

# MATERIAL SAFETY DATA SHEET

# MSDS

## SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

**Product Identifier:** ENGINE PRIMING FUEL

**Product Sizes:** 8 oz., 18 oz., 21 oz.

**Product Use:** Ether injection for starting diesel engines

**24-Hour Emergency Telephone:** Chemtrec (800) 424-9300 (Within Continental U.S.)  
Chemtrec (703) 527-3887 (Outside Continental U.S.)

**Manufactured/Supplied By:**

KBi/Kold-Ban International, Ltd.  
8390 Pingree Road  
Lake In The Hills, IL 60156 USA  
Telephone: (847) 658-8561

**MSDS Prepared By:**

KBi/Kold-Ban International, Ltd.  
Telephone: (847) 658-8561  
Prepared: November 12, 2007

## SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS #	% (weight)	ACGIH	OSHA	LC <sub>50</sub> (4hr)	LD <sub>50</sub> (mg/kg)	
			TLV (ppm)	PEL (ppm)	ihl. rat*	oral. rat*	dermal. rabbit*
Diethyl ether	60-29-7	55 - 70	400	400	32,000 ppm	1200	>14,200
Heptane	142-82-5	20 - 30	400	500	103,000 mg/m <sup>3</sup>	>15,000	N/Av
Carbon dioxide	124-38-9	10 - 15	5000	5000	N/Av	N/Av	N/Av
Mineral Oil, Petroleum distillates, solvent-refined, light paraffinic	64741-89-5	0.1 - 1.0	5 mg/m <sup>3</sup> , for oil mists	5 mg/m <sup>3</sup> , for oil mists	N/Av	>5000	>2000

This material is classified as hazardous under OSHA regulations (29CFR 1910.1200).

## SECTION 3 - HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** Pale yellow to clear liquid, strong ethereal odor, evaporates quickly, leaves slight lubricant residue. **WARNING!** Extremely flammable. Contents under pressure. Contact with liquid can cause frostbite. May be fatal if too much is inhaled.

**Target Organs:** Eyes, skin, respiratory system, central nervous system.

**Routes of Exposure:** Skin contact, eye contact, inhalation.

**Signs and Symptoms of Short-Term (acute) Exposure:**

**Inhalation:** May be harmful or fatal if inhaled. Inhalation of vapors or mists may cause dizziness, nausea, headache, incoordination and other central nervous system effects. In very high concentrations, may act as an asphyxiant and cause unconsciousness, respiratory collapse and death.

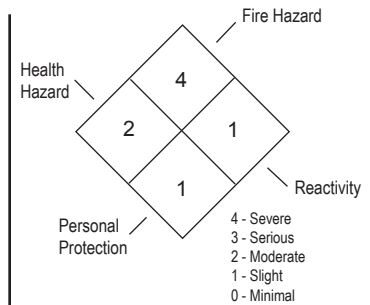
**Skin:** May cause mild irritation, redness and itching. Frostbite symptoms (numbness, pricking and itching) may be experienced.

**Eyes:** May cause mild irritation. Symptoms may include redness, tearing and stinging. Direct contact may cause freezing of the eye. Could cause eye damage.

**Ingestion:** Ingestion of liquefied gas is unlikely. However, if ingested could be harmful. May cause irritation to mouth, throat and stomach. Symptoms may include nausea, vomiting, diarrhea and other central nervous system effects. If large amounts of material are ingested, could cause aspiration into the lungs.

**Chronic Effects:** Prolonged or repeated skin contact may cause dermatitis (drying and cracking).

**Conditions Aggravated by Exposure:** May aggravate pre-existing skin, eye and respiratory problems.



## SECTION 4 - FIRST AID MEASURES

**Inhalation:** Immediately remove victim to fresh air. Obtain immediate medical attention.

**Skin Contact:** Immediately wash skin with mild soap and water. Avoid prolonged contact by removing and washing any clothing soaked with product. If irritation persists, obtain medical attention immediately.

**Eye Contact:** First check the victim for contact lenses and remove if present. Immediately flush eyes with lukewarm water or normal saline solution for at least 15 minutes. Obtain medical attention.

**Ingestion:** Do not induce vomiting. Obtain medical attention immediately. Guard against aspiration.

## SECTION 5 - FIRE FIGHTING MEASURES

**Flammability Classification (OSHA 29 CFR 1910.1200):** Flammable gas

**Suitable Extinguishing Media:** Dry chemical, foam, carbon dioxide, water fog.

**Hazardous Combustion Products:** Carbon oxides.

**Oxidizing Properties:** None known.

**Explosion Data:** *Sensitivity to Mechanical Impact:* Not Sensitive

*Sensitivity to Static Discharge:* May be sensitive to static discharge.

