

**Material Safety Data Sheet**  
**PERKINS DIESEL FUEL CONDITIONER**

<b>1</b>	<b>Chemical Product and Company Identification</b>
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*The Lubrizol Corporation*  
*29400 Lakeland Boulevard*  
*Wickliffe, Ohio 44092*  
*Tel: (440) 943-4200*

**Product Trade Name** PERKINS DIESEL FUEL CONDITIONER  
**CAS Number** Confidential.  
**Synonyms** **CAT Diesel Fuel Conditioner**  
**Generic Chemical Name** Confidential.  
**Product Type** Miscellaneous fuel additive.  
**Preparation/Revision Date** 01 September 2006  
**UN Number** UN3082  
**Dangerous Goods Class and Subsidiary Risk** 9  
**HAZCHEM Code** 2 X  
**24 Hour Transportation Emergency Phone No.** ACOHS (Australia) 1800 638 556, ACOHS (New Zealand) 0800 154 666  
**Statement of Hazardous Nature** Hazardous according to criteria of the National Occupational Health and Safety Commission.  
**Posionous Schedule Number** None Allocated  
**MSDS No.** 14229007-1201219-202610-811103

<b>2</b>	<b>Composition/Information on Ingredients</b>
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**Hazardous Ingredients**

Comp	Percentage (by wt.)	Symbol(s)	Risk Phrase(s)	CAS No.
2-Ethylhexyl nitrate	From 50 to 59.9 percent	Xn	R20 R65	27247-96-7
Petroleum naphtha	From 10 to 19.9 percent	Xn	R10 R36/38 R65	64742-94-5
Hydroxyethylated aminoethylamide	From 5 to 9.9 percent	C	R34 R43	Confidential.
Petroleum naphtha	From 1 to 4.9 percent	Xn	R10 R38 R65	64742-88-7
Naphthalene	1.3%	Xn	R22 R40	91-20-3
1,2,4-Trimethylbenzene	From 0.1 to 0.9 percent	Xn	R10 R20 R36/37/38	95-63-6
Petroleum naphtha	From 0.1 to 0.9 percent	Xn	R10 R36/38 R65	64742-95-6
n-Octane	From 0.1 to 0.9 percent	F Xn	R11 R21/22 R38 R65 R67	111-65-9

<b>3</b>	<b>Hazards Identification</b>
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**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.**

*See Section 11 for complete health hazard information.*

<b>4</b>	<b>First Aid Measures</b>
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**Oral**

DO NOT INDUCE VOMITING. If conscious, give 2 glasses of water. 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.

**Eyes**

Flush immediately with water for at least 15 minutes. Get immediate medical attention.

**Skin**

Wash with soap and water. Immediately remove contaminated clothing. Get medical attention if irritation persists. Launder contaminated clothing before reuse and discard shoes and other 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.

**Additional Information**

Note to physician: Treat symptomatically.

<b>5</b>	<b>Fire Fighting Measures</b>
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**Flash Point**

72 °C, 161.6 °F PMCC (Typical)

**Extinguishing Media**

CO<sub>2</sub>, 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**

Toxic fumes, gases or vapors may evolve on burning. 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 exothermically 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%.

<b>6</b>	<b>Accidental Release Measures</b>
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**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. Pick up free liquid for recycle and/or disposal. Residual liquid can be absorbed on inert material. Check under Transportation, Labeling and Other Regulatory Information Section for hazardous substances. If released consult the Australian Dangerous Goods code.

<b>7</b>	<b>Handling and Storage</b>
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**Pumping Temperature**

Ambient

**Maximum Handling Temperature**

55 °C, 131 °F

**Handling Procedures**

Keep away from potential sources of ignition. Open container in a well ventilated area. Avoid breathing vapors. 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. Wash thoroughly after handling. 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 area. Equip bulk storage tanks with overfill protection such as high level alarms or secondary containment. Store drums in area with secondary containment. Storage area should be covered to prevent rain water from entering. Store at ambient temperatures.

**Loading Temperature**

Not Determined.

