Material Safety Data Sheet
PERKINS DIESEL FUEL CONDITIONER

Prepared according to 29CFR 1910.1200.

1 Chemical Product and Company Identification

The Lubrizol Corporation
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Wickliffe, Ohio 44092
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Product Trade Name	PERKINS DIESEL FUEL CONDITIONER
CAS Number	Not applicable for mixtures.
Synonyms	CAT Diesel Fuel Conditioner.
Generic Chemical Name	Mixture.
Product Type	Miscellaneous fuel additive.
Preparation/Revision Date	07 January 2009
Transportation Emergency Phone No.	FOR TRANSPORT EMERGENCY call CHEMTREC: (+1) 703-527-3887 (outside the U.S.), 1-800-424-9300 (in the U.S.)
MSDS No.	16558357-2403621-5021920-102103

2 Hazards Identification

Appearance Clear liquid.

Odor Aromatic hydrocarbon

Principal Hazards Warning.

- Harmful if inhaled.
- Causes eye irritation.
- Causes skin irritation.
- Combustible liquid.
- May cause allergic skin reaction.
- Contains components which may cause cancer.
- May cause chronic health effects.

Target Organs: Blood, Central nervous system, Kidney, Liver

See Section 11 for complete health hazard information.

3 Composition/Information on Ingredients

Hazardous Ingredients

Comp	CAS No.	Percentage (by wt.)	Carcinogen
2-Ethylhexyl nitrate	27247-96-7	From 50 to 59.9 percent	N/E
Petroleum naphtha	64742-88-7	From 10 to 19.9 percent	N/E
Hydroxyethylated aminoethylamide	Confidential.	From 5 to 9.9 percent	N/E
Naphthalene	91-20-3	1.3%	IARC Suspect Carcinogen NTP Carcinogen

(N/E) - None established

4	First Aid Measures

Eyes	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical attention.
Skin	Wash with plenty of soap and water. Remove contaminated clothing. If skin irritation occurs, get medical attention. Launder contaminated clothing before reuse and discard leather articles saturated with the material.
Inhalation	Remove exposed person to fresh air if adverse effects are observed. If breathing is labored, administer oxygen. If breathing has stopped, apply artificial respiration. If irritation persists or if toxic symptoms are observed, get medical attention.
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.
Additional Information	If exposed or concerned: Get medical attention.

5	Fire Fighting Measures

Flash Point	72 °C, 161.6 °F PMCC (Typical)
Extinguishing Media	CO2, dry chemical, or foam. Water can be used to cool and protect exposed material.
Firefighting Procedures	Recommend wearing self-contained breathing apparatus. Water may cause splattering.
Unusual Fire & Explosion Hazards	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. Toxic nitrogen oxides may evolve when burning. The alkyl nitrate contained in this product may decompose exothermicly if heated above 120° 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%.

6	Accidental Release Measures

Spill Procedures	Evacuate all non-essential personnel. Personal Protective Equipment must be worn, see Personal Protection Section for PPE recommendations. Remove sources of ignition. Ventilate spill area. Prevent entry into sewers and waterways, dispose of in accordance with all federal, state and local environmental regulation. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. 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	55 °C, 131 °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 breathing dust, fume, gas, mist, vapors or spray. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. 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.
Maximum Storage Temperature	45 °C, 113 °F
Storage Procedures	Do not store near potential sources of ignition. Store in well ventilated place. Take

precautions to avoid release to the environment. Store at ambient temperatures. Keep container tightly closed.

Loading Temperature Not determined.

8 Exposure Controls/Personal Protection

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
Petroleum naphtha	N/E	N/E	N/E	N/E	100 ppm (u)	200 ppm (u)
Naphthalene	10 ppm	N/E	10 ppm (s)	15 ppm	N/E	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 Contains mineral oil. Under conditions which may generate mists, observe the OSHA PEL of 5 mg per cubic meter, ACGIH STEL of 10 mg per cubic meter. The recommended TWA for 2-Ethylhexyl nitrate is 1 PPM.

Engineering Controls Use material in well ventilated area only. Additional ventilation or exhaust may be required to maintain air concentrations below recommended exposure limits.

Gloves Procedures Use nitrile or neoprene gloves.

