



# SAFETY DATA SHEET

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

### Enhance™ Super Diesel Engine Oil SAE 15W-40

**PRODUCT USE:** Premium Heavy-Duty Motor Oil

**COMPANY IDENTIFICATION:** Enhance™ Lubricants, LLC  
1959 Bluff Road  
Columbia, SC 29201  
www.enhanceoil.com

**TRANSPORTATION EMERGENCY RESPONSE:** PERS – 800-633-8253

## SECTION 2: HAZARDS IDENTIFICATION

**CLASSIFICATION:** Not classified as hazardous according to 29 CFR 1910.1200 (2012).

**HAZARDS NOT OTHERWISE CLASSIFIED:** Not Applicable

## SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Alkylphenol	27193-86-8	< 0.29
Calcium sulphonate	70024-69-0	< 0.9
Calcium alkaryl sul-phonate	75975-85-8	< 0.9
Zinc dialkyldithio-phosphate	113706-15-3	< 2.4
Zinc dialkyl dithio-phosphate	84605-29-8	< 2.4
Alkylated phenol ester	125643-61-0	< 3
Alkaryl amine	36878-20-3	1 - 5
Alkyl phenate alka-noate	Not Assigned	< 3
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and	85940-28-9	< 3
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *	Not Assigned	0 - 90
**If chemical name/CAS No is proprietary and/or weight % is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.**		

## SECTION 4: FIRST AID MEASURES

**EYES:** Flush eyes with large amounts of water for at least 15 minutes until irritation subsides. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists, get medical attention.

**SKIN:** Remove clothing and shoes if contaminated. To remove the material from skin, flush area with water and follow by washing with soap if available. Discard contaminated clothing and shoes or thoroughly clean before reuse. If irritation persists, get medical attention.

**INGESTION:** In general no treatment is necessary unless large quantities are swallowed; however, get medical advice.

**INHALATION:** No treatment necessary under normal conditions of use. If symptoms persist, get medical attention.

**MOST IMPORTANT SYMPTOMS AND EFFECTS:**

**SYMPTOMS:** Expected to be both acute and delayed. 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 diarrhea.

**INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:**

Note to Physicians: Treat Symptomatically

**SECTION 5: FIRE FIGHTING MEASURES**

**SUITABLE EXTINGUISHING MEDIA:** Use 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.

**SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:** Hazardous combustion products may include:

A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.

**SPECIFIC EXTINGUISHING METHODS:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:** Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:** Use personal protective equipment as required.

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN UP:** 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.

**ENVIRONMENTAL PRECAUTIONS:** Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.

**SECTION 7: HANDLING AND STORAGE**

**TECHNICAL MEASURES:** Use local exhaust ventilation if there is risk of inhalation of vapors, mists or aerosols. 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.

**PRECAUTIONS FOR SAFE HANDLING:** Avoid prolonged or repeated contact with skin. Avoid inhaling vapor and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

**CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:**

**STORAGE CONDITIONS:** Store at ambient conditions. Keep container tightly closed in a cool, well-ventilated place. Use properly labeled and closable containers.

**PRODUCT TRANSFER:** Proper grounding and bonding procedures should be used during all bulk

transfer operations to avoid static accumulation.

**PACKAGING MATERIAL:** For containers or container linings, use mild steel or high-density polyethylene.

**INCOMPATIBLE MATERIALS:** PVC. This product may react with strong oxidizing agents. Containers should not be exposed to high temperatures because of possible risk of distortion.

## SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**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. Validated exposure measurement methods should be applied by a competent person and samples analyzed by an accredited laboratory.

**EXPOSURE GUIDELINES:** Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Section 6. If necessary, prevent undissolved material from being dis-charged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapor.

**APPROPRIATE ENGINEERING 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. General Information: Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or subsequent recycle. Always observe good personal hygiene measures, such as washing hands 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.

### INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:

**EYE/FACE PROTECTION:** If material is handled such that it could be splashed into eyes, protective eyewear is recommended.

**HAND PROTECTION REMARKS:** 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, 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. For continuous contact we recommend gloves with break-through time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.

**SKIN AND BODY PROTECTION:** Skin protection is not ordinarily required beyond standard work clothes. It is good practice to wear chemical resistant gloves.

**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 the combination of organic gases and vapors and particles [Type A/Type P boiling point >65°C (149°F)].

**PROTECTIVE MEASURES:** Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

**THERMAL HAZARDS:** Not applicable.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Attention: the data below are typical values and do not constitute a specification.**

**Color:** Amber

**Physical State:** Liquid

**Odor:** Typical petroleum

**Odor Threshold:** No data available

**pH:** Not applicable

**Vapor Pressure:** < 0.5 Pa (20°C / 68°F)

**Relative Vapor Density (Air = 1):** >1

**Boiling Point/Boiling Range:** > 280°C / 536°F

**Solubility:** Insoluble in water

**Pour Point:** -36°C / -33°F ASTM D-5950

**Evaporation Rate:** No data available

**Decomposition Temperature:** No data available

**Partition Coefficient: log Pow:** > 6

**Flash Point:** 237°C / 459°F ASTM D-92

**Flammability (Solid, Gas):** No data available

**Upper Flammability Limits:** Typical 10% (V)

**Lower Flammability Limits:** Typical 1% (V)

**Auto-Ignition Temperature:** > 320°C / 608°F

**Kinematic Viscosity:** 15.3 mm<sup>2</sup>/s (100°C / 212°F);  
115.6 mm<sup>2</sup>/s (40.0°C / 104.0°F) ASTM D-445

**Dynamic Viscosity:** No data available

**Explosive Properties:** Not classified

**Oxidizing Properties:** No data available

**Density:** 875 kg/m<sup>3</sup> (15.0°C / 59.0°F) ASTM D-4052

## SECTION 10: STABILITY AND REACTIVITY

**REACTIVITY:** Not reactive under normal conditions.

**CHEMICAL STABILITY:** Stable under recommended storage conditions.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Reacts with strong oxidizing agents.

