

Material Safety Data Sheet**1. MATERIAL AND COMPANY IDENTIFICATION**

Material Name : **Rotella Extended Life Coolant/Antifreeze Concentrate**
Uses : Antifreeze and coolant.

Manufacturer/Supplier : **SOPUS Products**
 PO BOX 4427
 Houston, TX 77210-4427
 USA

MSDS Request : 877-276-7285

Emergency Telephone Number

Spill Information : 877-242-7400

Health Information : 877-504-9351

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Identity	CAS No.	Concentration
Ethenediol	107-21-1	60.00 - 100.00 %

Mixture of ethylene glycol, water and additives.

3. HAZARDS IDENTIFICATION

Emergency Overview	
Appearance and Odour	: Purple. Liquid at room temperature. Characteristic.
Health Hazards	: Harmful or fatal if swallowed. May cause acidosis, cardiopulmonary and kidney effects.
Environmental Hazards	: May cause long-term adverse effects in the aquatic environment.

Health Hazards

Inhalation : Slightly irritating to respiratory system.

Skin Contact : May cause moderate irritation to skin.

Eye Contact : Moderately irritating to eyes.

Ingestion : Harmful if swallowed. May cause acidosis, cardiopulmonary and kidney effects. Ingestion may cause drowsiness and dizziness.

Other Information : Possibility of organ or organ system damage from prolonged exposure; see Chapter 11 for details. Target organ(s):
Kidney.

Lungs

Cardiovascular system.

Intentional abuse, misuse or other massive exposure may cause multiple organ damage and or death.

Signs and Symptoms : Kidney toxicity may be recognized by blood in the urine or increased or decreased urine flow. Other signs and symptoms can include nausea, vomiting, abdominal cramps, diarrhoea, lumbar pain shortly after ingestion, and possibly narcosis and

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death. High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued exposure may result in unconsciousness and/or death.

- Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Kidney. Cardiovascular system.
- Environmental Hazards** : Not classified as dangerous for the environment.
- Additional Information** : Under normal conditions of use or in a foreseeable emergency, this product meets the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

4. FIRST AID MEASURES

- General Information** : DO NOT DELAY. Keep victim calm. Obtain medical treatment immediately.
- Inhalation** : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
- Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
- Ingestion** : DO NOT DELAY. If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- Advice to Physician** : IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT! The preferred treatment is immediate transportation to a medical facility and use of appropriate treatment including possible administration of activated charcoal, gastric lavage and or gastric aspiration. If none of the above are immediately available and a delay of more than one hour is anticipated before such medical attention can be obtained, induction of vomiting may be appropriate using IPECAC syrup (Contraindicated if there are any signs of CNS depression). This should be considered on a case by case basis following specialist advice. Specific other treatments include may include ethanol therapy, fomepizole, treatment of acidosis and haemodialysis. Seek specialist advice without delay.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Flash point** : Typical 130 °C / 266 °F (Pensky-Martens Closed Cup)
- Lower / upper Flammability or Explosion limits** : 3 - 15 %(V)
- Auto ignition temperature** : > 200 °C / 392 °F
- Specific Hazards** : Hazardous combustion products may include: A complex

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- mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
- Suitable Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment for Firefighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

- Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Clean Up Methods** : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- For small liquid spills (< 1 drum), transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- Additional Advice** : U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Centre at (800) 424-8802. Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.

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- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : Zinc. Avoid contact with galvanized materials.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Ethanediol	ACGIH	Ceiling(Aerosol.)		100 mg/m3	
Ethanediol	OSHA Z1A	Ceiling	50 ppm	125 mg/m3	

- Additional Information** : Shell has adopted as Interim Standards the OSHA Z1A values that were established in 1989 and later rescinded.
- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective

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Eye Protection	: hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
Protective Clothing	: Wear safety glasses or full face shield if splashes are likely to occur.
Monitoring Methods	: Skin protection not ordinarily required beyond standard issue work clothes.
Environmental Exposure Controls	: Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
	: Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Purple. Liquid at room temperature.
Odour	: Characteristic.
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: > 100 °C / 212 °F estimated value(s)
Freezing Point	: Typical -30 °C / -22 °F
Flash point	: Typical 130 °C / 266 °F (Pensky-Martens Closed Cup)
Lower / upper Flammability or Explosion limits	: 3 - 15 %(V)
Auto-ignition temperature	: > 200 °C / 392 °F
Vapour pressure	: Data not available
Specific gravity	: Typical 1.1 at 15 °C / 59 °F
Density	: Typical 909 g/cm ³ at 15 °C / 59 °F
Water solubility	: Completely Soluble
n-octanol/water partition coefficient (log Pow)	: Data not available
Kinematic viscosity	: Typical 30 mm ² /s at 40 °C / 104 °F
Vapour density (air=1)	: Data not available
Evaporation rate (nBuAc=1)	: Data not available

10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Acute Oral Toxicity	: Classified as harmful by the European Commission. There is a

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marked difference in acute oral toxicity between rodents and man, man being more susceptible than rodents. The estimated fatal dose for man is 100 millilitres (1/2 cup). This material has also been shown to be toxic and potentially lethal by ingestion to cats and dogs. Ingestion may cause drowsiness and dizziness.

- Acute Dermal Toxicity** : Expected to be of low toxicity: LD50 >2000 mg/kg , Rabbit
- Skin Irritation** : May cause moderate skin irritation (but insufficient to classify).
- Eye Irritation** : Moderately irritating to eyes (but insufficient to classify).
- Respiratory Irritation** : Inhalation of vapours or mists may cause irritation.
- Sensitisation** : Not expected to be a skin sensitiser.
- Repeated Dose Toxicity** : Kidney: can cause kidney damage.
- Mutagenicity** : Not considered a mutagenic hazard.
- Carcinogenicity** : Components are not known to be associated with carcinogenic effects.

Material	Carcinogenicity Classification
Ethenediol	ACGIH Group A4: Not classifiable as a human carcinogen.
Sodium molybdate	ACGIH Group A3: Confirmed animal carcinogen with unknown relevance to humans.

- Reproductive and Developmental Toxicity** : Causes foetotoxicity in animals; considered to be secondary to maternal toxicity.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

- Acute Toxicity** : Expected to be practically non toxic: LC/EC/IC50 > 100 mg/l (to aquatic organisms)
- Mobility** : Dissolves in water. If product enters soil, it will be highly mobile and may contaminate groundwater.
- Persistence/degradability** : Readily biodegradable.
- Bioaccumulation** : Not expected to bioaccumulate significantly.
- Other Adverse Effects** : Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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14. TRANSPORT INFORMATION

Emergency Response Guide 171
No .

US Department of Transportation Classification (49CFR)

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

IMDG

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status

Notification Status

EINECS	All components listed.
DSL	All components listed.
TSCA	All components listed.

