SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name or designation of the mixture	Red Line® RL-2 Diesel Ignition Improver
Registration number	-
Synonyms	None.
SDS number	828905
Issue date	22-June-2015
Version number	01
Revision date	-
Supersedes date	-

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Fuel additive.
Uses advised against	All other uses.

1.3. Details of the supplier of the safety data sheet

Manufacturer / Supplier

Company name	RED LINE SYNTHETIC OIL CORP.
Address	6100 Egret Court, Benicia, CA 94510, USA
SDS Information	
Telephone number	+1-707-745-6100
Technical Information	
Telephone number	+1-707-745-6100

1.4. Emergency telephone number CHEMTREC UK +(44)-870-8200418

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Health hazards

Skin corrosion/irritation	Category 2	H315 - Causes skin irritation.
Serious eye damage/eye irritation	Category 2	H319 - Causes serious eye irritation.

Hazard summary Causes skin irritation. Causes serious eye irritation.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms

Signal word Warning

Hazard statements

H315	Causes skin irritation.
H319	Causes serious eye irritation.

Precautionary statements

Prevention

P280	Wear protective gloves and eye/face protection.

Response

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.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information None.

2.3. Other hazards Combustible liquid and vapour. Prolonged and repeated contact with used oil may cause serious skin diseases, such as dermatitis and skin cancer. Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	INDEX No.	Notes
Naphtha (petroleum) hydrotreated heavy	20-30	64742-48-9 265-150-3	-	649-327-00-6	
Classification: Flam. Liq. 3;H226, Asp. Tox. 1;H304					
Non-Hazardous Materials	<45	Various -	-	-	
Classification: -					
2-Ethylhexan-1-ol	10-15	104-76-7 203-234-3	-	-	
Classification: Skin Irrit. 2;H315, Eye Irrit. 2;H319, Acute Tox. 4;H332, STOT SE 3;H335					
Distillates (petroleum), hydrotreated heavy paraffinic	5-10	64742-54-7 265-157-1	-	649-467-00-8	
Classification: Asp. Tox. 1;H304					
Oleic acid	5-10	112-80-1 204-007-1	-	-	
Classification: Skin Irrit. 2;H315, Eye Irrit. 2;H319					

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Due to the high viscosity the product is not an aspiration hazard.

SECTION 4: First aid measures

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms persist.

Skin contact Remove contaminated clothing and wash skin with soap and water. Get medical attention if irritation develops and persists. If high pressure injection under the skin occurs, always seek medical attention.

Eye contact Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion Rinse mouth. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed Irritation of eyes and mucous membranes. Prolonged or repeated contact may dry skin and cause irritation. Inhalation of oil mist or vapours formed during heating of the product will irritate the respiratory system and provoke coughing.

4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically. This material, if aspirated into the lungs, may cause chemical pneumonitis; treat the affected person appropriately.

SECTION 5: Firefighting measures

General fire hazards The product is combustible, and heating may generate vapours which may form explosive vapour/air mixtures.

5.1. Extinguishing media

Suitable extinguishing media Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

5.2. Special hazards arising from the substance or mixture	Closed containers can burst violently when heated, due to excess pressure build-up. Combustion products include: Carbon monoxide, carbon dioxide, various hydrocarbon fragments as well as thick smoke. Oxides of Sulfur, Phosphorus and Nitrogen may also be formed.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Special fire fighting procedures	Cool containers exposed to heat with water spray and remove container, if no risk is involved.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Provide adequate ventilation. Keep unnecessary personnel away.
For emergency responders	Keep unnecessary personnel away. Use personal protection recommended in section 8 of the SDS.
6.2. Environmental precautions	Prevent spillage entering a watercourse or sewer, contaminating soil or vegetation. If this is not possible notify police and appropriate authorities immediately.
6.3. Methods and material for containment and cleaning up	Liquid spilled on the ground: Contain the liquid if possible. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Liquid spread on water surface: Confine the spill with booms. Remove from water surface by skimming or with suitable absorbents. Transfer to a container for disposal. Clean up in accordance with all applicable regulations. Local authorities should be advised if significant spillages cannot be contained.
6.4. Reference to other sections	For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Wear necessary protective equipment. Avoid inhalation of vapours and contact with skin and eyes. Observe good industrial hygiene practices. Wash thoroughly after handling. Always remove oil with soap and water or skin cleaning agent, never use organic solvents. Do not use oil-contaminated clothing or shoes, and do not put rags moistened with oil into pockets. "Empty" containers retain product residue (liquid or vapour) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or promptly disposed of.
7.2. Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a dry and well-ventilated place. Do not handle or store near an open flame, heat or other sources of ignition. Protect against physical damage. Store away from incompatible materials.
7.3. Specific end use(s)	Fuel additive.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters	
Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Recommended monitoring procedures	Follow standard monitoring procedures.
Derived no-effect level (DNEL)	Not available.
Predicted no effect concentrations (PNECs)	Not available.
Exposure guidelines	Follow standard monitoring procedures.
8.2. Exposure controls	
Appropriate engineering controls	Provide adequate ventilation and minimise the risk of inhalation of vapours and oil mist.

