

1	Chemical Product and Company Identification
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*Red Line Synthetic Oil
 Corp
 6100 Egret Court
 Benicia, CA 94510
 USA
 Tel: (707) 745-6100*

Product Trade Name Diesel Fuel Catalyst, Winterized Diesel Fuel Catalyst
 85 Plus, Winterized 85 Plus

CAS Number Not applicable for mixtures.

Synonyms None.

Generic Chemical Name Mixture.

Product Type Multipurpose.

Preparation/Revision Date 4 March 2013

Transportation Emergency Phone No. FOR TRANSPORT EMERGENCY call 707-400-0215

2	Hazards Identification
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Appearance Brown liquid.

Odor Pungent

Principal Hazards Warning.

- 1 Explosive reaction may occur on heating or burning.
- 1 Harmful if inhaled.
- 1 Combustible liquid.
- 1 Causes respiratory tract irritation.
- 1 Harmful if absorbed through skin.
- 1 May cause eye irritation.
- 1 May cause skin irritation.
- 1 May cause chronic health effects based on data with laboratory animals.

Target Organs: Blood Central nervous system Kidney Liver Spleen

See Section 11 for complete health hazard information.

3	Composition/Information on Ingredients
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Hazardous Ingredients

Comp	CAS No.	Percentage (by wt.)	Carcinogen
2-Ethylhexyl nitrate	27247-96-7	From 20 to 29.9 percent	N/E
2-Ethylhexanol	104-76-7	From 1 to 4.9 percent	N/E

(N/E) - None established

4	First Aid Measures
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Eyes Rinse cautiously with water for 20 minutes or until chemical is removed. Remove contact lenses, if present and easy to do. If eye irritation persists, get medical attention.

Skin Wash immediately with soap in flowing water for 15 minutes. Immediately remove all contaminated clothing. Call a poison center or doctor if you feel unwell. Launder contaminated clothing before reuse and discard leather articles saturated with the material.

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is labored, administer oxygen. If breathing has stopped, apply artificial respiration. Call a poison center or doctor.

Oral DO NOT INDUCE VOMITING. Aspiration of material due to vomiting can cause chemical pneumonitis which can be fatal. Get immediate medical attention. If vomiting occurs naturally, the casualty should lean forward to reduce the risk of aspiration. If swallowed, wash out mouth with water ONLY if the person is conscious. Rinse mouth and then drink plenty of water, seek medical attention Call a poison center or doctor if exposed or you feel unwell.

Additional Information Note to physician: Treat symptomatically.

5	Fire Fighting Measures
Flash Point	82 °C, 180 °F PMCC (Typical)
Extinguishing Media	Small fires: Dry chemical, carbon dioxide (CO ₂). Large fires: Water spray, deluge. Alcohol resistant foam
Firefighting Procedures	Firefighters' protective clothing may not provide adequate chemical resistance. Firefighters should wear chemical protective suits with hoods and use self-contained breathing apparatus. Treat as an oil fire. Do not use a water jet.
Unusual Fire & Explosion Hazards	Material may explode under confinement and high temperature. Vapors may be heavier than air and may travel along the ground to a distant ignition source and flash back. Container may rupture on heating. May decompose explosively when heated or involved in a fire. Toxic nitrogen oxides may evolve when burning. The alkyl nitrate contained in this product may decompose exothermically if heated above 100° C. Studies in the Koenen Tube Test indicate that the reaction is non-explosive even when the alkyl nitrate is present at levels up to 70%. Forms explosive mixtures in air. Closed containers may explode when exposed to extreme heat. See section 10 for additional information.

6	Accidental Release Measures
Spill Procedures	Evacuate all non-essential personnel. Only trained personnel should be permitted in area. Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Take precautions to avoid release to the environment. Eliminate all sources of heat, sparks pilot lights, static electricity and open flames. Ventilate spill area. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Small spills: contain spilled material. Transfer to secure containers. Where necessary collect using absorbent media. Larger spills: stop spill and dike area to prevent spreading, pump liquid to salvage tank, remaining liquid may be taken up on sand, clay, earth, floor absorbent or other absorbent material and shoveled into containers. Check under Transportation and Labeling (DOT/CERCLA) and Other Regulatory Information Section (SARA) for hazardous substances to determine regulatory reporting requirements for spills.

