1. MATERIAL AND COMPANY IDENTIFICATION

Material Name: Shell Gadus S5 T460 1.5
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

A lubricating grease containing polyolefins and additives. The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346. The highly refined mineral oil is only present as additive diluent.

3. HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Emergency Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Hazards: High-pressure injection under the skin may cause serious damage including local necrosis.</td>
</tr>
<tr>
<td>Safety Hazards: Not classified as flammable but will burn.</td>
</tr>
<tr>
<td>Environmental Hazards: Not classified as dangerous for the environment.</td>
</tr>
<tr>
<td>Health Hazards: Not expected to be a health hazard when used under normal conditions.</td>
</tr>
<tr>
<td>Health Hazards Inhalation: Under normal conditions of use, this is not expected to be a primary route of exposure.</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>Eye Contact: May cause slight irritation to eyes.</td>
</tr>
<tr>
<td>Ingestion: Low toxicity if swallowed.</td>
</tr>
<tr>
<td>Other Information: High-pressure injection under the skin may cause serious damage including local necrosis. Used grease may contain harmful impurities.</td>
</tr>
<tr>
<td>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</td>
</tr>
</tbody>
</table>
Material Safety Data Sheet


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. 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. If persistent irritation occurs, obtain medical attention. 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)
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
Material Safety Data Sheet


3.8

(2011

Print Date 02/19/2011

MSDS_US

Shell Gadus S5 T460 1.5

MSDS# 16249

Version 1.0

Effective Date 02/11/2011


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.

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

Contains no components with occupational exposure limit values.
Material Safety Data Sheet

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
Material Safety Data Sheet

Appearance : Light brown. Semi-solid at ambient temperature.
Odour : Slight hydrocarbon.
pH : Not applicable.
Initial Boiling Point and Boiling Range : Data not available
Dropping point : Typical 250 °C / 482 °F
Flash point : > 150 °C / 302 °F (COC)
Upper / lower Flammability or Explosion limits : Typical 1 - 10 % (V)
Auto-ignition temperature : > 320 °C / 608 °F
Vapour pressure : < 0.5 Pa at 20 °C / 68 °F (estimated value(s))
Vapour density (air=1) : > 1 (estimated value(s))

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 sensitisier.
Repeated Dose Toxicity : Not expected to be a hazard.
Mutagenicity : Not considered a mutagenic hazard.
Carcinogenicity : Components are not known to be associated with carcinogenic effects.

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 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).

**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.

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 Not established.

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

Diphenylmethane diisocyanate (26447-40-5) Listed.

16. OTHER INFORMATION

| NFPA Rating (Health, Fire, Reactivity) | : 0, 1, 0 |
| MSDS Version Number | : 1.0 |
| MSDS Effective Date | : 02/11/2011 |
| 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 |
Material Safety Data Sheet


**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

SECTION 1  PRODUCT AND COMPANY IDENTIFICATION

PRODUCT
Product Name: MOBIL DTE 10 EXCEL 32
Product Description: Base Oil and Additives
Product Code: 201560103630, 622621-00, 97AY99
Intended Use: Hydraulic fluid

COMPANY IDENTIFICATION
Supplier: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA.  22037     USA
24 Hour Health Emergency  609-737-4411
Transportation Emergency Phone  800-424-9300
ExxonMobil Transportation No.  281-834-3296
Product Technical Information  800-662-4525, 800-947-9147

SECTION 2  COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM</td>
<td>64742-55-8</td>
<td>20 - 30%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

SECTION 3  HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS
Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:  Health: 0  Flammability: 1  Reactivity: 0
HMIS Hazard ID:  Health: 0  Flammability: 1  Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.
SECTION 4  FIRST AID MEASURES

INHALATION
Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT
Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT
Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION
First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5  FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING
Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Pressurized mists may form a flammable mixture.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulfur oxides, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES
Flash Point [Method]: >175°C (347°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9   UEL: 7.0
Autoignition Temperature: N/D

SECTION 6  ACCIDENTAL RELEASE MEASURES
NOTIFICATION PROCEDURES
In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES
Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders. For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT
Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS
Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING
Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE
The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8  EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

