# Refrigeration Oil 32, 68

**Material Safety Data Sheet**

## 1. PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| **Product Name:** | Refrigeration Oil 32, 68 |
| **MSDS Code:** | 721590 |
| **Synonyms:** | 76 Refrigeration Oil 32<br>76 Refrigeration Oil 68 |
| **Intended Use:** | Refrigeration Oil |
| **Responsible Party:** | ConocoPhillips Lubricants<br>600 N. Dairy Ashford<br>Houston, Texas 77079-1175 |
| **Customer Service:** | 888-766-7676 |
| **Technical Information:** | 800-255-9556 |
| **MSDS Information:** | Internet: http://w3.conocophillips.com/NetMSDS/ |
| **Emergency Telephone Numbers:** | Chemtrec: 800-424-9300 (24 Hours)<br>California Poison Control System: 800-356-3219 |

## 2. HAZARDS IDENTIFICATION

**Emergency Overview**

This material is not considered hazardous according to OSHA criteria.

**NFPA**

**Appearance:** Clear and bright
**Physical Form:** Liquid
**Odor:** Petroleum

**Potential Health Effects**

**Eye:** Contact may cause mild eye irritation including stinging, watering, and redness.

**Skin:** Contact may cause mild skin irritation including redness and a burning sensation. Prolonged or repeated contact can defat the skin, causing drying and cracking of the skin, and possibly dermatitis (inflammation). No harmful effects from skin absorption are expected.

**Inhalation (Breathing):** No information available on acute toxicity.

**Ingestion (Swallowing):** No harmful effects expected from ingestion.

**Signs and Symptoms:** Effects of overexposure may include irritation of the digestive tract, nausea and diarrhea. Inhalation of oil mist or vapors at elevated temperatures may cause respiratory irritation.

**Pre-Existing Medical Conditions:** Conditions aggravated by exposure may include skin disorders.

**See Section 11 for additional Toxicity Information.**

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Component | CAS | Concentration (wt %) |
|---|---|---|
| Lubricant Base Oil (Petroleum) | VARIOUS | >99 |
| Additives | PROPRIETARY | <1 |

## 4. FIRST AID MEASURES

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

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

**Inhalation (Breathing):** If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

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

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

## 5. FIRE-FIGHTING MEASURES

**NFPA 704 Hazard Class**

**Health:** 0 **Flammability:** 1 **Instability:** 0 (0-Minimal, 1-Slight, 2-Moderate, 3-Serious, 4-Severe)

**Unusual Fire & Explosion Hazards:** This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of a fire.

**Extinguishing Media:** Dry chemical, carbon dioxide, foam, or water spray is recommended. Water or foam may cause frothing of materials heated above 212°F. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

**See Section 9 for Flammable Properties including Flash Point and Flammable (Explosive) Limits**

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8). See Sections 2 and 7 for additional information on hazards and precautionary measures.

**Environmental Precautions:** Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Spills into or upon navigable waters, the contiguous zone, or adjoining shorelines that cause a sheen or discoloration on the surface of the water, may require notification of the National Response Center (phone number 800-424-8802).

**Methods for Containment and Clean-Up:** Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material.

## 7. HANDLING AND STORAGE

**Precautions for safe handling:** Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Do not wear contaminated clothing or shoes.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

**Conditions for safe storage:** Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| Component | ACGIH | OSHA | Other: |
|---|---|---|---|
| Lubricant Base Oil (Petroleum) | TWA: 5mg/m$^3$<br>STEL: 10 mg/m$^3$<br>as Oil Mist, if generated | TWA: 5 mg/m$^3$<br>as Oil Mist, if generated | --- |

**Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.**

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

**Personal Protective Equipment (PPE):**

**Eye/Face:** The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

**Skin:** The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the performance of their products. Suggested protective materials: Nitrile

**Respiratory:** Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used. A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (MUC) as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5 percent oxygen) situations, or other conditions that are immediately dangerous to life and health (IDLH).