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

Rotella Extended Life Coolant/Antifreeze Concentrate ()	Reportable quantity: 5473 lbs
Ethenediol (107-21-1)	Reportable quantity: 5000 lbs

SARA Hazard Categories (311/312)

Immediate (Acute) Health Hazard.

SARA Toxic Release Inventory (TRI) (313)

Ethenediol (107-21-1)	91.35%
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State Regulatory Status

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

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

New Jersey Right-To-Know Chemical List

Ethanediol (107-21-1) Listed.

Pennsylvania Right-To-Know Chemical List

Ethanediol (107-21-1) Environmental hazard.
Listed.

16. OTHER INFORMATION

NFPA Rating (Health, Fire, Reactivity) : 2, 1, 0

MSDS Version Number : 6.3

MSDS Effective Date : 12/09/2010

MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

MSDS Distribution : The information in this document should be made available to all who may handle the product.

Disclaimer : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Eastern Multi-Purpose ATF
SYNONYMS: Automatic Transmission Fluid
PRODUCT CODES: 3f440001

MANUFACTURER: Eastern Oil Company
ADDRESS: 590 South Paddock Street
Pontiac, MI 48341

EMERGENCY PHONE: Eastern Oil (248) 333-1333
FAX PHONE: (248) 333-1426

CHEMICAL FAMILY: Petroleum Hydrocarbon
CHEMICAL FORMULA: Mixture

SECTION 1 NOTES: Product is a blend of highly refined petroleum oils fortified with anti-wear additives and corrosion inhibitors for superior performance.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>% WT</u>	<u>OSHA TWA</u>	<u>ACGIH TLV</u>	<u>SARA 313 Reportable</u>
Mineral Oil (Petroleum)	Various	>75	5 mg/m3 (Mist)	5 mg/m3 (Mist)	No
Additives	Proprietary	<15	Not Established	Not Established	No

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: No acute effects expected from incidental skin contact during handling. Aspiration hazard (lung injury) if breathed into the lungs during ingestion or vomiting. Regulated OSHA air contaminant (29 CFR 1910.1000, Subpart Z). Liquid is slippery and will burn. Avoid release of this product to the environment.

ROUTES OF ENTRY: Eyes, Skin, Inhalation, Ingestion

POTENTIAL HEALTH EFFECTS:

EYES: May cause irritation.

SKIN: Long term or repeated exposures can defat the skin resulting in irritation and possible dermatitis.

INGESTION: Danger of aspiration to the lungs with potential for chemical pneumonitis. Lesser effects include throat irritation, nausea, vomiting, and diarrhea.

INHALATION: Prolonged, excessive inhalation may cause irritation to the lungs and air passages.

ACUTE HEALTH HAZARDS: Eye and respiratory irritation.

CHRONIC HEALTH HAZARDS: Possible skin cracking, dermatitis and respiratory tract inflammation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Dry skin.

CARCINOGENICITY

OSHA: NO

ACGIH: NO

NTP: NO

IARC: NO



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SECTION 3 NOTES: NONE

SECTION 4: FIRST AID MEASURES

EYES: Flush with copious amounts of water for several minutes. If irritation persists, continue with water application. If after 15 minutes, irritation continues, seek medical attention.

SKIN: Promptly wash skin with mild soap and water.

INGESTION: Do not induce vomiting. Seek qualified medical attention. Small amounts, which may enter the mouth incidental to handling, may be rinsed out with water. If vomiting occurs, keep head below hips to avoid breathing the product into the lungs.

INHALATION: Remove to fresh air. In severe cases of overexposure, administer oxygen and seek qualified medical attention.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treat symptoms as required. Product contains petroleum oils.

SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT:

F: >350 deg. Fahrenheit Min.

C:

METHOD USED: Cleveland Open Cup

AUTOIGNITION TEMPERATURE:

F: Not Determined

C:

NFPA HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

OTHER: None

HMIS HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

EXTINGUISHING MEDIA: Foam, Carbon Dioxide, Dry Chemical, Water Fog

SPECIAL FIRE FIGHTING PROCEDURES: Water may spread the fire as oil can float on it. Water spray may be used to cool exposed containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Water may spread the fire.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Carbon and Phosphorous. Smoke, odorous and toxic fumes may form during incomplete combustion.

SECTION 5 NOTES: Use of water for fire fighting must be done with caution as water may actually spread the fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Prevent spread of material, especially to rivers or waterways by diking with dirt or absorbent. For large spills, pump released material into recovery containers and then spread absorbent over the spill area to collect residuals. For small spills, wipe up or use absorbent to clean the spill area.

SECTION 6 NOTES: Prevent spill from reaching any type of running or standing water, such as streams, sewers, well water and ponds.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Store in a sheltered area, away from temperature extremes in labeled containers. Keep away from heat, sparks, or flame. Avoid contact with eyes, skin, clothing, and shoes. Do not breath vapors or mist.

OTHER PRECAUTIONS: When handling, have appropriate safety equipment for the working conditions including eyewash. Do not pressurize, cut, weld, braze, solder, drill, or grind containers containing product residues. Wash thoroughly with soap and water after handling.



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SECTION 7 NOTES: Clean contaminated clothing and protective equipment before reuse.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good ventilation desirable.

VENTILATION: Sufficient to control mists below the operator exposure threshold limit of 5 mg/m³.

RESPIRATORY PROTECTION: Required if employee exposure exceeds threshold or discomfort persists.

EYE PROTECTION: Where contact is likely, wear safety glasses; contact lens use should be avoided.

SKIN PROTECTION: Gloves recommended when handling. Neoprene, nitrile, or PVC offer good protection.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: As required, wear aprons, sleeves or other protective gear to prevent long-term skin contact.

WORK HYGIENIC PRACTICES: Keep clean. Wash exposed skin areas with mild soap and water.

EXPOSURE GUIDELINES: Avoid excessive inhalation of vapors or mists. Product is regulated by OSHA as an air contaminant. A TLV of 5 mg/m³ has been established.

SECTION 8 NOTES: None

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Amber to Red Oil

ODOR: Mild petroleum

PHYSICAL STATE: Liquid

pH AS SUPPLIED: Not Applicable
pH (Other):

BOILING POINT: Greater than 475 deg. Fahrenheit

VAPOR PRESSURE (mmHg): Less than 0.1 mm of Hg.
@ C: 20 deg.

SPECIFIC GRAVITY (H₂O = 1): 0.86 Typical
@ C: 20 deg.

EVAPORATION RATE: Not Determined

SOLUBILITY IN WATER: Nil

VOLATILE ORGANIC COMPOUNDS (VOC): Not Determined

SECTION 9 NOTES: None

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): Any type of contamination.

INCOMPATIBILITY (MATERIAL TO AVOID): Avoid mixing with strong oxidizers (such as powdered floor cleaners, caustic soda, or liquid perchlorates) and reducers.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Oxides of Carbon and Phosphorous may form during combustion.