<table>
<thead>
<tr>
<th>Source</th>
<th>Form</th>
<th>Limit / Standard</th>
<th>NOTE</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROTREATED LIGHT PARAFFINIC DISTILLATES,</td>
<td>Mist.</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>N/A</td>
</tr>
<tr>
<td>PETROLEUM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HYDROTREATED LIGHT PARAFFINIC DISTILLATES,</td>
<td>Inhalable fraction.</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>N/A</td>
</tr>
<tr>
<td>PETROLEUM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HYDROTREATED LIGHT PARAFFINIC DISTILLATES,</td>
<td>Mist.</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>N/A</td>
</tr>
<tr>
<td>PETROLEUM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.
Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS
Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION
Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION
Relative Density (at 15 °C): 0.84
Flash Point [Method]: >175°C (347°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F) [Estimated]
Vapor Density (Air = 1): > 2 at 101 kPa [Estimated]
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C [Estimated]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5 [Estimated]
Solubility in Water: Negligible
Viscosity: 32.5 cSt (32.5 mm2/sec) at 40 °C | 6.6 cSt (6.6 mm2/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION
Freezing Point: N/D
Melting Point: N/A
Pour Point: -51°C (-60°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt
Decomposition Temperature: N/D
SECTION 10  STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11  TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>Conclusion / Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Toxicity: No end point data for material. Minimally Toxic. Based on assessment of the components.</td>
</tr>
<tr>
<td></td>
<td>Irritation: No end point data for material. Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Toxicity: No end point data for material. Minimally Toxic. Based on assessment of the components.</td>
</tr>
<tr>
<td>Skin</td>
<td>Toxicity: No end point data for material. Minimally Toxic. Based on assessment of the components.</td>
</tr>
<tr>
<td></td>
<td>Irritation: No end point data for material. Negligible irritation to skin at ambient temperatures. Based on assessment of the components.</td>
</tr>
<tr>
<td>Eye</td>
<td>Irritation: No end point data for material. May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.</td>
</tr>
</tbody>
</table>

CHRONIC/OTHER EFFECTS

Contains:
Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

SECTION 12  ECOLOGICAL INFORMATION
The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**
Material -- Not expected to be harmful to aquatic organisms.

**MOBILITY**
Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

**PERSISTENCE AND DEGRADABILITY**
Biodegradation:
Base oil component -- Expected to be inherently biodegradable

**BIOACCUMULATION POTENTIAL**
Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

**OTHER ECOLOGICAL INFORMATION**
VOC: 6.1 G/L [ASTM E1868-10]

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**SECTION 13 DISPOSAL CONSIDERATIONS**

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**
Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

**REGULATORY DISPOSAL INFORMATION**
RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.**
SECTION 14  TRANSPORT INFORMATION

LAND (DOT):  Not Regulated for Land Transport

LAND (TDG):  Not Regulated for Land Transport

SEA (IMDG):  Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA):  Not Regulated for Air Transport

SECTION 15  REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD:  When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

Complies with the following national/regional chemical inventory requirements::  DSL, ENCS, PICCS, TSCA

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AICS</td>
<td>Restrictions Apply</td>
</tr>
<tr>
<td>IECSC</td>
<td>Restrictions Apply</td>
</tr>
<tr>
<td>KECI</td>
<td>Restrictions Apply</td>
</tr>
</tbody>
</table>

EPCRA SECTION 302:  This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES:  None.

SARA (313) TOXIC RELEASE INVENTORY:  This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>List Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROTREATED LIGHT PARAFFINIC DISTILLATES, PETROLEUM</td>
<td>64742-55-8</td>
<td>1, 4, 17</td>
</tr>
</tbody>
</table>

