

MATERIAL SAFETY DATA SHEET

PRODUCT TRADE NAME: **RL-2**
PRODUCT TYPE: Diesel fuel combustion improver
REVISION DATE: April 18, 2008
CHEMICAL NAME: Mixture
NFPA CODE: Health: 2 Fire: 2 Reactivity: 0

SECTION 1 - HAZARDOUS INGREDIENTS

40-49.9% Petroleum Naphtha - CAS # 64742-94-5 Supplier recommended TWA = 100 ppm

1-4.9% Trimethyl benzene (mixed isomers)- CAS #25551-13-7

0.1-0.9% 1,2,4-Trimethyl benzene - CAS #95-63-6

2.5 % Naphthalene- OSHA PEL:10ppm, OSHA STEL:15ppm, ACGIH TLV:10ppm, ACGIH STEL:15ppm. IARC Suspect Carcinogen. CAS #91-20-3

SECTION 2 - FIRE AND EXPLOSION HAZARDS

FLASH POINT: 190°F (88°C)
UPPER FLAMMABLE LIMIT: Not Determined.
LOWER FLAMMABLE LIMIT: Not Determined.
EXTINGUISHING MEDIA: CO₂, dry chemical, foam.

SPECIAL FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus with full face piece
UNUSUAL FIRE & EXPLOSION HAZARDS: Toxic fumes may be evolved on burning or exposure to heat. Vapors are heavier than air and may travel to a distant ignition source. Container may rupture on heating.

SECTION 3 - HEALTH HAZARD DATA

ORAL TOXICITY: LD 50 > 5000 mg/kg in rats. Based on data from components.
EYE IRRITATION: May cause eye irritation.
SKIN IRRITATION: May cause skin irritation. Prolonged exposure may cause dermatitis.
DERMAL TOXICITY: LD 50 in rabbits >2000 mg/kg. Based on similar materials. Components may be absorbed through skin.
OTHER: Inhalation of vapors may cause irritation of nose and throat, dizziness, weakness, headache, nausea, vomiting, blurred vision, tremors, shallow and rapid respiration, and heart ventricular irregularities.
CHRONIC TOXICITY: A 14-day dermal toxicity study of 2-ethylhexanol in rats showed blood effects, decreased spleen weight and decreased triglycerides Repeated overexposure to naphthalene may cause destruction of red blood cells with anemia, fever, jaundice and kidney and liver damage. Repeated ingestion of 2-ethylhexanol may cause injury to the liver and kidneys.
CARCINOGENICITY: A two year National Toxicology Program (NTP) found an increase in incidence of tumors of the nose in rats exposed to naphthalene by inhalation. In mice similarly exposed, increased evidence 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.
MUTAGENICITY: No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
TLV: None established. Oil mist TLV 5mg/m³.

FIRST AID PROCEDURES

SKIN: Wash well with soap and water.
EYE: Flush well with water for at least 15 minutes.
INHALATION: Remove to fresh air. See a physician if irritation persists. If breathing has stopped, apply artificial respiration.
ORAL: Call a physician. Do not induce vomiting. If conscious give two glasses of water.
ADDITIONAL: None.

SECTION 4 - SPECIAL PROTECTION INFORMATION

VENTILATION PROCEDURE: Mechanical ventilation recommended.
GLOVES PROTECTION: Neoprene or nitrile rubber gloves recommended.
EYE PROTECTION: Safety glasses recommended.
OTHER PROTECTION: NIOSH-approved organic vapor respirator if TLV exceeded. Long-sleeved shirt.

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SECTION 5 - PHYSICAL DATA

VAPOR PRESSURE: <1 mmHg @ 20°C
SPECIFIC GRAVITY: 0.93
VISCOSITY @ 40°C: 51 cSt
WATER SOLUBILITY: Insoluble
PERCENT VOLATILE: Not Determined.
VAPOR DENSITY: Not Determined.
EVAPORATION RATE: Not Determined.
ODOR: Strong.
APPEARANCE: Reddish-brown liquid.

SECTION 6 - STABILITY

STABILITY: Normally stable under moderately elevated temperatures and pressures.
INCOMPATIBILITY: Strong oxidizing agents.
POLYMERIZATION: Will not occur.
THERMAL DECOMPOSITION: Smoke, and oxides of carbon, hydrogen, nitrogen.

SPILL OR LEAK PROCEDURES

SPILL PROCEDURES: Ventilate area. Remove sources of ignition. Wear self-contained breathing apparatus, rubber boots, suit, and gloves. Prevent entry into sewers and waterways. Pick up free liquid for recycle/disposal. Absorb small amounts on inert material for disposal.

WASTE DISPOSAL: If disposed of, this material is believed to be a hazardous waste under RCRA due to toxicity. Waste management should be in compliance with federal, state, and local laws. If discarding this material, consider the possible relevance of the following chemicals and the treatment standards for the associated U.S. EPA RCRA Hazardous Waste Numbers:
0.004% Benzene CAS No: 71-43-2, D018

CERCLA REPORTING: Must report accidental spills of greater than 500 gallons due to naphthalene.

SPECIAL PRECAUTIONS

SPECIAL PRECAUTIONS: **DO NOT HEAT!** Store in a cool (below 110°F), dry, place away from flame. Keep containers closed when not in use. Open container in a well-ventilated area. Remove contaminated clothing and laundry before reuse.

TRANSPORTATION AND LABELING

DOT PROPER SHIPPING NAME: Not Applicable.
DOT HAZARD CLASS: Not Applicable.
DOT ID NUMBER (UN NO.): Not Applicable.
EPA HAZARDOUS SUBSTANCES: Is not known to contain greater than 1% of any SARA Extremely Hazardous Substance.
SARA SECTION 313: 3% Naphthalene CAS No:91-20-3
U.S. TSCA INVENTORY: All components are included on the U.S. TSCA Inventory.
CANADIAN CEPA: All components are in compliance with the Canadian Environmental Protection Act.
California Proposition 65 Warning: This product may contain slight but detectable amounts of benzene, a chemical known to the State of California to cause cancer.
PRECAUTIONARY LABELS: Combustible. Harmful if inhaled. Causes eye irritation. Causes skin irritation. May be harmful if absorbed through skin. May cause chronic health effects. Based on data with laboratory animals.
IMDG Shipping Description: Environmentally hazardous substances liquid, nos (Contains Naphthalene, Tetramethyl benzenes, Trimethylbenzene), Class 9, UN3082, PG III- Marine Pollutant.

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