**Suggestions provided in this section for exposure control and specific types of protective equipment are based on readily available information. Users should consult with the specific manufacturer to confirm the performance of their protective equipment. Specific situations may require consultation with industrial hygiene, safety, or engineering professionals.**

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm). Data represent typical values and are not intended to be specifications.

| | |
|---|---|
| **Appearance:** | Clear and bright |
| **Physical Form:** | Liquid |
| **Odor:** | Petroleum |
| **Odor Threshold:** | No data |
| **pH:** | Not applicable |
| **Vapor Pressure:** | <1 |
| **Vapor Density (air=1):** | >1 |
| **Boiling Point/Range:** | No data |
| **Melting/Freezing Point:** | <-22°F / <-30°C |
| **Pour Point:** | <-22°F / <-30°C |
| **Solubility in Water:** | Negligible |
| **Partition Coefficient (n-octanol/water) (Kow):** | No data |
| **Specific Gravity:** | 0.86 @ 60ºF (15.6ºC) |
| **Bulk Density:** | 7.2 lbs/gal |
| **Viscosity:** | 5-9 cSt @ 100°C; 30-70 cSt @ 40°C |
| **Percent Volatile:** | Negligible |
| **Evaporation Rate (nBuAc=1):** | <1 |
| **Flash Point:** | >338°F / >170°C |
| **Test Method:** | Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010 |
| **LEL (vol % in air):** | No data |
| **UEL (vol % in air):** | No data |
| **Autoignition Temperature:** | No data |

## 10. STABILITY AND REACTIVITY

**Stability:** Stable under normal ambient and anticipated conditions of storage and handling.

**Conditions to Avoid:** Extended exposure to high temperatures can cause decomposition.

**Materials to Avoid (Incompatible Materials):** Avoid contact with oxidizing agents, bases and acids.

**Hazardous Decomposition Products:** Combustion can yield oxides of carbon, nitrogen and sulfur.

**Hazardous Polymerization:** Not known to occur.

## 11. TOXICOLOGICAL INFORMATION

**Chronic Data:**

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

**Acute Data:**

| Component | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|---|---|---|
| Lubricant Base Oil (Petroleum) | >5 g/kg | >2 g/kg | No data |

## 12. ECOLOGICAL INFORMATION

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Lubricant oil basestocks are complex mixtures of hydrocarbons (primarily branched chain alkanes and cycloalkanes) ranging in carbon number from C15 to C50. The aromatic hydrocarbon content of these mixtures varies with the severity of the refining process. White oils have negligible levels of aromatic hydrocarbons, whereas significant proportions are found in unrefined basestocks. Olefins are found only at very low concentrations. Volatilization is not significant after release of lubricating oil basestocks to the environment due to the very low vapor pressure of the hydrocarbon constituents. In water, lubricating oil basestocks will float and will spread at a rate that is viscosity dependent. Water solubilities are very low and dispersion occurs mainly from water movement with adsorption by sediment being the major fate process. In soil, lubricating oil basestocks show little mobility and adsorption is the predominant physical process.

Both acute and chronic ecotoxicity studies have been conducted on lubricant base oils. Results indicate that the acute aquatic toxicities to fish, Daphnia, Ceriodaphnia and algal species are above 1000 mg/l using either water accommodated fractions or oil in water dispersions. Since lubricant base oils mainly contain hydrocarbons having carbon numbers in the range C15 to C50, it is predicted that acute toxicity would not be observed with these substances due to low water solubility. Results from chronic toxicity tests show that the no observed effect level (NOEL) usually exceeds 1000 mg/l for lubricant base oils with the overall weight of experimental evidence leading to the conclusion that lubricant base oils do not cause chronic toxicity to fish and invertebrates.