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL  6 = TSCA 5a2  11 = CA P65 REPRO  16 = MN RTK
2 = ACGIH A1  7 = TSCA 5e  12 = CA RTK  17 = NJ RTK
3 = ACGIH A2  8 = TSCA 6  13 = IL RTK  18 = PA RTK
4 = OSHA Z  9 = TSCA 12b  14 = LA RTK  19 = RI RTK
5 = TSCA 4  10 = CA P65 CARC  15 = MI 293
THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:
Section 07: Handling and Storage - Storage Phrases was modified.
Hazard Identification: Health Hazards was modified.
Section 11: Dermal Lethality Test Data was modified.
Section 11: Dermal Lethality Test Comment was modified.
Section 11: Oral Lethality Test Data was modified.
Section 11: Inhalation Lethality Test Data was modified.
Section 11: Dermal Irritation Test Data was modified.
Section 11: Eye Irritation Test Data was modified.
Section 11: Oral Lethality Test Comment was modified.
Section 11: Inhalation Irritation Test Data was modified.
Composition: Component table was modified.
Section 15: List Citation Table - Header was modified.
Section 15: National Chemical Inventory Listing was modified.
Section 16: Code to MHCs was modified.
Section 15: Community RTK - Header was modified.
Section 08: Exposure limits/standards was modified.
Section 15: Special Cases Table was modified.
Section 12: Other Ecological Information - Header was added.
Section 15: Chemical Name - Header was added.
Section 15: CAS Number - Header was added.
Section 15: List Citations - Header was added.
Section 15: List Citations Table was added.
Section 08: Exposure Limits Table was added.
Section 08: Exposure Limit Values - Header was added.
Section 08: OEL Table - Form Column - Header was added.
Section 08: OEL Table - Limit Column - Header was added.
Section 08: OEL Table - Notation Column - Header was added.
Section 08: OEL Table - Source Column - Header was added.
Section 08: Exposure Limit Values - Header was added.
Section 12: California VOC was added.
Section 12: California VOC was added.
Section 08: Exposure limits/standards - Header was deleted.

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MHC: 0B, 0B, 0, 0, 0
PPEC: A

DGN: 7087020XUS (1013882)

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MATERIAL SAFETY DATA SHEET

SECTION 1  PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBILGEAR SHC XMP 320  
Product Description: Synthetic Base Stocks and Additives
Product Code: 201560403020, 610535-00, 97F364
Intended Use: Gear oil

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION  
3225 GALLOWS RD.  
FAIRFAX, VA. 22037 USA
24 Hour Health Emergency 609-737-4411
Transportation Emergency Phone 800-424-9300
ExxonMobil Transportation No. 281-834-3296
Product Technical Information 800-662-4525, 800-947-9147

SECTION 2  COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS#</th>
<th>Concentration*</th>
</tr>
</thead>
<tbody>
<tr>
<td>DITRIDECYL ADIPATE</td>
<td>16958-92-2</td>
<td>10 - 20%</td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

SECTION 3  HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL HEALTH EFFECTS

Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:       Health: 0  Flammability: 1  Reactivity: 0
HMIS Hazard ID:       Health: 0  Flammability: 1  Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.
SECTION 4 FIRST AID MEASURES

INHALATION
Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT
Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT
Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION
First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA
Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING
Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Incomplete combustion products, Oxides of carbon

FLAMMABILITY PROPERTIES
Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES
In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable
regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES
Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT
Land Spill: Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

Water Spill: Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS
Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING
Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

Static Accumulator: This material is a static accumulator.

STORAGE
The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

<table>
<thead>
<tr>
<th>Source</th>
<th>Form</th>
<th>Limit / Standard</th>
<th>NOTE</th>
<th>Source</th>
</tr>
</thead>
</table>


Exposure limits/standards for materials that can be formed when handling this product: When mists/aerosols can occur the following are recommended: 5 mg/m³ - ACGIH TLV (inhalable fraction), 5 mg/m³ - OSHA PEL.

