

# Safety Data Sheet

According to OSHA HCS 2012 (29 CFR 1910.1200), Health Canada HPR (SOR/2015-17), and Mexico NOM-018-STPS-2015



## SECTION 1: Identification

**Product Identifier:** Red Line® RL-2 Diesel Ignition Improver  
**Other means of identification:** none  
**Code:** 828905  
**Issue date:** 13-Mar-2023  
**Relevant identified uses:** Fuel additive  
**Uses advised against:** All others  
**24 Hour Emergency Phone Number:** CHEMTREC Global +1 703 527 3887  
CHEMTREC United States 1-800-424-9300  
CHEMTREC Mexico 01-800-681-9531  
**Manufacturer/Supplier:** RED LINE SYNTHETIC OIL  
6100 Egret Court  
Benicia, CA 94510  
**SDS Information:** URL: [www.phillips66.com/SDS](http://www.phillips66.com/SDS)  
Phone: 800-762-0942  
Email: [SDS@P66.com](mailto:SDS@P66.com)  
**Technical Information:** 1-707-745-6100

## SECTION 2: Hazard identification

### Classified Hazards

H227 -- Flammable liquids -- Category 4  
H315 -- Skin corrosion/irritation -- Category 2  
H319 -- Eye damage/irritation -- Category 2A

### Hazards Not Otherwise Classified (HNOC)

PHNOC: None known  
HHNOC: None known

### Label elements



#### WARNING

H227 - Combustible liquid  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking; P235 - Keep cool; P264 - Wash skin thoroughly after handling; P280 - Wear protective gloves/protective clothing and eye/face protection; P302 + P352 - IF ON SKIN: Wash with plenty of soap and water; P332 + P313 - If skin irritation occurs: Get medical advice/attention; P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing; P337 + P313 - If eye irritation persists: Get medical advice/attention; P362 - Take off contaminated clothing and wash before reuse; P370 + P378 - In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish; P403 + P233 - Store in a well-ventilated place. Keep container tightly closed; P501 - Dispose of contents/ container to an approved waste disposal plant

## SECTION 3: Composition/information on ingredients

Substance	CASRN	Concentration <sup>1</sup>
Distillates, petroleum, hydrotreated heavy naphthenic	64742-52-5	<30
Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics	64742-48-9	<25
2-Ethylhexanol	104-76-7	<14.9

<sup>1</sup> All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## SECTION 4: First aid measures

**Eye Contact:** For direct contact, remove contact lenses if present and easy to do. Immediately hold eyelids apart and flush the affected eye(s) with clean water for at least 20 minutes. Seek immediate medical attention.

**Skin Contact:** Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water or a waterless hand cleaner. If irritation or redness develops, seek medical attention. Wash contaminated clothing before reuse.

**Inhalation:** First aid is not normally required. If breathing difficulties develop, move victim away from source of exposure and into fresh air in a position comfortable for breathing. Seek immediate medical attention.

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

**Most important symptoms and effects, both acute and delayed:** Effects of overexposure may include signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue). Inhalation of oil mists or vapors generated at elevated temperatures may cause respiratory irritation. Accidental ingestion can result in minor irritation of the digestive tract, nausea and diarrhea. Prolonged or repeated contact may dry skin and cause irritation.

**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.

## SECTION 5: Firefighting measures

### NFPA 704: National Fire Protection Association

Health: 2                      Flammability: 2                      Instability: 0



0 = minimal hazard  
1 = slight hazard  
2 = moderate hazard  
3 = severe hazard  
4 = extreme hazard

**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. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

### Specific hazards arising from the chemical

**Unusual Fire & Explosion Hazards:** Combustible. This material can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). May create vapor/air explosion hazard if heated. This product will float and can be reignited on surface water. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

**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.

**Special protective actions for fire-fighters:** 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 the hazard area and deny entry to unnecessary and unprotected personnel. 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. Avoid spreading burning liquid with water used for cooling purposes. Cool equipment exposed to fire with water, if it can be done safely.

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

## SECTION 6: Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Combustible. The use of explosion-proof electrical equipment is recommended. Keep all sources of ignition away from spill/release. Stay upwind and away from spill/release. Avoid direct contact with material. For large spillages, 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 and contain 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. If spill occurs on water notify appropriate authorities and advise shipping of any hazard. 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 and material for containment and cleaning 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. If spilled on water remove with appropriate methods (e.g. skimming, booms or absorbents). In case of soil contamination, remove contaminated soil for remediation or disposal, in accordance with local regulations.

