

**Other Protective Equipment:** A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

<b>Appearance:</b>	Clear, brown
<b>Physical Form:</b>	Liquid
<b>Odor:</b>	Characteristic petroleum
<b>Odor Threshold:</b>	No data
<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	< 1
<b>Vapor Density (air=1):</b>	>1
<b>Boiling Point/Range:</b>	>555°F / >291°C
<b>Melting/Freezing Point:</b>	No data
<b>Solubility in Water:</b>	Negligible
<b>Partition Coefficient (n-octanol/water) (Kow):</b>	No data
<b>Specific Gravity:</b>	0.88 @ 60°F (15.6°C)
<b>Bulk Density:</b>	7.38 lbs/gal
<b>Viscosity:</b>	14.9 - 15.5 cSt @ 100°C; 118 cSt @ 40°C
<b>Evaporation Rate (nBuAc=1):</b>	No data
<b>Flash Point:</b>	399°F / 204°C
<b>Test Method:</b>	Cleveland Open Cup (COC), ASTM D92
<b>LEL (vol % in air):</b>	No data
<b>UEL (vol % in air):</b>	No data
<b>Autoignition Temperature:</b>	No data

## 10. STABILITY AND REACTIVITY

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

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

**Materials to Avoid (Incompatible Materials):** Avoid contact with strong oxidizing agents.

**Hazardous Decomposition Products:** Combustion can yield carbon, nitrogen, sulfur, phosphorus, and zinc oxides methacrylate monomers. Hydrogen sulfide and alkyl mercaptans may also be released. Thermal decomposition may produce hydrogen sulfide and other sulfur-containing gases at temperatures greater than 113°F.

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

### Chronic Data:

#### Lubricant Base Oil (Petroleum)

**Carcinogenicity:** The petroleum base oils contained in this product have been highly refined by a variety of processes including solvent extraction, hydrotreating, and/or dewaxing to remove aromatics and improve performance characteristics. They contain low concentrations of PAH's and none have been identified as a carcinogen by NTP, IARC or OSHA.

#### Hindered Alkyl Phenol

**Target Organs:** Repeated oral administration to rats resulted in liver cellular hypertrophy.

### Acute Data:

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

## 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 Regulations.

#### WHMIS Hazard Class

D2A

### 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

<b>Date of Issue:</b>	11-Mar-2009
<b>Status:</b>	Final
<b>Previous Issue Date:</b>	11-Oct-2005
<b>Revised Sections or Basis for Revision:</b>	Composition (Section 3) NFPA ratings (Sections 2&5) Toxicological (Section 11) Regulatory information (Section 15)
<b>MSDS Number:</b>	720640

### Guide to Abbreviations:

ACGIH = American Conference of Governmental Industrial Hygienists; CASRN = Chemical Abstracts Service Registry Number; 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)

### 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.

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.

<b>Appearance:</b>	Amber
<b>Physical Form:</b>	Liquid
<b>Odor:</b>	Petroleum
<b>Odor Threshold:</b>	No data
<b>pH:</b>	Not applicable
<b>Vapor Pressure:</b>	<1 mm Hg
<b>Vapor Density (air=1):</b>	>1
<b>Boiling Point/Range:</b>	No data
<b>Melting/Freezing Point:</b>	No data
<b>Solubility in Water:</b>	Insoluble
<b>Partition Coefficient (n-octanol/water) (Kow):</b>	No data
<b>Specific Gravity:</b>	0.88 - 0.89 @ 60°F (15.6°C)
<b>Bulk Density:</b>	7.4 lbs/gal
<b>Viscosity:</b>	14 cSt @ 100 °C
<b>Evaporation Rate (nBuAc=1):</b>	<1
<b>Flash Point:</b>	Minimum 490 °F / 254 °C
<b>Test Method:</b>	Cleveland Open Cup (COC), ASTM D92
<b>LEL (vol % in air):</b>	No data
<b>UEL (vol % in air):</b>	No data
<b>Autoignition Temperature:</b>	No data

## 10. Stability and Reactivity

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

**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. 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

### Chronic Toxicity:

#### **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.

#### **Hindered Alkyl Phenol**

**Target Organs:** The hindered alkyl phenol in this product has demonstrated adverse effects on the liver in rats, mice and monkeys. These effects occurred at doses that exceed the limit for classification in Canada and the EU.