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Liquid
Color: Amber
Odor: Characteristic
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 °C): 0.86
Flash Point [Method]: >210°C (410°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F) [Estimated]
Vapor Density (Air = 1): > 2 at 101 kPa [Estimated]
Vapor Pressure: < 0.013 kPa (0.1 mm Hg) at 20 °C [Estimated]
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Negligible
Viscosity: 335 cSt (335 mm2/sec) at 40 °C | 38.3 cSt (38.3 mm2/sec) at 100°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: < -32°C (-26°F)
DMSO Extract (mineral oil only), IP-346: < 3 %wt

SECTION 10  STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11  TOXICOLOGICAL INFORMATION

ACUTE TOXICITY
<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>Conclusion / Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inhalation</strong></td>
<td></td>
</tr>
<tr>
<td>Toxicity (Rat): LC50 &gt; 5000 mg/m³</td>
<td>Minimally Toxic. Based on test data for structurally similar materials.</td>
</tr>
<tr>
<td>Irritation: No end point data for material.</td>
<td>Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.</td>
</tr>
</tbody>
</table>

| **Ingestion**     |                     |
| Toxicity (Rat): LD50 > 5000 mg/kg | Minimally Toxic. Based on test data for structurally similar materials. |

| **Skin**          |                     |
| Toxicity (Rabbit): LD50 > 5000 mg/kg | Minimally Toxic. Based on test data for structurally similar materials. |
| Irritation (Rabbit): Data available. | Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials. |

| **Eye**           |                     |
| Irritation (Rabbit): Data available. | May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials. |

**CHRONIC/OTHER EFFECTS**

For the product itself:
Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract.

Contains:
Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.
Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not sensitizing in test animals and humans.

Additional information is available by request.

**The following ingredients are cited on the lists below:** None.

---REGULATORY LISTS SEARCHED---

1 = NTP CARC  
2 = NTP SUS  
3 = IARC 1  
4 = IARC 2A  
5 = IARC 2B  
6 = OSHA CARC

**SECTION 12 ECOLOGICAL INFORMATION**

The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**
Material -- Expected to be harmful to aquatic organisms.

**MOBILITY**

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to
partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:
Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL
Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13  DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS
Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

REGULATORY DISPOSAL INFORMATION
RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrositivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14  TRANSPORT INFORMATION

LAND (DOT): Not Regulated for Land Transport

LAND (TDG): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code
AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

Complies with the following national/regional chemical inventory requirements:: AICS, DSL, IECSC, KECI, PICCS, TSCA

Special Cases:

<table>
<thead>
<tr>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENCS</td>
<td>Restrictions Apply</td>
</tr>
</tbody>
</table>

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL  6 = TSCA 5a2  11 = CA P65 REPRO  16 = MN RTK
2 = ACGIH A1   7 = TSCA 5e  12 = CA RTK    17 = NJ RTK
3 = ACGIH A2   8 = TSCA 6   13 = IL RTK    18 = PA RTK
4 = OSHA Z     9 = TSCA 12b 14 = LA RTK    19 = RI RTK
5 = TSCA 4     10 = CA P65 CARC 15 = MI 293

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:
Section 13: Disposal Considerations - Disposal Recommendations was modified.
Section 01: Product Code was modified.
Section 10 Stability and Reactivity - Header was modified.
Section 13: Disposal Recommendations - Note was modified.
Section 09: Phys/Chem Properties Note was modified.
Section 09: Boiling Point C(F) was modified.
Section 09: Pour Point C(F) was modified.
Section 09: Flash Point C(F) was modified.
Section 08: Comply with applicable regulations phrase was modified.
Section 08: Personal Protection was modified.
Section 09: Vapor Pressure was modified.
Section 07: Handling and Storage - Handling was modified.
Section 07: Handling and Storage - Storage Phrases was modified.
Hazard Identification: Health Hazards was modified.
Section 11: Inhalation Irritation Test Data was modified.
Section 05: Hazardous Combustion Products was modified.
Section 06: Accidental Release - Spill Management - Water was modified.
Section 09: Relative Density - Header was modified.
Section 09: Viscosity was modified.
Section 09: Viscosity was modified.
Section 14: Sea (IMDG) - Header was modified.
Section 14: Air (IATA) - Header was modified.
Section 14: LAND (TDG) - Header was modified.
Section 14: LAND (DOT) - Header was modified.
Section 15: List Citation Table - Header was modified.
Section 14: LAND (DOT) - Default was modified.
Section 14: LAND (TDG) Default was modified.
Section 14: Sea (IMDG) - Default was modified.
Section 14: Air (IATA) - Default was modified.
Section 15: National Chemical Inventory Listing - Header was modified.
Section 15: National Chemical Inventory Listing was modified.
Section 15: Community RTK - Header was modified.
Section 08: Exposure limits/standards was modified.
Hazard Identification: OSHA - May be Hazardous Statement was modified.
Section 06: Notification Procedures was modified.
Section 09: Oxidizing Properties was modified.
Section 08: OEL Table - Notation Column - Header was modified.
Section 08: Exposure Limit Values - Header was modified.
Section 01: Company Contact Methods Sorted by Priority was modified.
Section 06: Protective Measures was added.
Section 06: Accidental Release - Protective Measures - Header was added.
Section 15: Special Cases - Header was added.
Section 15: Special Cases Table was added.
Section 15: Inventory - Header was added.
Section 15: Status - Header was added.
Section 12: Ecological Information - Acute Aquatic Toxicity was added.
Section 12: Ecological Information - Acute Aquatic Toxicity was added.
Section 09: Vapor Pressure was added.
Section 12: Ecological Information - Acute Aquatic Toxicity was deleted.
Section 12: Ecological Information - Acute Aquatic Toxicity was deleted.

