&lt;2</td>
<td></td>
<td></td>
<td>Group 3 Supplement 7, 1987; Monograph 19, 1979</td>
</tr>
</tbody>
</table>

**Medical Conditions Recognized as Being Aggravated by Exposure:** Preexisting eye, skin and respiratory disorders may be aggravated by overexposure to this product.
4. FIRST AID MEASURES
Ingestion: Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.
Inhalation: Move to fresh air in case of accidental inhalation of vapours. Oxygen or artificial respiration if needed.
Skin Contact: Wash off with soap and water. If skin irritation persists, call a physician.
Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

5. FIRE FIGHTING MEASURES
Flash Point °F(C°): 74°F (TCC)
Recommended Extinguishing Media: Carbon Dioxide, Dry Chemicals, Foam.
Special Fire-Fighting Procedures: Firefighters should wear self-contained breathing apparatus. Water spray may be ineffective on flames but should be used to keep fire-exposed containers cool.
Hazardous Products of Combustion: Oxides of carbon, Fluoride compounds
Unusual Fire/Explosion Hazards: Closed containers may rupture or explode when exposed to extreme heat.
Lower Explosive Limit: 2.3
Upper Explosive Limit: 12.7

6. ACCIDENTAL RELEASE MEASURES
Spill Procedures: Eliminate all sources of ignition. Maintain good ventilation. Take up with an inert absorbent. Store in a closed waste container until disposal. Residues may be cleaned up with isopropyl alcohol.

7. HANDLING AND STORAGE
Storage: Store away from heat, sparks or open flame. Do not store at temperatures above 100°F (38°C).
Handling: Avoid contact with skin and eyes. Do not inhale vapors. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Eyes: Safety glasses.
Skin: Neoprene or nitrile gloves recommended.
Ventilation: General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.
Respiratory Protection: An approved organic vapor respirator should be worn when exposures are expected to exceed the applicable limits.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance: White paste
Odor: Alcoholic
Boiling Point: 180° F
pH: Does not apply
Solubility in Water: Partial
Specific Gravity: 1.06-1.10
VOC(Wt.%) 36.5%; 395 g/L
Vapor Pressure: 33 mm Hg @ 68°F
Vapor Density (Air=1): 2.07
Evaporation Rate: 7.7 (ether = 1)

10. STABILITY AND REACTIVITY
Chemical Stability: Stable at normal conditions
Hazardous Polymerization: Will not occur
Incompatibilities: Strong oxidizers
Conditions to Avoid: Keep away from heat, sparks and open flame. - No smoking.
Hazardous Products of Combustion: Oxides of carbon, Fluoride compounds

11. TOXICOLOGICAL INFORMATION
See Section 3

12. ECOLOGICAL INFORMATION
12. ECOLOGICAL INFORMATION
No data available

13. DISPOSAL CONSIDERATIONS
Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations.
US EPA Waste Number: D001 as per 40CFR 261.21

14. TRANSPORTATION INFORMATION

DOT (49CFR 172)
Ground Transport (DOT)

<table>
<thead>
<tr>
<th>DOT Shipping Name:</th>
<th>Consumer Commodity (not more than one liter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class:</td>
<td>ORM-D</td>
</tr>
<tr>
<td>UN/ID Number:</td>
<td>None</td>
</tr>
</tbody>
</table>

IATA

<table>
<thead>
<tr>
<th>Proper Shipping Name:</th>
<th>Consumer Commodity (Not more than 1 liter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class or Division:</td>
<td>Class 9</td>
</tr>
<tr>
<td>UN/ID Number:</td>
<td>ID 8000</td>
</tr>
</tbody>
</table>

IMDG

<table>
<thead>
<tr>
<th>Proper Shipping:</th>
<th>Adhesives containing flammable liquid, Limited Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard Class:</td>
<td>Class 3 PGIII</td>
</tr>
<tr>
<td>UN Number:</td>
<td>UN 1133</td>
</tr>
<tr>
<td>Marine Pollutant:</td>
<td>None</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.
Methanol

California Proposition 65: No California Prop 65 chemicals are known to be present.

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

Estimated NFPA Rating: HEALTH 2, FLAMMABILITY 3, REACTIVITY 0.
Estimated HMIS Classification: HEALTH 2, FLAMMABILITY 3, PHYSICAL HAZARD 0
NFPA is a registered trademark of the National Fire Protection Assn.
HMIS is a registered trademark of the National Paint and Coatings Assn.

Prepared By: Denise Boyd, Manager-Environmental, Health & Safety
Company: Permatex. Inc. 10 Columbus Blvd. Hartford, CT USA 06106
Telephone No.: 1-877-Permatex (877) 376-2839

Revision Date: August 11, 2010
Revision Number: 7
Material Safety Data Sheet

1. PRODUCT IDENTIFICATION
Product Name: NAPA 765-1482 HI-TEMP RED RTV GASKET MAKER 7.25 OZ.
Item No: 81919
Product Type: Silicone (Barrier Pack)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>ACGIH; TLV-TWA</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLY (DIMETHYLSILOXANE), HYDROXY TERMINATED 70131-67-8</td>
<td>&gt;60</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>AMORPHOUS SILICA 7631-86-9</td>
<td>5-15</td>
<td>Not listed</td>
<td>20 mppcf</td>
</tr>
<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED MIDDLE 64742-46-7</td>
<td>&lt;7</td>
<td>5 mg/m³</td>
<td>Not listed</td>
</tr>
<tr>
<td>IRON OXIDE 1309-37-1</td>
<td>&lt;5</td>
<td>5 mg/m³</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>ETHYLTRIACETOXYLSILANE 17689-77-9</td>
<td>&lt;3</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>METHYLTRIACETOXYLSILANE 4253-34-3</td>
<td>&lt;3</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>TITANIUM DIOXIDE 13463-67-7</td>
<td>&lt;2</td>
<td>10 mg/m³</td>
<td>15 mg/m³</td>
</tr>
<tr>
<td>NITROGEN 7727-37-9</td>
<td>&lt;3</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>ACETIC ACID 64-19-7</td>
<td>0.5-2.0</td>
<td>5 mg/m³</td>
<td>10 ppm; 25 mg/m³</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Toxicity: May cause eye and skin irritation. May irritate lips, gums, tongue, mouth, nose and throat. May irritate respiratory system upon frequent or prolonged use. **When this product is exposed to moisture, acetic acid may be formed. Note: This product does not contain microcrystalline silica.

Primary Routes of Entry: Eye and skin contact, ingestion, inhalation

Signs and Symptoms of Exposure: Acetic acid produced during curing irritates eyes, nose and throat.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight%</th>
<th>NTP</th>
<th>ACGIH Carcinogens</th>
<th>IARC</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMORPHOUS SILICA 7631-86-9</td>
<td>5-15</td>
<td>NTP</td>
<td>Group 3 Monograph 68, 1997</td>
<td></td>
</tr>
<tr>
<td>IRON OXIDE 1309-37-1</td>
<td>&lt;5</td>
<td>NTP</td>
<td>A4 - Not Classifiable</td>
<td></td>
</tr>
<tr>
<td>TITANIUM DIOXIDE 13463-67-7</td>
<td>&lt;2</td>
<td>NTP</td>
<td>A4 Group 2B; Vol 93, 2006; Vol 47, 1989</td>
<td></td>
</tr>
</tbody>
</table>

Medical Conditions Recognized as Being Aggravated by Exposure: Methyltriacetoxyllsilane: Eye, skin and pulmonary disorders.

4. FIRST AID MEASURES

Ingestion: Rinse mouth. If swallowed, DO NOT induce vomiting. Keep individual calm. Obtain medical attention.

Inhalation: Move to fresh air in case of accidental inhalation of vapours. Obtain medical attention.

Skin Contact: Wipe off material with paper towel or cloth. Wash off with soap and water. If skin irritation persists, call a physician.

Eye Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
5. FIRE FIGHTING MEASURES

Flash Point °F(C°): >200°F TCC
Recommended Extinguishing Media: Carbon Dioxide, Dry Chemicals, Foam.
Special Fire-Fighting Procedures: ***Warning: This container is pressurized with nitrogen. Do not remove rubber plug. Keep containers cool. Use equipment or shielding required to protect against bursting or venting of containers.

Hazardous Products of Combustion: Oxides of carbon, Oxides of nitrogen, Oxides of sulfur, Acetic acid, Metal oxide fumes, Silica fume, Formaldehyde
Unusual Fire/Explosion Hazards: Contents under pressure. Heated cans may burst. Use equipment or shielding to protect personnel from bursting containers.

Lower Explosive Limit: Not determined
Upper Explosive Limit: Not determined

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures: Eliminate all sources of ignition. Wipe or scrape up spill material. Maintain good ventilation for large spills. Place scrap material in a well-ventilated area and allow to cure to rubber. Clean up spills thoroughly as residue is slippery.

7. HANDLING AND STORAGE

Storage: Store away from heat, sparks or open flame. Do not store at temperatures above 100°F (38°C). Exposure to high temperatures may cause container to burst. Keep away from oxidizers. Store away from water or moisture.
Handling: Avoid contact with skin and eyes. Do not wear contact lenses. Use only in a well ventilated area. Do not take internally.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eyes: Safety glasses.
Skin: Neoprene or nitrile gloves recommended.
Ventilation: General; local exhaust ventilation as necessary to control any air contaminants to within their exposure limits (or to the lowest feasible levels when limits have not been established) during the use of this product.
Respiratory Protection: An approved organic vapor respirator should be worn when exposures are expected to exceed the applicable limits.
Comments: When heated to temperatures above 300 degrees F, in the presence of air, this product can form formaldehyde vapors. Formaldehyde is a potential cancer hazard and a known skin and respiratory sensitizer. Safe handling conditions may be maintained by keeping vapor concentrations below the OSHA permissible limit for formaldehyde

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Red paste
Odor: Acetic acid
Boiling Point: Not applicable, polymeric material
pH: Does not apply
Solubility in Water: Polymerized
Specific Gravity: 1.04
VOC(Wt.%): 3.0%; 0.25 lb/gal; 30 g/l
Vapor Pressure: 66 mm Hg
Vapor Density (Air=1): >1
Evaporation Rate: Not determined

10. STABILITY AND REACTIVITY

Chemical Stability: Stable at normal conditions
Hazardous Polymerization: Will not occur.
Incompatibilities: Polymerized by contact with moisture. Acetic acid liberated.
Conditions to Avoid: Moisture while storing. Do not expose to heat or store at temperatures above 120 F
Hazardous Products of Combustion: Oxides of carbon, Oxides of nitrogen, Oxides of sulfur, Acetic acid, Metal oxide fumes, Silica fume, Formaldehyde

11. TOXICOLOGICAL INFORMATION
See Section 3
12. ECOLOGICAL INFORMATION

No data available

13. DISPOSAL CONSIDERATIONS

Recommended Method of Disposal: Disposal should be made in accordance with federal, state and local regulations.
US EPA Waste Number: NH - Not a RCRA Hazardous Waste Material

14. TRANSPORTATION INFORMATION

DOT (49CFR 172)
Ground Transport (DOT)

DOT Shipping Name: Consumer Commodity
Hazard Class: ORM-D
UN/ID Number: None

IATA

Proper Shipping Name: Consumer Commodity (Not more than 1 liter)
Class or Division: Class 9
UN/ID Number: ID 8000

IMDG

Proper Shipping: Aerosols, Limited Quantity
Hazard Class: Class 2.2
UN Number: UN 1950
Marine Pollutant: None

15. REGULATORY INFORMATION

SARA 313 Chemicals: The following component(s) is listed as a SARA Section 313 Toxic Chemical.

NONE

California Proposition 65: No California Prop 65 chemicals are known to be present at or above the No Significant Risk Level

TSCA Inventory Status: All components of this product are listed (or exempt) on the EPA TSCA inventory.

16. OTHER INFORMATION

Estimated NFPA Rating: HEALTH 2, FLAMMABILITY 1, REACTIVITY 1.
Estimated HMIS Classification: HEALTH 2, FLAMMABILITY 1, PHYSICAL HAZARD 0
NFPA is a registered trademark of the National Fire Protection Assn.
HMIS is a registered trademark of the National Paint and Coatings Assn.

Prepared By: Denise Boyd, Manager-Environmental, Health & Safety
Company: Permatex. Inc. 10 Columbus Blvd. Hartford, CT USA 06106
Telephone No.: 1-87-Permatex  (877) 376-2839

Revision Date: October 27, 2009
Revision Number: 6
Manufactured For
Balkamp Inc.
2601 S. Holt Rd.
Indianapolis, IN 46241 (317-381-2272)

Material Safety Data Sheet

Manufactured for:
ARC
2601 S. Holt Rd.
Indianapolis, IN 46241
1-317-244-7241

Product Name: NAPA BRAKE FLUID – DOT 3
Product Numbers: 35-012, 35-032, 35-101, 35-155
24 Hour Emergency Phone Number: To be supplied by customer

NFPA Hazard Identification:
  Fire – 1  Health-2  Reactivity-0

1. Ingredients

<table>
<thead>
<tr>
<th>Component Name/ CAS Number</th>
<th>Hazardous</th>
<th>Percentage In Blend</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycol Ether Mixture</td>
<td>Yes</td>
<td>50 to 80</td>
<td>OSHA PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No Limit</td>
</tr>
<tr>
<td>Lubricity Additive Mixture</td>
<td>No</td>
<td>10 to 35</td>
<td>OSHA PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No Limit</td>
</tr>
<tr>
<td>Oxidation Inhibitor Mixture</td>
<td>No</td>
<td>&lt; 10</td>
<td>OSHA PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No Limit</td>
</tr>
<tr>
<td>Corrosion Inhibitor Mixture</td>
<td>No</td>
<td>&lt; 1</td>
<td>OSHA PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>No Limit</td>
</tr>
</tbody>
</table>

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200)

2. Physical Properties

Appearance: Pale Yellow Liquid

Odor: No Data
Molecular Weight: No Data

Specific Gravity (HFO=1): 1.03
Solubility In HFO: Soluble

Boiling Point: 430°F (221° C) Minimum
Vapor Pressure: <1.

Freezing Point: No Data
% Volatiles by Volume: Negligible

Evaporation Rate: Negligible
Vapor Density (Air=1): No Data

PH: No Data
Pour Point: No Data
3. **Fire and Explosive Hazards**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>280F</td>
</tr>
<tr>
<td>Flammable Limits in Air % Vol.</td>
<td>No Data</td>
</tr>
<tr>
<td>Method Used</td>
<td>COC</td>
</tr>
<tr>
<td>Auto Ignition Temp</td>
<td>No Data</td>
</tr>
<tr>
<td>Extinguishing Media</td>
<td>Water fog, foam, dry chemical or carbon dioxide</td>
</tr>
</tbody>
</table>

**Manufactured For**

Balkamp Inc.
2601 S. Holt Rd.
Indianapolis, IN  46241 (317-381-2272)

**Material Safety Data Sheet**

**Product Name:** NAPA BRAKE FLUID – DOT 3  
**Product Numbers:** 35-012, 35-032, 35-101, 35-155

**Special Fire Fighting Procedures:** Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur. Especially if sprayed into containers or hot, burning liquid. Do not use direct water stream as it may spread the fire.

**Unusual Fire and Explosion Hazards:** Dense smoke may be generated while burning. Carbon monoxide, carbon dioxide and other oxides may be generated as products of combustion.

4. **Reactivity Data**

**Stability:** Stable

**Conditions to Avoid:** Elevated Temperatures May Decompose Active Ingredient

**Incompatibilities:** May React with Strong Oxidizing Agents

**Hazardous Decomposition:** None

**Hazardous Polymerization:** Will Not Occur

5. **Health Hazard Summary**

**Eyes:** Avoid Eye Contact. May cause Moderate Eye Irritation.

**Skin Contact:** Avoid skin contact. Minimally irritating to the skin upon direct contact. Prolonged or repeated contact may cause skin irritation. May be absorbed through the skin. Contact with extremely hot material or damaged skin may result in absorption of potentially harmful or lethal amounts.

**Inhalation:** Avoid prolonged inhalation of vapors. Not a probable inhalation hazard at room temperature due to its low vapor pressure. Overexposure may lead to drowsiness, numbness and headache followed by dizziness and nausea.

**Ingestion:** Do not ingest. Ingestion of large quantities may be fatal.
Health Data: Prolonged and repeated exposure to large quantities may cause skin irritation and drowsiness. Ingestion of large, single doses of chemicals similar to those in this product, can be harmful, even fatal. There is no relevant information available on the major components. The minor components when tested separately (usually by ingestion) caused kidney, liver, gastrointestinal, testicular and central nervous system effects.

Manufactured For
Balkamp Inc.
2601 S. Holt Rd.
Indianapolis, IN 46241 (317-381-2272)

Material Safety Data Sheet

Product Name: NAPA BRAKE FLUID – DOT 3
Product Numbers: 35-012, 35-032, 35-101, 35-155

bladder stones, nausea and vomiting. Not carcinogenic according to the OSHA hazard communication standard.

6. Recommended First Aid Treatment

Eyes: Flush with large amounts of water for at least 15 minutes or until irritation subsides. Consult physician if irritation or pain persists.

Skin: Remove contaminated clothing and flush with water and mild Soap. If redness or irritation persists, seek medical attention.

Inhalation: If breathing becomes difficult, remove to fresh air immediately. See medical attention.

Ingestion: Do not induce vomiting. Seek medical attention.

7. Health Protection Information

Ventilation: Adequate ventilation must be provided to maintain concentrations below the specified exposure or flammable limits if vapor or mist is generated when the material is heated.