HAZARDOUS POLYMERIZATION: None



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SECTION 10 NOTES: None

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: Not Determined

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Not Determined

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Contact waste hauler for recycling. Follow all Local, State and Federal regulations.

RCRA HAZARD CLASS: None

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME:

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENT:

SECTION 14 NOTES: Not DOT Regulated

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): Components Listed... None

SECTION 15 NOTES: None

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: None noted.

PREPARATION INFORMATION: Prepared at an ISO 9001-2000 certified facility.

DISCLAIMER: The information presented was obtained from sources believed to be reliable. However, it is provided without any warranty, expressed or implied, regarding its correctness. We do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the use, handling, storage, or disposal of the product.



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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Eastern Premium HD 15W-40 CJ-4
SYNONYMS: Car Engine Oil
PRODUCT CODES: 3F311001

MANUFACTURER: Eastern Oil Company
ADDRESS: 590 South Paddock
Pontiac, MI 48341

EMERGENCY PHONE: Eastern Oil (248) 333-1333

FAX PHONE: (248) 333-1426

CHEMICAL FAMILY: Petroleum Hydrocarbon
CHEMICAL FORMULA: Mixture

SECTION 1 NOTES: Product is a blend of highly refined petroleum oils with anti-wear, corrosion, and rust inhibitors added for performance enhancement.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>% WT</u>	<u>OSHA TWA</u>	<u>ACGIH TLV</u>	<u>SARA 313 Reportable</u>
Mineral Oil	Various	>98	5 mg/m3 (Mist)	5 mg/m3 (Mist)	No
Zinc Dialkyldithiophosphate	68649-42-3	< 2	Not Established	Not Established	Yes

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: No acute effects expected from incidental skin contact during handling. Aspiration hazard (lung injury) if breathed into the lungs during ingestion or vomiting. Regulated OSHA air contaminant (29 CFR 1910.1000, Subpart Z). Liquid is slippery and will burn. Avoid release of this product to the environment.

ROUTES OF ENTRY: Eyes, Skin, Inhalation, Ingestion

POTENTIAL HEALTH EFFECTS:

EYES: May cause irritation.

SKIN: Long term or repeated exposures can defat the skin resulting in irritation and possible dermatitis.

INGESTION: Danger of aspiration to the lungs with potential for chemical pneumonitis. Lesser effects include throat irritation, nausea, vomiting, and diarrhea.

INHALATION: Prolonged, excessive inhalation may cause irritation to the lungs and air passages.

ACUTE HEALTH HAZARDS: Eye and respiratory irritation.

CHRONIC HEALTH HAZARDS: Possible skin cracking, dermatitis and respiratory tract inflammation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Dry skin.

CARCINOGENICITY

OSHA: NO

ACGIH: NO

NTP: NO

IARC: NO

SECTION 3 NOTES: NONE



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SECTION 4: FIRST AID MEASURES

EYES: Flush with copious amounts of water for several minutes. If irritation persists, continue with water application. If after 15 minutes, irritation continues, seek medical attention.

SKIN: Promptly wash skin with mild soap and water.

INGESTION: Do not induce vomiting. Seek qualified medical attention. Small amounts, which may enter the mouth incidental to handling, may be rinsed out with water. If vomiting occurs, keep head below hips to avoid breathing the product into the lungs.

INHALATION: Remove to fresh air. In severe cases of overexposure, administer oxygen and seek qualified medical attention.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treat symptoms as required. Product contains petroleum oils.

SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT:

F: >380 deg. Fahrenheit Min.

C:

METHOD USED: Cleveland Open Cup

AUTOIGNITION TEMPERATURE:

F: Not Determined

C:

NFPA HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

OTHER: None

HMIS HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

EXTINGUISHING MEDIA: Foam, Carbon Dioxide, Dry Chemical, Water Fog

SPECIAL FIRE FIGHTING PROCEDURES: Water may spread the fire as oil can float on it. Water spray may be used to cool exposed containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Water may spread the fire.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Carbon, Sulfur, Phosphorous and Zinc. Smoke, odorous and toxic fumes may form during incomplete combustion. High heat may also generate hydrogen sulfide and alkyl mercaptans.

SECTION 5 NOTES: Use of water for fire fighting must be done with caution as water may actually spread the fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Prevent spread of material, especially to rivers or waterways by diking with dirt or absorbent. For large spills, pump released material into recovery containers and then spread absorbent over the spill area to collect residuals. For small spills, wipe up or use absorbent to clean the spill area.

SECTION 6 NOTES: Prevent spill from reaching any type of running or standing water, such as streams, sewers, well water and ponds.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Store in a sheltered area, away from temperature extremes in labeled containers. Keep away from heat, sparks, or flame. Avoid contact with eyes, skin, clothing, and shoes. Do not breath vapors or mist.

OTHER PRECAUTIONS: When handling, have appropriate safety equipment for the working conditions including eyewash. Do not pressurize, cut, weld, braze, solder, drill, or grind containers containing product residues. Wash thoroughly with soap and water after handling.

SECTION 7 NOTES: Clean contaminated clothing and protective equipment before reuse.



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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good ventilation desirable.

VENTILATION: Sufficient to control mists below the operator exposure threshold limit of 5 mg/m3.

RESPIRATORY PROTECTION: Required if employee exposure exceeds threshold or discomfort persists.

EYE PROTECTION: Where contact is likely, wear safety glasses; contact lens use should be avoided.

SKIN PROTECTION: Gloves recommended when handling. Neoprene, nitrile, or PVC offer good protection.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: As required, wear aprons, sleeves or other protective gear to prevent long-term skin contact.

WORK HYGIENIC PRACTICES: Keep clean. Wash exposed skin areas with mild soap and water.

EXPOSURE GUIDELINES: Avoid excessive inhalation of vapors or mists. Product is regulated by OSHA as an air contaminant. A TLV of 5 mg/m3 has been established.

SECTION 8 NOTES: None

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Amber Oil

ODOR: Mild petroleum

PHYSICAL STATE: Liquid

pH AS SUPPLIED: Not Applicable

pH (Other):

BOILING POINT: Greater than 420 deg. Fahrenheit

VAPOR PRESSURE (mmHg): Less than 0.1 mm of Hg.

@ C: 20 deg.

SPECIFIC GRAVITY (H2O = 1): 0.88 Typical

@ C: 20 deg.

EVAPORATION RATE: 0.001 (ethyl ether = 1) (based on similar materials)

SOLUBILITY IN WATER: Nil

VOLATILE ORGANIC COMPOUNDS (VOC): 100 WT%

SECTION 9 NOTES: None

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): Any type of contamination.

INCOMPATIBILITY (MATERIAL TO AVOID): Avoid mixing with strong oxidizers (such as powdered floor cleaners, caustic soda, or liquid perchlorates) and reducers.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Oxides of Carbon, Phosphorous, Sulfur and Zinc may form during combustion. Also, low levels of hydrogen sulfide may be generated at elevated temperatures.