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included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.
Material Safety Data Sheet

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

Material Name: Shell Omala S4 WE 320
Uses: Gear lubricant.
Product Code: 001D7858

Manufacturer/Supplier: Belgian Shell SA/NV
15-23 Avenue Arnaud Fraiteur
B-1050 Bruxelles
Telephone: (+32) 02508 9298
Email Contact for MSDS: If you have any enquiries about the content of this MSDS please email lubricantSDS@shell.com
Emergency Telephone Number: +31 (0)10 4313233

2. HAZARDS IDENTIFICATION

EC Classification: Not classified as dangerous under EC criteria.
Health Hazards: Not expected to be a health hazard when used under normal conditions. Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis. 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.

Safety Hazards: Not classified as flammable but will burn.
Environmental Hazards: Not classified as dangerous for the environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Preparation Description: Blend of polyalkylene glycol and additives.

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.
Material Safety Data Sheet

Advice to Physician : Treat symptomatically.

5. FIRE FIGHTING MEASURES

Clear fire area of all non-emergency personnel.

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 absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.

Additional Advice : 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.
Material Safety Data Sheet

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

If the American Conference of Governmental Industrial Hygienists (ACGIH) value is provided on this document, it is provided for information only.

Occupational Exposure Limits

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)] meeting EN14387.

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. Approved to EU Standard EN166.

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
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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear colourless. Liquid at room temperature.</td>
</tr>
<tr>
<td>Odour</td>
<td>Slight hydrocarbon.</td>
</tr>
<tr>
<td>pH</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Initial Boiling Point and Boiling Range</td>
<td>&gt; 280 °C / 536 °F estimated value(s)</td>
</tr>
<tr>
<td>Pour point</td>
<td>Typical -39 °C / -38 °F</td>
</tr>
<tr>
<td>Flash point</td>
<td>Typical 286 °C / 547 °F (COC)</td>
</tr>
<tr>
<td>Upper / lower Flammability or Explosion limits</td>
<td>Typical 1 - 10 %(V)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 320 °C / 608 °F</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 0.5 Pa at 20 °C / 68 °F (estimated value(s))</td>
</tr>
<tr>
<td>Density</td>
<td>Typical 1.069 kg/m3 at 15 °C / 59 °F</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Negligible</td>
</tr>
<tr>
<td>n-octanol/water partition (log Pow)</td>
<td>&gt; 6 (based on information on similar products)</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>Typical 321 mm2/s at 40 °C / 104 °F</td>
</tr>
<tr>
<td>Vapour density (nBuAc=1)</td>
<td>&gt; 1 (estimated value(s))</td>
</tr>
<tr>
<td>Evaporation rate (nBuAc=1)</td>
<td>Data not available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Stable</td>
</tr>
<tr>
<td>Conditions to Avoid</td>
<td>Extremes of temperature and direct sunlight.</td>
</tr>
<tr>
<td>Materials to Avoid</td>
<td>Strong oxidising agents.</td>
</tr>
<tr>
<td>Hazardous</td>
<td>Hazardous decomposition products are not expected to form during normal storage.</td>
</tr>
<tr>
<td>Decomposition Products</td>
<td></td>
</tr>
</tbody>
</table>