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

**Reproductive Toxicity:** 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%.

### Acute Toxicity:

### 3. Composition / Information on Ingredients

Component	CASRN	Concentration*
Lubricant Base Oil (Petroleum)	VARIOUS	>90
Additives	PROPRIETARY	<10
Hindered Alkyl Phenol	PROPRIETARY	0 - 1
Phenol, (tetrapropenyl) derivatives (<1%)	74499-35-7	0 - 0.2

\* 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 / 100°C. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the initial stage, emergency responders in the immediate hazard area should wear protective clothing. 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 and shipping 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.

Dear Customer,

Enclosed is the Material Data Safety Sheet (MSDS) related to your recent product purchase.

For the MSDS to serve its purpose it must be forwarded to all locations where the product is used, handled, resold, or stored. In addition, the MSDS should be forwarded to all individuals involved with the design, implementation, and/or control of operations involving the product. Note also that if you resell, repackage, or otherwise distribute the purchased product(s) and the product is hazardous, it is your responsibility to provide the MSDS to your customers.

MSDSs are provided to current customers with the initial purchase of a product and whenever it is revised to reflect new health or safety information. If you currently have copies of this MSDS, please check the issue date of your present copies against the date of the attached MSDS and substitute any outdated copies.

For products containing SARA Section 313 substances, an MSDS is sent to all customers with their first order of the calendar year to comply with the supplier notification provisions of the Superfund Amendment and Reauthorization Act.

In accordance with US EPA rules, should any of your employees allege or exhibit any new adverse health or environmental effects related specifically to the product, please advise us in writing of the circumstances of the allegation according to TSCA, Section 8c.

If you are not the correct recipient of this MSDS, if you need to change your company contact information for receiving MSDSs, or you need additional information about our products, please notify the group identified in the return address field. You can also call the Product Safety Help desk at (800) 762-0942 or email us at [msds@conocophillips.com](mailto:msds@conocophillips.com).

We appreciate your continued business.

Enclosure

**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.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### HAZARDOUS COMPONENTS

Component	CAS	Concentration (wt %)
Hindered Alkyl Phenol	PROPRIETARY	1

#### NON-HAZARDOUS COMPONENTS

Component	CAS	Concentration (wt %)
Lubricant Base Oil (Petroleum)	VARIOUS	78 - 79
Additives	PROPRIETARY	18 - 20

### 4. FIRST AID MEASURES

**Eye:** If irritation or redness develops from exposure, flush eyes with clean water. For direct contact, hold eyelids apart and flush the affected eye(s) with clean water for at least 15 minutes. Seek medical attention. 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):** First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air. Seek immediate 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:** 1    **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. Vapors are heavier than air and can accumulate in low areas.

**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, 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.

**Spill precautions:** Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment, including respiratory protection, as conditions warrant (see Section 8).

**14. TRANSPORTATION INFORMATION**

	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 SARA 313 and 40 CFR 372:

Component	Concentration (wt %)	de minimis
Zinc Compound(s)	1.1	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. Used engine oil, while not a component of this material, is on the Proposition 65 list of chemicals known to the state of California to cause cancer.

**Carcinogen Identification:**

Used motor oil has been identified as a possible skin carcinogen by IARC.

**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 listed on the US TSCA Inventory.  
All components are listed on the Canadian DSL.

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

**16. OTHER INFORMATION**

**Issue Date:** 26-Jan-2007  
**Status:** Final  
**Revised Sections or Basis for Revision:** Periodic review and update  
**MSDS Code:** 723300

**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)