

---

**MATERIAL SAFETY DATA SHEET**

---

**PRODUCT NAME:** Enerpac HF Hydraulic Oil**STOCK NUMBER:** HF100, 101, 102, 104, CM40885**Distributor:**Enerpac  
720 West James Street  
Columbus, WI 53925**Date Issued:** 09-02-09

Supercedes: 04-16-08

REVISION NUMBER: 2056  
PREPARATION/REVISION DATE: 03/11/09  
REVISED FROM (DATE): 03/11/09EMERGENCY PHONE #: (920)-735-8298  
NFPA CODE: Health: 2 Fire: 1 Reactivity: 0  
HMIS CODE: Health: 2 Fire: 1 Reactivity: 0

---

**SECTION 1 - HAZARDOUS INGREDIENTS**

---

This material is not known to contain greater than 0.1% of any carcinogen required to be listed under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

<u>Component</u>	<u>Cas #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Hydrotreated heavy paraffinic distillate	64742-54-7	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Interchangeable neutral oils	64742-65-0	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Zinc dialkyl dithiophosphate	68649-42-3	N.E.	N.E.

---

**SECTION 2 - FIRE AND EXPLOSION HAZARDS**

---

FLASH POINT: 400°F  
UPPER FLAMMABLE LIMIT: 10% (Estimated value)  
LOWER FLAMMABLE LIMIT: 1% (Estimated value)**EXTINGUISHING MEDIA:**CO<sub>2</sub>, dry chemical, foam, water spray, water fog**SPECIAL FIRE FIGHTING PROCEDURES:**

Wear self contained breathing apparatus with full face piece. Cool exposed containers with water spray. Avoid breathing fumes.

**UNUSUAL FIRE & EXPLOSION HAZARDS:**

Toxic fumes may be evolved on burning or exposure to heat. Pressure may increase in overheated closed containers. Store below 120° F

---

**SECTION 3 - HEALTH HAZARD DATA**

---

## « ACUTE EXPOSURE »

- ORAL TOXICITY: Low order of acute oral toxicity. May cause irritation of the gastrointestinal tract, nausea and vomiting. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.
- EYE IRRITATION: Eye irritant. Based on data from components or similar material.
- SKIN IRRITATION: Skin irritant. Based on data from components or similar materials. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
- DERMAL TOXICITY: The LD50 in rabbits is > 2000 mg/kg. Based on data from components or similar materials
- INHALATION TOXICITY: No data available to indicate product or components may be a toxic inhalation hazard.
- RESPIRATORY IRRITATION: If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract similar to that observed with mineral oil. Based on data from components or similar materials. Under good industrial hygiene practices where all exposure limits are observed respiratory irritation should not be a problem.
- DERMAL SENSITIZATION: No data available to indicate product or components may be a skin sensitizer.
- INHALATION SENSITIZATION: No data available to indicate product or components may be a respiratory sensitizer.

## « CHRONIC EXPOSURE »

- CHRONIC TOXICITY: No data available to indicate product or components present at greater than 1% are chronic health hazards.
- CARCINOGENICITY: No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
- MUTAGENICITY: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
- REPRODUCTIVE TOXICITY: No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
- TERATOGENICITY: No data available to indicate either product or components contained at greater than 0.1% may cause birth defects.

## « ADDITIONAL INFORMATION »

- OTHER: No other health hazards known.
- EXPOSURE LIMITS: See Hazardous Ingredients Section for any applicable exposure limits for components.

---

**SECTION 3A - EMERGENCY FIRST AID PROCEDURES**

---

SKIN: Wash with soap and water. Get medical attention if irritation develops. Launder contaminated clothing before reuse.

EYE: Flush with water at least 15 minutes. Get medical attention if eye irritation develops or persists.

INHALATION: Remove exposed person to fresh air if adverse effects are observed.

ORAL: DO NOT INDUCE VOMITING! If conscious, give 2 glasses of water. Get immediate medical attention.

ADDITIONAL: Note to physician: treat symptomatically.