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis for Assessment</td>
<td>Information given is based on data on the components and the toxicology of similar products.</td>
</tr>
<tr>
<td>Acute Oral Toxicity</td>
<td>Expected to be of low toxicity: LD50 &gt; 5000 mg/kg , Rat</td>
</tr>
<tr>
<td>Acute Dermal Toxicity</td>
<td>Expected to be of low toxicity: LD50 &gt; 5000 mg/kg , Rabbit</td>
</tr>
<tr>
<td>Acute Inhalation Toxicity</td>
<td>Not considered to be an inhalation hazard under normal conditions of use.</td>
</tr>
<tr>
<td>Skin Irritation</td>
<td>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.</td>
</tr>
<tr>
<td>Eye Irritation</td>
<td>Expected to be slightly irritating.</td>
</tr>
<tr>
<td>Respiratory Irritation</td>
<td>Inhalation of vapours or mists may cause irritation.</td>
</tr>
<tr>
<td>Sensitisation</td>
<td>Not expected to be a skin sensitisier.</td>
</tr>
<tr>
<td>Repeated Dose Toxicity</td>
<td>Not expected to be a hazard.</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Not considered a mutagenic hazard.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Components are not known to be associated with carcinogenic effects.</td>
</tr>
<tr>
<td>Reproductive and</td>
<td>Not expected to be a hazard.</td>
</tr>
</tbody>
</table>
Developmental Toxicity 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 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).

Mobility: Liquid under most environmental conditions. Sinks in 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.
EU Waste Disposal Code (EWC): 13 02 06 synthetic engine, gear and lubricating oils. Classification of waste is always the responsibility of the end user.

14. TRANSPORT INFORMATION

ADR
This material is not classified as dangerous under ADR regulations.
Material Safety Data Sheet

This material is not classified as dangerous under RID regulations.

ADNR
This material is not classified as dangerous under ADNR regulations.

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.

| EC Classification                          | Not classified as dangerous under EC criteria. |
| EC Symbols                                 | No Hazard Symbol required                     |
| EC Risk Phrases                            | Not classified.                                |
| EC Safety Phrases                          | Not classified.                                |

**Chemical Inventory Status**

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

16. OTHER INFORMATION

R-phrase(s)

Not classified.

**MSDS Version Number** : 1.0

**MSDS Effective Date** : 29.11.2010

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

**MSDS Regulation** : Regulation 1907/2006/EC

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

**Disclaimer** : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
1. MATERIAL AND COMPANY IDENTIFICATION

Material Name: Shell Rhodina Grease BBZ
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

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

3. HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Hazards</td>
<td>High-pressure injection under the skin may cause serious damage including local necrosis.</td>
</tr>
<tr>
<td>Safety Hazards</td>
<td>Not classified as flammable but will burn.</td>
</tr>
<tr>
<td>Environmental Hazards</td>
<td>Not classified as dangerous for the environment.</td>
</tr>
<tr>
<td>Health Hazards</td>
<td>Not expected to be a health hazard when used under normal conditions.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Under normal conditions of use, this is not expected to be a primary route of exposure.</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>May cause slight irritation to eyes.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Low toxicity if swallowed.</td>
</tr>
<tr>
<td>Other Information</td>
<td>High-pressure injection under the skin may cause serious damage including local necrosis. Used grease may contain harmful impurities.</td>
</tr>
<tr>
<td>Signs and Symptoms</td>
<td>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.</td>
</tr>
</tbody>
</table>
Material Safety Data Sheet

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: > 200 °C / 392 °F (COC)

Upper / lower Flammability or Explosion limits: Typical 1 - 10 %(%)(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.
Material Safety Data Sheet

