




Material Safety Data Sheet

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Name:** Firebird HD EC Motor Oil  
**MSDS Number:** 778983  
**Synonyms:** 76 Firebird HD EC Motor Oil, SAE 15W-40  
**Intended Use:** Heavy Duty Diesel Engine Oil  
**Manufacturer/Supplier:** ConocoPhillips Lubricants  
600 N. Dairy Ashford  
Houston, Texas 77079-1175  
**Emergency Health and Safety Number:** Chemtrec: 800-424-9300 (24 Hours)  
**Customer Service:** 888-766-7676  
**Technical Information:** 800-255-9556  
**MSDS Information:** Internet: <http://w3.conocophillips.com/NetMSDS/>

**2. HAZARDS IDENTIFICATION**

<u>Emergency Overview</u>	<u>NFPA</u>
This material is not considered hazardous according to OSHA criteria.	

**Appearance:** Clear, brown  
**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):** Low degree of toxicity by 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	CASN	Concentration*
Lubricant Base Oil (Petroleum)	VARIOUS	<25
Re-Refined Lubricating Oil, Hydrotreated	VARIOUS	>55
Additives	PROPRIETARY	<25
Zinc Compound(s)	PROPRIETARY	<2

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

### 4. FIRST AID MEASURES

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

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

**Inhalation (Breathing):** If respiratory symptoms develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. 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, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

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

**Hazardous Combustion Products:** Combustion may yield smoke, carbon monoxide, and other products of incomplete combustion. Oxides of sulfur, nitrogen or phosphorus may also be formed.

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 safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Use water sparingly to minimize environmental contamination and reduce disposal requirements. 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 relevant authorities in accordance with all applicable regulations. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Absorb spill with inert material such as sand or vermiculite, and place in suitable container for disposal.

## 7. HANDLING AND STORAGE

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

Used motor oils have been shown to cause skin cancer in mice after repeated application to the skin without washing. Brief or intermittent skin contact with used motor oil is not expected to cause harm if the oil is thoroughly removed by washing with soap and water.

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

"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:** Use and store this material in cool, dry, well-ventilated area away from heat and all sources of ignition. Keep container(s) tightly closed. 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	US-ACGIH	OSHA	Other
Lubricant Base Oil (Petroleum)	TWA: 5mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup> as Oil Mist, if generated	TWA: 5 mg/m <sup>3</sup> as Oil Mist, if generated	--
Re-Refined Lubricating Oil, Hydrotreated	TWA: 5mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup> as Oil Mist, if generated	TWA: 5 mg/m <sup>3</sup> as Oil Mist, if generated	--

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

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

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

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

**Respiratory Protection:** Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (as directed by regulation or the manufacturer's instructions), in oxygen deficient (less than 19.5 percent oxygen) situations, or under conditions that are immediately dangerous to life and health (IDLH).

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

## 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, brown
Physical Form:	Liquid
Odor:	Petroleum
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure:	<1 mm Hg
Vapor Density (air=1):	>1
Boiling Point/Range:	572300
Melting/Freezing Point:	No data
Pour Point:	-43.6 °F / -42 °C
Solubility in Water:	Negligible
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity:	0.8769 @ 60°F (15.6°C)
Bulk Density:	7.31 lbs/gal
Viscosity:	15.4 cSt @ 100 °C; 116 cSt @ 40 °C
Percent Volatile:	Negligible
Evaporation Rate (nBuAc=1):	No data
Flash Point:	390 °F / 199 °C
Test Method:	Cleveland Open Cup (COC), ASTM D92
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 strong oxidizing agents and strong reducing agents.

**Hazardous Decomposition Products:** Not anticipated under normal conditions of use. Combustion can yield carbon monoxide, oxides of nitrogen, sulfur, phosphorus and zinc. During use in engines, contamination of oil with low levels of hazardous fuel combustion by-products (e.g. polycyclic aromatic hydrocarbons) may occur.

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

## 11. TOXICOLOGICAL INFORMATION

### Lubricant Base Oil (Petroleum)

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

### Re-Refined Lubricating Oil, Hydrotreated

**Carcinogenicity:** This material has been highly refined by a variety of processes including hydrotreating to remove aromatics and improve performance characteristics. It is not listed as a carcinogen by NTP, IARC, or OSHA.

### Phenol, (tetrapropenyl) derivatives (<1%)

**Reproductive:** This product contains low levels of phenol, (tetrapropenyl) derivatives. Rats given high, repeated daily doses of phenol, (tetrapropenyl) derivatives by oral intubation experienced adverse reproductive effects. Pregnant rats given high, repeated daily doses of phenol, (tetrapropenyl) derivatives by oral intubation gave birth to pups with cleft palate and skeletal malformations at dose levels that caused maternal toxicity. Follow-up studies of phenol, (tetrapropenyl) derivatives in finished lubricating fluids demonstrated a no-observed effect level of 1.78 wt%.

Component	Oral LD50	Dermal LD50	Inhalation LC50
Lubricant Base Oil (Petroleum)	>5 g/kg	>2 g/kg	No data
Re-Refined Lubricating Oil, Hydrotreated	>5 gkg (rat)	>2 g/kg (rat)	No Data

## 12. ECOLOGICAL INFORMATION

**Ecological Information:** 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: *U.S. DOT compliance requirements may apply. See 49 CFR 171.22, 23 & 25.*

### 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 contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR 372:

Component	Concentration*	de minimis
Zinc Compound(s)	<2	1.0%

### EPA (CERCLA) Reportable Quantity (In pounds):

This material does not contain any chemicals with CERCLA Reportable Quantities.

### California Proposition 65:

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

### 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 Regulations.

### WHMIS Hazard Class

None

### National Chemical Inventories:

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

U.S. Export Control Classification Number: EAR99

**Other Regulatory Information**

Diphenylamine, CASRN 122-39-4, which is present at trace amounts, is subject to the export notification requirements of TSCA Section 12(b).

**16. OTHER INFORMATION****References used in compiling safety data sheet information:**

Dangerous Substances Directive 67/548/EEC

<b>Issue Date:</b>	11-Aug-2008
<b>Status:</b>	Final
<b>Revised Sections or Basis for Revision:</b>	New MSDS
<b>MSDS Number:</b>	778983

**Guide to Abbreviations:**

ACGIH = American Conference of Governmental Industrial Hygienists; ADR = Agreement on Dangerous Goods by Road; CASRN = Chemical Abstracts Service Registry Number; CEILING = Ceiling Limit (15 minutes); EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = [US] Environmental Protection Agency; Germany-TRGS = Technical Rules for Dangerous Substances; IARC = International Agency for Research on Cancer; ICAO/IATA = International Civil Aviation Organization / International Air Transport Association; IMDG = International Maritime Dangerous Goods; Ireland-HSA = Ireland's National Health and Safety Authority; LEL = Lower Explosive Limit; N/A = Not Applicable; N/D = Not Determined; NTP = [US] National Toxicology Program; RID = Regulations Concerning the International Transport of Dangerous Goods by Rail; STEL = Short Term Exposure Limit (15 minutes); TLV = Threshold Limit Value; TWA = Time Weighted Average (8 hours); UEL = Upper Explosive Limit; UK-EH40 = United Kingdom EH40/2005 Workplace Exposure Limits

**Disclaimer of Expressed and Implied Warranties:**

The information presented in this Material Safety Data Sheet is based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

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