Respiration Protection: Respiratory protection is not required under conditions of normal use. If vapor or mist is generated when material is heated or handled. Use a Niosh approved organic vapor respirator with a dust and mist filter.

Skin Protection: None required in normal use. For prolonged or repeated contact, use impervious clothing (gloves, aprons etc.) to cover exposed body parts.

Eye Protection: Not required under normal use. Use splash-proof safety glasses or plastic face shields if splashing may occur.

Other: Consumption of food and beverage should be avoided in work areas where hydrocarbons are present. Always wash hands and face with soap and water before eating, drinking or smoking.
8. **Environmental Procedures**

   Spills or Releases: Notify appropriate authorities of spills. Contain spill immediately. Do not allow spill to enter sewers or watercourses. Remove all sources of ignition. Absorb with appropriate inert material such as sand, clay etc. Large spills may be picked up using vacuum pumps, shovels, buckets or other means and placed in drums or other suitable containers.

   **Material Safety Data Sheet**

   **Product Name:** NAPA BRAKE FLUID – DOT 3
   **Product Numbers:** 35-012, 35-032, 35-101, 35-155

   Waste Disposal: Dispose in accordance with federal, state and local regulations.

9. **Storage and Handling Requirements**

   **Handling Procedures:** Store in closed containers away from heat, sparks, flame or oxidizing materials. Do not transfer to unmarked containers. Use in well ventilated areas. Fire extinguishers should be kept readily available as per NFPA 30 and OSHA 1910.106-Flammable and Combustible Liquids.

10. **Shipping Information**

    **DOT Label:** Not regulated

11. **Regulatory Information**

    This product contains the following SARA Title III, Section 313 Reportable Chemicals at or greater than 1.0% (0.1% for Carcinogens).

    | Glycolethers | CAS#   | <100% |
    |--------------|--------|-------|
    |              |        |       |

    All ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Inventory.

    **NOTE:** The information contained herein is based on data considered accurate and available to us. However, no warranty is expressed or implied regarding accuracy of the data or results to be obtained from the use thereof. It is user’s obligation to determine conditions of safe use of the product and we assume no responsibility for its use.

    **Original Issue:** 11-15-99
Section 1 - Product and Company Identification

PRODUCT NAME: NAPA Lith-Ease Grease (Plastic Tub 1 pound) 765-1393

MANUFACTURER'S NAME: AGS Company
2651 Hoyt St.
Muskegon Hts., MI 49444

EMERGENCY TELEPHONE NUMBER
(800)255-3924

MISCELLANEOUS INFORMATION
(616)733-2101

Section 2 - Hazardous Ingredients

HAZARDOUS INGREDIENT | CAS NO. | WGT. % | TLV
------------------------|--------|--------|-----
White Lithium Grease    | Not Assigned | 100% | 5 cu. m.

NOTE:

Section 3 - Hazards Identification

EYES: May cause irritation.

SKIN: May cause irritation on prolonged or repeated contact.

INGESTION: Contains petroleums, may cause diarrhea and nausea.

INHALATION: When at elevated temperature or aerosolized, may cause irritation of the respiratory tract.

OTHER EFFECTS: Not known.

Section 4 - First Aid Measures

EYES: Flush with water for at least 15 minutes. Call a physician
immediately.

SKIN: Wash thoroughly with soap and water.

INGESTION: Do not induce vomiting. Call a physician immediately.

INHALATION: Of oil mist from grease; remove victim to fresh air. Administer oxygen or artificial respiration as required. Consult a physician.

==================================
MATERIAL SAFETY DATA SHEET
Effective Date: 9-6-94 Revision Date: none
NAPA Lith-Ease Grease (Plastic Tub 1 pound) 765-1393
Code: AGS
Page: 2
==================================
Section 5 - Firefighting Measures

FLASH POINT       :  400F
METHOD            :  C.O.C.
AUTO IGNITION TEMP:  Not Determined

FLAMMABLE LIMITS:
  LEL:  Not Determined
  UEL:  Not Determined

EXTINGUISHING MEDIA:  Dry chemical, carbon dioxide, foam, water fog, sand or earth.

SPECIAL PROCEDURES:  Wear self-contained breathing apparatus.

UNUSUAL HAZARDS:  Dense smoke.

==================================
Section 6 - Environmental Release Measures

SPILL PROCEDURE:  Transfer bulk of material to a container. Remove the residue with an absorbent material.

==================================
Section 7 - Handling and Storage

CONDITIONS TO AVOID:  None listed.

==================================
Section 8 - Exposure Controls/Personal Protection

VENTILATION REQUIREMENTS:  General exhaust exceptable where a TLV of 5 cu.
m. as mineral oil will not be exceeded.

EYES : Yes
GLOVES : Yes
CLOTHING : No
RESPIRATORY: No

OTHER: Eye wash in work area.

============================================================================
MATERIAL SAFETY DATA SHEET
Effective Date: 9-6-94                                  Revision Date: none
NAPA Lith-Ease Grease (Plastic Tub 1 pound) 765-1393
Code: AGS
Page: 3
============================================================================
Section 9 - Physical and Chemical Properties
pH SUPPLIED     : Not Applicable
pH DILUTED      : Not Applicable
WATER SOLUBILITY: Nil
SPECIFIC GRAVITY: (Water=1) 0.90
MELTING POINT   : 360F (min.)
BOILING POINT   : Not Applicable
% VOLATILES     : Not Applicable
VAPOR PRESSURE  : Not Applicable
VAPOR DENSITY   : Not Applicable
EVAPORATION RATE: Not Applicable
APPEARANCE      : Pale yellow semi-solid with mineral oil odor.

============================================================================
Section 10 - Stability and Reactivity
UNSTABLE AND/OR AUTO REACTIVE: Stable
INCOMPATIBLE MATERIALS: Strong oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: CO and carbon dioxide.

============================================================================
Section 11 - Toxicological Information
Not available.

============================================================================
Section 12 - Ecological Information
Not available.

============================================================================
Section 13 - Disposal Considerations

DISPOSAL METHOD: Removal by an approved, licensed waste hauler.

EPA WASTE I.D. NO.: Not Reg.

============================================================================
Section 14 - Transport Information

Not available.

============================================================================
Section 15 - Regulatory Information

Not available.

============================================================================
MATERIAL SAFETY DATA SHEET

Effective Date: 9-6-94 Revision Date: none

NAPA Lith-Ease Grease (Plastic Tub 1 pound) 765-1393

Code: AGS

Page: 4

============================================================================
Section 16 - Other Information

TRADE NAME : NAPA White Lithium Grease
COMMON NAME : Lith-Ease
CONTAINER SIZE: Plastic Tube, 1 pound

NFPA: HEALTH : 0
FLAMMABILITY : 1
REACTIVITY : 0
SPECIFIC HAZARD: N/A

HMIS: HEALTH : 0
FLAMMABILITY : 1
REACTIVITY : 0

PROTECTIVE EQUIPMENT: A

***The information herein is given in good faith, no warranty, expressed or implied, is made.***
PRODUCT NAME: NAPA/MAC'S STARTING FLUID #7216

PUBLIC UTILITY DISTR. NO. 1
OF CLALLAM COUNTY
P.O. BOX 1117
PORT ANGELES, WA 98362
ATTN: JIM LACKEY-PURCH. AGENT

SECTION I- PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: SOLVENT BLEND

DOT HAZARD CLASSIFICATION: FLAMMABLE COMPRESSED GAS (173.380)

SECTION II- COMPONENTS

INGREDIENT % (BY WT) PEL TLY NOTE

ETHER Gas B: 60-29-7
30-60 400 400 400 ppm

ALIPHATIC HYDROCARBON Gas B: 142-82-5
30-60 500 400 ppm

N O I S H RECOMMENDS A LIMIT OF 55 PPM - 8 HOUR TIME WEIGHTED AVERAGE, 440 PPM CEILING.

PROPERTY REFINEMENT MEASUREMENT

BOILING POINT FOR COMPONENT (30-60 %) 94.00 DEG F
0 750.00 MMHG

VAPOR PRESSURE FOR COMPONENT (30-60 %) 90.00 MMHG
0 68.00 DEG F

SPECIFIC VAPOR DENSITY

SPECIFIC GRAVITY

PERCENT VOLATILES

EVAPORATION RATE SLOWER THAN ETHER

SECTION IV- FIRE AND EXPLOSION INFORMATION

FLASH POINT (TC) -88.0 DEG F

EXPLOSIVE LIMIT (LOWEST VALUE OF COMPONENT) LOWER - 1.1%

EXTINGUISHING MEDIA: REGULAR FOAM OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS: CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-Demand OR OTHER POSITIVE PRESSURE MODE WHEN FIGHTING FIRES.

WATER OR FOAM MAY CAUSE FROTHING WHICH CAN BE VIOLENT AND POSSIBLY ENDANGER THE LIFE OF THE FIREFIGHTER. ESPECIALLY IF SPRAYED INTO CONTAINERS OF HOT, BURNING LIQUID

SPECIAL FIRE & EXPLOSION HAZARDS: NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY.

VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND OR BE MOVED BY VENTILATION AND IGNITED BY HEAT, PILLOT LIGHTS, OTHER FLAMES AND IGNITION SOURCES AT LOCATIONS DISTANT FROM MATERIAL HANDLING POINT.

NFPA CODES: HEALTH- 1 FLAMMABILITY- 4 REACTIVITY- 0

EFFECTS OF ACUTE OVEREXPOSURE: FOR COMPONENT

EYES - CAN CAUSE SEVERE IRRITATION, REDNESS, TEARING, BLURRED VISION.

SIN - PROLONGED OR REPEATED CONTACT CAN CAUSE MODERATE IRRITATION, DEFATTING, DERMATITIS.

BREATHEING - EXCESSIVE INHALATION OF VAPORS CAN CAUSE NASAL AND RESPIRATORY IRRITATION, DIZZINESS, WEAKNESS, FATIGUE, NAUSEA, HEADACHE, POSSIBLE SCLEROSIS, AND EVEN ASHYPIXATION.

SWALLOWING - CAN CAUSE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA. ASPIRATION OF MATERIAL INTO THE LUNGS CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

FIRST AID:
IF ON SKIN: THOROUGHLY WASH EXPOSED AREA WITH SOAP AND WATER. REMOVE CONTAMINATED CLOTHING. LAUNDER CONTAMINATED CLOTHING BEFORE RE-USE.

IF IN EYES: FLUSH WITH LARGE AMOUNTS OF WATER. LIFTING UPPER AND LOWER LIDS, get medical attention.

IF SWALLOWED: DO NOT INDUCE VOMITING. KEEP PERSON WARM, QUIET, AND GET MEDICAL ATTENTION. ASPIRATION OF MATERIAL INTO THE LUNGS DUE TO VOMITING CAN CAUSE CHEMICAL PNEUMONITIS WHICH CAN BE FATAL.

IF BREATHED, IF AFFECTED, REMOVE INDIVIDUAL TO FRESH AIR. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN. IF BREATHING HAS STopped, GIVE ARTIFICIAL RESPIRATION. KEEP PERSON WARM, QUIET AND GET MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:
INHALATION
SKIN CONTACT

SECTION VI - REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR
STABILITY: STABLE
INCOMPATIBILITY: AVOID CONTACT WITH: STRONG OXIDIZING AGENTS.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: ABSORB LIQUID ON PAPER, VERMICULITE, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND TRANSFER TO HOOD.

LARGE SPILL: ELIMINATE ALL IGNITION SOURCES (FLAMES, FLAMES INCLUDING PILOT LIGHTS, ELECTRICAL SPARKS). PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE. COVER SPILL WITH DRY DIRT, SODA ASH, LOAM, OR FLUSSING DETERGENT. PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELLED INTO CONTAINERS. PREVENT RUN-OFF TO SEWERS, STREAMS OR OTHER BODIES OF WATER. IF RUN-OFF OCCURS, NOTIFY PROPER AUTHORITIES AS REQUIRED, THAT A SPILL HAS OCCURRED.

WASTE DISPOSAL METHOD:

SMALL SPILL: ALLOW VOLATILE PORTION TO EVAPORATE IN HOOD. ALLOW SUFFICIENT TIME FOR VAPORS TO COMpletely CLEAR HOOD BEFORE WORK. DISPOSE OF REMAINING MATERIAL IN ACCORDANCE WITH APPLICABLE REGULATIONS.

LARGE SPILL: DESTROY BY LIQUID INCINERATION. CONTAMINATED ABSORBENT MAY BE DEPOSITED IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED

RESPIRATORY PROTECTION: IF TLV OF THE PRODUCT OR ANY COMPONENT IS EXCEEDED, A NIOSH/MSHA JOINTLY APPROVED AIR SUPPLIED RESPIRATOR IS ADVISED IN ABSENCE OF PROPER VENTILATION. ENVIRONMENTAL CONTROL REGULATIONS ALSO PERMIT OTHER NIOSH/MSHA RESPIRATORS UNDER SPECIFIED CONDITIONS. (SEE YOUR SAFETY EQUIPMENT SUPPLIER). ENGINEERING OR ADMINISTRATIVE CONTROLS SHOULD BE IMPLEMENTED TO REDUCE EXPOSURE.

VENTILATION: PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW TLV/CS.

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES SUCH AS: NEOPRENE, NITRILE RUBBER

EYE PROTECTION: CHEMICAL SPLASH GOGGLES IN COMPLIANCE WITH OSHA REGULATIONS ARE ADVISED. HOWEVER, OSHA REGULATIONS ALSO PERMIT OTHER TYPE SAFETY GLASSES.

OTHER PROTECTIVE EQUIPMENT: TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, WEAR IMPERVIOUS CLOTHING AND BOOTS.

SECTION IX - SPECIAL PRECAUTIONS OR OTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMBOTTLED. SINCE EMBOTTLED CONTAINERS REQUIRING CONFINES (VAPOR OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DatasheET MUST BE OBSERVED.

THE SPECIFIC CHEMICAL IDENTIFICATION HAS BEEN WITHHELD AS A TRADE SECRET.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE COMPLETE OR CORRECT. THE RECIPIENT IS ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.
**SECTION 1  PRODUCT AND COMPANY IDENTIFICATION**

**Trade Name:** OATEY PVC HEAVY DUTY CLEAR CEMENT  
**Product No.:** 30850, 30863, 30876, 30882, 31008, 31011, 31950, 31951, 31952, 31953  
**Product Use:** Cement for PVC Plastic Pipe  
**Formula:** PVC Resin in Solvent Solution  
**Synonyms:** PVC Plastic Pipe Cement  
**Firm Name & OATEY CO.  4700 West 160th Street  P.O. Box 35906  Cleveland, Ohio  44135, U.S.A.          http://www.oatey.com  
**Oatey Phone Number:** (216) 267-7100 or (800) 321-9532  
**Emergency Phone Numbers:**  
For Emergency First Aid call 1-877-740-5015. For chemical transportation emergencies ONLY, call Chemtrec at 1-800-424-9300. Outside the U.S. 1-703-527-3887.  
**Prepared By:** Technical Department  
**Preparation Date:** November 11, 2008

**SECTION 2  COMPOSITION/INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>INGREDIENTS</th>
<th>%wt/wt</th>
<th>CAS NUMBER</th>
<th>ACGIH TLV TWA</th>
<th>OSHA PEL TWA</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrofuran</td>
<td>40 – 60%</td>
<td>109-99-9</td>
<td>50 ppm(skin)</td>
<td>200 ppm</td>
<td>25 ppm (Mfg) STEL</td>
</tr>
<tr>
<td>Methyl Ethyl Ketone</td>
<td>0 – 28%</td>
<td>78-93-3</td>
<td>200 ppm</td>
<td>200 ppm</td>
<td>None</td>
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<tr>
<td>Acetone</td>
<td>0 – 20%</td>
<td>67-64-1</td>
<td>500 ppm</td>
<td>1000 ppm</td>
<td>None</td>
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<tr>
<td>PVC Resin</td>
<td>12 – 20%</td>
<td>9002-86-2</td>
<td>10 mg/m3</td>
<td>15 mg/m3</td>
<td>None</td>
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<tr>
<td>(Non-hazardous)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclohexanone</td>
<td>10 – 20%</td>
<td>108-94-1</td>
<td>20 ppm(skin)</td>
<td>50 ppm</td>
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<tr>
<td>(Non-hazardous)</td>
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<td></td>
<td></td>
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<tr>
<td>Amorphous Fumed Silica</td>
<td>1 – 4%</td>
<td>112945-52-5</td>
<td>10 mg/m3</td>
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<td>None</td>
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<tr>
<td>(Non-hazardous)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OSHA Hazard Classification: Flammable, irritant, organ effects

**SECTION 3  HAZARDS IDENTIFICATION**

**Emergency Overview:**  
Clear liquid with an ether-like odor. Extremely flammable liquid and vapor. Vapors may cause flash fire. May cause eye and skin irritation. Inhalation of vapors or mist may cause respiratory irritation and central nervous system effects. Swallowing may cause irritation, nausea, vomiting, diarrhea and kidney or liver disorders. Aspiration hazard. May be fatal if swallowed. Symptoms may be delayed.