Recommended measures are based on the most likely spillage scenarios for this material; however local conditions and regulations may influence or limit the choice of appropriate actions to be taken. See Section 13 for information on appropriate disposal.

## SECTION 7: Handling and storage

**Precautions for safe handling:** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Use non-sparking tools. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use good personal hygiene practices and wear appropriate personal protective equipment (see section 8). Spills will produce very slippery surfaces. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-70 and/or API RP 2003 for specific bonding/grounding requirements. Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. Open container slowly to relieve any pressure. Electrostatic charge may accumulate and create a hazardous condition when handling or processing this material. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames.

**Conditions for safe storage:** Keep container(s) tightly closed and properly labeled. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Store only in approved containers. Post area "No Smoking or Open Flame." Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage.

"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. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

## SECTION 8: Exposure controls/personal protection

### Occupational exposure limits

Substance	ACGIH	OSHA	Mexico	Phillips 66
Distillates, petroleum, hydrotreated heavy naphthenic	TWA-8hr: 5 mg/m <sup>3</sup> STEL: 10 mg/m <sup>3</sup> as Oil Mist, if Generated	---	---	---
2-Ethylhexanol	TWA-8hr: 5 ppm	---	---	---

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.

### Biological occupational exposure limits

None.

**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 (such as splash goggles) that meets or exceeds ANSI Z.87.1 is recommended when there is potential liquid contact to the eye. 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. Depending on exposure and use conditions, additional protection may be necessary to prevent skin contact including use of items such as chemical resistant boots, aprons, arm covers, hoods, coveralls, or encapsulated suits. Suggested protective materials: Nitrile rubber.

**Respiratory Protection:** Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with organic vapor cartridges/canisters 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).

**Other Protective Equipment:** Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse.

**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.**

## SECTION 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>Color:</b>	dark red
<b>Physical State:</b>	Liquid
<b>Odor:</b>	Slight hydrocarbon
<b>Odor threshold:</b>	No data
<b>pH:</b>	Not applicable
<b>Melting / freezing point:</b>	No data
<b>Initial boiling point and boiling range:</b>	No data
<b>Flash point:</b>	> 158 °F / > 70 °C; (ASTM D93)
<b>Method:</b>	Pensky-Martens Closed Cup (PMCC), ASTM D93, EPA 1010
<b>Evaporation Rate (nBuAc=1):</b>	No data
<b>Flammability (solid, gas):</b>	Not applicable
<b>Upper Explosive Limits (vol % in air):</b>	No data
<b>Lower Explosive Limits (vol % in air):</b>	No data
<b>Vapor pressure:</b>	No data
<b>Vapor density:</b>	>1 (air = 1)
<b>Relative density:</b>	0.8899 @ 60°F (15.6°C) (water = 1)
<b>Solubility:</b>	Insoluble
<b>Partition coefficient n-octanol /water (log Kow):</b>	No data
<b>Autoignition temperature:</b>	No data
<b>Decomposition temperature:</b>	No data
<b>Viscosity:</b>	9.5 cSt @ 100°C; 54 cSt @ 40°C
<b>Molecular weight:</b>	No data

### Other information

<b>Particle characteristics</b>	No data
<b>Pour point:</b>	No data

Bulk density: 7.4 lbs/gal

**SECTION 10: Stability and reactivity**

**Reactivity:** Not chemically reactive.

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

**Possibility of Hazardous Reactions:** Hazardous reactions not anticipated.

**Conditions to Avoid:** Extended exposure to high temperatures can cause decomposition. Avoid all possible sources of ignition.

**Incompatible Materials:** Avoid contact with strong oxidizing agents and strong reducing agents.

**Hazardous Decomposition Products:** Not anticipated under normal conditions of use.

**SECTION 11: Toxicological information**

**Information on Toxicological Effects**

**Substance / Mixture**

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Unlikely to be harmful		>5 mg/L (mist, estimated)
Dermal	Unlikely to be harmful		> 2 g/kg (estimated)
Oral	Unlikely to be harmful		> 5 g/kg (estimated)

**Likely Routes of Exposure:** Inhalation, eye contact, skin contact

**Aspiration Hazard:** Not expected to be an aspiration hazard.

**Skin Corrosion/Irritation:** Causes skin irritation. Repeated exposure may cause skin dryness or cracking.

**Serious Eye Damage/Irritation:** Causes serious eye irritation.

**Skin Sensitization:** No information available on the mixture, however none of the components have been classified for skin sensitization (or are below the concentration threshold for classification).

**Respiratory Sensitization:** No information available.

**Specific target organ toxicity - Single exposure:** No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

**Specific target organ toxicity - Repeated exposure:** No information available on the mixture, however none of the components have been classified for target organ toxicity (or are below the concentration threshold for classification).