HAZARDOUS POLYMERIZATION: None

SECTION 10 NOTES: None



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: Not Determined

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Not Determined

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Contact waste hauler for recycling. Follow all Local, State and Federal regulations.

RCRA HAZARD CLASS: None

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME:

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENT:

SECTION 14 NOTES: Not DOT Regulated

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): Components Listed

SARA 313 REPORTABLE INGREDIENTS: This product contains less than two (2) percent Zinc Dialkyl-dithiophosphate, a reportable substance in SARA Title III and found in the substance tables of 40 CFR Part 372 as "Zinc compound".

SECTION 15 NOTES: Low concentrations of zinc (below de minimus concentrations for reporting) and very low concentrations of lead

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: None noted.

PREPARATION INFORMATION: Prepared at a QS 9000 certified facility.

DISCLAIMER: The information presented was obtained from sources believed to be reliable. However, it is provided without any warranty, expressed or implied, regarding its correctness. We do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the use, handling, storage, or disposal of the product.



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Premium Hydraulic 46 (PH 46)
SYNONYMS: Anti - Wear Hydraulic Oil
PRODUCT CODES: 3H020001

MANUFACTURER: Eastern Oil Company
ADDRESS: 590 South Paddock
Pontiac, MI 48341

EMERGENCY PHONE: Eastern Oil (248) 333-1333

FAX PHONE: (248) 333-1426

CHEMICAL FAMILY: Petroleum Hydrocarbon
CHEMICAL FORMULA: Mixture

SECTION 1 NOTES: Product is a blend of highly refined petroleum oils with anti-wear and oxidation & rust inhibitors added for performance enhancement.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>% WT</u>	<u>OSHA TWA</u>	<u>ACGIH TLV</u>	<u>SARA 313 Reportable</u>
Mineral Oil	Various	>98	5 mg/m3 (Mist)	5 mg/m3 (Mist)	No

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: No acute effects expected from incidental skin contact during handling. Aspiration hazard if swallowed. Regulated OSHA air contaminant (29 CFR 1910.1000, Subpart Z). Liquid is slippery and will burn. Avoid release of this product to the environment.

ROUTES OF ENTRY: Eyes, Skin, Inhalation, Ingestion

POTENTIAL HEALTH EFFECTS:

EYES: May cause mild irritation.

SKIN: Long term or repeated exposures will defat the skin resulting in irritation and possible dermatitis.

INGESTION: May cause vomiting. Danger of aspiration to the lungs with potential for chemical pneumonitis. Acts as a laxative.

INHALATION: Prolonged, excessive inhalation may cause irritation to the lungs and air passages.

ACUTE HEALTH HAZARDS: Eye and respiratory irritation.

CHRONIC HEALTH HAZARDS: Possible dermatitis and respiratory tract inflammation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Dry skin.

CARCINOGENICITY

OSHA: NO

ACGIH: NO

NTP: NO

IARC: NO

SECTION 3 NOTES: NONE



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

SECTION 4: FIRST AID MEASURES

EYES: Flush with copious amounts of water for several minutes. If irritation persists, continue with water application. If after 15 minutes, irritation continues, seek medical attention.

SKIN: Promptly wash skin with mild soap and water.

INGESTION: Do not induce vomiting. Seek qualified medical attention. Small amounts, which may enter the mouth incidental to handling, may be rinsed out with water.

INHALATION: Remove to fresh air. In severe cases of overexposure, such as with a fire, administer oxygen and seek qualified medical attention.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treat symptoms as required. Product contains petroleum oils.

SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT:

F: >300 deg. Fahrenheit Min.

C:

METHOD USED: Cleveland Open Cup

AUTOIGNITION TEMPERATURE:

F: Not Determined

C:

NFPA HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

OTHER: None

HMIS HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

EXTINGUISHING MEDIA: Foam, Carbon Dioxide, Dry Chemical, Water Fog

SPECIAL FIRE FIGHTING PROCEDURES: Water may spread the fire as oil can float on it. Water spray may be used to cool exposed containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Water may spread the fire.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Carbon, Phosphorous, Sulfur and Zinc. Smoke, odorous and toxic fumes may form during incomplete combustion. High heat may also generate hydrogen sulfide and alkyl mercaptans.

SECTION 5 NOTES: Use of water for fire fighting must be done with caution as water may actually spread the fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Prevent spread of material, especially to rivers or waterways by diking with dirt or absorbent. For large spills, pump released material into recovery containers and then spread absorbent over the spill area to collect residuals. For small spills, wipe up or use absorbent to clean the spill area.

SECTION 6 NOTES: Prevent spill from reaching any type of running or standing water, such as streams, sewers, well water and ponds.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Store in a sheltered area, away from temperature extremes in labeled containers. Keep away from heat, sparks, or flame. Avoid contact with eyes, skin, clothing, and shoes.

OTHER PRECAUTIONS: When handling, have appropriate safety equipment for the working conditions including eyewash. Do not pressurize, cut, weld, braze, solder, drill, or grind containers containing product residues.



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good ventilation desirable.

VENTILATION: Sufficient to control mists below the operator exposure threshold limit of 5 mg/m³.

RESPIRATORY PROTECTION: Required if employee exposure exceeds threshold.

EYE PROTECTION: Where contact is likely, wear safety glasses.

SKIN PROTECTION: Gloves recommended when handling. Neoprene, nitrile, or PVC offer good protection.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: As required, wear aprons, sleeves or other protective gear to prevent long-term skin contact.

WORK HYGIENIC PRACTICES: Keep clean. Wash exposed skin areas with mild soap and water.

EXPOSURE GUIDELINES: Avoid excessive inhalation of vapors or mists. Product is regulated by OSHA as an air contaminant. A TLV of 5 mg/m³ has been established.

SECTION 8 NOTES: None

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Pale Amber Oil

ODOR: Mild petroleum

PHYSICAL STATE: Liquid

pH AS SUPPLIED: Not Applicable

pH (Other):

BOILING POINT: Greater than 475 deg. Fahrenheit

VAPOR PRESSURE (mmHg): Less than 0.1 mm of Hg.

@ C: 20 deg.

SPECIFIC GRAVITY (H₂O = 1): 0.88 Typical

@ C: 20 deg.

EVAPORATION RATE: Nil

SOLUBILITY IN WATER: Nil

VOLATILE ORGANIC COMPOUNDS (VOC): Not Determined

SECTION 9 NOTES: None

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): Any type of contamination.

INCOMPATIBILITY (MATERIAL TO AVOID): Avoid mixing with strong oxidizers (such as powdered floor cleaners, caustic soda, or liquid perchlorates) and reducers.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Oxides of Carbon, Phosphorous, Sulfur and Zinc may form during combustion. Also, low levels of hydrogen sulfide may be generated at elevated temperatures.



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

HAZARDOUS POLYMERIZATION: None

SECTION 10 NOTES: None

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: Not Determined

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Not Determined

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Contact waste hauler for recycling. Follow all Local, State and Federal regulations.