7	Handling and Storage
Pumping Temperature	Ambient
Maximum Handling Temperature	61 °C, 141.8 °F
Handling Procedures	Keep away from potential sources of ignition. Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. DO NOT HEAT. Avoid inhalation of aerosol, mist, spray, fume or vapor. Avoid breathing dust, fume, gas, mist, vapors or spray. Product can accumulate static charge when handled. Equipment should be grounded. Keep container tightly closed. Isolate from sources of heat, sparks, and open flame. No sparking tools should be used. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Launder contaminated clothing before reuse. Empty containers retain material residue. Do not cut, weld, braze, solder, drill, grind or expose containers to heat, flame, spark or other sources of ignition. Do not eat, drink or smoke when using this product. Dispose of packaging or containers in accordance with local, regional, national and international regulations.
Maximum Storage Temperature	45 °C, 113 °F
Storage Procedures	Keep away from heat and sources of ignition. Take precautions to avoid release to the environment. Store in a well-ventilated place. Keep cool. Storage temperature must not exceed 40 °C (104 °F). Store separately from incompatible materials. Store in dry, well ventilated place away from sources of heat and direct sunlight. Ground all equipment containing material. Keep cool. Store in accordance with local, regional, national and international regulations. See section 10 for incompatible materials.
Maximum Loading Temperature	61 °C, 141.8 °F

8	Exposure Controls/Personal Protection
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Exposure Limits

Comp	Exposure Guidelines					
	OSHA		ACGIH		Other	
	TWA	STEL	TWA	STEL	TWA	STEL
2-Ethylhexyl nitrate	N/E	N/E	N/E	N/E	1 ppm (l)	N/E

- (s) - Skin exposure
 (p) - Proposed limit
 (c) - Ceiling exposure
 (l) - Recommended exposure limit
 (u) - Supplier recommended exposure limit
 (N/E) - None established

Other Exposure Limits

The recommended TWA for 2-Ethylhexyl nitrate is 1 PPM.

Engineering Controls

Use local exhaust ventilation to control mists or vapors. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.

Gloves Procedures

Rubber. Use nitrile or neoprene gloves. Use good industrial hygiene practices. In case of skin contact, wash hands and arms with soap and water. Gloves should always be inspected before each use and discarded if they show tears, pinholes, or signs of wear.

Eye Protection

Safety glasses. If potential for splash or mist exists, wear chemical goggles or faceshield.

Respiratory Protection

Use NIOSH/MSHA approved full face respirator with a combination organic vapor and high efficiency filter cartridge if the recommended exposure limit is exceeded. Use self-contained breathing apparatus for entry into confined space, for other

poorly ventilated areas and for large spill clean-up sites.

Clothing Recommendation

Long sleeve shirt is recommended. Wear either a chemical protective suit or apron when potential for contact with material exists. Do not wear rings, watches or similar apparel that could entrap the material and cause a skin reaction. Launder contaminated clothing before reuse.

9	Physical and Chemical Properties
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Flash Point	82 °C, 180 °F PMCC (Typical)
Upper Flammable Limit	Not determined.
Lower Flammable Limit	Not determined.
Autoignition Point	Not determined.
Explosion Data	Heating material under confinement may cause an explosion.
Vapor Pressure	Not determined.
pH	Not determined.
Specific Gravity	0.90 (15.6 °C)
Bulk Density	7.50 Lb/gal, 0.95 Kg/L
Water Solubility	Insoluble.
Percent Solid	Not determined.
Percent Volatile	Not determined.
Volatile Organic Compound	Not determined.
Vapor Density	Not determined.
Evaporation Rate	Not determined.
Odor	Pungent
Appearance	Brown liquid.
Viscosity	22 cSt (40 °C)
Odor Threshold	Not determined.
Boiling Point	Not determined.
Pour Point Temperature	-51 °C, -60 °F
Melting / Freezing Point	Not determined.