**Carcinogenicity:** No information available on the mixture, however none of the components have been classified for carcinogenicity (or are below the concentration threshold for classification).

**Germ Cell Mutagenicity:** No information available on the mixture, however none of the components have been classified for germ cell mutagenicity (or are below the concentration threshold for classification).

**Reproductive Toxicity:** No information available on the mixture, however none of the components have been classified for reproductive toxicity (or are below the concentration threshold for classification).

**Information on Toxicological Effects of Components**

**Distillates, petroleum, hydrotreated heavy naphthenic**

Additional Information (Carcinogenicity): This oil has been highly refined by a variety of processes to reduce aromatics and improve performance characteristics. It meets the IP-346 criteria of less than 3 percent PAH's and is not considered a

carcinogen by the International Agency for Research on Cancer.

**Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics**

Additional Information (Reproductive toxicity): Hydrodesulfurized kerosene applied to the skin of female rats at 494, 330, or 165 mg/kg daily for 7 consecutive weeks (pre mating, mating, and gestation), or for 8 consecutive weeks in males did not result in systemic, reproductive, or developmental toxicity.

## SECTION 12: Ecological information

### GHS Classification: No classified hazards

**Toxicity:** All acute aquatic toxicity studies on samples of lubricant base oils show acute toxicity values greater than 100 mg/L for invertebrates, algae and fish. These tests were carried out on water accommodated fractions and the results are consistent with the predicted aquatic toxicity of these substances based on their hydrocarbon compositions.

**Persistence and Degradability:** The hydrocarbons in this material are not readily biodegradable, but since they can be degraded by microorganisms, they are regarded as inherently biodegradable.

**Bioaccumulative Potential:** Log Kow values measured for the hydrocarbon components of this material are greater than 5.3, and therefore regarded as having the potential to bioaccumulate. In practice, metabolic processes may reduce bioconcentration.

**Mobility in Soil:** Volatilization to air is not expected to be a significant fate process due to the low vapor pressure of this material. In water, base oils will float and spread over the surface at a rate dependent upon viscosity. There will be significant removal of hydrocarbons from the water by sediment adsorption. In soil and sediment, hydrocarbon components will show low mobility with adsorption to sediments being the predominant physical process. The main fate process is expected to be slow biodegradation of the hydrocarbon constituents in soil and sediment.

**Other adverse effects:** None anticipated.

## SECTION 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 SDS 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.

## SECTION 14: Transport information

**UN Number:** NA1993

**UN proper shipping name:** Combustible liquid, n.o.s ( Petroleum distillates, 2-Ethylhexanol )

**Transport hazard class(es):** Combustible liquid

**Packing Group:** III

**Environmental Hazard(s):** This product does not meet the DOT/UN/IMDG/IMO criteria of a marine pollutant

**Special precautions for user:** Combustible liquids are not regulated by DOT in non-bulk quantities shipped by land. 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)

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable

## SECTION 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)**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.


**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**

 **WARNING:** This product can expose you to chemicals including Propylene oxide (CASRN 75-56-9) which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

**International Inventories**

TSCA (United States): All ingredients are on the inventory or exempt from listing.  
All components are either on the DSL, or are exempt from DSL listing requirements.

**SECTION 16: Other information**

Issue date	Previous Issue Date:	SDS Number	Status:
13-Mar-2023	14-Nov-2022	828905	FINAL

**Reason for Revision:**

Periodic review and update  
Occupational Exposure Limits  
Personal Protective Equipment  
Transport Information

**Mexican NOM-018-STPS-2015:**

The information within is considered correct but is not exhaustive and will be used for guidance only, which is based on the current knowledge of the substance or mixture and is applicable to the appropriate safety precautions for the product.

**Precautionary Statements**

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
P235 - Keep cool  
P264 - Wash skin thoroughly after handling  
P280 - Wear protective gloves/protective clothing and eye/face protection  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P332 + P313 - If skin irritation occurs: Get medical advice/attention  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P337 + P313 - If eye irritation persists: Get medical advice/attention  
P362 - Take off contaminated clothing and wash before reuse  
P370 + P378 - In case of fire: Use CO2, dry chemical, or foam to extinguish  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P501 - Dispose of contents/ container to an approved waste disposal plant

**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; GHS = Globally Harmonized System; HPR = Hazardous Products Regulations; IARC = International Agency for Research on Cancer; INSHT = National Institute for Health and Safety at Work; IOPC = International Oil Pollution Compensation; 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 Safety Data Sheet is based on data believed to be accurate as of the date this 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.