**SECTION 4  FIRST AID MEASURES**

**Skin:** Remove contaminated clothing immediately. Wash all exposed areas with soap and water. Get medical attention if irritation develops. Remove dried cement with Oatey Plumber’s Hand Cleaner or baby oil.  
**Eyes:** If material gets into eyes or if fumes cause irritation, immediately flush eyes with plenty of water until chemical is removed. If irritation persists, get medical attention immediately.  
** Inhalation:** If symptoms of exposure develop, remove to fresh air. If breathing becomes difficult, administer oxygen. Administer artificial respiration if breathing has stopped. Seek immediate medical attention.  
**Ingestion:** DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention by calling a Poison Control Center, or hospital emergency room. If medical advice cannot be obtained, then take the person and product to the nearest medical emergency treatment center or hospital.
SECTION 5  FIRE FIGHTING MEASURES
Flashpoint / Method: 14 - 23 Degrees F. (~10 to -5 Degrees C) / CCCFP
Flammability: LEL = 1.8 % Volume, UEL = 11.8 % Volume
Extinguishing Media: exposed container with water. Water may be ineffective as an extinguishing agent.
Special Fire Fighting: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored
Unusual Fire and Explosion Hazards: Extremely flammable liquid. Keep away from heat and all sources of ignition including sparks, flames, lighted cigarettes and pilot lights. Containers may rupture or explode in the heat of a fire. Vapors are heavier than air and may travel to a remote ignition source and flash back.
This product contains tetrahydrofuran that may form explosive organic peroxide when exposed to air or light or with age.
Hazardous Combustion will produce toxic and irritating vapors including decomposition products:
- carbon monoxide, carbon dioxide and hydrogen chloride.

SECTION 6  ACCIDENTAL RELEASE MEASURES
Spill or Leak Procedures: Remove all sources of ignition and ventilate area. Stop leak if it can be done without risk. Personnel cleaning up the spill should wear appropriate personal protective equipment, including respirators if vapor concentrations are high. Soak up spill with an inert absorbent such as sand, earth or other non-combustible material. Put absorbent material in covered, labeled metal containers. Prevent liquid from entering watercourses, sewers and natural waterways. Report releases to authorities as required. See Section 13 for disposal information.

SECTION 7  HANDLING AND STORAGE
Handling: Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Use with adequate ventilation (equivalent to outdoors). Wash thoroughly after handling. Do not eat, drink or smoke in the work area. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use.
Storage: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers closed when not in use.
Other: "Empty" containers retain product residue and can be hazardous. Follow all MSDS precautions in handling empty containers. Do not cut or weld on or near empty or full containers.

SECTION 8  EXPOSURE CONTROLS/PERSONAL PROTECTION
Ventilation: Open doors & windows. Provide ventilation capable of maintaining emissions at the point of use below recommended exposure limits. If used in enclosed area, use exhaust fans. Exhaust fans should be explosion-proof or set up in a way that flammable concentrations of solvent vapors are not exposed to electrical fixtures or hot surfaces.
Respiratory Protection: For operations where the exposure limit may be exceeded, a NIOSH approved organic vapor respirator or supplied air respirator is recommended. Equipment selection depends on contaminant type and concentration, select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.
Skin Protection: Rubber gloves are suitable for normal use of the product. For long exposures chemical resistant gloves may be required such as 4H(tm)
or Silver Shield™ to avoid prolonged skin contact.
Eye Protection: Safety glasses with side shields or safety goggles.
Other: Eye wash and safety shower should be available.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES
Boiling Point: 151 Degrees F / 66 Degrees C
Melting Point: Not applicable
Vapor Pressure: 145 mmHg @ 20 Degrees C
Vapor Density: (Air = 1) 2.5
Volatile Components: 80-84%
Solubility In Water: Negligible
pH: Not applicable
Specific Gravity: 0.93 +/- 0.02 @ 20 Degrees C
Evaporation Rate: (BUAC = 1) = 5.5 - 8.0
Appearance: Clear Liquid
Odor: Ether-Like
Will Dissolve In: Tetrahydrofuran
Material Is: Liquid

SECTION 10 STABILITY AND REACTIVITY
Stability: Stable.
Conditions To Avoid: Avoid heat, sparks, flames and other sources of ignition.
Hazardous Combustion will produce toxic and irritating vapors
Decomposition including carbon monoxide, carbon dioxide and hydrogen chloride.
Incompatibility/ Oxidizing agents, alkalis, amines, ammonia, acids, chlorine
Materials To Avoid: compounds, chlorinated inorganics (potassium, calcium and sodium hypochlorite) and hydrogen peroxides. May attack plastic, resins and rubber.
Hazardous Polymerization: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION
Inhalation: Vapors or mists may cause mucous membrane and respiratory irritation, coughing, headache, dizziness, dullness, nausea, shortness of breath and vomiting. High concentrations may cause central nervous system depression, narcosis and unconsciousness. May cause kidney, liver and lung damage.
Skin: May cause irritation with redness, itching and pain. Methyl ethyl ketone and cyclohexanone may be absorbed through the skin causing effects similar to those listed under inhalation.
Eye: Vapors may cause irritation. Direct contact may cause irritation with redness, stinging and tearing of the eyes. May cause eye damage.
Ingestion: Swallowing may cause abdominal pain, nausea, vomiting and diarrhea. Aspiration during swallowing or vomiting can cause chemical pneumonia and lung damage. May cause kidney and liver damage.
Chronic Toxicity: Prolonged or repeated overexposure cause dermatitis and damage to the kidney, liver, lungs and central nervous system.
Toxicity Data:
- Acetone: Oral rat LD50: 5,800 mg/kg
  Inhalation rat LC50: 50,100 mg/m3/8 hours
  Oral rat LD50: 1,620 mg/kg
- Cyclohexanone: Inhalation rat LC50: 8,000 ppm/4 hours
  Skin rabbit LD50: 1 mL/kg
- Tetrahydrofuran: Oral rat LD50: 1,650 mg/kg
  Inhalation rat LC50: 21,000 ppm/3 hours
- Methyl Ethyl Ketone: Oral rat LD50: 2,737 mg/kg
  Inhalation rat LC50: 23,500 mg/m3/8 hours
  Skin rabbit LD50: 6,480 mg/kg
Sensitization: None of the components are known to cause sensitization.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA. The National Toxicology Program has reported that exposure of mice and rats to tetrahydrofuran (THF) vapor levels up to 1800 ppm 6 hr/day, 5 days/week for their lifetime caused an increased incidence of kidney tumors in male rats and liver tumors in female mice. The significance of these findings for human health is unclear at this time, and may be related to "species specific" effects. Elevated incidences of tumors in humans have not been reported for THF. ACGIH has classified cyclohexanone (CYH) and tetrahydrofuran as “A3,” Confirmed Animal Carcinogens with Unknown Relevance to Humans.

Mutagenicity: Cyclohexanone has been positive in bacterial and mammalian assays. Acetone, methyl ethyl ketone and tetrahydrofuran are generally thought not to be mutagenic.

Reproductive Toxicity: Methyl ethyl ketone and cyclohexanone have been shown to cause embryofetal toxicity and birth defects in laboratory animals. Acetone and tetrahydrofuran has been found to cause adverse developmental effects only when exposure levels cause other toxic effects to the mother.

Medical Conditions Aggravated By Exposure: Persons with pre-existing skin, lung, kidney or liver disorders may be at increased risk from exposure to this product.

SECTION 12 ECOLOGICAL INFORMATION

This product is not expected to be toxic to aquatic organisms. Cyclohexanone: 96 hour LC50 values for fish is over 100 mg/L. Tetrahydrofuran: 96 hour LC50 fathead minnow: 2160 mg/L. Acetone: 96 hour LC50 for fish is greater than 100 mg/L. Methyl Ethyl Ketone: 96 hour LC50 for fish is greater than 100 mg/L.

VOC Information: Make sure that use of this product complies with local VOC emission regulations, where they exist.

VOC Level: Maximum 650 g/L per SCAQMD Test Method 316A.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with current local, state and federal regulations.

RCRA Hazardous Waste Number: U002, U057, U159, U213
EPA Hazardous Waste ID Number: D001, D035, F003, F005
EPA Hazard Waste Class: Ignitable Waste. Toxic Waste (Methyl Ethyl Ketone content)

SECTION 14 TRANSPORT INFORMATION

DOT Less than 1 liter (0.3 gal) Greater than 1 Liter (0.3 gal)

UN/NA Number: None UN1133
Proper Shipping Name: Consumer Commodity Adhesives
Hazard Class: ORM-D 3
Packing Group: None PGII
Hazard Labels: None Flammable Liquid
IMDG
UN Number: UN1133 UN1133
Proper Shipping Name: Adhesives Adhesives
Hazard Class: 3 3
Packing Group: II II
Label: None (Limited Quantities are excepted from labeling)

Flashpoint (deg C) -10 to -5 Degrees C -10 to -5 Degrees C

SECTION 15 REGULATORY INFORMATION

Hazard Category for Section 311/312: Acute Health, Chronic Health, Flammable

Section 302 Extremely Hazardous Substances (TPQ): This product does not contain chemicals regulated under SARA Section 302.

Section 313 Toxic Chemicals: This product does not contain chemicals subject to SARA Title III Section 313 Reporting requirements.

CERCLA 103 Reportable Quantity: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Tetrahydrofuran (60% maximum) of 1,000 lbs, is 1,667 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product contains trace amounts of chemicals known to the State of California to cause cancer. Under normal use conditions, exposure to these chemicals at levels above the State of California “No Significant Risk Level” (NSRL) are unlikely. Oatey strongly encourages the use of proper personal protective equipment (PPE) and ventilation guidelines noted in Section 8 to minimize exposure to these chemicals.

TSCA Inventory: All of the components of this product are listed on the TSCA inventory.

Canadian WHIMS Classification: Class B, Division 2; Class D, Division 2, Subdivision B; Class D, Division 2, Subdivision A. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

SECTION 16 OTHER INFORMATION

NFPA and HMIS:

NFPA Hazard Signal: Health: 2  Flammability: 3  Reactivity: 1  Special: None
HMIS Hazard Signal: Health: 2*  Flammability: 3  Reactivity: 1  PPE: G

Disclaimer:
The information herein has been compiled from sources believed to be reliable, up-to-date, and is accurate to the best of our knowledge. However, Oatey cannot give any guarantees regarding information from other sources, and expressly does not make warranties, nor assumes any liability for its use.
Material Safety Data Sheet

Supply Co. - PB PENETRATING CATALYST (AEROSOL)

Document Nbr: 063199
Class C Parts IDs 16GDLTWINPK,21431,C37043,CD21431
"BLASTER" (R*)

CONFORMS TO OSHA HAZCOM 2012 & NOM-018-STPS-2000 STANDARDS

SAFETY DATA SHEET

-------SECTION 1: IDENTIFICATION-------

1.1 PRODUCT IDENTIFIER:

PRODUCT NAME: PB PENETRATING CATALYST (AEROSOL)

PRODUCT CODE: 16-PB, 8-PB, 8-PBS, PBT5, 20-PB

1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE:
USE: LUBRICANT

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

NAME/ADDRESS:
THE BLASTER CORPORATION
8500 SWEET VALLEY DRIVE
VALLEY VIEW, OHIO 44125
USA

TELEPHONE NUMBER:
T: (216) 901-5800
F: (216) 901-5801

1.4 EMERGENCY TELEPHONE NUMBER:
EMERGENCY TELEPHONE NUMBER:
CHEMTREC: (800) 424-9300

DATE OF PREPARATION: MAY 26, 2014

VERSION #: 1.0
SECTION 2: HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE CHEMICAL ACCORDING TO OSHA HAZCOM 2012:

HAZARD CLASS:
FLAMMABLE AEROSOL 2
GASES UNDER PRESSURE (DISSOLVED GAS)
SERIOUS EYE IRRITATION 2A
CARCINOGENICITY 2
ASPIRATION HAZARD 1

2.2 LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012:

HAZARD PICTOGRAM:
FLAME
GAS CYLINDER
EXCLAMATION MARK
HEALTH HAZARD

SIGNAL WORD: DANGER

HAZARD STATEMENT:
FLAMMABLE AEROSOL. CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED. CAUSES SERIOUS EYE IRRITATION. SUSPECTED OF CAUSING CANCER. MAY BE FATAL IF SWALLOWED AND ENTERS AIRWAYS.

PREVENTION:
KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. - NO SMOKING.
DO NOT SPRAY ON AN OPEN FLAME OR OTHERignition SOURCE.

PRESSURIZED CONTAINER:
DO NOT PIERCE OR BURN, EVEN AFTER USE. WASH HANDS THOROUGHLY AFTER HANDLING.
OBTAIN SPECIAL INSTRUCTIONS BEFORE USE. DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD. WEAR PROTECTIVE GLOVES/PROTECTIVE CLOTHING/EYE PROTECTION/FACE PROTECTION.

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 SWALLOWED:
IMMEDIATELY CALL A POISON CENTER OR DOCTOR. DO NOT INDUCE VOMITING.

STORAGE:
PROTECT FROM SUNLIGHT. DO NOT EXPOSE TO TEMPERATURES EXCEEDING
50 DEG. C/122 DEG. F. STORE IN A WELL-VENTILATED PLACE. STORE LOCKED UP.

DISPOSAL:
DISPOSE OF CONTENTS AND CONTAINER IN ACCORDANCE WITH ALL LOCAL, REGIONAL, NATIONAL AND INTERNATIONAL REGULATIONS.

2.3 ADDITIONAL INFORMATION:

HAZARDS NOT OTHERWISE CLASSIFIED: NOT APPLICABLE.

8% OF THE MIXTURE CONSISTS OF INGREDIENT(S) OF UNKNOWN ACUTE TOXICITY.

THIS PRODUCT IS A HAZARDOUS CHEMICAL AS DEFINED BY NOM-018-STPS-2000.

MEXICO CLASSIFICATION:

2 4 0

BLUE = HEALTH
RED = FLAMMABILITY
YELLOW = REACTIVITY
WHITE = SPECIAL

HAZARD RATING:
0 = MINIMAL
1 = SLIGHT
2 = MODERATE
3 = SEVERE
4 = EXTREME

-------SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS -------

3.1 MIXTURES:

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>UN #</th>
<th>H / F / R / *</th>
<th>CAS NO</th>
<th>WT. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED LIGHT</td>
<td>NOT AVAILABLE</td>
<td>64742-47-8</td>
<td>50 - 60</td>
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<tr>
<td>SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC</td>
<td>UN1270</td>
<td>NOT AVAILABLE</td>
<td>64742-94-5</td>
<td>20 - 30</td>
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<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC</td>
<td>NOT AVAILABLE</td>
<td>64742-52-5</td>
<td>20 - 30</td>
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<tr>
<td>CARBON DIOXIDE</td>
<td>UN1013</td>
<td>1/0/0</td>
<td>124-38-9</td>
<td>1 - 5</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>UN1334/UN2304</td>
<td>2/2/0</td>
<td>91-20-3</td>
<td>2 - 3</td>
</tr>
</tbody>
</table>
DINONYLPHENOL,                  NOT                            NOT AVAILABLE  39464-64-7 0.5 - 1.5 ETHOXYLATED, PHOSPHATED  AVAILABLE

THE EXACT PERCENTAGE (CONCENTRATION) OF COMPOSITION HAS BEEN WITHHELD AS
A TRADE SECRET IN ACCORDANCE WITH PARAGRAPH (I) OF SUBSECTION 1910.1200.

* PER NOM-018-STPS-2000

-------SECTION 4: FIRST - AID MEASURES -------

4.1 DESCRIPTION OF THE FIRST AID MEASURE:

EYE:
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.

SKIN:
IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER. REMOVE
CONTAMINATED CLOTHING AND SHOES. WASH CLOTHING BEFORE REUSE. CALL A
PHYSICIAN IF IRRITATION DEVELOPS AND PERSISTS.

INHALATION:
IF BREATHING IS DIFFICULT, REMOVE TO FRESH AIR AND KEEP AT REST IN A
POSITION COMFORTABLE FOR BREATHING. GET MEDICAL ADVICE/ATTENTION IF YOU
FEEL UNWELL.

INGESTION:
IF SWALLOWED, DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY MEDICAL
PERSONNEL. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. GET
IMMEDIATE MEDICAL ADVICE/ATTENTION.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

EYE:
CAUSES SERIOUS EYE IRRITATION. SYMPTOMS MAY INCLUDE DISCOMFORT OR PAIN,
EXCESS BLINKING AND TEAR PRODUCTION, WITH MARKED REDNESS AND SWELLING
OF THE CONJUNCTIVA.

SKIN:
MAY CAUSE SKIN IRRITATION. SYMPTOMS MAY INCLUDE REDNESS, DRYING, DEFATTING
AND CRACKING OF THE SKIN.

INHALATION:
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.

INGESTION: MAY CAUSE RESPIRATORY TRACT IRRITATION.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS
NEEDED:

NOTE TO PHYSICIANS: SYMPTOMS MAY NOT APPEAR IMMEDIATELY.

SPECIFIC TREATMENTS:
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 EXTINGUISHING MEDIA:

SUITABLE EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE OR FOAM.

UNSUITABLE EXTINGUISHING MEDIA:
WATER MAY BE INEFFECTIVE FOR EXTINGUISHING FIRE.

5.2 SPECIAL HAZARDS ARISING FROM THE CHEMICAL:

PRODUCTS OF COMBUSTION:
MAY INCLUDE, AND ARE NOT LIMITED TO: OXIDES OF CARBON, HYDROCARBONS.

5.3 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS:
KEEP UPWIND OF FIRE. WEAR FULL FIRE FIGHTING TURN-OUT GEAR (FULL BUNKER GEAR) AND RESPIRATORY PROTECTION (SCBA). COOL CLOSED CONTAINERS EXPOSED TO FIRE WITH WATER. DO NOT USE A SOLID WATER STREAM AS IT MAY SCATTER AND SPREAD FIRE. CONTAINERS MAY EXPLODE WHEN HEATED.