Large volumes spills of lubricant base oils into water will produce a layer of undissolved oil on the water surface that will cause direct physical fouling of organisms and may interfere with surface air exchange resulting in lower levels of dissolved oxygen. Petroleum products have also been associated with causing taint in fish even when the latter are caught in lightly contaminated environments. Highly refined base oils sprayed onto the surface of eggs will result in a failure to hatch.

Extensive experience from laboratory and field trials in a wide range of crops has confirmed that little or no damage is produced as a result of either aerosol exposure or direct application of oil emulsion to the leaves of crop plants. Base oils incorporated into soil have resulted in little or no adverse effects on seed germination and plant growth at contamination rates up to 4%.

## 13. DISPOSAL CONSIDERATIONS

The generator of a waste is always responsible for making proper hazardous waste determinations and needs to consider state and local requirements in addition to federal regulations.

This material, if discarded as produced, would not be a federally regulated RCRA "listed" hazardous waste and is not believed to exhibit characteristics of hazardous waste. See Sections 7 and 8 for information on handling, storage and personal protection and Section 9 for physical/chemical properties. It is possible that the material as produced contains constituents which are not required to be listed in the MSDS but could affect the hazardous waste determination. Additionally, use which results in chemical or physical change of this material could subject it to regulation as a hazardous waste.

This material under most intended uses would become "Used Oil" due to contamination by physical or chemical impurities. Whenever possible, Recycle Used Oil in accordance with applicable federal and state or local regulations. Container contents should be completely used and containers should be emptied prior to discard.

## 14. TRANSPORTATION INFORMATION

**U.S. Department of Transportation (DOT)**

**Shipping Description:** Not regulated
**Note:** If shipped by land in a packaging having a capacity of 3,500 gallons or more, the provisions of 49 CFR, Part 130 apply. (Contains oil)

**International Maritime Dangerous Goods (IMDG)**

**Shipping Description:** Not regulated
**Note:** Federal compliance requirements may apply. See 49 CFR 171.12.

**International Civil Aviation Org. / International Air Transport Assoc. (ICAO/IATA)**

**UN/ID #:** Not regulated

| | LTD. QTY | Passenger Aircraft | Cargo Aircraft Only |
|---|---|---|---|
| **Packaging Instruction #:** | --- | --- | --- |
| **Max. Net Qty. Per Package:** | --- | --- | --- |

## 15. REGULATORY INFORMATION

**CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):**
This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

**CERCLA/SARA - Section 311/312 (Title III Hazard Categories)**

| | |
|---|---|
| **Acute Health:** | No |
| **Chronic Health:** | No |
| **Fire Hazard:** | No |
| **Pressure Hazard:** | No |
| **Reactive Hazard:** | No |

**CERCLA/SARA - Section 313 and 40 CFR 372:**
This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

**EPA (CERCLA) Reportable Quantity (in pounds):**
This material does not contain any chemicals with CERCLA Reportable Quantities.

**California Proposition 65:**
This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

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

WHMIS Hazard Class
None

**National Chemical Inventories:**
All components are either listed on the US TSCA Inventory, or are not regulated under TSCA.
All components are either on the DSL, or are exempt from DSL listing requirements.

**U.S. Export Control Classification Number:** EAR99

## 16. OTHER INFORMATION

| | |
|---|---|
| **Issue Date:** | 28-Sep-2007 |
| **Status:** | Final |
| **Revised Sections or Basis for Revision:** | Periodic review and update |
| **MSDS Code:** | 721590 |

**MSDS Legend:**
ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service Registry; CEILING = Ceiling Limit (15 minutes); CERCLA = The Comprehensive Environmental Response, Compensation, and Liability Act; EPA = Environmental Protection Agency; IARC = International Agency for Research on Cancer; LEL = Lower Explosive Limit; NE = Not Established; NFPA = National Fire Protection Association; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit (OSHA); SARA = Superfund Amendments and Reauthorization Act; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value (ACGIH); TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; WHMIS = Worker Hazardous Materials Information System (Canada)

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