RCRA HAZARD CLASS: None

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME:
HAZARD CLASS:
ID NUMBER:
PACKING GROUP:
LABEL STATEMENT:

SECTION 14 NOTES: Not DOT Regulated

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): Components Listed

Sara 313 REPORTABLE INGREDIENTS: None

SECTION 15 NOTES:

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: None noted.

PREPARATION INFORMATION: Prepared at a QS 9000 certified facility.

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MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Premium Hydraulic 68 (PH 68)
SYNONYMS: Anti - Wear Hydraulic Oil
PRODUCT CODES: 3H030001

MANUFACTURER: Eastern Oil Company
ADDRESS: 590 South Paddock
Pontiac, MI 48341

EMERGENCY PHONE: Eastern Oil (248) 333-1333

FAX PHONE: (248) 333-1426

CHEMICAL FAMILY: Petroleum Hydrocarbon
CHEMICAL FORMULA: Mixture

SECTION 1 NOTES: Product is a blend of highly refined petroleum oils with anti-wear and oxidation & rust inhibitors added for performance enhancement.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>% WT</u>	<u>OSHA TWA</u>	<u>ACGIH TLV</u>	<u>SARA 313 Reportable</u>
Mineral Oil	Various	>98	5 mg/m3 (Mist)	5 mg/m3 (Mist)	No

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: No acute effects expected from incidental skin contact during handling. Aspiration hazard if swallowed. Regulated OSHA air contaminant (29 CFR 1910.1000, Subpart Z). Liquid is slippery and will burn. Avoid release of this product to the environment.

ROUTES OF ENTRY: Eyes, Skin, Inhalation, Ingestion

POTENTIAL HEALTH EFFECTS:

EYES: May cause mild irritation.

SKIN: Long term or repeated exposures will defat the skin resulting in irritation and possible dermatitis.

INGESTION: May cause vomiting. Danger of aspiration to the lungs with potential for chemical pneumonitis. Acts as a laxative.

INHALATION: Prolonged, excessive inhalation may cause irritation to the lungs and air passages.

ACUTE HEALTH HAZARDS: Eye and respiratory irritation.

CHRONIC HEALTH HAZARDS: Possible dermatitis and respiratory tract inflammation.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Dry skin.

CARCINOGENICITY

OSHA: NO

ACGIH: NO

NTP: NO

IARC: NO

SECTION 3 NOTES: NONE



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

SECTION 4: FIRST AID MEASURES

EYES: Flush with copious amounts of water for several minutes. If irritation persists, continue with water application. If after 15 minutes, irritation continues, seek medical attention.

SKIN: Promptly wash skin with mild soap and water.

INGESTION: Do not induce vomiting. Seek qualified medical attention. Small amounts, which may enter the mouth incidental to handling, may be rinsed out with water.

INHALATION: Remove to fresh air. In severe cases of overexposure, such as with a fire, administer oxygen and seek qualified medical attention.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treat symptoms as required. Product contains petroleum oils.

SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT:

F: >300 deg. Fahrenheit Min.

C:

METHOD USED: Cleveland Open Cup

AUTOIGNITION TEMPERATURE:

F: Not Determined

C:

NFPA HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

OTHER: None

HMIS HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 1

REACTIVITY: 0

EXTINGUISHING MEDIA: Foam, Carbon Dioxide, Dry Chemical, Water Fog

SPECIAL FIRE FIGHTING PROCEDURES: Water may spread the fire as oil can float on it. Water spray may be used to cool exposed containers.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Water may spread the fire.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of Carbon, Phosphorous, Sulfur and Zinc. Smoke, odorous and toxic fumes may form during incomplete combustion. High heat may also generate hydrogen sulfide and alkyl mercaptans.

SECTION 5 NOTES: Use of water for fire fighting must be done with caution as water may actually spread the fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Prevent spread of material, especially to rivers or waterways by diking with dirt or absorbent. For large spills, pump released material into recovery containers and then spread absorbent over the spill area to collect residuals. For small spills, wipe up or use absorbent to clean the spill area.

SECTION 6 NOTES: Prevent spill from reaching any type of running or standing water, such as streams, sewers, well water and ponds.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Store in a sheltered area, away from temperature extremes in labeled containers. Keep away from heat, sparks, or flame. Avoid contact with eyes, skin, clothing, and shoes.

OTHER PRECAUTIONS: When handling, have appropriate safety equipment for the working conditions including eyewash. Do not pressurize, cut, weld, braze, solder, drill, or grind containers containing product residues.



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Good ventilation desirable.

VENTILATION: Sufficient to control mists below the operator exposure threshold limit of 5 mg/m³.

RESPIRATORY PROTECTION: Required if employee exposure exceeds threshold.

EYE PROTECTION: Where contact is likely, wear safety glasses.

SKIN PROTECTION: Gloves recommended when handling. Neoprene, nitrile, or PVC offer good protection.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: As required, wear aprons, sleeves or other protective gear to prevent long-term skin contact.

WORK HYGIENIC PRACTICES: Keep clean. Wash exposed skin areas with mild soap and water.

EXPOSURE GUIDELINES: Avoid excessive inhalation of vapors or mists. Product is regulated by OSHA as an air contaminant. A TLV of 5 mg/m³ has been established.

SECTION 8 NOTES: None

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Pale Amber Oil

ODOR: Mild petroleum

PHYSICAL STATE: Liquid

pH AS SUPPLIED: Not Applicable

pH (Other):

BOILING POINT: Greater than 475 deg. Fahrenheit

VAPOR PRESSURE (mmHg): Less than 0.1 mm of Hg.
@ C: 20 deg.

SPECIFIC GRAVITY (H₂O = 1): 0.88 Typical
@ C: 20 deg.

EVAPORATION RATE: Nil

SOLUBILITY IN WATER: Nil

VOLATILE ORGANIC COMPOUNDS (VOC): Not Determined

SECTION 9 NOTES:

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): Any type of contamination.

INCOMPATIBILITY (MATERIAL TO AVOID): Avoid mixing with strong oxidizers (such as powdered floor cleaners, caustic soda, or liquid perchlorates) and reducers.



MATERIAL SAFETY DATA SHEET

590 S. Paddock Pontiac MI 48341

Ph: 248-333-1333 Fax: 248-333-1426

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Oxides of Carbon, Phosphorous, Sulfur and Zinc may form during combustion. Also, low levels of hydrogen sulfide may be generated at elevated temperatures.

HAZARDOUS POLYMERIZATION: None

SECTION 10 NOTES: None

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: Not Determined

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Not Determined

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Contact waste hauler for recycling. Follow all Local, State and Federal regulations.

RCRA HAZARD CLASS: None

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME:

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENT:

SECTION 14 NOTES: Not DOT Regulated

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): Components Listed

Sara 313 REPORTABLE INGREDIENTS: None

SECTION 15 NOTES:

SECTION 16: OTHER INFORMATION

OTHER INFORMATION: None noted.