Individual protection measures, such as personal protective equipment

General information	Personal protective equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
Eye/face protection	It is a good industrial hygiene practice to minimise eye contact. Wear approved safety glasses or goggles.
Skin protection	
- Hand protection	Wear protective gloves. Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
- Other	Wear suitable protective clothing.
Respiratory protection	No protection is ordinarily required with adequate ventilation. In case of inadequate ventilation or risk of inhalation of oil mist, suitable respiratory equipment with combination filter (type A2/P2) can be used.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
Hygiene measures	Always observe good personal hygiene measures, such as washing 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.
Environmental exposure controls	Contain spills and prevent releases and observe national regulations on emissions.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Colour	Red.
Odour	Mild hydrocarbon.
Odour threshold	Not determined.
pH	Not available.
Melting point/freezing point	Not determined.
Initial boiling point and boiling range	Not determined.
Flash point	70.0 °C (158.0 °F) Pensky-Martens Closed Cup (ASTM D-93, EPA 1010)
Evaporation rate	(Butyl acetate = 1) Not determined.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not determined.
Explosive limit – upper (%)	Not determined.
Vapour pressure	No data available.
Vapour density	> 1 (Air = 1)
Relative density	0.89 @60°F (15.6°C)
Solubility(ies)	Insoluble in water.
Partition coefficient (n-octanol/water)	No data available.
Auto-ignition temperature	Not determined.
Decomposition temperature	Not determined.
Viscosity	9.52 cSt (100°C) 54.08 cSt (40°C)
Explosive properties	Not explosive.
Oxidizing properties	Not oxidising.

9.2. Other information

Bulk density	7.41 lb/gal

SECTION 10: Stability and reactivity

10.1. Reactivity	The product is stable and non reactive under normal conditions of use, storage and transport.
10.2. Chemical stability	The product is stable under normal conditions of use, storage and transport.

10.3. Possibility of hazardous reactions Hazardous polymerisation does not occur.

10.4. Conditions to avoid High temperatures. Ignition sources.

10.5. Incompatible materials Strong oxidising agents. Strong reducing agents.

10.6. Hazardous decomposition products None expected under normal conditions of use.

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

Inhalation Inhalation of oil mist or vapours formed during heating of the product will irritate the respiratory system and provoke coughing.

Skin contact Causes skin irritation. Prolonged or frequent contact may cause redness, itching, irritation, eczema/chaps and oil acne.

Eye contact Causes serious eye irritation.

Ingestion May cause discomfort if swallowed.

Symptoms Irritation of eyes and mucous membranes. Prolonged or repeated contact may dry skin and cause irritation. Inhalation of oil mist or vapours formed during heating of the product will irritate the respiratory system and provoke coughing.

11.1. Information on toxicological effects

Acute toxicity Not expected to be acutely toxic.

Product	Species	Test results
Red Line® RL-2 Diesel Ignition Improver		
Acute		
Dermal		
LD50		> 2 g/kg, (Estimated)
Inhalation		
LC50		> 5 mg/l, (Mist, estimated)
Oral		
LD50		> 5 g/kg, (Estimated)

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye irritation.