---

**SECTION 4 - SPECIAL PROTECTION INFORMATION**

---

VENTILATION PROCEDURE: Use local exhaust ventilation to control dust.

GLOVE PROTECTION: Neoprene or Nitrile Gloves Recommended.

EYE PROTECTION: Safety glasses recommended.

RESPIRATORY PROTECTION: Normally not required, mask or respirator for mists.

CLOTHING RECOMMENDATION: Launder as needed to prevent repeated or prolonged contact.

---

**SECTION 5 - PHYSICAL DATA**

---

VAPOR PRESSURE: Less than 0.01 mm Hg @ 20°C

PH: Essentially Neutral

SPECIFIC GRAVITY: 0.860

LB/GAL: 7.16

WATER SOLUBILITY: Insoluble

PERCENT VOLATILE: Negligible from open container in 4 hours @ 38°C (100°F)

VAPOR DENSITY: Greater than 1 (Air = 1)

EVAPORATION RATE: Less than 0.01 (@1 ATM and 25°C. n-butyl acetate = 1)

ODOR: Mild Petroleum oil like

APPEARANCE: Amber Viscous Liquid

VISCOSITY: 30-34 cSt @ 40°C

POUR: -45°F

---

**SECTION 6 - STABILITY**

---

STABILITY: Stable

INCOMPATIBILITY: Oxidizing agents and acids.

POLYMERIZATION: Will not occur.

THERMAL DECOMPOSITION: Smoke, carbon monoxide, aldehydes and other products of incomplete combustion. Hydrogen sulfide and short chain alkyl mercaptans may also be released. Under combustion conditions, oxides of the following elements will be formed: Phosphorus, Sulfur, Zinc.

---

**SECTION 7 - SPILL OR LEAK PROCEDURES**

---

**SPILL PROCEDURES:** Prevent entry into sewers and waterways. Pick up free liquid for recycle or disposal. Absorb small amounts with an inert material.

**WASTE DISPOSAL:** Dispose according to current local, state and federal regulations. Materials may become hazardous waste through use. If permitted, incineration may be practical. Consider recycling.

---

**SECTION 8 - SPECIAL PRECAUTIONS**

---

**SPECIAL PRECAUTIONS:** Keep containers closed when not in use. Do not handle or store near high heat or flames. Avoid breathing oil mists, wash skin thoroughly with soap and water after handling.

---

**SECTION 9 - TRANSPORTATION AND OSHA LABELING INFORMATION**

---

**TRANSPORTATION INCIDENT INFORMATION:** For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents.

**U.S. DOT HAZARDOUS MATERIALS SHIPPING DESCRIPTION:** Not Regulated.

**OSHA REQUIRED LABEL INFORMATION:** In compliance with hazard and right-to-know requirements, where applicable OSHA Hazard Warnings may be found on the label, bill of lading or invoice accompanying this shipment.

The information presented herein has been compiled from sources considered to be dependable and is accurate to the best of seller's knowledge, however, seller makes no warranty whatsoever, expressed, implied or of merchantability regarding the accuracy of such data or the results to be obtained from the use thereof, seller assumes no responsibility for injury to buyer or to third persons or for any damage to any property and buyer assumes all such risks.

N.A. = Not Applicable   N.D. = Not Determine   N.E. = Not Established

---

---

**MATERIAL SAFETY DATA SHEET**

---

**PRODUCT NAME:** Enerpac LX Hydraulic Oil**STOCK NUMBER:** LX101, LX104, CM50885**Distributor:**Enerpac  
720 West James Street  
Columbus, WI 53925**Date Issued:** 09-02-09

Supercedes: 04-16-08

**REVISION NUMBER:** 2048  
**PREPARATION/REVISION DATE:** 03/11/09  
**REVISED FROM (DATE):** 03/11/09**EMERGENCY PHONE #:** (920)-735-8298  
**NFPA CODE:** Health: 2 Fire: 1 Reactivity: 0  
**HMIS CODE:** Health: 2 Fire: 1 Reactivity: 0

---

**SECTION 1 - HAZARDOUS INGREDIENTS**

---

This material is not known to contain greater than 0.1% of any carcinogen required to be listed under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

<u>Component</u>	<u>Cas #</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Hydrotreated heavy paraffinic distillate	64742-54-7	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Interchangeable neutral oils	64742-65-0	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Zinc dialkyl dithiophosphate	68649-42-3	N.E.	N.E.