PREPARATION INFORMATION: Prepared at a QS 9000 certified facility.

DISCLAIMER: The information presented was obtained from sources believed to be reliable. However, it is provided without any warranty, expressed or implied, regarding its correctness. We do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with the use, handling, storage, or disposal of the product.

Material Safety Data Sheet**1. MATERIAL AND COMPANY IDENTIFICATION**

Material Name : **Retinax Grease CMX 2**
Uses : Automotive and industrial grease.

Manufacturer/Supplier : **SOPUS Products**
 PO BOX 4427
 Houston, TX 77210-4427
 USA

MSDS Request : 877-276-7285

Emergency Telephone Number
Spill Information : 877-242-7400
Health Information : 877-504-9351

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Identity	CAS No.	Concentration
Molybdenum disulphide	1317-33-5	1.00 - 5.00 %
Tris[bis(2-ethylhexyl)dithiocarbamate-S,S'] antimony	15991-76-1	1.00 - 5.00 %

A lubricating grease consisting of highly-refined mineral oil and additives.
 The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

3. HAZARDS IDENTIFICATION

Emergency Overview	
Appearance and Odour	: Dark grey. Semi-solid at room temperature. Slight hydrocarbon.
Health Hazards	: High-pressure injection under the skin may cause serious damage including local necrosis.
Safety Hazards	: Not classified as flammable but will burn.
Environmental Hazards	: Not classified as dangerous for the environment.

Health Hazards : Not expected to be a health hazard when used under normal conditions.

Health Hazards Inhalation : Under normal conditions of use, this is not expected to be a primary route of exposure.

Skin Contact : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Eye Contact : May cause slight irritation to eyes.

Ingestion : Low toxicity if swallowed.

Other Information : High-pressure injection under the skin may cause serious damage including local necrosis. Used grease may contain

Material Safety Data Sheet

- harmful impurities.
- Signs and Symptoms** : Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.
- Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.
- Environmental Hazards** : Not classified as dangerous for the environment.
- Additional Information** : Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

4. FIRST AID MEASURES

- General Information** : Not expected to be a health hazard when used under normal conditions.
- Inhalation** : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
- Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
- Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Advice to Physician** : Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Flash point** : ≥ 260 °C / 500 °F (Cleveland Open Cup)
- Upper / lower Flammability or** : Typical 1 - 10 %(V)(based on mineral oil)

Material Safety Data Sheet

Explosion limits	
Auto ignition temperature	: > 320 °C / 608 °F
Specific Hazards	: Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
Suitable Extinguishing Media	: Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable Extinguishing Media	: Do not use water in a jet.
Protective Equipment for Firefighters	: Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

Protective measures	: Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Clean Up Methods	: Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

7. HANDLING AND STORAGE

General Precautions	: Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Handling	: Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
Storage	: Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F
Recommended Materials	: For containers or container linings, use mild steel or high density polyethylene.
Unsuitable Materials	: PVC.
Additional Information	: Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Occupational Exposure Limits**

Material Safety Data Sheet

Material	Source	Type	ppm	mg/m3	Notation
Molybdenum disulphide	ACGIH	TWA(Respirable fraction.)		0.5 mg/m3	as Mo
Molybdenum disulphide	OSHA Z1	PEL		5 mg/m3	as Mo
Molybdenum disulphide	OSHA Z1A	TWA		5 mg/m3	as Mo
Molybdenum disulphide	ACGIH	TWA(Inhalable fraction.)		10 mg/m3	as Mo
Molybdenum disulphide	ACGIH	TWA(Respirable fraction.)		3 mg/m3	as Mo
Molybdenum disulphide	OSHA Z1	PEL(Total dust.)		15 mg/m3	as Mo
Molybdenum disulphide	OSHA Z1A	TWA(Total dust.)		10 mg/m3	as Mo
Tris[bis(2-ethylhexyl) dithiocarbamate-S,S'] antimony	ACGIH	TWA		0.5 mg/m3	as Sb
Tris[bis(2-ethylhexyl) dithiocarbamate-S,S'] antimony	OSHA Z1	PEL		0.5 mg/m3	as Sb
Tris[bis(2-ethylhexyl) dithiocarbamate-S,S'] antimony	OSHA Z1A	TWA		0.5 mg/m3	as Sb
Oil mist, mineral	ACGIH	TWA(Mist.)		5 mg/m3	
Oil mist, mineral	ACGIH	STEL(Mist.)		10 mg/m3	

Additional Information : Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.

Exposure Controls : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or

Material Safety Data Sheet

- mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Dark grey. Semi-solid at room temperature.
- Odour : Slight hydrocarbon.
- pH : Not applicable.
- Initial Boiling Point and Boiling Range : Data not available
- Dropping point : Typical 220 °C / 428 °F
- Flash point : >= 260 °C / 500 °F (Cleveland Open Cup)
- Upper / lower Flammability or Explosion limits : Typical 1 - 10 %(V) (based on mineral oil)

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Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Specific gravity	: Typical 0.955
Density	: Typical 911 g/cm ³
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available

10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.
Carcinogenicity	: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.

Material	Carcinogenicity Classification
Molybdenum disulphide	: ACGIH Group A3: Confirmed animal carcinogen with unknown relevance to humans.

Reproductive and Developmental Toxicity	: Not expected to be a hazard.
Additional Information	: Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal. ALL used grease should be handled with caution and skin contact avoided as far

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as possible. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

- Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.
- Mobility** : Semi-solid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.
- Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
- Bioaccumulation** : Contains components with the potential to bioaccumulate.
- Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

IMDG

This material is not classified as dangerous under IMDG regulations.

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IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status

Notification Status

DSL	All components listed.
EINECS	All components listed.
TSCA	All components listed.

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

Retinax Grease CMX 2 ()	Reportable quantity: 40 lbs
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Tris[bis(2-ethylhexyl)dithiocarbamato-S,S']
antimony (15991-76-1)

SARA Hazard Categories (311/312)

No SARA 311/312 Hazards.

SARA Toxic Release Inventory (TRI) (313)

Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony (15991-76-1)	2.50%
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State Regulatory Status

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

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

New Jersey Right-To-Know Chemical List

Molybdenum disulphide (1317-33-5)	Listed.
Tris[bis(2-ethylhexyl)dithiocarbamato-S,S'] antimony (15991-76-1)	Listed.

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16. OTHER INFORMATION

NFPA Rating (Health, Fire, Reactivity) : 0, 1, 0

MSDS Version Number : 3.0

MSDS Effective Date : 07/07/2008

MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

MSDS Distribution : The information in this document should be made available to all who may handle the product.

Disclaimer : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Material Safety Data Sheet**1. MATERIAL AND COMPANY IDENTIFICATION**

Material Name : **Retinax Grease LX 2**
Uses : Automotive and industrial grease.