Respiratory sensitisation Due to lack of data the classification is not possible.

Skin sensitisation No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

Germ cell mutagenicity No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

Carcinogenicity No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).
This product contains mineral oils which are considered to be severely refined and not considered to be carcinogenic under IARC. All of the oils in this product have been demonstrated to contain less than 3% extractables by the IP 346 test.

IARC Monographs. Overall Evaluation of Carcinogenicity

Distillates (petroleum), hydrotreated heavy paraffinic (CAS 64742-54-7)	3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

Specific target organ toxicity - single exposure No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

Specific target organ toxicity - repeated exposure No information available on the mixture. However, none of the components are classified in respect of this hazard (or are present at a level below the concentration threshold for classification).

Aspiration hazard Based on available data, the classification criteria are not met.

Mixture versus substance information	None known.
Other information	Base oils in this material are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using various screening methods such as Modified Ames Test, IP-346, and/or other analytical methods. Used petrol engine oils have shown evidence of skin carcinogenic activity in laboratory tests when no effort was made to wash the oil off between applications. The relevance of these results to humans has not been fully established.

SECTION 12: Ecological information

12.1. Toxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
12.2. Persistence and degradability	Not readily degradable. Expected to be inherently biodegradable.
12.3. Bioaccumulative potential	Has the potential to bioaccumulate.
Partition coefficient n-octanol/water (log Kow)	No data available.
Bioconcentration factor (BCF)	Not available.
12.4. Mobility in soil	The product is insoluble or slightly soluble in water. Expected to partition to sediment and wastewater solids. Minimally volatile. The main fate process is expected to be slow biodegradation of the hydrocarbon components.
12.5. Results of PBT and vPvB assessment	Not a PBT or vPvB substance or mixture.
12.6. Other adverse effects	Oil spills are generally hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Residual waste	Recover and recycle, if practical. Contact specialist disposal companies.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. DO NOT pressurise, cut, heat or weld containers; they may explode and cause injury or death. Empty product containers may contain product residue. DO NOT reuse empty containers without commercial cleaning or reconditioning. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.
EU waste code	13 02 05* Waste codes should be assigned by the user based on the application for which the product was used.
Disposal methods/information	Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

Not regulated as dangerous goods.

RID

Not regulated as dangerous goods.

ADN

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Distillates (petroleum), hydrotreated heavy paraffinic (CAS 64742-54-7)
Naphtha (petroleum) hydrotreated heavy (CAS 64742-48-9)

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended

Distillates (petroleum), hydrotreated heavy paraffinic (CAS 64742-54-7)
Naphtha (petroleum) hydrotreated heavy (CAS 64742-48-9)

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended

Distillates (petroleum), hydrotreated heavy paraffinic (CAS 64742-54-7)
Naphtha (petroleum) hydrotreated heavy (CAS 64742-48-9)

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances

Not listed.

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Distillates (petroleum), hydrotreated heavy paraffinic (CAS 64742-54-7)
Naphtha (petroleum) hydrotreated heavy (CAS 64742-48-9)

Directive 94/33/EC on the protection of young people at work

Distillates (petroleum), hydrotreated heavy paraffinic (CAS 64742-54-7)
Naphtha (petroleum) hydrotreated heavy (CAS 64742-48-9)

Other regulations	The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended and respective national laws implementing EC directives. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006 as amended. The product is classified and labelled in accordance with EC directives or respective national laws.
National regulations	Follow national regulation for work with chemical agents.
15.2. Chemical safety assessment	No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

IARC: International Agency for Research on Cancer.
LC50: Lethal Concentration, 50%.
LD50: Lethal Dose, 50%.
TWA: Time weighted average.

References	IARC: International Agency for Research on Cancer.
Information on evaluation method leading to the classification of mixture	The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.
Full text of any H-statements not written out in full under Sections 2 to 15	H226 Flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled.

	H335 May cause respiratory irritation.
Training information	Follow training instructions when handling this material.
Further information	No information available.
Disclaimer	The information in the sheet was written based on the best knowledge and experience currently available.