-------SECTION 6: ACCIDENTAL RELEASE MEASURES-------

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:
USE PERSONAL PROTECTION RECOMMENDED IN SECTION 8. ISOLATE THE HAZARD AREA AND DENY ENTRY TO UNNECESSARY AND UNPROTECTED PERSONNEL. ELIMINATE SOURCES OF ignition.

6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING-UP:

METHODS FOR CONTAINMENT:
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. VAPORS MAY BE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND TO A DISTANT IGNITION SOURCE AND FLASH BACK. PROVIDE VENTILATION.

-------SECTION 7: HANDLING AND STORAGE-------

7.1 PRECAUTIONS FOR SAFE HANDLING:
HANDLING:
KEEP AWAY FROM SOURCES OF IGNITION. - NO SMOKING. AVOID CONTACT WITH SKIN
AND EYES. AVOID BREATHING DUST/FUME/GAS/MIST/VAPOURS/SPRAY. DO NOT SWALLOW.
WHEN USING DO NOT EAT, DRINK OR SMOKE. DO NOT SPRAY ON AN OPEN FLAME OR
OTHER IGNITION SOURCE. USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA.

PRESSURIZED CONTAINER:
DO NOT PIERCE OR BURN, EVEN AFTER USE. (SEE SECTION 8)

GENERAL HYGIENE ADVICE:
LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. WASH HANDS BEFORE EATING,
DRINKING, OR SMOKING.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

STORAGE:
KEEP LOCKED UP AND OUT OF REACH OF CHILDREN. DO NOT EXPOSE TO TEMPERATURES
EXCEEDING 50 DEG. C / 122 DEG. F. STORE IN DRY, COOL, WELL-VENTILATED AREA.
(SEE SECTION 10)

--------SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION--------

8.1 CONTROL PARAMETERS:

EXPOSURE GUIDELINES:

OCCUPATIONAL EXPOSURE LIMITS:

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>OSHA-PEL</th>
<th>ACGIH-TLV</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED LIGHT</td>
<td>100 PPM</td>
<td>200 MG/M3</td>
</tr>
<tr>
<td>SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC</td>
<td>NOT AVAILABLE.</td>
<td>NOT AVAILABLE.</td>
</tr>
<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC</td>
<td>5 MG/M3 (MIST)</td>
<td>5 MG/M3 (MIST)</td>
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<tr>
<td>CARBON DIOXIDE</td>
<td>5000 PPM</td>
<td>5000 PPM</td>
</tr>
<tr>
<td></td>
<td>9000 MG/M3</td>
<td></td>
</tr>
<tr>
<td>NAPHTHALENENE</td>
<td>10 PPM</td>
<td>10 PPM</td>
</tr>
<tr>
<td></td>
<td>50 MG/M3</td>
<td></td>
</tr>
<tr>
<td>DINONYLPHENOL, ETHOXYLATED, PHOSPHATED</td>
<td>NOT AVAILABLE.</td>
<td>NOT AVAILABLE.</td>
</tr>
</tbody>
</table>

8.2 EXPOSURE CONTROLS:

ENGINEERING CONTROLS:
USE VENTILATION ADEQUATE TO KEEP EXPOSURES (AIRBORNE LEVELS OF DUST, FUME,
VAPORETC.BELOWRECOMMENDEDEXPOSURELIMITS.

8.3INDIVIDUALPROTECTIVEMEASURES:

PERSONALPROTECTIVEEQUIPMENT:

EYEFACEPROTECTION:SAFETYGLASSESWITHSIDE-SHIELDS.

SKINPROTECTION:
HANDPROTECTION:WEARCHEMICALLYRESISTANTPROTECTIVEGLOVES.
BODYPROTECTION:WEARSUITABLEPROTECTIVECLOTHING.

RESPIRATORYPROTECTION:
ANIOSHAPPROVEDRESPIRATORISRECOMMENDEDINPOORLYVENTILATEDAREASOR
WHENPERMISSIBLEEXPOSURELIMITSMAYBEEXCEEDED.RESPIRATORSELECTIONMUST
BEBASEDONKNOWNORANTICIPATEDEXPOSURELEVELS,THEHAZARDOFPTHEN
ANDTHESAFEWORKINGLIMITSOFTHESELECTEDRESPIRATOR.

GENERALHEALTHANDSAFETYMEASURES:
DO NOT EAT, SMOKE OR DRINK WHERE MATERIAL IS HANDLED, PROCESSED OR STORED.
WASHHANDSCAREFULLYBEFOREEATINGORSMOKING.HANDLEACCORDINGTO
ESTABLISHEDINDUSTRIALHYGIENEANDSAFETYPRACTICES.ENSURETHATEYEWASH
STATIONSANDSAFETYSHOWERSARECLOSETOTHEWORKSTATIONLOCATION.

--------SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES--------

9.1INFORMATIONONBASICPHYSICALANDCHEMICALPROPERTIES:

APPEARANCE: VISCOUS / OILY.

COLOR: ORANGE.

ODOR: HEAVY AROMATIC.

ODOR THRESHOLD: NOT AVAILABLE.

PHYSICAL STATE: GAS/PRESSURIZED LIQUID.

PH: NOT AVAILABLE.

MELTING POINT/FREEZING POINT: NOT AVAILABLE.

INITIAL BOILING POINT AND BOILING RANGE: 177.8 DEG. C (352 DEG. F)

FLASH POINT: 65.6 DEG. C (150 DEG. F)

EVAPORATION RATE: <1 (N-BUTYL ACETATE = 1)

FLAMMABILITY: FLAMMABLE.

LOWER FLAMMABILITY/EXPLOSIVE LIMIT: NOT AVAILABLE.
UPPER FLAMMABILITY/EXPLOSIVE LIMIT: NOT AVAILABLE.
VAPOR PRESSURE: NOT AVAILABLE.

VAPOR DENSITY: >1 (AIR = 1)

RELATIVE DENSITY/SPECIFIC GRAVITY: 0.91 (WATER = 1)

SOLUBILITY: NEGLIGIBLE.

PARTITION COEFFICIENT N-OCTANOL/WATER: NOT AVAILABLE.

AUTO-IGNITION TEMPERATURE: NOT AVAILABLE.

DECOMPOSITION TEMPERATURE: NOT AVAILABLE.

VISCOSITY: NOT AVAILABLE.

OXIDIZING PROPERTIES: NOT AVAILABLE.

EXPLOSIVE PROPERTIES: NOT AVAILABLE.

VOC CONTENT: <25%

FLAME PROJECTION: 0 CM

HEAT OF COMBUSTION: 45.8 KJ/G

------SECTION 10: STABILITY AND REACTIVITY------

10.1 REACTIVITY: NO DANGEROUS REACTION KNOWN UNDER CONDITIONS OF NORMAL USE.

10.2 CHEMICAL STABILITY:
STABLE UNDER NORMAL STORAGE CONDITIONS. FLAMMABLE AEROSOL. CONTENTS UNDER PRESSURE. CONTAINER MAY EXPLODE IF HEATED. DO NOT PUNCTURE. DO NOT BURN.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS:
NO DANGEROUS REACTION KNOWN UNDER CONDITIONS OF NORMAL USE.

10.4 CONDITIONS TO AVOID:
HEAT. INCOMPATIBLE MATERIALS. SOURCES OF IGNITION. EXCESSIVE WATER.

10.5 INCOMPATIBLE MATERIALS:
STRONG OXIDIZING AGENTS. STRONG REDUCING AGENTS. MOISTURE.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS:
MAY INCLUDE, AND ARE NOT LIMITED TO: OXIDES OF CARBON, HYDROCARBONS.

------SECTION 11: TOXICOLOGICAL INFORMATION------

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:
LIKELY ROUTES OF EXPOSURE:
SKIN CONTACT, EYE CONTACT, INHALATION, AND INGESTION.

SYMPTOMS RELATED TO PHYSICAL/CHEMICAL/TOXICOLOGICAL CHARACTERISTICS:

EYE:
CAUSES SERIOUS EYE IRRITATION. SYMPTOMS MAY INCLUDE DISCOMFORT OR PAIN, EXCESS BLINKING AND TEAR PRODUCTION, WITH MARKED REDNESS AND SWELLING OF THE CONJUNCTIVA.

SKIN:
MAY CAUSE SKIN IRRITATION. SYMPTOMS MAY INCLUDE REDNESS, DRYING, DEFATTING AND CRACKING OF THE SKIN.

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.

INHALATION: MAY CAUSE RESPIRATORY TRACT IRRITATION.

ACUTE TOXICITY:

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>IDLH</th>
<th>LC50</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED LIGHT</td>
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<td>INHALATION: &gt;5.2 MG/L 4H, RAT</td>
<td>ORAL: &gt;5000 MG/KG, RAT</td>
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<tr>
<td>SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC</td>
<td>NOT AVAILABLE.</td>
<td>INHALATION: &gt;5.28 MG/L 4H, RAT</td>
<td>ORAL: &gt;5000 MG/KG, RAT</td>
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<tr>
<td>DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC</td>
<td>NOT AVAILABLE.</td>
<td>INHALATION: &gt;5.0 MG/L 4H, RAT</td>
<td>ORAL: &gt;5000 MG/KG, RAT</td>
</tr>
<tr>
<td>CARBON DIOXIDE</td>
<td>40000 PPM</td>
<td>NOT AVAILABLE.</td>
<td>NOT AVAILABLE.</td>
</tr>
<tr>
<td>NAPHTHALENE</td>
<td>250 PPM</td>
<td>NOT AVAILABLE.</td>
<td>ORAL: 490 MG/KG, RAT</td>
</tr>
</tbody>
</table>

https://classc.mscdirect.com/Contents/Item/Display/5453
DERMAL:
>2500 MG/KG, RAT

DERMAL:
>20 G/KG, RABBIT

DINONYLPHENOL, ETHOXYLATED, NOT AVAILABLE. NOT AVAILABLE.
PHTHOSPHATED AVAILABLE.

CALCULATED OVERALL CHEMICAL ACUTE TOXICITY VALUES:

LC50 (INHALATION)  LD50 (ORAL)  LD50 (DERMAL)
>5 MG/L 4H, RAT  >2000 MG/KG, RAT  >2000 MG/KG, RABBIT

INGREDIENT
CHEMICAL LISTED AS CARCINOGEN OR POTENTIAL CARCINOGEN
(NTP, IARC, OSHA, ACGIH, CP65)*

DISTILLATES (PETROLEUM), HYDROTREATED LIGHT
NOT LISTED.

SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC
NOT LISTED.

DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC
NOT LISTED.

CARBON DIOXIDE
NOT LISTED.

NAPHTHALENE
G-A4, I-2B, N-2, CP65

DINONYLPHENOL, ETHOXYLATED, PHOSPHATED
NOT LISTED.

* SEE SECTION 15 FOR MORE INFORMATION.

11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE:

SKIN CORROSION/IRRITATION:
BASED ON AVAILABLE DATA, THE CLASSIFICATION CRITERIA ARE NOT MET.

SERIOUS EYE DAMAGE/IRRITATION: CAUSES SERIOUS EYE IRRITATION.

RESPIRATORY SENSITIZATION:
BASED ON AVAILABLE DATA, THE CLASSIFICATION CRITERIA ARE NOT MET.

SKIN SENSITIZATION:
BASED ON AVAILABLE DATA, THE CLASSIFICATION CRITERIA ARE NOT MET.

STOT–SINGLE EXPOSURE:
Based on available data, the classification criteria are not met.

Chronic Health Effects:

Carcinogenicity: Possible carcinogen.

Germ cell mutagenicity:
Based on available data, the classification criteria are not met.

Reproductive Toxicity:

Developmental:
Based on available data, the classification criteria are not met.

Fertility: Based on available data, the classification criteria are not met.

Stot-repeated exposure:
Based on available data, the classification criteria are not met.

Aspiration hazard: May be fatal if swallowed and enters airways.

Other information: Not available.

------Section 12: Ecological Information------

12.1 Ecotoxicity:

Acute/chronic toxicity:
May cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability: Not available.

12.3 Bioaccumulative potential:
Bioaccumulation: Not available.

12.4 Mobility in soil: Not available.

12.5 Other adverse effects: Not available.

------Section 13: Disposal Considerations------

13.1 Waste treatment methods:

Disposal method:
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.

Other disposal recommendations:
Flammable vapours may accumulate in the container.
Do not incinerate empty containers.
SECTION 14: TRANSPORT INFORMATION

14.1 UN NUMBER:

DOT NOM-004-SCT2-1994
UN1950 UN1950

14.2 UN PROPER SHIPPING NAME:

DOT NOM-004-SCT2-1994
AEROSOLS, FLAMMABLE, LIMITED AEROSOLS, FLAMMABLE, LIMITED QUANTITIES
QUANTITIES

14.3 TRANSPORT HAZARD CLASS (ES):

DOT NOM-004-SCT2-1994
2.1 2.1

14.4 PACKING GROUP:

DOT NOM-004-SCT2-1994
NOT APPLICABLE. NOT APPLICABLE.

14.5 ENVIRONMENTAL HAZARDS: NOT AVAILABLE.

14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: NOT AVAILABLE.

14.7 SPECIAL PRECAUTIONS FOR USER:
DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.
THE BLASTER CORPORATION DOES NOT RECOMMEND SHIPPING THEIR AEROSOL PRODUCTS BY AIR.

SECTION 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATIONS SPECIFIC FOR THE CHEMICAL:

US:
SDS PREPARED PURSUANT TO THE HAZARD COMMUNICATION STANDARD (CFR 29 1910.1200) HAZCOM 2012

MEXICO: SDS PREPARED PURSUANT TO NOM-018-STPS-2000.

SARA TITLE III:
INGREDIENT | SECTION 302 (EHS) | SECTION 304 (EHS RQ (LBS.)) | CERCLA RQ (LBS.) | SECTION 313 (TPQ (LBS.))
--- | --- | --- | --- | ---
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT | NOT LISTED. | NOT LISTED. | NOT LISTED. | NOT LISTED.
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC | NOT LISTED. | NOT LISTED. | NOT LISTED. | NOT LISTED.
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC | NOT LISTED. | NOT LISTED. | NOT LISTED. | NOT LISTED.
CARBON DIOXIDE | NOT LISTED. | NOT LISTED. | NOT LISTED. | NOT LISTED.
NAPHTHALENE | NOT LISTED. | NOT LISTED. | 100 | 313
DINONYLPHENOL, ETHOXYLATED, PHOSPHATED | NOT LISTED. | NOT LISTED. | NOT LISTED. | NOT LISTED.

STATE REGULATIONS:

CALIFORNIA PROPOSITION 65:
THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

GLOBAL INVENTORIES:

INGREDIENT | USA TSCA
--- | ---
DISTILLATES (PETROLEUM), HYDROTREATED LIGHT | YES.
SOLVENT NAPHTHA (PETROLEUM), HEAVY AROMATIC | YES.
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC | YES.
CARBON DIOXIDE | YES.
NAPHTHALENE | YES.
DINONYLPHENOL, ETHOXYLATED, PHOSPHATED | YES.

NFPA—NATIONAL FIRE PROTECTION ASSOCIATION:
HEALTH 2
FIRE 4
REACTIVITY 0

HMIS—HAZARDOUS MATERIALS IDENTIFICATION SYSTEM:
HAZARD RATING:
0 = MINIMAL
1 = SLIGHT
2 = MODERATE
3 = SEVERE
4 = EXTREME

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

CP65: CALIFORNIA PROPOSITION 65

OSHA (O): OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.

ACGIH (G): AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS.
A1 - CONFIRMED HUMAN CARCINOGEN.
A2 - SUSPECTED HUMAN CARCINOGEN.
A3 - ANIMAL CARCINOGEN.
A4 - NOT CLASSIFIABLE AS A HUMAN CARCINOGEN.
A5 - NOT SUSPECTED AS A HUMAN CARCINOGEN.

IARC (I): INTERNATIONAL AGENCY FOR RESEARCH ON CANCER.
1 - THE AGENT (MIXTURE) IS CARCINOGENIC TO HUMANS.
2A - THE AGENT (MIXTURE) IS PROBABLY CARCINOGENIC TO HUMANS; THERE IS LIMITED EVIDENCE OF CARCINOGENICITY IN HUMANS AND SUFFICIENT EVIDENCE OF CARCINOGENICITY IN EXPERIMENTAL ANIMALS.
2B - THE AGENT (MIXTURE) IS POSSIBLY CARCINOGENIC TO HUMANS; THERE IS LIMITED EVIDENCE OF CARCINOGENICITY IN HUMANS IN THE ABSENCE OF SUFFICIENT EVIDENCE OF CARCINOGENICITY IN EXPERIMENTAL ANIMALS.
3 - THE AGENT (MIXTURE, EXPOSURE CIRCUMSTANCE) IS NOT CLASSIFIABLE AS TO ITS CARCINOGENICITY TO HUMANS.
4 - THE AGENT (MIXTURE, EXPOSURE CIRCUMSTANCE) IS PROBABLY NOT CARCINOGENIC TO HUMANS.

NTP (N): NATIONAL TOXICOLOGY PROGRAM.
1 - KNOWN TO BE CARCINOGENS.
2 - REASONABLY ANTICIPATED TO BE CARCINOGENS.

--------SECTION 16: OTHER INFORMATION --------

DATE OF PREPARATION: MAY 26, 2014

VERSION: 1.0
REVISION DATE: MAY 26, 2014

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.