<b>8</b>	<b>Exposure Controls/Personal Protection</b>
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**Exposure Limits**

**Australia**

Comp	CAS No.	Long Term (8 Hours T.W.A.)	Short Term (15 mins.)
Naphthalene	91-20-3	10 ppm	15 ppm
n-Octane	111-65-9	300 ppm	375 ppm

**New Zealand**

Comp	CAS No.	Long Term (8 Hours T.W.A.)	Short Term (15 mins.)
Naphthalene	91-20-3	10 ppm	15 ppm
n-Octane	111-65-9	300 ppm	375 ppm

- (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 Worksafe Australia exposure limit of 5 mg per cubic meter, ACGIH STEL of 10 mg per cubic meter. See Guidance Note [NOHSC:3008 (1995)]. 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.

**Hand Protection**

Use nitrile or neoprene gloves.

**Eye Protection**

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

**Respiratory Protection**

Use 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.

**Clothing Recommendation**

Long sleeve shirt is recommended. 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.

<b>9</b>	<b>Physical and Chemical Properties</b>
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<b>Flash Point</b>	72 °C, 161.6 °F PMCC (Typical)
<b>Upper Flammable Limit</b>	Not Determined.
<b>Lower Flammable Limit</b>	Not Determined.
<b>Autoignition Point</b>	Not Determined.
<b>Explosion Data</b>	Material does not have explosive properties.
<b>Vapour Pressure</b>	Not Determined.
<b>pH</b>	Not Determined.
<b>Specific Gravity</b>	0.94 (15.6 °C)
<b>Bulk Density</b>	7.85 Lb/gal, 0.94 Kg/L
<b>Water Solubility</b>	Insoluble.
<b>Percent Solid</b>	Not Determined.
<b>Percent Volatile</b>	Unknown.
<b>Percent VOC</b>	Not Determined.
<b>Vapour Density</b>	Not Determined.
<b>Evaporation Rate</b>	Not Determined.
<b>Odor</b>	Aromatic hydrocarbon
<b>Appearance</b>	Clear liquid.
<b>Viscosity</b>	9.6 Centistokes (25 °C) 6.6 Centistokes (40 °C)
<b>Odor Threshold</b>	Unknown.
<b>Boiling Point</b>	Not Determined.
<b>Pour Point Temperature</b>	< -40 °C, -40 °F
<b>Melting / Freezing Point</b>	Not Determined.
<b>Flash Point</b>	72 °C, 161.6 °F PMCC (Typical)

*The above data are typical values and do not constitute a specification.*

<b>10</b>	<b>Stability and Reactivity</b>
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<b>Stability</b>	Material can become unstable at elevated temperatures and pressures.
<b>Decomposition Temperature</b>	Not Determined.
<b>Incompatibility</b>	Strong oxidizing agents. Halogens and halogenated compounds.
<b>Polymerization</b>	Will not occur.
<b>Thermal Decomposition</b>	Smoke, carbon monoxide, carbon dioxide, aldehydes and other products of incomplete combustion. Under combustion conditions, oxides of the following elements will be formed: nitrogen.

<b>11</b>	<b>Toxicological Information</b>
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**-- ACUTE EXPOSURE --**

<b>Oral Toxicity</b>	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.
<b>Eye Irritation</b>	Moderate to strong eye irritation. Based on data from components or similar material.
<b>Skin Irritation</b>	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.
<b>Dermal Toxicity</b>	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.
<b>Inhalation Toxicity</b>	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.
<b>Respiratory Irritation</b>	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.
<b>Dermal Sensitization</b>	May cause skin sensitization. Based on data from components or similar materials.
<b>Inhalation Sensitization</b>	No data available to indicate product or components may be respiratory sensitizers.

**-- CHRONIC EXPOSURE --**

<b>Chronic Toxicity</b>	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.
<b>Carcinogenicity</b>	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 is formulated with 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% extrables by the IP 346 test.
<b>Mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Reproductive Toxicity</b>	No data available to indicate either product or components present at greater than 0.1% that may cause reproductive toxicity.
<b>Teratogenicity</b>	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 --**

<b>Other</b>	No other health hazards known.
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<b>12</b>	<b>Ecological Information</b>
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**-- ENVIRONMENTAL TOXICITY --**

<b>Freshwater Fish Toxicity</b>	The acute LC50 is 10 - 100 mg/L based on component data.
<b>Freshwater Invertebrates Toxicity</b>	The acute EC50 is 1 - 10 mg/L based on component data.
<b>Algal Inhibition</b>	The acute EC50 is 10 - 100 mg/L based on component data.
<b>Saltwater Fish Toxicity</b>	Not Determined.
<b>Saltwater Invertebrates Toxicity</b>	Not Determined.