---

**SECTION 2 - FIRE AND EXPLOSION HAZARDS**

---

**FLASH POINT:** 375° F  
**UPPER FLAMMABLE LIMIT:** 10% (Estimated value)  
**LOWER FLAMMABLE LIMIT:** 1% (Estimated value)**EXTINGUISHING MEDIA:**CO<sub>2</sub>, dry chemical, foam, water spray, water fog**SPECIAL FIRE FIGHTING PROCEDURES:**

Wear self contained breathing apparatus with full face piece. Cool exposed containers with water spray. Avoid breathing fumes.

**UNUSUAL FIRE & EXPLOSION HAZARDS:**

Toxic fumes may be evolved on burning or exposure to heat. Pressure may increase in overheated closed containers. Store below 120° F.

---

**SECTION 3 - HEALTH HAZARD DATA**

---

## « ACUTE EXPOSURE »

- ORAL TOXICITY: Low order of acute oral toxicity. May cause irritation of the gastrointestinal tract, nausea and vomiting. Aspiration into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possibly death.
- EYE IRRITATION: Eye irritant. Based on data from components or similar material.
- SKIN IRRITATION: Skin irritant. Based on data from components or similar materials. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, defatting and cracking of the skin.
- DERMAL TOXICITY: The LD50 in rabbits is > 2000 mg/kg. Based on data from components or similar materials.
- INHALATION TOXICITY: No data available to indicate product or components may be a toxic inhalation hazard.
- RESPIRATORY IRRITATION: If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract similar to that observed with mineral oil. Based on data from components or similar materials. Under good industrial hygiene practices where all exposure limits are observed respiratory irritation should not be a problem.
- DERMAL SENSITIZATION: No data available to indicate product or components may be a skin sensitizer.
- INHALATION SENSITIZATION: No data available to indicate product or components may be a respiratory sensitizer.

## « CHRONIC EXPOSURE »

- CHRONIC TOXICITY: No data available to indicate product or components present at greater than 1% are chronic health hazards.
- CARCINOGENICITY: No data available to indicate any components present at greater than 0.1% may present a carcinogenic hazard.
- MUTAGENICITY: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
- REPRODUCTIVE TOXICITY: No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
- TERATOGENICITY: No data available to indicate either product or components contained at greater than 0.1% may cause birth defects.

## « ADDITIONAL INFORMATION »

- OTHER: No other health hazards known.
- EXPOSURE LIMITS: See Hazardous Ingredients Section for any applicable exposure limits for components.

---

**SECTION 3A - EMERGENCY FIRST AID PROCEDURES**

---

SKIN: Wash with soap and water. Get medical attention if irritation develops. Launder contaminated clothing before reuse.

EYE: Flush with water at least 15 minutes. Get medical attention if eye irritation develops or persists.

INHALATION: Remove exposed person to fresh air if adverse effects are observed.

ORAL: DO NOT INDUCE VOMITING! If conscious, give 2 glasses of water. Get immediate medical attention.

ADDITIONAL: Note to physician: treat symptomatically.

---

**SECTION 4 - SPECIAL PROTECTION INFORMATION**

---

VENTILATION PROCEDURE: Use local exhaust ventilation to control dust.

GLOVE PROTECTION: Neoprene or Nitrile Gloves Recommended.

EYE PROTECTION: Safety glasses recommended.

RESPIRATORY PROTECTION: Normally not required, mask or respirator for mists.

CLOTHING RECOMMENDATION: Launder as needed to prevent repeated or prolonged contact.