**Fire Hazards/Conditions of Flammability:** Material may explode and burn when exposed to heat, sparks and flame. Vapors are heavier than air and collect in low-lying areas. The vapors may travel considerable distances and flashback to a source of ignition. Containers are under pressure and may explode if exposed to excess heat.

**Special Fire-Fighting Procedures/Equipment:** Firefighters should wear proper full protective equipment and self-contained breathing apparatus. Move containers from fire area if it can be done without risk. Water spray may be useful in cooling equipment and containers exposed to heat and flame. Shield personnel to protect from venting, rupturing or bursting cylinders

## SECTION 6 - ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Restrict access to area until completion of clean-up. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate chemically protective equipment. Keep all other personnel upwind and away from spill/release. Also see Section 8, Exposure Controls/Personal Protection.

**Environmental Precautions:** Ensure spilled product does not enter sewers or confined spaces.

**Spill Response/Cleanup:** Eliminate all sources of heat, sparks and flame. Ventilate area of release. Stop leak if you can do so without risk. Carbon dioxide may be used as a precautionary vapor blanket. For small amounts of spilled material, flush with water. Notify the appropriate authorities as required.

**Prohibited Materials:** None known.

**Special Spill Response Procedures:** If a spill/release in excess of EPA reportable quantity is made into the environment, immediately notify the national response center in the U.S. (phone: 1-800-424-8802).

**EPA/CERCLA Reportable quantity (RQ):** Diethyl ether (100 lbs.)

## SECTION 7 - HANDLING AND STORAGE

**Safe Handling Procedures:** Read all cautionary information on cylinder and use only in accordance with directions. Wear protective equipment during handling, as applicable. Use in a well ventilated area. Avoid inhaling vapors or mists. Avoid contact with eyes, skin and clothing. Do not use near sources of heat, flame, sparks or ignition sources. Do not puncture or incinerate containers. Keep away from children.

**Storage Requirements:** Store in a cool (< 120° F / 48.9° C), dry, well-ventilated area away from incompatibles, heat, flame, sunlight, sparks or ignition sources. No smoking in the area.

## SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

**Ventilation and Engineering Controls:** Use in well ventilated area. Ventilation must be sufficient to maintain vapors at level which is below listed TLV's, particularly at floor level as vapors are heavier than air.

**Respiratory Protection:** For prolonged exposure or if the TLV is exceeded, wear NIOSH-approved respirators.

**Skin Protection and Other Protective Equipment:** Not normally required. For prolonged exposure, insulated gloves impervious to the material, such as Nitrile, Viton, PVA, or Butyl are recommended. An eyewash station should be made available in the immediate working area.

**Eye / Face Protection:** Wear safety glasses or goggles to prevent any vapors or mists from entering the eyes.

**General Hygiene Considerations:** Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke while handling product. Avoid excessive breathing of vapors.

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## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

**Physical State, Odor and Appearance:** Pale yellow to clear liquid, ethereal odor.**Absolute Pressure of Container (@ 70° F / 21.1° C):** 148 PSIG (10.2 BAR)**Odor Threshold:** N/Av**Volatiles (% by weight):** 86**Specific Gravity:** 0.7**Solubility in Water:** 6 % @ 70° F (21.1° C)**Coefficient of Water/Oil Distribution:** N/Av**Vapor Density (air = 1):** 2.5**Vapor Pressure (PSIG):** N/Av**Boiling Point (Diethyl ether):** 94° F (34.4° C)**Evaporation Rate (BuAe = 1):** 6**Freezing Point:** N/Av**pH:** N/Av

## SECTION 10 - REACTIVITY AND STABILITY DATA

**Stability and Reactivity:** Stable under the recommended storage and handling conditions prescribed. Product may form explosive peroxides when exposed to light and air.**Hazardous Polymerization:** Will not occur.**Conditions to Avoid:** Heat, sparks, flame and direct sunlight. Stable under ambient pressure and temperature.**Materials to Avoid (incompatibles):** Oxidizing agents.**Hazardous Decomposition Products:** Peroxides.**Note:** Antioxidant has been added to product to retard formation of peroxides.

## SECTION 11 - TOXICOLOGICAL INFORMATION

**Toxicological Data:** There is no available data for the product itself, only for the ingredients. See Section 2 for individual ingredient acute toxicity data.**Carcinogenicity:** None of the ingredients listed are classified by IARC, ACGIH, NTP or OSHA [29 CFR 1910.1200(D)#4] as carcinogenic.**Reproductive Effects, Teratogenicity, Mutagenicity:** None known.**Sensitization to Material:** None known.**Synergistic Materials:** Not available.