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

<table>
<thead>
<tr>
<th>Material</th>
<th>Source</th>
<th>Type</th>
<th>ppm</th>
<th>mg/m3</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil mist, mineral</td>
<td>ACGIH</td>
<td>TWA(Mist.)</td>
<td>5</td>
<td>mg/m3</td>
<td></td>
</tr>
<tr>
<td>Oil mist, mineral</td>
<td>ACGIH</td>
<td>STEL(Mist.)</td>
<td>10</td>
<td>mg/m3</td>
<td></td>
</tr>
</tbody>
</table>

Print Date 10/04/2008 MSDS_US
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.
Material Safety Data Sheet

Odour       : Slight hydrocarbon.
PH          : Not applicable.
Initial Boiling Point and Boiling Range : Data not available
Dropping point : Typical 140 °C / 284 °F
Flash point : > 200 °C / 392 °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/m3 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.
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)
Material Safety Data Sheet

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.

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.

16. OTHER INFORMATION

| NFPA Rating (Health, Fire, Reactivity) | 0, 1, 0 |
| MSDS Version Number | 1.0 |
| MSDS Effective Date | 10/03/2008 |
| 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. |
Material Safety Data Sheet

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.
1. IDENTIFICATION OF PRODUCT AND COMPANY

TRADE NAME: LGWM 1
APPLICATION: SKF Extreme Pressure Low Temperature Grease.

Supplier
Company: SKF Maintenance Products
Address: Postbus 1008
Postal code: NL-3430 BA Nieuwgein
Country: The Netherlands
Telephone: +31 30 6307200
Fax: +31 30 6307205
Contact Person: Sébastien David
E-mail: sebastien.david@skf.com

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>No</th>
<th>Ingredient name</th>
<th>EC No.</th>
<th>CAS No.</th>
<th>Conc. (wt %)</th>
<th>R-List</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Baseoil-unspecified</td>
<td>-</td>
<td>-</td>
<td>60 - 100 %</td>
<td>No classification required</td>
<td></td>
</tr>
</tbody>
</table>

Legend: T=Toxic, C=Corrosive, Xn=Harmful, Xi=Irritant, E=Explosive, Ox=Oxidising, F=Extremely flammable, H=Highly flammable, N=Dangerous for the environment, Carc. = Carcinogenic, Mut. = Mutagenic, Repr. = Reproductive

INGREDIENT COMMENTS

Note 1:
The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3% DMSO extract as measured by IP 346.

3. HAZARDS IDENTIFICATION

HEALTH
May be irritating to eyes. Prolonged or frequently recurrent contact will degrease the skin and may cause skin irritation.

FIRE AND EXPLOSION
Not flammable, but combustible.

ENVIRONMENT
Oil products may cause ground and water pollutants.

4. FIRST AID MEASURES

INHALATION
Remove victim immediately from source of exposure. Provide rest, warmth and fresh air. Seek medical advice if symptoms develop.

SKIN CONTACT
Immediately flush contaminated skin with soap or mild detergent and water. Immediately remove soaked clothing and flush the skin with water. Use appropriate hand lotion to prevent degreasing and cracking of skin. Seek medical advice if irritation persists.

EYE CONTACT
Immediately flush eyes with plenty of water while holding eye lids open. Remove any contact lenses and continue rinsing with water for at least 15 minutes (keep the eyelids open). Seek medical advice if irritation persists.

INGESTION
DO NOT INDUCE VOMITING! If vomiting occurs, keep head low so that stomach contents do not enter lungs. Thoroughly rinse the mouth with water. Drink a few glasses of water or milk. Seek medical advice.
SAFETY DATA SHEET

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA
Extinguishing agent: carbon dioxide, powder, foam, water spray or water mist.

IMPROPER EXTINGUISHING MEDIA
Do not use a direct water stream which may spread the fire.

EXTINGUISHING METHODS
Remove containers from fire area if this can be done without risk. Use water to cool exposed containers. If possible, fight the fire from a protected location.