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 an organic vapor 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. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.

Clothing Recommendation Gloves, coveralls, apron, boots as necessary to minimize contact. Wear either a chemical protective suit or apron when potential for contact with material exists. Use chemically protective boots when necessary to avoid contaminating shoes. 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

Flash Point 72 °C, 161.6 °F PMCC (Typical)

Upper Flammable Limit Not determined.

Lower Flammable Limit Not determined.

Autoignition Point Not determined.

Explosion Data Material does not have explosive properties.

Vapor Pressure Not determined.

pH Not determined.

Specific Gravity 0.94 (15.6 °C)

Bulk Density 7.85 Lb/gal, 0.94 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	Aromatic hydrocarbon
Appearance	Clear liquid.
Viscosity	9.6 Centistokes (25 °C) 6.6 Centistokes (40 °C)
Odor Threshold	Not determined.
Boiling Point	Not determined.
Pour Point Temperature	< -40 °C, < -40 °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

Stability	Material can become unstable at elevated temperatures and pressures.
Decomposition Temperature	Not determined.
Incompatibility	Strong oxidizing agents. Nitriles. Halogens and halogenated compounds.
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	Not determined.

11 Toxicological Information

-- ACUTE EXPOSURE --

Eye Irritation	Moderate to strong eye irritation. 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, and cracking of the skin.
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. Exposure to a high concentration of vapor or mist is irritating to the respiratory tract. Breathing of vapor or mist may aggravate asthma and inflammatory or fibrotic pulmonary disease. If fatty acids are over-heated, vapors or entrained mist may cause respiratory irritation.
Dermal Toxicity	The LD50 in rabbits is > 2000 mg/Kg. Based on data from components or similar materials. Overexposure to organic nitrates by skin contact may cause headache, nausea and decreased blood pressure.
Inhalation Toxicity	The following is based on incomplete information on components. Aerosols of this material are considered toxic. Based on data from components or similar materials. High concentrations may cause headaches, dizziness, nausea, stupor, and other central nervous system effects leading to visual impairment, difficulty breathing and convulsions.

	Overexposure to organic nitrates by inhalation may cause headache, nausea and decreased blood pressure.
Oral Toxicity	The LD50 in rats is > 5000 mg/kg. Based on data from components or similar materials. Swallowing this material causes irritation of mouth, esophagus and stomach, with nausea, vomiting, diarrhea and abdominal pain. Ingestion can cause cyanosis, collapse, and coma.
Dermal Sensitization	May cause skin sensitization. Based on data from components or similar materials.
Inhalation Sensitization	No data available to indicate product or components may be respiratory sensitizers.

-- CHRONIC EXPOSURE --

Chronic Toxicity	Repeated overexposure to petroleum naphtha can cause nervous system damage. Repeated overexposure to naphthalene may cause destruction of red blood cells with anemia, fever, jaundice and kidney and liver damage.
Carcinogenicity	A two-year National Toxicology Program (NTP) study found an increased incidence of tumors of the nose in rats exposed to naphthalene by inhalation. In mice similarly exposed, increased incidences of alveolar/bronchiolar adenomas were observed. Naphthalene has been classified by the International Agency for Research on Cancer (IARC) as a possible human carcinogen (Group 2B) on the basis of sufficient evidence of carcinogenicity in experimental animals but inadequate evidence in exposed humans. 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 data available to indicate product or any components contained at greater than 0.1% may cause birth defects.

-- ADDITIONAL INFORMATION --

Other	No other health hazards known.

12 Ecological Information

-- ENVIRONMENTAL TOXICITY --

Freshwater Fish Toxicity	The acute LC50 is 10 - 100 mg/L based on component data.
Freshwater Invertebrates Toxicity	The acute EC50 is 1 - 10 mg/L based on component data.
Algal Inhibition	The acute EC50 is 10 - 100 mg/L based on component data.
Saltwater Fish Toxicity	Not determined.
Saltwater Invertebrates Toxicity	Not determined.
Bacteria Toxicity	The acute EC50 is 10 - 100 ppm based on component data.
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