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**Bacteria Toxicity** The acute EC50 is 10 - 100 mg/L 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 measured octanol/water partition coefficients.  
**Soil Mobility** Not Determined.

<b>13</b>	<b>Disposal Consideration</b>
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**Waste Disposal** Waste management should be in compliance with the Waste Disposal Act and local laws.

<b>14</b>	<b>Transport Information</b>
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**ICAO/IATA** Environmentally hazardous substance, liquid, n.o.s. (Alkyl (C7-C9) nitrates, Petroleum naphtha), Class 9, UN3082, PG III, Marine Pollutant  
**IMDG** Environmentally hazardous substance, liquid, n.o.s. (Alkyl (C7-C9) nitrates, Petroleum naphtha), Class 9, UN3082, PG III, Marine Pollutant  
**IMDG EMS Fire** F-A  
**IMDG EMS Spill** S-F  
**IMDG MFAAG** None  
**IMO Marine Vessel** DO NOT TRANSPORT - ADDITIONAL INFORMATION REQUIRED  
**USCG Compatibility** Not Determined.  
**ADG** Environmentally hazardous substance, liquid, n.o.s. (Alkyl (C7-C9) nitrates, Petroleum naphtha), Class 9, UN3082, PG III, Marine Pollutant  
**ADG HAZCHEM** 2 X

*Review classification requirements before shipping materials at elevated temperatures.*

<b>15</b>	<b>Regulatory Information</b>
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**Signal Word** Hazardous  
**Labelling Information** R20 -- Harmful by inhalation.  
R40/22 -- Harmful: limited evidence of a carcinogenic effect if swallowed.  
R43 -- May cause sensitisation by skin contact.  
R65 -- Harmful: may cause lung damage if swallowed.  
S24 -- Avoid contact with skin.  
S26 -- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S28 -- After contact with skin, wash immediately with plenty of water.  
S37/39 -- Wear suitable gloves and eye/face protection

## -- Global Chemical Inventories --

**USA** All components of this material are on the US TSCA Inventory or are exempt.  
**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.  
**Canada** All components are in compliance with the Canadian Environmental Protection Act and are

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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.
- China** All components of this product are listed on the Inventory of Existing Chemical Substances in China.
- Philippines** This product requires notification before sale in the Philippines.

**-- Product Registrations --**

- 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
- New Zealand Registration Number** Not Registered

**-- Other / International --**

- U.S. Tariff Heading Number** 3811.90.00.00
- Schedule B Number** 3811.90.0000
- FDA Approval** Not applicable.

<b>16</b>	<b>Other Information</b>
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**US NFPA Codes**

Health	Fire	Reactivity	Special
2	2	1	N/E

**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: 2 EU HAZARDOUS INGREDIENTS Changed: 1 September 2006
- Section: 3 PRINCIPAL HAZARDS Changed: 1 September 2006

**PERKINS**

Section: 8 CLOTHING RECOMMENDATIONS	Changed: 1 September 2006
Section: 8 RESPIRATORY PROTECTION	Changed: 1 September 2006
Section: 10 THERMAL DECOMPOSITION	Changed: 1 September 2006
Section: 11 CARCINOGENICITY	Changed: 1 September 2006
Section: 11 CHRONIC TOXICITY	Changed: 1 September 2006
Section: 11 EYE IRRITATION	Changed: 1 September 2006
Section: 12 ACCUMULATION	Changed: 1 September 2006
Section: 13 WASTE DISPOSAL	Changed: 1 September 2006
Section: 16 PRINCIPAL HAZARDS	Changed: 1 September 2006

**Contact Point** Lubrizol Australia, David Blackwell (Technical Manager), Phone No. (61) (02) 9648 5122

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