FIRE AND EXPLOSION HAZARDS
Not flammable, but combustible. Carbon monoxide and hydrocarbons are released in a fire situation.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS
General: Evacuate all personnel, use protective equipment for fire fighting. Use a portable breathing apparatus when the product is involved in a fire.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Provide good ventilation.
Avoid contact with the skin, eyes and airways.
Wear necessary protective equipment. Keep the emission away from sources of ignition.

ENVIRONMENTAL PRECAUTIONS
Must not be released into the sewage system, drinking water supply or ground.

METHODS FOR CLEANING UP
Dry, scrape or absorb the product with inert material and place it in a refuse container. Collect and dispose of materials in closed and labelled containers at an approved disposal or waste collection facility. Clean with soap and water or detergent. Flush clean with plenty of water. Be aware of the risk of slippery surfaces.

7. HANDLING AND STORAGE

HANDLING ADVICE
Provide good ventilation. Avoid contact with the skin and eyes. Wear necessary protective equipment. Keep away from sources of ignition.

STORAGE
Keep in a dry, cool and well-ventilated area. Keep in original container. Keep containers tightly closed. Store at temperatures below 50 °C. Avoid contact with oxidising substances. Keep away from sources of ignition.

8. EXPOSURE CONTROL/PERSOAL PROTECTION

EXPOSURE CONTROL
Provide good ventilation. Wash the skin at the end of each work shift and before eating, smoking and using restroom facilities. Eye wash facilities and safety shower must be available when handling this product.

RESPIRATORY PROTECTION
Respiratory protective equipment is usually not necessary. In case of insufficient ventilation, wear respiratory protective equipment with A/P2 filter.

EYE PROTECTION
Wear approved safety goggles if there is a risk of eye splash.

HAND PROTECTION
Protective gloves (nitrile rubber, Viton®).

PROTECTIVE CLOTHING
Wear suitable protective clothing.
9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State  Paste.
Colour  Orange.
Odour  Mineral oil.
Water solubility  Insoluble in water.

Physical and chemical parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value / Unit</th>
<th>Method</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>&gt; 150 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>&lt; 1 g/cm³</td>
<td></td>
<td>25 °C</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

STABILITY
Stable under recommended storage and handling conditions.

CONDITIONS TO AVOID
Avoid heat, sparks and naked flames.

MATERIALS TO AVOID
Avoid contact with oxidising substances.

11. TOXICOLOGICAL INFORMATION

INHALATION
On warming/heating, the vapours emitted may cause irritation to the respiratory organs. May cause coughing and breathing difficulties.

SKIN CONTACT
Prolonged or frequently recurrent contact will degrease the skin and may cause skin irritation.

EYE CONTACT
May cause moderate irritation/smarting.

INGESTION
May cause irritation of the mucous membranes, nausea and vomiting.

12. ECOLOGICAL INFORMATION

MOBILITY
Insoluble in water. The product floats on water.

DEGRADABILITY
Not readily biodegradable.

OTHER EFFECTS
Oil products may cause ground and water pollutants.

CONCLUSION
Must not be released into the sewage system, drinking water supply or ground.

13. DISPOSAL CONSIDERATIONS

GENERAL REGULATIONS
Treat as hazardous waste. Collect and dispose of materials in closed and labelled containers at an approved disposal or waste collection facility. Empty packages must be handled in an environmentally safe manner in accordance with applicable laws and regulations.

CATEGORY OF WASTE
The EWC code is a suggestion only; the end user will select a suitable EWC code. 12 01 12* spent waxes and fats
14. TRANSPORT INFORMATION

Classified as Dangerous Goods:  
☐ Yes  ☒ No  ☐ N/A

OTHER INFORMATION
Not classified as dangerous goods.

15. REGULATORY INFORMATION

EC-Label  
☐ Yes  ☒ No  ☐ N/A

COMPOSITION
Baseoil-unspecifed (60 - 100 %)

S-PHRASES
S24/25 Avoid contact with skin and eyes.
S37 Wear suitable gloves.

REFERENCES
Directive 1999/45/EC.
European Waste Catalogue (EWC 2002).
Occupational exposure limits (EH40/2006)
Transport of dangerous goods: ADR, RID, IMDG and IATA.

16. OTHER INFORMATION

ISSUED: 22/03/2006