---

**SECTION 5 - PHYSICAL DATA**

---

VAPOR PRESSURE: Less than 0.01 mm Hg @ 20°C

PH: Essentially Neutral

SPECIFIC GRAVITY: 0.848

LB/GAL: 7.06

WATER SOLUBILITY: Insoluble

PERCENT VOLATILE: Negligible from open container in 4 hours @ 38°C (100°F)

VAPOR DENSITY: Greater than 1 (Air = 1)

EVAPORATION RATE: Less than 0.01 (@1 ATM and 25°C. n-butyl acetate = 1)

ODOR: Mild Petroleum oil like

APPEARANCE: Amber Viscous Liquid

VISCOSITY: 14-16.4 cSt @ 40°C

POUR: -50°F

---

**SECTION 6 - STABILITY**

---

STABILITY: Stable

INCOMPATIBILITY: Oxidizing agents and acids.

POLYMERIZATION: Will not occur.

THERMAL DECOMPOSITION: Smoke, carbon monoxide, aldehydes and other products of incomplete combustion. Hydrogen sulfide and short chain alkyl mercaptans may also be released. Under combustion conditions, oxides of the following elements will be formed: Phosphorus, Sulfur, Zinc.

---

**SECTION 7 - SPILL OR LEAK PROCEDURES**

---

**SPELL PROCEDURES:** Prevent entry into sewers and waterways. Pick up free liquid for recycle or disposal. Absorb small amounts with an inert material.

**WASTE DISPOSAL:** Dispose according to current local, state and federal regulations. Materials may become hazardous waste through use. If permitted, incineration may be practical. Consider recycling.

---

**SECTION 8 - SPECIAL PRECAUTIONS**

---

**SPECIAL PRECAUTIONS:** Keep containers closed when not in use. Do not handle or store near high heat or flames. Avoid breathing oil mists, wash skin thoroughly with soap and water after handling.

---

**SECTION 9 - TRANSPORTATION AND OSHA LABELING INFORMATION**

---

**TRANSPORTATION INCIDENT INFORMATION:** For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents.

**U.S. DOT HAZARDOUS MATERIALS SHIPPING DESCRIPTION:** Not Regulated.

**OSHA REQUIRED LABEL INFORMATION:** In compliance with hazard and right-to-know requirements, where applicable OSHA Hazard Warnings may be found on the label, bill of lading or invoice accompanying this shipment.

The information presented herein has been compiled from sources considered to be dependable and is accurate to the best of seller's knowledge, however, seller makes no warranty whatsoever, expressed, implied or of merchantability regarding the accuracy of such data or the results to be obtained from the use thereof, seller assumes no responsibility for injury to buyer or to third persons or for any damage to any property and buyer assumes all such risks.

N.A. = Not Applicable   N.D. = Not Determine   N.E. = Not Established

---



720 W. James St.  
Columbus, WI 53925 USA

ENERPAC B.V., Galvanistraat 115, P O Box 8097, 6710 AB Ede,  
The Netherlands.

## STATEMENT ON REACH COMPLIANCE

JANUARY 2009

Enerpac supports the objectives of the European Union's (EU) Regulation for the **Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)**. The Regulation's aim is that "the European Union achieves that, by 2020, chemicals are produced and used in ways that lead to the minimization of significant adverse effects on human health and environment."

Enerpac is a manufacturer, importer and purchaser of industrial hydraulic equipment. We have assessed the products that we manufacture and sell in the EU and determined that the only products we manufacture/sell above 1 tonne are articles, and we are therefore impacted by REACH only marginally. In relation to our REACH obligations, we have conducted an assessment on identifying articles within our manufacturing range which contain substances that might require pre-registration or registration. We have concluded that none of those articles have any substances subject to the pre-registration or registration requirements under REACH. Nevertheless, whenever any new product is introduced, we will continue with our due diligence and, if required by REACH, will pre-register and register the substances in that product (or ask our suppliers to do so).

Enerpac reviewed the impact of REACH on our business and had extensive discussions with our supply chain partners to better understand the overall impact and their intentions under REACH. This includes working with suppliers to ensure continued supply of raw materials suitable for customers' uses. There has been no withdrawal of raw materials by our suppliers. In the event that materials are later withdrawn from the market we will keep our customers informed and work towards making the appropriate substitutions.

Gopal R. Raja,  
Global Compliance Leader