The above data are typical values and do not constitute a specification. Vapor pressure data are calculated unless otherwise noted.

10	Stability and Reactivity
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Stability	Heating material under confinement may cause an explosion.
Decomposition Temperature	Not determined.
Incompatibility	Strong acids. Strong alkalis. Reducing agents. Strong oxidizing agents. Copper and copper alloys. Nitriles. Amines. Phosphorous.
Polymerization	Will not occur.
Thermal Decomposition	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen.
Conditions to Avoid	Do not expose to excessive heat, ignition sources, or oxidizing materials.

11	Toxicological Information
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– ACUTE EXPOSURE –

Eye Irritation	Weak to moderate eye irritant. Does not meet EU R36 criteria. Based on data from similar materials.
Skin Irritation	May cause mild skin irritation. Does not meet Canadian D2B or EU R38 criteria. Based on data from similar materials. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, and cracking of the skin.
Respiratory Irritation	Nose, throat and lung irritant. Based on data from similar materials. Exposure to a high concentration of vapor or mist may cause severe irritation to the nose and upper respiratory tract.
Dermal Toxicity	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials. Absorption of 2-ethylhexyl nitrate through the skin may cause vasodilation resulting in reduced blood pressure and other cardiovascular effects. Symptoms include headache, dizziness, nausea, fatigue, heart palpitations, confusion and possible loss of consciousness.
Inhalation Toxicity	The LC50 (1 hr.) in rats for dust or mist of this material is > 200 mg/l. Based on data from components or similar materials. High concentrations may cause headaches, dizziness, nausea, behavioral changes, weakness, drowsiness and stupor. Inhalation of 2-ethylhexyl nitrate may cause vasodilation resulting in reduced blood pressure and other cardiovascular effects. Symptoms include headache, dizziness, nausea, fatigue, heart palpitations, confusion and possible loss of consciousness.

Comp	Percentage (by wt.)	LC50 (4 Hr.)	Form
2-Ethylhexanol	From 1 to 4.9 percent	2.7mg/l	Particulate/Mist

Oral Toxicity

The LD50 in rats is > 10,000 mg/Kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain. Ingestion may cause CNS depression. Ingestion of 2-ethylhexyl nitrate may cause vasodilation resulting in reduced blood pressure and other cardiovascular effects. Symptoms include headache, dizziness, nausea, fatigue, heart palpitations, confusion and possible loss of consciousness.

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 respiratory sensitizers.

– CHRONIC EXPOSURE –**Chronic Toxicity**

A 14-day dermal toxicity study of 2-ethylhexanol in rats showed blood effects, decreased spleen weight and decreased triglycerides. Repeated ingestion of 2-ethylhexanol may cause injury to the liver and kidneys. Prolonged exposure to 2-ethylhexyl nitrate may cause vasodilation resulting in reduced blood pressure and other cardiovascular effects. Symptoms include headache, dizziness, nausea, fatigue, heart palpitations, confusion and possible loss of consciousness.

Carcinogenicity

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.

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 evidence of adverse effects were found in a developmental toxicity study of 2-ethylhexanol in rats. Doses up to 3 ml/kg applied to the skin during the most critical part of the gestation period produced evidence of toxicity to mothers, but no evidence of injury in the developing offspring. In a previous study, birth defects were observed by oral administration, an unlikely route of exposure in the workplace.

– ADDITIONAL INFORMATION –**Other**

Alcohol may enhance the toxic effects.

12	Ecological Information
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– ENVIRONMENTAL TOXICITY –**Freshwater Fish Toxicity**

The acute LC50 is 1 - 10 mg/L based on component data.

Freshwater Invertebrates Toxicity

Not determined.

Algal Inhibition

The acute EC50 is 1 - 10 mg/L based on component data.

Saltwater Fish Toxicity

Not determined.

Saltwater Invertebrates Toxicity

Not determined.

Bacteria Toxicity

Not determined.