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

ICAO/IATA I	Not regulated.
ICAO/IATA II	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Alkyl (C7-C9) nitrates, Petroleum naphtha), Class 9, PG III, Marine Pollutant
IMDG	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Alkyl (C7-C9) nitrates, Petroleum naphtha), Class 9, PG III, Marine Pollutant
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-Ethylhexyl nitrate, Petroleum naphtha), PG III, Marine Pollutant (Alkyl (C7-C9) nitrates, Petroleum naphtha), RQ (Naphthalene, Xylene)
U.S. DOT Non-Bulk	Not regulated.
DOT NAERG	128
TDG Bulk	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Alkyl (C7-C9) nitrates, Petroleum naphtha), Class 9, PG III, Marine Pollutant
TDG Non-Bulk	Not regulated.
Mexico	UN3082 Environmentally hazardous substance, liquid, n.o.s. (Alkyl (C7-C9) nitrates, Petroleum naphtha), Class 9, PG III, Marine Pollutant
Mexico Non-Bulk	Not regulated.
Bulk Quantity	85000 liters, 22457 gal.
Non-Bulk Quantity	207.8 liters, 55 gal.

Review classification requirements before shipping materials at elevated temperatures.

15 Regulatory Information

-- Global Chemical Inventories --

USA	All components of this material are on the US TSCA Inventory or are exempt.
Other TSCA Reg.	Section 4a (Naphthalene).May be subject to export notification under TSCA Section 12(b).
EU	All components are in compliance with the EC Seventh amendment Directive 92 /32/EEC.
Japan	All components are in compliance with the Chemical Substances Control Law of Japan.
Australia	All components are in compliance with chemical notification requirements in Australia.
New Zealand	May require notification before sale under New Zealand regulations.
Canada	All components are in compliance with the Canadian Environmental Protection Act and are present on the Domestic Substances List.
Switzerland	All components are in compliance with the Environmentally Hazardous Substances Ordinance in Switzerland.
Korea	This product requires notification before sale in Korea.
Philippines	All components are in compliance with the Philippines Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990 (R.A. 6969).
China	All components of this product are listed on the Inventory of Existing Chemical Substances

in China.

-- 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 1.3% Naphthalene, CAS no. 91-20-3

SARA 311 Classifications

Acute Hazard	Yes
Chronic Hazard	Yes
Fire Hazard	Yes
Reactivity Hazard	No

CERCLA Hazardous Substances

Transit Reportable Quantities

Component	Reportable Quantity RQ	Units	Reportable Quantity RQ	Units
Naphthalene	990	gal.	3746	liters
Xylene	3348	gal.	12672	liters

FDA Approval Not applicable.

-- State Regulations --

Cal. Prop. 65 This product contains the following chemical(s) known to the state of California to cause cancer and/or birth defects: 0.002% Benzene, CAS no. 71-43-2 0.058% Ethylbenzene, CAS no. 100-41-4 1.3% Naphthalene, CAS no. 91-20-3

-- Product Registrations --

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

U.S. Dept of Agriculture This product has not been filed with the USDA to support H2 approvals.

NSF Nonfood Compounds Registration This product has not been filed with the NSF to support H1 or H2 approvals.

Finnish Registration Number Not Registered

Swedish Registration Number Not Registered

Norwegian Registration Number Not Registered

Danish Registration Number Not Registered

Swiss Registration Number Not Registered

Italian Registration Number Not Registered

Korean Registration Number Not Registered

-- Other / International --

TDG Regulated Limit. None known.

16 Other Information

US NFPA Codes

Health	Fire	Reactivity	Special
2	2	1	N/E

(N/E) - None established

HMIS Codes

Health	Fire	Reactivity
2*	2	1

Precautionary Labels

Warning.

- Harmful if inhaled.
- Causes eye irritation.
- Causes skin irritation.
- Combustible liquid.
- May cause allergic skin reaction.
- Contains components which may cause cancer.
- May cause chronic health effects.

Revision Indicators

Section: 7 Storage procedures.	Changed: 19 July 2008
Section: 9 Odor threshold.	Changed: 7 January 2009
Section: 9 Percent volatile.	Changed: 7 January 2009
Section: 13 Waste disposal.	Changed: 19 July 2008
Section: 15 MISC. Regulatory info.	Changed: 19 July 2008
Section: 16 Miscellaneous information.	Changed: 19 July 2008