PREPARED BY: NEXREG COMPLIANCE INC.

PHONE: (519) 488-5126

WWW.NEXREG.COM

PREPARED FOR: THE BLASTER CORPORATION

TRADE NAME: PB PENETRATING CATALYST (AEROSOL)

PRINT DATE: 2014-05-26

NEXREG
1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Permatex® Medium Strength Threadlocker Blue
IDH number: 303074

Product type: Anaerobic Sealant

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: 860.571.5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>Blue</td>
</tr>
<tr>
<td>Odor:</td>
<td>Mild</td>
</tr>
<tr>
<td>HMIS:</td>
<td>°2</td>
</tr>
<tr>
<td>HEALTH:</td>
<td>2</td>
</tr>
<tr>
<td>FLAMMABILITY:</td>
<td>1</td>
</tr>
<tr>
<td>PHYSICAL HAZARD:</td>
<td>1</td>
</tr>
<tr>
<td>Personal Protection:</td>
<td>See MSDS Section 8</td>
</tr>
</tbody>
</table>

WARNING:
CAUSES EYE IRRITATION.
MAY CAUSE SKIN IRRITATION.
MAY CAUSE ALLERGIC SKIN REACTION.
MAY CAUSE RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Skin, Inhalation, Eyes

Potential Health Effects

Inhalation: May cause respiratory tract irritation.

Skin contact: May cause allergic skin reaction. May cause skin irritation.

Eye contact: Contact with eyes will cause irritation.

Ingestion: Not expected to be harmful by ingestion.

Existing conditions aggravated by exposure: Eye, skin, and respiratory disorders.

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

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>CAS NUMBER</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyglycol dimethacrylate</td>
<td>25852-47-5</td>
<td>60 - 100</td>
</tr>
<tr>
<td>Oleic acid 5.5EO</td>
<td>9004-96-0</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Saccharin</td>
<td>81-07-2</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystal-free</td>
<td>112945-52-5</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>80-15-9</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Propanediol-1,2</td>
<td>57-55-6</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>13463-67-7</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>Cumene</td>
<td>98-82-8</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>

IDH number: 303074

Product name: Permatex® Medium Strength Threadlocker Blue

Page 1 of 6
4. FIRST AID MEASURES

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Keep warm and quiet. Get medical attention.

Skin contact: Wash with soap and water. Remove contaminated clothing and footwear. Wash clothing before reuse. If symptoms develop and persist, get medical attention.

Eye contact: Flush with copious amounts of water, preferably, lukewarm water for at least 15 minutes, holding eyelids open all the time. Get medical attention.

Ingestion: Do not induce vomiting. Keep individual calm. Get medical attention.

5. FIRE FIGHTING MEASURES

Flash point: > 93.3 °C (> 199.94 °F) Tagliabue closed cup

Flame projection: Not applicable

Autoignition temperature: Not determined

Flammable/Explosive limits - lower: 2.6 % (propylene glycol)

Flammable/Explosive limits - upper: 12.5 % (propylene glycol)

Extinguishing media: Foam, dry chemical or carbon dioxide.

Special firefighting procedures: None

Unusual fire or explosion hazards: None


6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Do not allow product to enter sewer or waterways.

Clean-up methods: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Store in a partly filled, closed container until disposal.

7. HANDLING AND STORAGE

Handling: Prevent contact with eyes, skin and clothing. Do not breathe vapor and mist. Wash thoroughly after handling.

Storage: For safe storage, store at or below 38 °C (100.4 °F) Keep in a cool, well ventilated area away from heat, sparks and open flame. Keep container tightly closed until ready for use.

For information on product shelf life contact Henkel Customer Service at (800) 243-4874.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.
<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>AIHA WEEL</th>
<th>OTHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyglycol dimethacrylate</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Oleic acid 5.5EO</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Saccharin</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystal-free</td>
<td>10 mg/m³ TWA Inhalable dust. 3 mg/m³ TWA Respirable fraction.</td>
<td>20 MPPCF TWA 0.8 mg/m³ TWA</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>None</td>
<td>None</td>
<td>1 ppm (6 mg/m³) TWA (SKIN)</td>
<td>None</td>
</tr>
<tr>
<td>Propanediol-1,2</td>
<td>None</td>
<td>None</td>
<td>10 mg/m³ TWA Aerosol.</td>
<td>None</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>10 mg/m³ TWA</td>
<td>15 mg/m³ TWA Total dust.</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Cumene</td>
<td>50 ppm TWA</td>
<td>50 ppm (245 mg/m³) TWA (SKIN)</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

**Engineering controls:**
No specific ventilation requirements noted, but forced ventilation may still be required if concentrations exceed occupational exposure limits.

**Respiratory protection:**
Use NIOSH approved respirator if there is potential to exceed exposure limit(s).

**Eye/face protection:**
Safety goggles or safety glasses with side shields.

**Skin protection:**
Use impermeable gloves and protective clothing as necessary to prevent skin contact. Neoprene gloves. Butyl rubber gloves. Natural rubber gloves.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** Liquid
- **Color:** Blue
- **Odor:** Mild
- **Odor threshold:** Not available.
- **pH:** Not applicable
- **Vapor pressure:** < 5 mm hg (27 °C (80.6 °F))
- **Boiling point/range:** > 149 °C (> 300.2 °F)
- **Melting point/ range:** Not available.
- **Specific gravity:** 1.1 at 23.9 °C (75.02 °F)
- **Vapor density:** Not available.
- **Flash point:** > 93.3 °C (> 199.94 °F) Tagliabue closed cup
- **Flame projection:** Not applicable
- **Flammable/Explosive limits - lower:** 2.6 % (propylene glycol)
- **Flammable/Explosive limits - upper:** 12.5 % (propylene glycol)
- **Autoignition temperature:** Not determined
- **Evaporation rate:** Not available.
- **Solubility in water:** Slight
- **Partition coefficient (n-octanol/water):** Not available.
- **VOC content:** 4.48 %; 49.3 g/l EPA Method 24
10. STABILITY AND REACTIVITY

Stability: Stable

Hazardous reactions: Will not occur.


Conditions to avoid: See "Handling and Storage" (Section 7) and "Incompatibility" (Section 10).

11. TOXICOLOGICAL INFORMATION

Acute oral product toxicity: LD50 (rat) > 10,000 mg/kg

Acute dermal product toxicity: LD50 (rabbit) > 5,000 mg/kg

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>NTP Carcinogen</th>
<th>IARC Carcinogen</th>
<th>OSHA Carcinogen (Specifically Regulated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyglycol dimethacrylate</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Oleic acid 5.5EO</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Saccharin</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystal-free</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Propanediol-1,2</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>No</td>
<td>Group 2B</td>
<td>No</td>
</tr>
<tr>
<td>Cumene</td>
<td>No</td>
<td>Group 2B</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>Health Effects/Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyglycol dimethacrylate</td>
<td>Irritant, Allergen</td>
</tr>
<tr>
<td>Oleic acid 5.5EO</td>
<td>Irritant</td>
</tr>
<tr>
<td>Saccharin</td>
<td>No Target Organs</td>
</tr>
<tr>
<td>Silica, amorphous, fumed, crystal-free</td>
<td>Nuisance dust</td>
</tr>
<tr>
<td>Cumene hydroperoxide</td>
<td>Allergen, Central nervous system, Corrosive, Irritant, Mutagen</td>
</tr>
<tr>
<td>Propanediol-1,2</td>
<td>Irritant</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>Irritant, Respiratory, Some evidence of carcinogenicity</td>
</tr>
<tr>
<td>Cumene</td>
<td>Central nervous system, Irritant, Lung</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecological information: Not available.
13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Follow all local, state, federal and provincial regulations for disposal.

Hazardous waste number: Not a RCRA hazardous waste.

14. TRANSPORT INFORMATION

The shipping classifications in this section are for non-bulk packaging only (unless otherwise specified). Shipping classification may be different for bulk packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

International Air Transportation (ICAO/IATA)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

Water Transportation (IMO/IMDG)

Proper shipping name: Not regulated
Hazard class or division: None
Identification number: None
Packing group: None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.
TSCA 12(b) Export Notification: None above reporting de minimus
CERCLA/SARA Section 302 EHS: None above reporting de minimus
CERCLA/SARA Section 311/312: Immediate Health, Delayed Health
CERCLA/SARA 313: This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Cumene hydroperoxide (CAS# 80-15-9).

California Proposition 65: This product contains a chemical known in the State of California to cause cancer. This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status: All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This material safety data sheet contains changes from the previous version in sections: 3, 8, 11

Prepared by: Kyra Kozak Woods, Manager, Regulatory Affairs
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product code DN4380
Product name Persist
Recommended Use Lubricant
Supplier
Drummond American
A Lawson Products Company
600 Corporate Woods Parkway
Vernon Hills, IL 60061
(847) 913-9313
Emergency telephone number (888) 426-4851

2. HAZARDS IDENTIFICATION

Color Red
Odor Oily
Form Solid

Aggravated Medical Conditions
Dermatitis.

Principal Routes of Exposure
Skin absorption.

Potential health effects
Eyes
Irritation.

Skin
May cause eye/skin irritation.

Inhalation

Ingestion
May cause the following effects. Vomiting. Nausea. Diarrhea.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates (naphtha)</td>
<td>8002-05-9</td>
<td>75-90</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye contact
Wash off with plenty of water. Seek medical attention if irritation persists.

Skin contact
Remove and wash contaminated clothing before re-use. Wash area thoroughly with soap and water.

Ingestion
Do not induce vomiting. Give several glasses of water. Seek medical attention.

Inhalation
Remove to fresh air.
### 5. FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point °C</td>
<td>&gt; 204</td>
</tr>
<tr>
<td>Flash point °F</td>
<td>&gt; 400</td>
</tr>
<tr>
<td>Method</td>
<td>Open cup</td>
</tr>
<tr>
<td>Autoignition temperature °C</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Autoignition temperature °F</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

**Flammability Limits (% in Air)**
- **Upper**: No data available
- **Lower**: No data available

**Suitable extinguishing media**
- Dry chemical
- Carbon dioxide
- Foam
- Water

**Special protective equipment for firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**Fire and Explosion Hazards**
Empty containers contain residue and/or vapors. Do not weld, cut, pressurize, braze, solder, drill, grind, or expose such containers to heat, sparks, flame, static electricity, or other sources of ignition. They may explode and cause injury or death.

**Sensitivity to shock**
No information available.

**Sensitivity to static discharge**
No information available.

### 6. ACCIDENTAL RELEASE MEASURES

**Methods for cleaning up**
Eliminate all sources of ignition. Do not allow product to reach sewage system, soil, surface or ground water, or any water course. Notify proper authorities if entry occurs. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

### 7. HANDLING AND STORAGE

**Handling**
Avoid prolonged inhalation of vapor or mist. Keep away from open flames, hot surfaces and sources of ignition. Empty containers are very hazardous.

**Storage**
Keep container tightly closed. Keep out of the reach of children.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>OSHA PEL (TWA)</th>
<th>OSHA PEL (Ceiling)</th>
<th>ACGIH OEL (TWA)</th>
<th>ACGIH OEL (STEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates (naphtha)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Ventilation and Environmental Controls
None required.

Hygiene measures
Wash hands before breaks and immediately after handling the product.

Personal protective equipment

- Respiratory protection
  None required.
- Hand Protection
  Oil resistant gloves.
- Eye protection
  Use safety eyewear designed to protect against splash of liquids.
- Skin and body protection
  Apron.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Red</td>
</tr>
<tr>
<td>Odor</td>
<td>Oily</td>
</tr>
<tr>
<td>pH</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt; 0.01 mmHg @ 70°F</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Negligible</td>
</tr>
<tr>
<td>Boiling point/range °C</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Melting point/range °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point °C</td>
<td>&gt; 204</td>
</tr>
<tr>
<td>Flash point °F</td>
<td>&gt; 400</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.80</td>
</tr>
<tr>
<td>Vapor density</td>
<td>12 (air=1)</td>
</tr>
<tr>
<td>VOC Content</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability
Stable.

Conditions to avoid
Do not use on oxygen lines.
Incompatibility

Hazardous Decomposition Products
Carbon oxides. Unidentifiable organic materials.

Polymerization
Hazardous polymerization does not occur.

### 11. TOXICOLOGICAL INFORMATION

#### Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50 (oral,rat)</th>
<th>LD50 (dermal,rat/rabbit)</th>
<th>LC50 (inhalation,rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates (naphtha) 8002-05-9</td>
<td>4300 mg/kg</td>
<td>4300</td>
<td>4300 mg/kg</td>
</tr>
</tbody>
</table>

Synergistic Products
None known

Potential health effects

Sensitization
None known

Mutagenic effects
None known

Reproductive toxicity
None known

Carcinogenic effects
See table below

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH OEL - Carcinogens</th>
<th>IARC</th>
<th>NTP - Known Carcinogens</th>
<th>NTP - Suspected Human Carcinogens</th>
<th>OSHA RTK Carcinogens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates (naphtha)</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

### 12. ECOLOGICAL INFORMATION

No Information Available

Petroleum distillates (naphtha)

**Water Flea Data**

*Daphnia magna* hEC50 24 (36 mg/L)
13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products
Dispose in accordance with federal, state, and local regulations.

14. TRANSPORT INFORMATION

DOT
Not Regulated

TDG
Not Regulated

IMDG/IMO
Not Regulated

IATA
Not Regulated

MEX
Not Regulated

15. REGULATORY INFORMATION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>New Jersey - RTK</th>
<th>Pennsylvania - RTK</th>
<th>California Prop. 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates</td>
<td>Listed</td>
<td>Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>(naphtha)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EINECS</th>
<th>DSL</th>
<th>NDSL</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>(naphtha)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CPRC
This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all of the information required by the Controlled Product Regulations.
16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Health</td>
</tr>
<tr>
<td>Flammability</td>
<td>Flammability</td>
</tr>
<tr>
<td>Reactivity</td>
<td>Physical Hazard</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Prepared By: J. Cameron, Regulatory Affairs Coordinator

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.
MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION:
Product Name: PK Force Industrial Hand Cleaner
Product Use: Waterless Hand Cleaner
Manufactured By: Woodbine Products Company
915 West Smith Rd Medina, OH 44256

Date: 12-01-2006
Phone: 330-725-0185

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS
Ingredient(s) with notification requirements:
Glycerine CAS# 56-81-5
Triethanolamine CAS# 102-71-6

SECTION 3: HAZARDS IDENTIFICATION
This product is a cosmetic intended for personal use in the workplace and is thus regulated by FDA.

Potential Health Effects:
Inhalation: N/A
Skin Contact: None
Eye Contact: Mild irritant
Ingestion: May cause gastrointestinal discomfort.

Carcinogenicity:
Not listed as a carcinogen by NTP, LARC or OSHA.
HMIS: Health 1 Flammability 0 Reactivity 0
Personal Protection None

SECTION 4: FIRST AID MEASURES
Eyes: Do not rub eyes. Flush thoroughly with water. Seek medical attention if discomfort persists.
Ingestions: Do not induce vomiting.
Seek medical attention.

SECTION 5: FIRE FIGHTING MEASURES
NFPA: Health 1 Fire 0 Reactivity 0
Flash Point: > 200 F
Fire and Explosion Hazards: None Known
Extinguishing Media: Use extinguishing agents appropriate for surrounding fire.
Special Fire Fighting Procedures: None Known

SECTION 6: ACCIDENTAL RELEASE MEASURES
No special requirement. Absorb spill with inert material.
Shovel material into appropriate container for disposal.
Water clean up and rinse.

SECTION 7: HANDLING AND STORAGE
Keep in a tightly closed container, stored in a cool, dry area.
Use older containers first. Keep from freezing.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
Ventilation: Not required
Gloves: Not required
Eye Protection: Not required
Clothing: Not required
Respirator: Not required

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES
Appearance: Off White
pH: 7.0 - 8.0
Odor: Orange Scent
Solubility In Water: Disperses in Water

SECTION 10: STABILITY AND REACTIVITY
Stable/Non Reactive Product

SECTION 11: TOXICOLOGICAL INFORMATION
When used per directions, no acute or chronic effects expected.

SECTION 12: ECOLOGICAL INFORMATION
No ecological or special considerations when used according to directions. Not considered environmentally harmful.

SECTION 13: DISPOSAL CONSIDERATIONS
Environmental Release: If spilled, contain spill with an absorbent and collect for disposal. Rinse area with water.
Waste Disposal: Dispose in accordance with all applicable local, state and federal regulations.

SECTION 14: TRANSPORT INFORMATION
Not classified as a hazardous material.
US DOT: No classification assigned.

SECTION 15: REGULATORY INFORMATION
Complies with current Regulations as a personal use cosmetic.

While the information and recommendations set forth herein are believed to be accurate as of the date hereof, Woodbine Products Company makes no warranty with respect thereto, and all liability from reliance thereon.
1. Identification

Product identifier Propane

Other means of identification

SDS number WC002
Product code UN1075
Recommended use Portable fuel.
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Worthington Cylinder Corporation
Address 300 E. Breed St., Chilton, WI 5301
United States
Contact person Ann Stiefvater
E-mail address Ann.Stiefvater@worthingtonindustries.com
Telephone number 1-920-849-1740
Emergency telephone

2. Hazard(s) identification

Physical hazards Flammable gases Category 1
Gases under pressure Liquefied gas
Health hazards Not classified.
OSHA defined hazards Not classified.