Miscellaneous Toxicity

Not determined.

– ENVIRONMENTAL FATE –**Biodegradation**

At least 25% of the components in this product show limited biodegradation based on OECD 301-type test data.

Bioaccumulation

25% or greater of the components potentially bioconcentrate, based on octanol/water coefficients.

Soil Mobility

Not determined.

13	Disposal Considerations
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Waste Disposal

This material, if discarded, is not a hazardous waste under RCRA Regulation 40 CFR 261. Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

14	Transport Information
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ICAO/IATA I

Not regulated.

ICAO/IATA II

UN3082 Environmentally hazardous substance, liquid, n.o.s. (2-Ethylhexyl nitrate) , 9 , III , Marine Pollutant (2-Ethylhexyl nitrate)

IMDG

UN3082 Environmentally hazardous substance, liquid, n.o.s. (2-Ethylhexyl nitrate) , 9 , III , Marine Pollutant (2-Ethylhexyl nitrate)

IMDG EMS Fire

F-A

IMDG EMS Spill

S-F

IMDG MFAG

None

MARPOL Annex II

Not determined.

USCG Compatibility

Not determined.

U.S. DOT Bulk

NA1993 Combustible liquid, n.o.s. (2-Ethylhexanol, 2-Ethylhexyl nitrate) , III, Marine Pollutant (2-Ethylhexyl nitrate)

DOT NAERG

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U.S. DOT (Intermediate)

NA1993 Combustible liquid, n.o.s. (2-Ethylhexanol, 2-Ethylhexyl nitrate) , III, Marine Pollutant (2-Ethylhexyl nitrate)

U.S. DOT Intermediate NAERG

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U.S. DOT Non-Bulk

Not regulated.

U.S. DOT Non-Bulk NAERG

Not applicable.

Canada

UN3082 Environmentally hazardous substance, liquid, n.o.s. (2-Ethylhexyl nitrate), 9 , III, Marine Pollutant (2-Ethylhexyl

Mexico nitrate)
 UN3082 Environmentally hazardous substance, liquid, n.o.s. (2-Ethylhexyl nitrate) , 9 , III , Marine Pollutant (2-Ethylhexyl nitrate)

Review classification requirements before shipping materials at elevated temperatures.

15	Regulatory Information
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– Global Chemical Inventories –

USA All components of this material are on the US TSCA Inventory or are exempt.

Other TSCA Reg. Section 8D (2-Ethylhexanol).

EU All components are in compliance with the EC Seventh amendment Directive 92 /32/EEC.

Canada All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.

– Other U.S. Federal Regulations –

SARA Ext. Haz. Subst. This product does not contain greater than 1.0% of any chemical substance on the SARA Extremely Hazardous Substances list.

SARA Section 313 This product does not contain greater than 1.0% (greater than 0.1% for carcinogenic substance) of any chemical substances listed under SARA Section 313.

SARA 311 Classifications

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	Yes
Reactivity Hazard	Yes

CERCLA Hazardous Substances None known.

– State Regulations –

Cal. Prop. 65 This product does not intentionally contain any chemicals known by the State of California to cause cancer and/or birth defects. Moreover, we do not routinely analyze its products for impurities which may be such chemicals.

– Product Registrations –

U.S. Fuel Registration This fuel additive is registered in the United States.

– Other / International –

Miscellaneous Regulatory Information Not determined.

16	Other Information
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US NFPA Codes

Health	Fire	Reactivity	Special
2	2	3	N/E

(N/E) - None established

Health	Fire	Reactivity
2*	2	3

Precautionary Labels

Warning.

- 1 Explosive reaction may occur on heating or burning.
- 1 Harmful if inhaled.
- 1 Causes respiratory tract irritation.
- 1 Combustible liquid.
- 1 Harmful if absorbed through skin.
- 1 May cause eye irritation.
- 1 May cause skin irritation.
- 1 May cause chronic health effects based on data with laboratory animals.

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of this product. Information contained herein is believed to be true and accurate but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable federal, state, and local regulations remains the responsibility of the user.