## SECTION 12 - ECOLOGICAL INFORMATION

**Environmental Effects:** The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters.

## SECTION 13 - DISPOSAL CONSIDERATIONS

**Handling for Disposal:** Do not puncture or incinerate containers intended for disposal. See Section 7 for additional handling information.**Methods of Disposal:** Dispose of in original metal containers in accordance with all applicable government regulations.**Recycling/Reclamation Disposal:** The manufacturer offers a recycling program. Contact the manufacturer for further information.**RCRA:** If this product, as supplied, becomes a waste, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. For disposal of unused or waste material, check with local, state and federal environmental agencies.

## SECTION 14 - TRANSPORTATION INFORMATION

**Shipping Description:**

CLR: LIQUEFIED GAS, FLAMMABLE, N.O.S. (Diethyl ether), Class 2.1, UN3161

IATA: Liquefied gas, flammable, n.o.s. (contains Diethyl ether), 2.1, UN3161

US DOT: Liquefied gas, flammable, n.o.s. (contains Diethyl ether), 2.1, UN3161

**Shipping Labels Required:**

CLR: Red, flammable gas label (Class 2) and package orientation

IATA: Red, flammable gas label (Class 2), package orientation, and Cargo Aircraft Only required

US DOT: Red, flammable gas label (Class 2) and package orientation

**Other Shipping Information:**

CLR: Limited Quantity exemption may apply. If shipping under this exemption under the CLR, refer to Section 1.17 for Limited Quantity Shipping Information.

IATA: This material is not permitted to be transported on 'Passenger Aircraft'. Please refer to Special Provision A1 in IATA's 2003 Dangerous Goods Regulations for additional information.

US DOT: Limited Quantity exceptions may apply. Refer to 49 CFR, Section 173.306 for 'Limited quantities of compressed gases' Shipping Information.

**Identification Number:** UN3161**Hazard Class:** 2.1

## SECTION 15 - REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and this MSDS contains all the information required by the CPR.

**WHMIS Information:** A (Compressed gas), B1 (Flammable gas), D1A (Very Toxic Material), D2B (Toxic Material).**CEPA Information:** All ingredients are listed on the DSL/NDL.**TSCA Information:** All ingredients are listed on the TSCA inventory.**EPA/CERCLA Reportable Quantity (RQ):** 100 lbs. (Diethyl ether).**SARA TITLE III: Sec. 313, Toxic Chemicals Notification, 40 CFR 372:** This material is not subject to the TSCA notification requirements, since it does not contain any Toxic Chemical constituents.**California Proposition 65:** This product does not contain any chemicals known to the State of California to cause cancer or reproductive harm.

## SECTION 16 - OTHER INFORMATION

**References:**

\* Canadian Centre for Occupational Health and Safety, CCIInfoWeb databases, 2003 (Chempendium and RTECs).

1. ACGIH, Threshold Limit Values and Biological Exposure Indices for 2002.

2. International Agency for Research on Cancer Monographs, Supplement 7, 1988.

3. Material Safety Data Sheet from manufacturer.

4. US EPA Title III List of Lists – October 2001 version.

5. California Proposition 65 List – February 21, 2003 version.

**Abbreviations:**

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstract Services

CEPA: Canadian Environmental Protection Act

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980

CFR: Code of Federal Regulations

CLR: Transportation of Dangerous Goods Clear Language Regulations

CPR: Controlled Products Regulations

DSL: Domestic Substances List

EPA: Environmental Protection Agency

IARC: International Agency for Research on Cancer

IATA: International Air Transport Association

LEL: Lower Explosive Limit

MSDS: Material Safety Data Sheet

N/Av: Not Applicable

N/A: Not Available

NDSL: Non-Domestic Substances List

NIOSH: National Institute of Occupational Safety and Health

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit

RCRA: Resource Conservation and Recovery Act

SARA: Superfund Amendments &amp; Reauthorization Act

TCC: Tag Closed Cup

TLV: Threshold Limit Values

TSCA: Toxic Substance Control Act

UEL: Upper Explosive Limit

US DOT: United States Department of Transportation

WHMIS: Workplace Hazardous Material Information System

**NOTICE:** These data are offered in good faith as typical values and not product specifications. The information in this data sheet is believed to be correct and reliable. However, the data is offered solely for consideration, evaluating and verification by the user. No guarantee, warranty, or representation of accuracy of completeness is expressed or implied. KBI/Kold-Ban International, Ltd. assumes no responsibility for any kind of loss or damage arising from use of this data.

END OF MSDS