Label elements

Signal word Danger
Hazard statement Extremely flammable gas. Contains gas under pressure; may explode if heated.
Precautionary statement

Prevention
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Response
Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
Storage
Protect from sunlight. Store in a well-ventilated place.
Disposal
Dispose of waste and residues in accordance with local authority requirements.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane</td>
<td>74-98-6</td>
<td>87.5-100</td>
</tr>
<tr>
<td>Ethane</td>
<td>74-84-0</td>
<td>0-7</td>
</tr>
<tr>
<td>Propylene</td>
<td>115-07-1</td>
<td>0-5</td>
</tr>
<tr>
<td>Butane</td>
<td>106-97-8</td>
<td>0-2.5</td>
</tr>
</tbody>
</table>
Additives

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan</td>
<td>75-08-1</td>
<td>&lt;0.005</td>
</tr>
</tbody>
</table>

Composition comments
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation
Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.

Skin contact
Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation develops and persists. If frostbite occurs, immerse involved area in warm water (between 100°F/38°C and 110°F/43°C, not exceeding 112°F/44°C). Keep immersed for 20 to 40 minutes. Seek medical assistance.

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 immediately.

Ingestion
Ingestion is not a typical route of exposure for gases or liquefied gases.

Most important symptoms/effects, acute and delayed
Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.

Indication of immediate medical attention and special treatment needed
Exposure may aggravate pre-existing respiratory disorders. Treat symptomatically.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Dry chemical, CO₂, water spray, fog, or foam.

Unsuitable extinguishing media
None known.

Specific hazards arising from the chemical
Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire-fighting equipment/instructions
Move container from fire area if it can be done without risk.

Do not extinguish fires unless gas flow can be stopped safely; explosive re-ignition may occur. Promptly isolate the scene by removing all persons from the vicinity of the incident. No action shall be taken involving any personal risk or without suitable training. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus. Stop flow of material. Use water to keep fire exposed containers cool and to protect personnel effecting shutoff. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply.

General fire hazards
Extremely flammable gas.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Evacuate the area promptly. No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away.

Ensure adequate ventilation. In case of inadequate ventilation, use respiratory protection. Wear appropriate personal protective equipment (See Section 8).

Methods and materials for containment and cleaning up
Ventilate well, stop flow of gas or liquid if possible. Immediately contact emergency personnel.

Environmental precautions
Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent from entering into soil, ditches, sanitary sewers, waterways and/or groundwater.

7. Handling and storage

Precautions for safe handling
Eliminate all sources of ignition. Wear appropriate personal protective equipment (See Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Do not breathe gas. Do not get in eyes, on skin, on clothing. Use only with adequate ventilation.
## 8. Exposure controls/personal protection

### Occupational exposure limits

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propane (CAS 74-98-6)</td>
<td>PEL</td>
<td>1800 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000 ppm</td>
</tr>
</tbody>
</table>

#### Additives

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan (CAS 75-08-1)</td>
<td>Ceiling</td>
<td>25 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

#### US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butane (CAS 106-97-8)</td>
<td>STEL</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>Propylene (CAS 115-07-1)</td>
<td>TWA</td>
<td>500 ppm</td>
</tr>
</tbody>
</table>

#### Additives

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan (CAS 75-08-1)</td>
<td>TWA</td>
<td>0.5 ppm</td>
</tr>
</tbody>
</table>

#### US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butane (CAS 106-97-8)</td>
<td>TWA</td>
<td>1900 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>800 ppm</td>
</tr>
<tr>
<td>Propane (CAS 74-98-6)</td>
<td>TWA</td>
<td>1800 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000 ppm</td>
</tr>
</tbody>
</table>

#### Additives

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan (CAS 75-08-1)</td>
<td>Ceiling</td>
<td>1.3 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.5 ppm</td>
</tr>
</tbody>
</table>

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### Appropriate engineering controls

Provide adequate ventilation and minimize the risk of inhalation of gas. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

### Individual protection measures, such as personal protective equipment

#### Eye/face protection

Wear approved safety glasses or goggles.

#### Skin protection

- **Hand protection**: Wear appropriate chemical resistant gloves.
- **Other**: Wear protective clothing appropriate for the risk of exposure.

#### Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

#### Thermal hazards

Contact with liquefied gas might cause frostbites, in some cases with tissue damage. Wear appropriate thermal protective clothing, when necessary.

#### General hygiene considerations

Do not eat, drink or smoke when using the product. Wash thoroughly after handling. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practices.

## 9. Physical and chemical properties

| Appearance | Colorless gas. |
| Physical state | Gas. |
| Form      | Compressed liquefied gas. |
| Color     | Colorless. |
| Odor      | Rotten egg. |
Odor threshold Not available.

pH Not applicable.

Melting point/freezing point -306.4 °F (-188 °C)
Initial boiling point and boiling range -43.6 °F (-42 °C) 14.7 psia
Flash point -155.2 °F (-104.0 °C)
Evaporation rate Not applicable.
Flammability (solid, gas) Extremely flammable gas.

Upper/lower flammability or explosive limits

| Explosive limit - lower (%) | 2.15 % |
| Explosive limit - upper (%) | 9.6 % |

Vapor pressure 127 psig (21°C / 70°F)
Vapor density Not available.
Relative density 0.504 (liquid)
1.5 (vapor) (air=1) @ 15°C / 60°F

Solubility(ies)

Solubility (water) Slightly soluble in water.
Partition coefficient (n-octanol/water) 1.77

Auto-ignition temperature 809.6 °F (432 °C)
Decomposition temperature Not available.
Viscosity Not applicable.

Other information

Molecular weight 45 g/mol
Percent volatile 100 %

10. Stability and reactivity

Reactivity Reacts violently with strong oxidants, nitrites, inorganic chlorides, chlorites and perchlorates causing fire and explosion hazard.

Chemical stability Stable under normal temperature conditions and recommended use.

Possibility of hazardous reactions Polymerization will not occur.

Conditions to avoid Heat, flames and sparks.


Hazardous decomposition products Carbon oxides. Hydrocarbons.

11. Toxicological information

Information on likely routes of exposure

Ingestion Not likely, due to the form of the product.

Inhalation High concentrations: Suffocation (asphyxiating) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels. Breathing of high concentrations may cause dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness.

Skin contact Contact with liquefied gas may cause frostbite.

Eye contact Contact with liquefied gas may cause frostbite.

Symptoms related to the physical, chemical and toxicological characteristics Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Very high exposure can cause suffocation from lack of oxygen. May cause drowsiness or dizziness.

Information on toxicological effects

Acute toxicity High concentration: Suffocation (asphyxiating) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.
## Components

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butane (CAS 106-97-8)</td>
<td>Acute &lt;br&gt; <strong>Inhalation</strong></td>
</tr>
<tr>
<td>LC50</td>
<td>680 mg/l, 2 Hours</td>
</tr>
<tr>
<td>Rat</td>
<td>658 mg/l, 4 Hours</td>
</tr>
<tr>
<td>Propane (CAS 74-98-6)</td>
<td>Acute &lt;br&gt; <strong>Inhalation</strong></td>
</tr>
<tr>
<td>LC50</td>
<td>&gt; 1442 mg/l, 15 Minutes</td>
</tr>
<tr>
<td>Propylene (CAS 115-07-1)</td>
<td>Acute &lt;br&gt; <strong>Inhalation</strong></td>
</tr>
<tr>
<td>LC50</td>
<td>680 mg/l, 2 Hours</td>
</tr>
<tr>
<td>Rat</td>
<td>658 mg/l, 4 Hours</td>
</tr>
</tbody>
</table>

## Additives

<table>
<thead>
<tr>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl Mercaptan (CAS 75-08-1)</td>
<td>Acute &lt;br&gt; <strong>Dermal</strong></td>
</tr>
<tr>
<td>LD50</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>4420 mg/l, 4 Hours</td>
</tr>
<tr>
<td><strong>Oral</strong></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>682 mg/kg</td>
</tr>
</tbody>
</table>

### Skin corrosion/irritation
- Contact with liquefied gas might cause frostbites, in some cases with tissue damage.

### Serious eye damage/eye irritation
- Direct contact with liquefied gas may cause eye damage from frostbite.

### Respiratory or skin sensitization
- **Respiratory sensitization**: Not classified.
- **Skin sensitization**: Not classified.
- **Germ cell mutagenicity**: Not classified.
- **Carcinogenicity**: Not classified.

### IARC Monographs. Overall Evaluation of Carcinogenicity
- Propylene (CAS 115-07-1) 3 Not classifiable as to carcinogenicity to humans.

### Reproductive toxicity
- Not classified.

### Specific target organ toxicity - single exposure
- Not classified.

### Specific target organ toxicity - repeated exposure
- Not classified.

### Aspiration hazard
- Not classified.

## 12. Ecological information

### Ecotoxicity
- Not expected to be harmful to aquatic organisms.

### Persistence and degradability
- The product is readily biodegradable.

### Bioaccumulative potential
- The product is not expected to bioaccumulate.

#### Partition coefficient n-octanol / water (log Kow)
- **Propane (CAS Mixture)**: 1.77
- **Butane (CAS 106-97-8)**: 2.89
- **Propane (CAS 74-98-6)**: 2.36
- **Propylene (CAS 115-07-1)**: 1.77

### Mobility in soil
- May evaporate quickly.

### Mobility in general
- May evaporate quickly.
13. Disposal considerations

Disposal instructions
Use the container until empty. Do not dispose of any non-empty container. Empty containers have residual vapor that is flammable and explosive. Cylinders should be emptied and returned to a hazardous waste collection point. Do not puncture or incinerate even when empty. Dispose in accordance with all applicable regulations.

Hazardous waste code
D001: Waste Flammable material with a flash point <140 °F

Waste from residues / unused products
Dispose in accordance with all applicable regulations.

Contaminated packaging
Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN1075</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>Propane</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>Propane</td>
</tr>
<tr>
<td>Class</td>
<td>2.1</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td></td>
</tr>
<tr>
<td>Packing group</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Environmental hazards</td>
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</tr>
<tr>
<td>Marine pollutant</td>
<td>No</td>
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<tr>
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</tr>
<tr>
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<td>Packaging exceptions</td>
<td>306</td>
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IATA

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<tr>
<td>Class</td>
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</tr>
<tr>
<td>Subsidiary risk</td>
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IMDG

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<td>Class</td>
<td>2.1</td>
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<tr>
<td>Subsidiary risk</td>
<td></td>
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<tr>
<td>Label(s)</td>
<td>2.1</td>
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<td>Packing group</td>
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<tr>
<td>Environmental hazards</td>
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<td>Marine pollutant</td>
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<td>Read safety instructions, SDS and emergency procedures before handling.</td>
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<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>This product is a compressed or liquefied gas and when transported in bulk is covered under IGC code.</td>
</tr>
</tbody>
</table>

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)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
- Butane (CAS 106-97-8) LISTED
- Ethyl Mercaptan (CAS 75-08-1) LISTED
- Propane (CAS 74-98-6) LISTED
- Propylene (CAS 115-07-1) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories
- Immediate Hazard - No
- Delayed Hazard - No
- Fire Hazard - Yes
- Pressure Hazard - Yes
- Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
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<tr>
<td>Propylene</td>
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</table>

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
- Butane (CAS 106-97-8)
- Ethyl Mercaptan (CAS 75-08-1)
- Propane (CAS 74-98-6)
- Propylene (CAS 115-07-1)

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)
Hazardous substance

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations
US. Massachusetts RTK - Substance List
- Butane (CAS 106-97-8)
- Ethyl Mercaptan (CAS 75-08-1)
- Propane (CAS 74-98-6)
- Propylene (CAS 115-07-1)

US. New Jersey Worker and Community Right-to-Know Act
- Butane (CAS 106-97-8)
- Ethyl Mercaptan (CAS 75-08-1)
- Propane (CAS 74-98-6)
- Propylene (CAS 115-07-1)

US. Pennsylvania Worker and Community Right-to-Know Law
- Butane (CAS 106-97-8)
- Ethyl Mercaptan (CAS 75-08-1)
- Propane (CAS 74-98-6)
- Propylene (CAS 115-07-1)

US. Rhode Island RTK
- Butane (CAS 106-97-8)
- Ethyl Mercaptan (CAS 75-08-1)
- Propane (CAS 74-98-6)
- Propylene (CAS 115-07-1)

US. California Proposition 65

Propylene
919503  Version : 02  Revision date: 11-September-2014  Issue date: 05-May-2014
US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
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<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
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<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
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</tr>
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<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
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<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
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<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
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<tr>
<td>Japan</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
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<tr>
<td>New Zealand</td>
<td>Existing Chemicals List (ECL)</td>
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<td>Philippines</td>
<td>New Zealand Inventory</td>
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<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
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<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
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</table>

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

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

Issue date 05-May-2014
Revision date 11-September-2014
Version # 02

NFPA Ratings

2 4 0

Disclaimer
All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user’s responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.

Effective Date: August 1995
Product Name: R-134a
Emergency #: Chem Trac 1-800-424-9300

Section A: General Information
Trade Name: R-134a
CAS No.: 811-97-2
Chemical Name: 1,1,1,2-Tetrafluoroethane
Synonym: HFC 134a
Formula: \( \text{CH}_2\text{FCF}_3 \)

Refrigerant Management Services
610 McFarland/400 Drive
Alpharetta, Georgia 30004
Phone: 1-800-347-5872
Fax: 770-777-0599

Section B: First Aid Measures
Inhalation: If high concentrations are inhaled, immediately remove to fresh air. Keep person calm. If breathing has stopped, give mouth-to-mouth resuscitation. If breathing is difficult, give oxygen, as necessary, provided a qualified operator is available. Call a physician. 

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes, while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reuse. Treat for frostbite if necessary by gently warming affected area.

Ingestion: Ingestion is not considered a potential route of exposure.

Note to Physician: Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine should only be used with special caution in situations of emergency life support.

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**Section C: Hazards Information**

**Inhalation:** Ethane, 1,1,1,2-tetrafluoro: Gross overexposure may cause, central nervous system depression with dizziness, confusion, uncoordination, drowsiness or unconsciousness. Irregular heart beat with a strange sensation in the chest “heart thumping”, apprehension, light-headedness, and feeling of fainting, dizziness, weakness, sometimes progressing to loss of consciousness and death. Suffocation, if air is displaced by vapors.

**Skin:** Ethane, 1,1,1,2-tetrafluoro: Immediate effects of overexposure may include: frostbite if liquid or escaping vapor contacts the skin.

**Eyes:** Ethane, 1,1,1,2-tetrafluoro: “Frostbite-like” effects may occur if the liquid or escaping vapors contact the eyes.

**Additional Health Effects:** Ethane, 1,1,1,2-tetrafluoro: Increased susceptibility to the effects of this material may be observed in persons with pre-existing disease of the central nervous system, cardiovascular system.

**Carcinogenicity Information:** None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

---

**Section D: Precautions / Procedures**

**Flash Point:** Will not burn.

**Flammable limits in Air,% by Volume:**
- LEL - Not applicable
- UEL - Not applicable

**Auto Ignition:** >743°C (> 1369°F)

**Fire Extinguishing Agents:** Any standard agent. Use media most suitable for surrounding material.

**Special Fire Fighting Precautions:** HFC-134a is not flammable at ambient temperatures and atmospheric pressure. However, HFC-134a has been shown in tests to be combustible at pressure as low as 5.5 psig at 177°C (351°F) when mixed with air at concentrations of generally more than 60 volume % air. At lower temperatures, higher pressures are required for combustibility. Experimental data have also been reported which indicate combustibility of HFC-134a in the presence of certain concentrations of chlorine.

**Fire & Explosion Hazards:** Cylinders may rupture under fire conditions. Decomposition may occur. Contact of welding or soldering torch flame with high concentrations of refrigerant can result in visible changes in the size and color of the torch flame. This flame effect will only
occur in concentrations of product well above the recommended exposure limit, therefore stop all work and ventilate the area before proceeding. Use forced ventilation to disperse refrigerant vapors from the work area before using any open flames.

Ventilation: Ventilate area, especially low or enclosed places where heavy vapors may collect. Remove open flames. Use self-contained breathing apparatus (SCBA) if large spill or leak occurs.

Normal Handling: Use with sufficient ventilation to keep employee exposure below recommended limits. HFC-134a should not be mixed with air for leak testing or used for any other purpose above atmospheric pressure. See Flammable Properties section. Contact with chlorine or other strong oxidizing agents should also be avoided.

Storage: Store in a clean, dry place. Do not heat above 52°C (126°F).

---

**Section E: Personal Protective Equipment**

Engineering Controls: Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. Mechanical ventilation should be used in low or enclosed places. Refrigerant concentration monitors may be necessary to determine vapor concentrations in work areas prior to use of torches or other open flames, or if employees are entering enclosed areas.

Personal Protection: Impervious gloves and chemical splash goggles should be used when handling liquid. Under normal manufacturing conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large release occurs.

Exposure Guideline: PEL (OSHA) - None established
TLV (ACGIH) - None established
WEEL (AIHA) - 1000 ppm, 8 hr. TWA

---

**Physical and Chemical Properties:**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>-26.5°C (-15.7°F) @ 736 mm Hg</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>96 psia @ 25°C (77°F)</td>
</tr>
<tr>
<td>Vapor Density (Air=1)</td>
<td>3.6 @ 25°C (77°F)</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>100 WT%</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>0.15 WT% @ 25°C (77°F) @ 14.7 psia</td>
</tr>
<tr>
<td>Odor</td>
<td>Ether (slight)</td>
</tr>
<tr>
<td>Form</td>
<td>Liquefied gas</td>
</tr>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Liquid Density</td>
<td>1.21 g/cm³ @ 25°C (77°F)</td>
</tr>
</tbody>
</table>

---

**Section F: Reactivity Data**

Stability: Stable

Conditions to Avoid: Avoid open flames and high temperatures.
Incompatibility: Incompatible with alkali or alkaline earth metals – powdered Al, Zn, Be, etc

Decomposition: Decomposition products are hazardous. This material can be decomposed by high temperatures, (open flames, glowing metal surfaces, etc.) forming hydrofluoric acid and possibly carbonyl fluoride.