Manufacturer/Supplier : **SOPUS Products**
 PO BOX 4427
 Houston, TX 77210-4427
 USA

MSDS Request : 877-276-7285

Emergency Telephone Number
Spill Information : 877-242-7400
Health Information : 877-504-9351

2. COMPOSITION/INFORMATION ON INGREDIENTS

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.
 A lubricating grease consisting of highly-refined mineral oil and additives.

3. HAZARDS IDENTIFICATION

Emergency Overview	
Appearance and Odour	: Red. Semi-solid. Slight hydrocarbon.
Health Hazards	: High-pressure injection under the skin may cause serious damage including local necrosis.
Safety Hazards	: Not classified as flammable but will burn.
Environmental Hazards	: Not classified as dangerous for the environment.

Health Hazards : Not expected to be a health hazard when used under normal conditions.

**Health Hazards
 Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.

Skin Contact : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Eye Contact : May cause slight irritation to eyes.

Ingestion : Low toxicity if swallowed.

Other Information : High-pressure injection under the skin may cause serious damage including local necrosis. Used grease may contain harmful impurities.

Signs and Symptoms : Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection. Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

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- Aggravated Medical Condition** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.
- Environmental Hazards** : Not classified as dangerous for the environment.
- Additional Information** : Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

4. FIRST AID MEASURES

- General Information** : Not expected to be a health hazard when used under normal conditions.
- Inhalation** : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- Skin Contact** : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention. When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Obtain medical attention even in the absence of apparent wounds.
- Eye Contact** : Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
- Ingestion** : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Advice to Physician** : Treat symptomatically. High pressure injection injuries require prompt surgical intervention and possibly steroid therapy, to minimise tissue damage and loss of function. Because entry wounds are small and do not reflect the seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to swelling, vasospasm and ischaemia. Prompt surgical decompression, debridement and evacuation of foreign material should be performed under general anaesthetics, and wide exploration is essential.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

- Flash point** : > 150 °C / 302 °F (COC)
- Upper / lower Flammability or Explosion limits** : Typical 1 - 10 %(V)(based on mineral oil)
- Auto ignition temperature** : > 320 °C / 608 °F
- Specific Hazards** : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.

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- Suitable Extinguishing Media** : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable Extinguishing Media** : Do not use water in a jet.
- Protective Equipment for Firefighters** : Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe all relevant local and international regulations.

- Protective measures** : Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Clean Up Methods** : Shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

7. HANDLING AND STORAGE

- General Precautions** : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Handling** : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.
- Storage** : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F
- Recommended Materials** : For containers or container linings, use mild steel or high density polyethylene.
- Unsuitable Materials** : PVC.
- Additional Information** : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Occupational Exposure Limits**

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Mist.)		5 mg/m3	
Oil mist, mineral	ACGIH	STEL(Mist.)		10 mg/m3	

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- Additional Information** : Due to the product's semi-solid consistency, generation of mists and dusts is unlikely to occur.
- Exposure Controls** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.
- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65 °C (149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	: Red. Semi-solid.
Odour	: Slight hydrocarbon.
pH	: Not applicable.
Initial Boiling Point and Boiling Range	: Data not available
Dropping point	: > 245 °C / 473 °F
Flash point	: > 150 °C / 302 °F (COC)
Upper / lower Flammability or Explosion limits	: Typical 1 - 10 %(V) (based on mineral oil)
Auto-ignition temperature	: > 320 °C / 608 °F
Vapour pressure	: < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Density	: Typical 900 kg/m ³ at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Not applicable.
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available

10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.
Carcinogenicity	: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.
Reproductive and Developmental Toxicity	: Not expected to be a hazard.

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Additional Information : Used grease may contain harmful impurities that have accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment on disposal. ALL used grease should be handled with caution and skin contact avoided as far as possible. High pressure injection of product into the skin may lead to local necrosis if the product is not surgically removed.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

Acute Toxicity : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

Mobility : Semi-solid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

Persistence/degradability : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

Bioaccumulation : Contains components with the potential to bioaccumulate.

Other Adverse Effects : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

Material Disposal : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.

Container Disposal : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

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

14. TRANSPORT INFORMATION

US Department of Transportation Classification (49CFR)

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This material is not subject to DOT regulations under 49 CFR Parts 171-180.

IMDG

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

This material is not classified as dangerous under IATA regulations.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status**Notification Status**

EINECS	All components listed or polymer exempt.
TSCA	All components listed.
DSL	All components listed.

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA)

Retinax Grease LX 2 () Reportable quantity: 57 lbs

Zinc alkyl dithiophosphate (68649-
42-3)

SARA Hazard Categories (311/312)

No SARA 311/312 Hazards.

SARA Toxic Release Inventory (TRI) (313)

Zinc alkyl dithiophosphate (68649- 1.75%
42-3)

State Regulatory Status**California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)**

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

New Jersey Right-To-Know Chemical List

Zinc alkyl dithiophosphate (68649-42-3) Listed.

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16. OTHER INFORMATION

NFPA Rating (Health, Fire, Reactivity) : 0, 1, 0

MSDS Version Number : 2.0

MSDS Effective Date : 07/07/2008

MSDS Revisions : A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

MSDS Distribution : The information in this document should be made available to all who may handle the product.

Disclaimer : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Material Safety Data Sheet**1. MATERIAL AND COMPANY IDENTIFICATION**

Material Name : Shell Tellus Oil T 68
Uses : Hydraulic oil

Manufacturer/Supplier : SOPUS Products
 PO BOX 4427
 Houston, TX 77210-4427
 USA

MSDS Request : 877-276-7285

Emergency Telephone Number

Spill Information : 877-242-7400
Health Information : 877-504-9351

2. COMPOSITION/INFORMATION ON INGREDIENTS

Highly refined mineral oils and additives.

The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

3. HAZARDS IDENTIFICATION

Emergency Overview	
Appearance and Odour	: Clear. Liquid at room temperature. Slight hydrocarbon.
Health Hazards	: Not classified as dangerous for supply or conveyance.
Safety Hazards	: Not classified as flammable but will burn.
Environmental Hazards	: Not classified as dangerous for the environment.

Health Hazards : Not expected to be a health hazard when used under normal conditions.

**Health Hazards
 Inhalation** : Under normal conditions of use, this is not expected to be a primary route of exposure.

Skin Contact : Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Eye Contact : May cause slight irritation to eyes.

Ingestion : Low toxicity if swallowed.

Other Information : Used oil may contain harmful impurities.

Signs and Symptoms : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.

**Aggravated Medical
 Conditions** : Pre-existing medical conditions of the following organ(s) or organ system(s) may be aggravated by exposure to this material: Skin.

Environmental Hazards : Not classified as dangerous for the environment.