**CONDITIONS TO AVOID:** Avoid extremes of temperature and direct sunlight.

**INCOMPATIBLE MATERIALS:** This product may react with strong oxidizing agents.

**HAZARDOUS DECOMPOSITION PRODUCTS:** No decomposition if stored and applied as directed.

## SECTION 11: TOXICOLOGICAL INFORMATION

**INFORMATION OF LIKELY ROUTES OF EXPOSURE:**

**EYE CONTACT:** Avoid contact with eyes

**SKIN CONTACT:** Avoid contact with skin

**INHALATION:** Do not inhale

**INGESTION:** Do not ingest

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Petroleum derived calcium salt 61789-86-4	>5000 mg/kg (Rat)	>5000 mg/kg (Rabbit)	-

**INFORMATION ON PHYSICAL, CHEMICAL AND TOXICOLOGICAL EFFECTS:**

**SYMPTOMS:** See Section 4

**DELAYED AND IMMEDIATE EFFECTS AS WELL AS CHROMIC EFFECTS FROM SHORT AND LONG-TERM EXPOSURE:**

**CARCINOGENICITY:** This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

**SECTION 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. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s). (LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

**COMPONENT INFORMATION:**

Algae	Fish	Daphnia & Other Aquatic Invertebrates
LL/EL/IL50 > 100 mg/l	LL/EL/IL50 > 100 mg/l	1000: 48 h Daphnia magna mg/ L EC50

**ALKYLPHENOL:** M-Factor (Acute aquatic toxicity): 10; M-Factor (Chronic aquatic toxicity): 10

**SOIL MOBILITY:** Liquid under most environmental conditions. If it enters soil, it will absorb to soil particles and will not be mobile. Floats on water.

**PERSISTENCE/DEGRADABILITY:** Not readily biodegradable. Major constituents are inherently biodegradable, but contains components that may persist in the environment.

**BIOACCUMULATION:** Contains components with the potential to bioaccumulate.

**OTHER ADVERSE EFFECTS:** Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential. Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use. Poorly soluble mixture. Causes physical fouling of aquatic organisms. Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

**SECTION 13: DISPOSAL CONSIDERATIONS**

**DISPOSAL OF WASTES:** 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. Waste product should not be allowed to contaminate soil or ground water or be disposed of into the environment. Waste, spills or used product is dangerous waste.

**CONTAMINATED PACKAGING:** Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

**SECTION 14: TRANSPORT INFORMATION**

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

**DOT:** Not regulated

**IMDG-CODE:** Not regulated

**IATA-DGR:** Not regulated

**SECTION 15: REGULATORY INFORMATION**

**INTERNATIONAL INVENTORIES:**

Components	CAS-No.	Component RQ (lbs)	Calculated Product RQ (lbs)
Benzene	71-43-2	10	10 (D018)
Toluene	108-88-3	100	100 (F005)
Fumaric Acid	110-17-8	5000	*

\*Calculated RQ exceeds reasonably attainable upper limit., The components with RQs are given for information., Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

**Legend:**

**TSCA** – United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**US FEDERAL REGULATIONS:**

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPO.

## **SARA 311/312 Hazards**

No SARA Hazards.

## **SARA 313**

<b>Chemical Name</b>	<b>CAS NUMBER</b>	<b>Weight-%</b>
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	85940-28-9	>= 1 – 5%
Zinc dialkyldithiophosphate	113706-15-3	>= 1 – 5%

## **CWA (Clean Water Act)**

Fumaric Acid	110-17-8	0.1554%
Ethylenediamine (SVHC)	107-15-3	0.003%
Benzene	71-43-2	0.0002%
Toluene	108-88-3	0.0002%

## **US STATE REGULATIONS:**

### **California Proposition 65**

WARNING: This product can expose you to chemicals including Benzene, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more in-formation go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

<b>California List of Hazardous Substances</b>	
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8
Zinc dialkyldithiophosphate	113706-15-3

<b>California List of Hazardous Substances</b>	
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
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Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	85940-28-9
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Zinc dialkyldithiophosphate	113706-15-3

<b>California Permissible Exposure Limits for Chemical Contaminants</b>	
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8

**U.S. STATE RIGHT-TO-KNOW REGULATIONS:**

<b>Pennsylvania Right To Know</b>	
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8
Zinc dialkyldithiophosphate	113706-15-3
Fumaric acid	110-17-8
Diphenylamine	122-39-4

<b>Pennsylvania Right To Know</b>	
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8
Phosphorodithioic acid, mixed O,O-bis(2-ethylhexyl and iso-Bu and iso-Pr) esters, zinc salts	85940-28-9
Distillates (petroleum), solvent-dewaxed heavy paraffinic	64742-65-0
Zinc dialkyldithiophosphate	113706-15-3
Fumaric acid	110-17-8
Diphenylamine	122-39-4

**SECTION 16: OTHER INFORMATION**

**NFPA RATINGS:** Health: 0      Flammability: 1      Reactivity: 0      Special Hazards: NA

***DISCLAIMER***

*The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose*

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