Polymerization: Will not occur.

Section G: Toxicological Information

Animal Data: Ethane, 1,1,1,2-tetrafluoro

Eye: A short duration spray of vapor produced very slight eye irritation.

Skin: Animal testing indicates this material is a slight skin irritant, but not a skin sensitizer.

Inhalation: 4 hour, ALC, rat: 567,000 ppm.

Single exposure caused: Cardiac sensitization, a potentially fatal disturbance of heart rhythm associated with a heightened sensitivity to the action of epinephrine. Lowest observed adverse effect level for cardiac sensitization; 75,000 ppm. Single exposure caused: lethargy, narcosis, and increased respiratory rates. These effects were temporary. Single exposure to near lethal doses caused: pulmonary edema. Repeated exposure caused: increased adrenals, liver, and spleen weight, decreased uterine, prostate weight. Repeated dosing of higher concentrations caused the following temporary effects: tremors and incoordination.

Carcinogenic, Development, Reproductive, Mutagenic Effects: In a two-year inhalation study, HFC-134a at a concentration of 50,000 ppm, produced an increase in late-occurring benign testicular tumors, testicular hyperplasia and testicular weight. The no-effect-level for this study was 10,000 ppm. Animal data show slight fetotoxicity but only at exposure levels producing other toxic effects in the adult animal. Reproductive data on male mice show: no change in reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. In animal testing, this material has not caused permanent genetic damage in reproductive cells of mammals (has not produced heritable genetic damage).

Section H: Environmental

Aquatic Toxicity
- 48 hour EC50 – Daphnia magna: 980 mg/L
- 96 hour LC50 – Rainbow trout: 450 mg/L

Waste disposal: Contaminated HFC-134a can be recovered by distillation or removed to a permitted waste disposal facility. Comply with Federal, state and local regulations.

Section I: Regulatory Information

Title III Hazard Classifications Section 311, 312
Acute: Yes
Chronic: Yes
Fire: No
Reactivity: No
Pressure: Yes

Hazard Chemical Lists:
SARA Extremely Hazardous Substance: No
CERCLA Hazardous Substance: No
SARA Toxic Chemical: No

---

**Section J: Additional Information**

NFPA, NPCA-HMIS Rating
Health 1
Flammability 0
Reactivity 1

Personal protection rating to be supplied by user depending on use condition.

*This product safety data sheet is offered solely for your information, consideration and investigation. RMS of Georgia, L.L.C. provides no warranties either expressed or implied and assumes no responsibility for the accuracy or completeness of the data contained herein.*
Material Safety Data Sheet

Rinker 711 Pipe Joint Lubricant (Water Dispersible)

Section 1 - Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Product/Chemical Name:</th>
<th>Rinker 711 Pipe Joint Lubricant</th>
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<tbody>
<tr>
<td>Chemical Formula:</td>
<td>2006-7</td>
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<tr>
<td>Manufacturer:</td>
<td>JTM Products, Inc., 31025 Carter Street, Solon, OH 44139, Phone (440) 287-2302, FAX (440) 287-3095</td>
</tr>
<tr>
<td></td>
<td>(CHEM-TEL 24-hour emergency: (800) 255-3924)</td>
</tr>
</tbody>
</table>

Section 2 - Composition / Information on Ingredients

Blend of soap, fatty oils and other non-toxic ingredients.

Section 3 - Hazards Identification

### Emergency Overview

**Potential Health Effects**

**Primary Entry Routes:** Not Hazardous

**Carcinogenicity:** IARC, NTP, and OSHA do not list the ingredients in Rinker 711 Pipe Joint Lubricant as carcinogens.

Section 4 - First Aid Measures

**Eye Contact:** Flush with copious volumes of water for 15 minutes while holding eyelids open.

**Skin Contact:** Wash with water. *If irritation persists, call a physician.*

If swallowed, do not induce vomiting. Drink plenty of water and call a physician immediately.

Section 5 - Fire-Fighting Measures

**Flash Point:** >220 °F (>104 °C)

**Flash Point Method:** NA, contains water

**Autoignition Temperature:** NA

**Extinguishing Media:** Water, water fog, alcohol foam, carbon dioxide or dry chemical are all suitable.

**Unusual Fire or Explosion Hazards:** None

**Hazardous Combustion Products:** None

**Fire-Fighting Instructions:** Do not release runoff from fire control methods to sewers or waterways.

**Fire-Fighting Equipment:** Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.

Section 6 - Accidental Release Measures

**Spill/Leak Procedures:**

**Containment:** For large spills, dike far ahead of spill for later disposal.

**Cleanup:** Place the bulk of any spilled material into drums, then rinse any remaining material to sewage treatment facility, in accordance with any applicable regulations.

**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - Handling and Storage

**Handling Precautions:** No special precautions are required.

**Storage Requirements:** No special precautions are required.

**Regulatory Requirements:** No known regulatory requirement for handling and storage.

Section 8 - Exposure Controls / Personal Protection

**Engineering Controls:**

**Ventilation:** Provide general or local exhaust ventilation systems.

**Administrative Controls:**

**Respiratory Protection:** If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.
**Rinker 711 Pipe Joint Lubricant (Water Dispersible)**

**Protective Clothing/Equipment:** Wear chemically protective gloves to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

**Contaminated Equipment:** Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

### Section 9 - Physical and Chemical Properties

| Physical State: Paste-like | Water Solubility: partially solubility in water |
| Appearance and Odor: amber paste, mild odor | Boiling Point: >220 °F |
| Vapor Pressure: NA | Freezing/Melting Point: <32 °F |
| Vapor Density (Air=1): NA | Viscosity: viscous paste |
| Density: ~9.1 lbs./gal. | Refractive Index: unknown |
| Specific Gravity (H2O=1, at 4 °C): ~1.1 | % Volatile: 4 |
| pH: NA | Evaporation Rate: NA |

### Section 10 - Stability and Reactivity

**Stability:** Rinker 711 Pipe Joint Lubricant is stable at room temperature in closed containers under normal storage and handling conditions.

**Polymerization:** Hazardous polymerization will not occur.

**Chemical Incompatibilities:**

**Conditions to Avoid:** Reactive alloys such as aluminum, brass, bronze. Also avoid contact with strong acids & strong oxidizing agents.

**Hazardous Decomposition Products:** Thermal oxidative decomposition of Rinker 711 Pipe Joint Lubricant can produce oxides of carbon.

### Section 11 - Toxicological Information

**Toxicity Data:**

**Eye Effects:** Eye irritant.

**Skin Effects:** Slight skin irritant if allowed to remain in contact.

### Section 12 - Ecological Information

**Ecotoxicity:**

**Environmental Fate**

**Environmental Transport:** Unknown.

**Environmental Degradation:** Unknown.

**Soil Absorption/Mobility:** Unknown.

### Section 13 - Disposal Considerations

**Disposal:** Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

### Section 14 - Transport Information

Not hazardous under DOT regulations.

### Section 15 - Regulatory Information

**EPA Regulations:** None apply.

### Section 16 - Other Information

**Prepared By:** J. Cahoon  
**Approved By:** J. Cahoon

**Disclaimer:** JTM PRODUCTS, INC. makes no warranty, expressed or implied, as to the accuracy, completeness, or reliability of information contained herein, except that such information is, to the best of JTM’s knowledge and belief, accurate as of the date indicated. It is for the purchaser and/or user to decide whether this information is suitable for his purposes.
Material Safety Data Sheet

SECTION I - Material Identity

<table>
<thead>
<tr>
<th>Item Name</th>
<th>STIHL 2-CYCLE ENGINE OIL</th>
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<tbody>
<tr>
<td>Part Number/Trade Name</td>
<td>9150P1402-60</td>
</tr>
<tr>
<td>National Stock Number</td>
<td>5L113</td>
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<td>A</td>
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<td>MSDS Number</td>
<td>186678</td>
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<td>HAZ Code</td>
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SECTION II - Manufacturer's Information

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<tr>
<th>Manufacturer Name</th>
<th>WESTLAND OIL COMPANY</th>
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<tbody>
<tr>
<td>P.O. Box</td>
<td>8098</td>
</tr>
<tr>
<td>Street</td>
<td>P.O. BOX 8098</td>
</tr>
<tr>
<td>City</td>
<td>SHREVEPORT</td>
</tr>
<tr>
<td>State</td>
<td>LA</td>
</tr>
<tr>
<td>Country</td>
<td>US</td>
</tr>
<tr>
<td>Zip Code</td>
<td>71148</td>
</tr>
<tr>
<td>Emergency Phone</td>
<td>(318) 688-1300</td>
</tr>
<tr>
<td>Information Phone</td>
<td>(318) 688-1300</td>
</tr>
</tbody>
</table>

MSDS Preparer's Information

| Street                  | P.O. BOX 8098            |
| City                    | SHREVEPORT               |
Alternate Vendors

Vendor #5 CAGE  BGVCL

SECTION III - Physical/Chemical Characteristics

Appearance/Odor  DARK EMERALD GREEN
Boiling Point  N/K
Melting Point  0.2
Vapor Pressure  < 5
Vapor Density  > 5
Specific Gravity  0.8810
Decomposition Temperature  N/K
Evaporation Rate  0.2
Solubility in Water  NEGLIGABLE
Percent Volatiles by Volume  8
Chemical pH  N/K
Corrosion Rate  N/K
Container Pressure Code  1
Temperature Code  4
Product State Code  L

SECTION IV - Fire and Explosion Hazard Data

Flash Point  175
Flash Point Method  PMCC
Lower Explosion Limit  0.9
Upper Explosion Limit  7.0
Extinguishing Media  WATER SPRAY, DRY CHEMICAL, FOAM OR CO2
Special Fire Fighting Procedures  WATER OR FOAM MAY CAUSE FROTHING. USE WATER TO COOL FIRE-EXPOSED CONTAINERS
Unusual Fire/Explosion Hazards  IF A LEAK OR SPILL ISN'T IGNITED, USE WATER TO DISPERSE VAPORS & PROTECT PERSONNEL

SECTION V - Reactivity Data

Stability  YES
Stability Conditions to Avoid  HEAT & FLAME. PROLONGED BREATHING OF MIST OR VAPOR. PROLONGED OR REPEATED CONTACT W/SKIN
## SECTION VI - Health Hazard Data

<table>
<thead>
<tr>
<th>Route of Entry: Skin</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route of Entry: Ingestion</td>
<td>YES</td>
</tr>
<tr>
<td>Route of Entry: Inhalation</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Health Hazards - Acute and Chronic**
- **EYES/SKIN:** MINIMALLY IRRITATING. **INHALATION:** DROWSINESS & UNCONSCIOUSNESS POSSIBLE UPON EXPOSURE TO HIGH CONCENTRATIONS IN POORLY VENTILATED CONFINED SPACES

**Carcinogenity:**
- **NTP:** NO
- **IARC:** NO
- **OSHA:** NO

**Explanation of Carcinogenity:** NONE

**Symptoms of Overexposure**
- **EYES/SKIN:** MINIMALLY IRRITATING. **INHALATION:** DROWSINESS & UNCONSCIOUSNESS POSSIBLE UPON EXPOSURE TO HIGH CONCENTRATIONS IN POORLY VENTILATED CONFINED SPACES

**Medical Cond. Aggravated by Exposure:** N/K

**Emergency/First Aid Procedures**
- **EYES:** WASH W/PLENTY OF WATER. **SKIN:** WASH EXPOSED AREAS W/SOAP & WATER. **INGESTION:** DON'T INDUCE VOMITING. ASPIRATION MAY CAUSE CHEMICAL PNEUMONIA. **INHALATION:** SHOULD SYMPTOMS NOTED UNDER OVEREXPOSURE OCCUR, REMOVE TO FRESH AIR. IF NOT BREATHING, APPLY ARTIFICIAL RESPIRATION

## SECTION VII - Precautions for Safe Handling and Use

**Steps if Material Released/Spilled**
- WIPE UP OR ABSORB ON SUITABLE MATERIAL & SHOVEL UP

**Neutralizing Agent**
- N/K

**Waste Disposal Method**
- UNDER RCRA, IT IS THE RESPONSIBILITY OF THE USER OF PRODUCTS TO DETERMINE, AT THE TIME OF DISPOSAL, WHETHER PRODUCT MEETS RCRA CRITERIA FOR HAZARDOUS WASTE. UNUSED PRODUCT IS NOT A HAZARDOUS WASTE
Handling and Storage Precautions
MINIMUM FEASIBLE HANDLING TEMPERATURES SHOULD BE MAINTAINED. WATER CONTAMINATION SHOULD BE AVOIDED

Other Precautions
PERIODS OF EXPOSURE TO HIGH TEMPERATURES SHOULD BE MINIMIZED

SECTION VIII - Control Measures

Respiratory Protection N/K
Ventilation NORMAL
Protective Gloves RUBBER (OPTIONAL)
Eye Protection GOGGLES, FACE SHIELD
Other Protective Equipment N/R
Work Hygenic Practices CLEANSING AREAS SEVERAL TIMES DAILY W/SOAP & WATER. LAUNDERING OR DRY CLEANING SOILED WORK CLOTHING AT LEAST WEEKLY

Supplemental Health/Safety Data N/R
Disposal Code O

SECTION IX - Label Data

Protect Eye YES
Protect Skin YES
Protect Respiratory YES
Chronic Indicator NO
Contact Code SLIGHT
Fire Code UNKNOWN
Health Code UNKNOWN
React Code UNKNOWN
Specific Hazard and Precaution NO TARGET ORGANS LISTED FOR CHRONIC EXPOSURES

SECTION X - Transportation Data

Container Quantity 2.6
Unit of Measure OZF

SECTION XI - Site Specific/Reporting Information

Volatile Organic Compounds (P/G) 0
Volatile Organic Compounds (G/L) 0

SECTION XII - Ingredients/Identity Information
<table>
<thead>
<tr>
<th>Ingredient #</th>
<th>01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredient Name</td>
<td>LUBRICATING OIL (&gt;85%)</td>
</tr>
<tr>
<td>CAS Number</td>
<td>64742547</td>
</tr>
<tr>
<td>Percent</td>
<td>85</td>
</tr>
<tr>
<td>Ingredient #</td>
<td>02</td>
</tr>
<tr>
<td>Ingredient Name</td>
<td>ADDITIVES (&lt;10%)</td>
</tr>
<tr>
<td>CAS Number</td>
<td>ADDITIVE</td>
</tr>
<tr>
<td>NIOSH Number</td>
<td>1003000AS</td>
</tr>
<tr>
<td>Proprietary</td>
<td>NO</td>
</tr>
<tr>
<td>Percent</td>
<td>10</td>
</tr>
<tr>
<td>OSHA PEL</td>
<td>N/K</td>
</tr>
<tr>
<td>ACGIH TLV</td>
<td>N/K</td>
</tr>
<tr>
<td>Recommended Limit</td>
<td>N/K</td>
</tr>
<tr>
<td>Ingredient #</td>
<td>03</td>
</tr>
<tr>
<td>Ingredient Name</td>
<td>STODDARD SOLVENT (&lt;10%)</td>
</tr>
<tr>
<td>CAS Number</td>
<td>8052413</td>
</tr>
<tr>
<td>NIOSH Number</td>
<td>WJ8925000</td>
</tr>
<tr>
<td>Proprietary</td>
<td>NO</td>
</tr>
<tr>
<td>Percent</td>
<td>10</td>
</tr>
<tr>
<td>OSHA PEL</td>
<td>500 PPM</td>
</tr>
<tr>
<td>ACGIH TLV</td>
<td>100 PPM; 9293</td>
</tr>
<tr>
<td>Recommended Limit</td>
<td>100 PPM</td>
</tr>
</tbody>
</table>
MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

| Manufacturer: | WD-40 Company |
| Address: | 1061 Cudahy Place (92110) |
| | P.O. Box 80607 |
| | San Diego, California |
| | 92138-0607 |
| Telephone: | Emergency Only: 1 (800) 424-9300 (CHEMTREC) |
| | Information: (619) 275-1400 |
| Chemical Name: | Organic Mixture |
| Trade Name: | WD-40 Aerosol |
| Item No. | 10002, 10005, 10008, 10011, 10013, 10016, 10023 |

II. HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>%</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aliphatic Petroleum Distillates</td>
<td>8052-41-3</td>
<td>60-70</td>
<td>PEL</td>
</tr>
<tr>
<td>Petroleum Base Oil</td>
<td>64742-65-0</td>
<td>15-25</td>
<td>5 mg/M³</td>
</tr>
<tr>
<td>Carbon Dioxide</td>
<td>124-38-9</td>
<td>2-3</td>
<td>5000 ppm</td>
</tr>
<tr>
<td>Non-hazardous Ingredients</td>
<td>&lt;10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