Additional Information : Under normal conditions of use or in a foreseeable emergency,

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this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

4. FIRST AID MEASURES

General Information	:	Not expected to be a health hazard when used under normal conditions.
Inhalation	:	No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
Skin Contact	:	Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available. If persistent irritation occurs, obtain medical attention.
Eye Contact	:	Flush eye with copious quantities of water. If persistent irritation occurs, obtain medical attention.
Ingestion	:	In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
Advice to Physician	:	Treat symptomatically.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

Flash point	:	252 °C / 486 °F (COC)
Upper / lower Flammability or Explosion limits	:	Typical 1 - 10 %(V)(based on mineral oil)
Auto ignition temperature	:	> 320 °C / 608 °F
Specific Hazards	:	Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide. Unidentified organic and inorganic compounds.
Suitable Extinguishing Media	:	Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
Unsuitable Extinguishing Media	:	Do not use water in a jet.
Protective Equipment for Firefighters	:	Proper protective equipment including breathing apparatus must be worn when approaching a fire in a confined space.

6. ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

Protective measures	:	Avoid contact with skin and eyes. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
Clean Up Methods	:	Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an

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Additional Advice : absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
 : Local authorities should be advised if significant spillages cannot be contained.

7. HANDLING AND STORAGE

General Precautions : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.

Handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used.

Storage : Keep container tightly closed and in a cool, well-ventilated place. Use properly labelled and closeable containers. Storage Temperature: 0 - 50 °C / 32 - 122 °F

Recommended Materials : For containers or container linings, use mild steel or high density polyethylene.

Unsuitable Materials : PVC.

Additional Information : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

Material	Source	Type	ppm	mg/m3	Notation
Oil mist, mineral	ACGIH	TWA(Inhalable fraction.)		5 mg/m3	
Oil mist, mineral	OSHA Z1	PEL(Mist.)		5 mg/m3	
Oil mist, mineral	OSHA Z1A	TWA(Mist.)		5 mg/m3	
Oil mist, mineral	OSHA Z1	(Mist.)			Listed.

Additional Information : Shell has adopted as Interim Standards the OSHA Z1A values that were established in 1989 and later rescinded.

Exposure Controls : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate ventilation to control airborne concentrations. Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

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- Personal Protective Equipment** : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Respiratory Protection** : No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material. If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for combined particulate/organic gases and vapours [boiling point >65°C(149 °F)].
- Hand Protection** : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
- Eye Protection** : Wear safety glasses or full face shield if splashes are likely to occur.
- Protective Clothing** : Skin protection not ordinarily required beyond standard issue work clothes.
- Monitoring Methods** : Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.
- Environmental Exposure Controls** : Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Clear. Liquid at room temperature.
- Odour : Slight hydrocarbon.
- pH : Not applicable.
- Initial Boiling Point and Boiling Range : > 280 °C / 536 °F estimated value(s)
- Pour point : -36 °C / -33 °F
- Flash point : 252 °C / 486 °F (COC)
- Upper / lower Flammability or Explosion limits : Typical 1 - 10 %(V) (based on mineral oil)
- Auto-ignition temperature : > 320 °C / 608 °F
- Vapour pressure : < 0.5 Pa at 20 °C / 68 °F (estimated value(s))

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Specific gravity	: Typical 878 at 15 °C / 59 °F
Density	: Typical 878.3 kg/m ³ at 15 °C / 59 °F
Water solubility	: Negligible.
n-octanol/water partition coefficient (log Pow)	: > 6 (based on information on similar products)
Kinematic viscosity	: Typical 67.9 mm ² /s at 40 °C / 104 °F
Vapour density (air=1)	: > 1 (estimated value(s))
Evaporation rate (nBuAc=1)	: Data not available

10. STABILITY AND REACTIVITY

Stability	: Stable.
Conditions to Avoid	: Extremes of temperature and direct sunlight.
Materials to Avoid	: Strong oxidising agents.
Hazardous Decomposition Products	: Hazardous decomposition products are not expected to form during normal storage.

11. TOXICOLOGICAL INFORMATION

Basis for Assessment	: Information given is based on data on the components and the toxicology of similar products.
Acute Oral Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rat
Acute Dermal Toxicity	: Expected to be of low toxicity: LD50 > 5000 mg/kg , Rabbit
Acute Inhalation Toxicity	: Not considered to be an inhalation hazard under normal conditions of use.
Skin Irritation	: Expected to be slightly irritating.
Eye Irritation	: Expected to be slightly irritating.
Respiratory Irritation	: Inhalation of vapours or mists may cause irritation.
Sensitisation	: Not expected to be a skin sensitiser.
Repeated Dose Toxicity	: Not expected to be a hazard.
Mutagenicity	: Not considered a mutagenic hazard.
Carcinogenicity	: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies. Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC). Other components are not known to be associated with carcinogenic effects.

Material	Carcinogenicity Classification
Extracts (petroleum), heavy paraffinic distillate solvent	: NTP: Known carcinogen.
Extracts (petroleum), heavy paraffinic distillate solvent	: IARC 1: Carcinogenic to humans.

Reproductive and Developmental Toxicity	: Not expected to be a hazard.
Additional Information	: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and

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the environment on disposal. ALL used oil should be handled with caution and skin contact avoided as far as possible.

12. ECOLOGICAL INFORMATION

Ecotoxicological data have not been determined specifically for this product. Information given is based on a knowledge of the components and the ecotoxicology of similar products.

- Acute Toxicity** : Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.
- Mobility** : Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.
- Persistence/degradability** : Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.
- Bioaccumulation** : Contains components with the potential to bioaccumulate.
- Other Adverse Effects** : Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

13. DISPOSAL CONSIDERATIONS

- Material Disposal** : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.
- Container Disposal** : Dispose in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local Legislation** : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

14. TRANSPORT INFORMATION**US Department of Transportation Classification (49CFR)**

This material is not subject to DOT regulations under 49 CFR Parts 171-180.

IMDG

This material is not classified as dangerous under IMDG regulations.

IATA (Country variations may apply)

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This material is either not classified as dangerous under IATA regulations or needs to follow country specific requirements.

15. REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Federal Regulatory Status

Notification Status

EINECS	All components listed or polymer exempt.
TSCA	All components listed.
DSL	All components listed.

Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA Hazard Categories (311/312)

No SARA 311/312 Hazards.

State Regulatory Status

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

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

New Jersey Right-To-Know Chemical List

Extracts (petroleum), heavy paraffinic distillate solvent (64742-04-7)	Listed.
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Pennsylvania Right-To-Know Chemical List

Extracts (petroleum), heavy paraffinic distillate solvent (64742-04-7)	Listed.
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16. OTHER INFORMATION

NFPA Rating (Health, Fire, Reactivity) : 0, 1, 0

Material Safety Data Sheet

- MSDS Version Number** : 1.0
- MSDS Effective Date** : 05/16/2011
- MSDS Revisions** : A vertical bar (|) in the left margin indicates an amendment from the previous version.
- MSDS Regulation** : The content and format of this MSDS is in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- MSDS Distribution** : The information in this document should be made available to all who may handle the product.
- Disclaimer** : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty or guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.