III. PHYSICAL DATA

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point:</td>
<td>NA</td>
</tr>
<tr>
<td>Vapor Density (air = 1):</td>
<td>Greater than 1</td>
</tr>
<tr>
<td>Solubility in Water:</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Specific Gravity (H₂O = 1):</td>
<td>0.816 @ 70°F</td>
</tr>
<tr>
<td>Percent Volatile (volume):</td>
<td>70%</td>
</tr>
<tr>
<td>Evaporation Rate:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapor Pressure:</td>
<td>110 ±5 PSI @ 70°F</td>
</tr>
<tr>
<td>Appearance:</td>
<td>Light amber</td>
</tr>
<tr>
<td>Odor:</td>
<td>Characteristic odor</td>
</tr>
</tbody>
</table>

IV. FIRE AND EXPLOSION

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point:</td>
<td>Tag Open Cup 110°F (minimum)</td>
</tr>
<tr>
<td>Flammable Limits:</td>
<td>(Solvent Portion) [LeL] 1.0% [UeL] 6.0%</td>
</tr>
<tr>
<td>Extinguishing Media:</td>
<td>CO₂, Dry Chemical, Foam</td>
</tr>
<tr>
<td>Special Fire Fighting Procedures:</td>
<td>Contents Under Pressure</td>
</tr>
<tr>
<td>Unusual Fire and Explosion Hazards:</td>
<td>FLAMMABLE – U.F.C. level 3 AEROSOL</td>
</tr>
</tbody>
</table>

V. HEALTH HAZARD / ROUTE(S) OF ENTRY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threshold Limit Value</td>
<td>Aliphatic Petroleum Distillates (Stoddard solvent) lowest TLV (ACGIH 100 ppm.)</td>
</tr>
<tr>
<td>Symptoms of Overexposure</td>
<td>Inhalation (Breathing): May cause anesthesia, headache, dizziness, nausea and upper respiratory irritation.</td>
</tr>
<tr>
<td></td>
<td>Skin Contact: May cause drying of skin and/or irritation.</td>
</tr>
<tr>
<td></td>
<td>Eye Contact: May cause irritation, tearing and redness.</td>
</tr>
<tr>
<td></td>
<td>Ingestion (Swallowed): May cause irritation, nausea, vomiting and diarrhea.</td>
</tr>
<tr>
<td>First Aid Emergency Procedures</td>
<td>Ingestion (Swallowed): Do not induce vomiting, seek medical attention.</td>
</tr>
<tr>
<td></td>
<td>Eye Contact: Immediately flush eyes with large amounts of water for 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>Skin Contact: Wash with soap and water.</td>
</tr>
<tr>
<td></td>
<td>Inhalation (Breathing): Remove to fresh air. Give artificial respiration if necessary.</td>
</tr>
<tr>
<td></td>
<td>If breathing is difficult, give oxygen.</td>
</tr>
<tr>
<td>Pre-existing medical conditions such as eye, skin and respiratory disorders may be aggravated by exposure.</td>
<td></td>
</tr>
<tr>
<td>DANGER!</td>
<td>Aspiration Hazard: If swallowed, can enter lungs and may cause chemical pneumonitis. Do not induce vomiting. Call Physician immediately.</td>
</tr>
<tr>
<td>Suspected Cancer Agent</td>
<td>Yes _______ No _______</td>
</tr>
<tr>
<td>The components in this mixture have been found to be noncarcinogenic by NTP, IARC and OSHA.</td>
<td></td>
</tr>
</tbody>
</table>
VI. REACTIVITY DATA

<table>
<thead>
<tr>
<th>Stability: Stable</th>
<th>Unstable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions to avoid: NA</td>
<td></td>
</tr>
<tr>
<td>Incompatibility: Strong oxidizing materials</td>
<td></td>
</tr>
<tr>
<td>Hazardous decomposition products: Thermal decomposition may yield carbon monoxide and/or carbon dioxide.</td>
<td></td>
</tr>
<tr>
<td>Hazardous polymerization: May occur</td>
<td>Will not occur</td>
</tr>
</tbody>
</table>

VII. SPILL OR LEAK PROCEDURES

Spill Response Procedures
Spill unlikely from aerosol cans. Leaking cans should be placed in plastic bag or open pail until pressure has dissipated.

Waste Disposal Method
Empty aerosol cans should not be punctured or incinerated; bury in land fill. Liquid should be incinerated or buried in land fill. Dispose of in accordance with local, state and federal regulations.

VIII. SPECIAL HANDLING INFORMATION

| Ventilation: Sufficient to keep solvent vapor less than TLV. |
| Respiratory Protection: Advised when concentrations exceed TLV. |
| Protective Gloves: Advised to prevent possible skin irritation. |
| Eye Protection: Approved eye protection to safeguard against potential eye contact, irritation or injury. |
| Other Protective Equipment: None required. |

IX. SPECIAL PRECAUTIONS

Keep from sources of ignition. Avoid excessive inhalation of spray particles, do not take internally. Do not puncture, incinerate or store container above 120°F. Exposure to heat may cause bursting. Keep can away from electrical current or battery terminals. Electrical arcing can cause burn-through (puncture) which may result in flash fire, causing serious injury. Keep from children.

X. TRANSPORTATION DATA (49 CFR 172.101)

**Domestic Surface**
Description: Consumer Commodity
Hazard Class: ORM-D
ID No.: NONE
Label Required: Consumer Commodity (ORM-D)

**Domestic Air**
Description: Consumer Commodity (Non-Flammable Gas – Aerosol)
Hazard Class: ORM-D
ID No.: NONE
Label Required: Consumer Commodity (ORM-D-AIR)

XI. REGULATORY INFORMATION

All ingredients for this product are listed on the TSCA inventory.
SARA Title III chemicals: None
California Prop 65 chemicals: None
CERCLA reportable quantity: None
RCRA hazardous waste no.: D001 (Ignitable)

SIGNATURE: R. Miles  
TITLE: Technical Director  
REVISION DATE: March 2001  
SUPERSEDES: March 1998

NA = Not applicable  
NDA = No data available  
< = Less than  
> = More than

We believe the statements, technical information and recommendations contained herein are reliable. However, the data is provided without warranty, expressed or implied. It is the user’s responsibility both to determine safe conditions for use of this product and assume loss, damage or expense, direct or consequential, arising from its use. Before using product, read label.
1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Winter Power 4033

Company Identification: Primrose Oil Company, Inc.
11444 Denton Drive
P.O. Box 29665
Dallas, Texas 75229 USA
1-972-241-1100 (For product information)
1-800-633-8253 (For Emergencies Only)

Notice: This mixture does contain a toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372: 2-Butoxyethanol, CAS# 111-76-2, <40%; Naphthalene CAS# 91-20-3 <1%; Vinyl Acetate CAS# 108-05-4 <1%

2. COMPOSITION / INFORMATION ON INGREDIENTS

CONTAINING: HAZARDOUS AND/OR REGULATED COMPONENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Amount</th>
<th>CAS Number</th>
<th>OSHA PEL (TWA)</th>
<th>ACGIH TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Aromatic Naphtha</td>
<td>5 – 20%</td>
<td>64742-94-5</td>
<td>125 mg/m³</td>
<td>NE</td>
</tr>
<tr>
<td>2-Butoxyethanol</td>
<td>20 - 40%</td>
<td>111-76-2</td>
<td>50 ppm</td>
<td>20 ppm</td>
</tr>
<tr>
<td>Alkyl Nitrates</td>
<td>Proprietary</td>
<td>27247-96-7</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Additive</td>
<td>Proprietary</td>
<td>Mixture</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

Balance of above ingredients are non-hazardous or hazardous in less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

CALIFORNIA PROP 65: This product does not contain an ingredient(s), above the safe harbor limits, which are known to the state of California to cause cancer, birth defects, or other reproductive harm.

HAZARDS DISCLOSURE: This product does contain known hazardous materials in reportable levels as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200. As defined under Sara 311 and 312, this product contains known hazardous materials.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER! COMBUSTIBLE LIQUID AND VAPOR. HARMFUL IF INHALED. PROLONGED EXPOSURE MAY CAUSE IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

HMIS/NFPA Rating: See Section 16

POTENTIAL HEALTH EFFECTS

ROUTES OF ENTRY: Skin. Eyes, Inhalation, Ingestion.

TARGET ORGANS: Skin. Respiratory System

INHALATION: Causes irritation to the nose and throat. Concentrations above the TLV may cause headache,
dizziness, nausea, or shortness of breath.

INGESTION: Not expected to be a normal route of entry. Ingestion of small amounts may produce mild gastrointestinal irritation.

SKIN CONTACT: Prolonged contact with skin may cause irritation. Symptoms include redness, itching, and pain.

EYE CONTACT: Vapors can irritate the eyes. Splashes cause pain and irritation.

CHRONIC EXPOSURE: None known.

AGGRAVATION OF PRE-EXISTING CONDITIONS: Persons with pre-existing eye, skin disorders or impaired respiratory function may be more susceptible to the effects of the substance.

4. FIRST AID MEASURES

INHALATION FIRST AID: If breathing difficulty develops, remove victim to fresh air. Provide oxygen if breathing continues to be difficult. If not breathing, give artificial respiration, preferably mouth to mouth. GET MEDICAL ATTENTION IMMEDIATELY.

SKIN CONTACT FIRST AID: If contact occurs wash skin with plenty of soap and water. Remove contaminated clothing. Wash clothing before reuse. GET MEDICAL ATTENTION IF IRRITATION OCCURS.

EYE CONTACT FIRST AID: If contact with eyes, immediately flush eyes with plenty of water for at least 15 minutes lifting upper and lower eyelids occasionally. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION FIRST AID: Induce vomiting ONLY as directed by medical personnel. Never give anything by mouth to an unconscious person. GET MEDICAL ATTENTION IMMEDIATELY.

NOTE TO PHYSICIANS: Treat symptoms.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

AUTO IGNITION TEMPERATURE: >500°F

FLASH POINT: 125°F Minimum.

FLAMMABLE LIMITS IN AIR, % by Volume: lel: NE; uel: NE

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, foam. Water spray may be used to keep fire exposed containers cool, dilute spills to non-flammable mixtures.

FIRE & EXPLOSION HAZARDS: Do not use forced stream as this could cause fire to spread.

SPECIAL INFORMATION:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

SPILL CLEAN-UP PROCEDURES: Evacuate unprotected personnel from the area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in section 8. Contain and recover liquid if possible. Use non-sparking tools and equipment. Cover spilled liquid with sand or earth. Clean up spill immediately and place in appropriate containers. Do not discharge to sewers and surface waters. Notify authorities if entry occurs.

U.S. Regulations (CERCLA) requires reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.
7. HANDLING AND STORAGE

RECOMMENDED STORAGE CONDITIONS: Protect against physical damage. Store in a cool, dry well-ventilated location away from heat or ignition sources. Keep out of direct sunlight. Containers should be bonded and grounded for transfers to avoid static sparks. Keep containers tightly closed. Containers of this material may be hazardous when empty since they retain residues. Observe all warnings and precautions listed for the product.

HANDLING (PERSONNEL): Handle in accordance with good industrial hygiene and safety practices. Avoid contact with eyes, skin and clothing. Use with adequate ventilation. Avoid breathing vapors, mists, or dust. Do not eat, drink or smoke in work area. Wash thoroughly after handling.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS: See Section 2 above.

Heavy Aromatic Naphtha:
- OSHA Permissible Exposure Limit (PEL): 125 mg/m³ (TWA)
- ACGIH Threshold Limit Value (TWA): Not Established

2-Butoxyethanol:
- OSHA Permissible Exposure Limit (PEL): 50 ppm (TWA)
- ACGIH Threshold Limit Value (TWA): 20 ppm

Alkyl Nitrates:
- OSHA Permissible Exposure Limit (PEL): Not Established
- ACGIH Threshold Limit Value (TWA): Not Established

Additive:
- OSHA Permissible Exposure Limit (PEL): Not Established
- ACGIH Threshold Limit Value (TWA): Not Established

VENTILATION SYSTEM: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

PERSONAL RESPIRATORS (NIOSH APPROVED): If the exposure limit is exceeded and engineering controls are not feasible, a respirator may be required. Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

SKIN PROTECTION: Wear protective clothing, gloves, as appropriate.

EYE PROTECTION: Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

GOOD HYGIENE CONDITIONS: Wash with soap and water before meals and at the end of each work shift. Good manufacturing practices require amounts of any chemical be removed from the skin as soon as practical, especially before eating or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM: Liquid.

ODOR: Light Petroleum Odor

SOLUBILITY IN WATER: Partial

COLOR: Yellow

BOILING POINT: >500°F

SPECIFIC GRAVITY: 0.9 (Water =1)
MATERIAL SAFETY DATA SHEET

Winter Power 4033
Last Updated November 12, 2010

MELTING POINT: NA
AUTO IGNITION TEMPERATURE: >500°F
pH: NE
VAPOR DENSITY: >5
EVAPORATION RATE (BuAc=1): NE
FLASH POINT: 125°F Minimum
VAPOR PRESSURE: NE

10. STABILITY AND REACTIVITY

STABILITY: Stable under ordinary conditions of use and storage.
CONDITIONS TO AVOID: Heat, flame ignition sources and strong oxidizers.
HAZARDOUS POLYMERIZATION: Will not occur.
INCOMPATIBILITY WITH OTHER MATERIALS: Strong oxidizers.
HAZARDOUS DECOMPOSITION: Carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA:
No Data Available
Carcinogenic effects: Not available.
Mutagenic effects: Not available.
Teratogenic effects: Not available.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>---NTP Carcinogen---</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naphthalene CAS# 91-20-3</td>
<td>Known: No</td>
</tr>
<tr>
<td>Vinyl Acetate CAS# 108-05-4</td>
<td>Known: No</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:
If applied to leaves, this product may kill grasses and small plants by interfering with transpiration and respiration. This product is not toxic to fish but may coat gill structures resulting in suffocation if spilled in shallow, running water. Product may be moderately toxic to amphibians by preventing dermal respiration. This product may cause gastrointestinal distress in birds and mammals through ingestion during pelage grooming.

ENVIRONMENTAL TOXICITY:
This product is rapidly biodegradable. Biodegradation is possible within 90 to 120 days in aerobic environments at temperatures above 70°F.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Recover, reclaim or recycle when practical.
MATERIAL SAFETY DATA SHEET

Winter Power 4033

Last Updated November 12, 2010

Dispose of material in accordance with federal, state and local requirements. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.

14. TRANSPORTATION INFORMATION


D.O.T. (USA) – Non-bulk containers (≤ 119 Gallons/450L) shipped road or rail are non-regulated
CLASS: 3
PRODUCT LABEL: Winter Power 4033
UN NUMBER: UN1993
PACKING GROUP: III
DOT SHIPPING NAME: Flammable Liquid N.O.S.
PRODUCT RQ: 20L Passenger Aircraft, 220L Cargo Aircraft.
ERG Guide Number: 128
SUPPLEMENTAL HAZARD: None

15. REGULATORY INFORMATION

FEDERAL REGULATORY STATUS

| Chemical Inventory Status - Part 1 |
| Ingredient | TSCA | EC | Japan | Australia |
| All Ingredients | YES | YES | YES | YES |

| Chemical Inventory Status - Part 2 |
| Ingredient | Korea | DSL | NDSL | Phil. |
| All Ingredients | YES | YES | NO | YES |

| Federal, State & International Regulations - Part 1 |
| Ingredient | RQ | TPQ | List | Chemical Catalog |
| All Ingredients | NO | NO | YES | NO |
| This product does not have a component(s) which are subject to SARA 313 Annual Reporting Requirements: 2-Butoxyethanol, CAS# 111-76-2, <40%; Naphthalene CAS# 91-20-3 <1%; Vinyl Acetate CAS# 108-05-4 <1% |
| Chemical Weapons Convention: No | TSCA 12(b): No | CDTA: No |
| Clean Water Act (CWA) 307: No products were found. |
| Clean Water Act (CWA) 311: No products were found. |
| Clean Air Act (CAA) 112 accidental release prevention: No products were found. |
| Clean Air Act (CAA) 112 regulated flammable substances: No products were found. |
| Clean Air Act (CAA) 112 regulated toxic substances: No products were found. |

| SARA 311/312: | Acute: Yes | Chronic: No | Fire: Yes | Pressure: No |
| Reactivity: No (Pure / Liquid) |

STATE REGULATIONS:

PROP 65 - WARNING: THIS PRODUCT DOES NOT CONTAIN A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.
MATERIAL SAFETY DATA SHEET

Winter Power 4033
Last Updated November 12, 2010

RCRA 40 CFR: None.

CANADIAN REGULATIONS:
WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.
WHIMS Classification: Class B Division 3 Combustible Material with flash point between 100°F and 200°F

This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA). This material or all of its components are listed on the Canadian Domestic Substances List (DSL). This material or all of its components are listed (or considered as having been notified) on the European Inventory of Existing Chemical Substances (EINECS). Other inventory lists: Korea (TCCL), Australia (AICS), China (Draft), PICCS (Philippines-RA6969), Japan (ENCS METI/MOL).

16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>Hazardous Material Information System (HMIS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
</tr>
<tr>
<td>Flammability</td>
</tr>
<tr>
<td>Reactivity</td>
</tr>
<tr>
<td>Personal Protection</td>
</tr>
</tbody>
</table>

National Fire Protection Association (NFPA) 1-Health, 2-Flammability, 0-Reactivity

NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme
Protective Equipment: GOGGLES & SHIELD; PROPER GLOVES;
Prepared By: Paul Eigbrett (MSDS Authoring Services PLUS)
Date: November 12, 2010

ADDITIONAL INFORMATION:
The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process. This Material Safety Data Sheet (MSDS) has been reviewed to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-2004)

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END OF MSDS