

# MATERIAL SAFETY DATA SHEET

## Section I - Material and Company Identification

**Product Name:** Milpack Beverage Heater  
**Synonym(s):** FUEL, GEL, DIETHYLENE GLYCOL  
Enhanced Fuel Bar (EFB)  
**Supplier:** Milpack, Inc.  
14550 Torrey Chase Blvd. Suite 460, Houston, TX 77014, USA  
**Telephone Number:** (281) 893-8650  
**Manufacturer:** Ritek, Inc.  
415 Interchange Drive, McKinney, TX 75071, USA  
**Telephone Number:** (972) 529-1118  
**MSDS Revision Number:** 2  
**Revision Date:** November 1, 2004

**Emergency Telephone Number:** CHEMTREC (USA): (800) 424-9300

## Section II - Composition/Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>Weight Percent</u>
Diethylene Glycol	111-46-6	>90
Siloxanes and Silicones di-Me, reaction products with silica	67762-90-7	<10

## Section III - Hazards Identification

### Emergency Overview

**Appearance & Odor:** Viscous liquid with very mild odor  
**Health Hazards:** Ingestion of large quantities is highly toxic and may be fatal.  
May cause central nervous system depression.

**Inhalation:** Harmful health effects are not expected from exposure to vapor generated at ambient temperatures. Vapor or mist from heated material may cause nausea and headaches, minor irritation to respiratory tract or a mild burning sensation in the nose, throat and lungs.

**Skin:** Prolonged or repeated exposure may be slightly irritating to the skin.

Eyes	May be mildly irritating to eyes.
Ingestion	Ingestion of large quantities may be harmful, and in extreme cases, may be fatal. Large quantities may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea, and possible loss of coordination. Significant exposure may result in unconsciousness and death. Repeated ingestion may cause kidney toxicity.
Target Organ Effects: Signs and Symptoms:	Kidney Kidney toxicity may be recognized by blood in the urine or increased or decreased urine flow. Other signs and symptoms can include nausea, abdominal cramps, diarrhea, and lumbar pain after digestion, and possibly narcosis and death.
Carcinogenic Effects:	Does not contain any substances listed by IARC, NTP, OSHA, or ACGIH as carcinogenic. See also Section 11.
Other Health Effects:	Intentional abuse, misuse or other massive exposure may cause multiple organ damage or death.

Section 6	First Aid Measures
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Skin	Wash with soap and water after handling material. If persistent irritation develops get medical attention.
Eyes	Immediately flush eyes with large amounts of water for 15 minutes, lifting lower and upper eyelids. Rest eyes for 30 minutes. Seek medical attention if redness, burning, blurred vision or swelling persists.
Inhalation:	If cough, shortness of breath or other breathing problems occur, move patient to fresh air. Seek medical attention if symptoms persist.
Ingestion	If large quantities of this material are swallowed, immediately call a physician. <b>DO NOT INDUCE</b> vomiting. Never give anything by mouth to an unconscious person.

**Note to Physician:** Reason: Ingestion  
Gastric lavage with protected airway may be indicated within the first one or two hours after ingestion large quantities. Competitors for the enzyme, alcohol dehydrogenase, such as, ethanol or other substances currently being investigated are important therapy. Consult a clinical toxicologist for guidance on use. Support of respiratory function and monitoring for renal failure and deterioration of CNS function are important. Use of syrup of ipecac is no longer recommended. Kidney toxicity to metabolic acidosis and can generally be recognized functionally as hematuria, or changes in urine flow; microscopic crystals of oxalic acid in the urine often is a clinical diagnostic tool.

**Section VI Fire Fighting Measures**

Flash Point and Method 244 F / 117.78 C [Tagliabue Closed Cup]

Flammable Limits: LEL N/A  
UEL N/A

Unusual Fire and Explosion Hazards: None

Extinguishing Method Water Fog, "Alcohol" Foam, Dry Chemical, CO2

**Special Fire Fighting Procedures and Precautions:**  
Material will not burn unless preheated. Do not enter confined fire space without full bunker gear (helmet with face shield), gloves, and rubber boots. Wear Positive Pressure NIOSH approved (SCBA) Self-Contained Breathing Apparatus.

**Section VII Accidental Release**

May burn although not readily ignitable.

**Protective Measures:**

Eliminate potential sources of ignition (no smoking, flares, sparks, or flames in immediate area).  
Use cautious judgment and take measures to prevent bodily contact when cleaning up large amounts of spilled material.

**Section VIII Handling and Storage**

**Handling:**

Do not taste or swallow. Avoid contact with eyes and skin. Washing thoroughly with soap and water after handling is recommended. Keep away from open flames and high temperatures.

**Storage:**

Keep packaging and containers closed when not in use.

**Section IX Exposure Control / Personal Protection**

**Exposure Limits:**

There are no exposure limits identified for this specific product. Exposure limits for Ethylene Glycol (CAS# 107-21-1) and Amorphous Silica (CAS# 7631-86-96) are stated below.

Chemical	Limit	Ceiling
As Ethylene Glycol, Vapors	ACGIH-TLV	39.4 ppm (v)
As Ethylene Glycol, Vapors	OSHA-PEL	50.0 ppm (v)
As Amorphous Silica	OSHA-PEL	6 mg/m <sup>3</sup>
Dust or Particles	ACGIH-TLV	10 mg/m <sup>3</sup> , inhalable
Not otherwise specified		6 mg/m <sup>3</sup> , respirable

**Exposure Control:**

The level of protection and types of control necessary will vary depending upon potential exposure conditions and depending upon amount of product exposure.

**Appropriate measures include:**

Adequate ventilation to control airborne concentrations below the exposure guidelines.

**Personal Protection:**

No eye protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid eye contact. Repeated exposure may cause skin dryness. Use skin cream if this symptom develops.

**Respiratory Protection:**

No respiratory protection is ordinarily required under normal conditions of use, unless fire of large quantities has occurred, which the recommended precautions of Section V (Fire Fighting Measures) should be followed.

### Section 4. Physical and Chemical Properties

Appearance and Odor	viscous liquid, white to off-white gel very mild odor to odorless
Boiling Point (Deg. F)	473
Flash Point (Deg. F), Tagliabue Closed Cup	244
Specific Gravity (H <sub>2</sub> O=1) at 60 F	1.1
Vapor Pressure (mm Hg.)	> 0.01 @ 68F
Evaporation Rate (nButyl Acetate =1)	< 0.001
Solubility in Water	Complete
VOC Content	>95%, 9.28 lbs/gal.
Stability	Stable

### Section 5. Reactivity and Stability

- Stability:** Material is stable
- Conditions to Avoid:** Avoid high temperatures. Keep away from heat and sources of ignition.
- Materials to Avoid:** Avoid strong bases and salts of strong bases combined with elevated temperatures.
- Hazardous Decomposition Products:**  
Silicone Dioxide may have thermal decomposition above temperatures of 150°C. Decomposition products may include carbon monoxide, carbon dioxide, and formaldehyde.

**Section XII: Toxicological Information**

There is no toxicological data on the product itself.

Toxicity information for Diethylene Glycol (CAS# 111-46-6) and Silicone Dioxide (CAS# 67762-90-7) are stated below.

**Acute Toxicity:**

<u>Chemical</u>		<u>Ceiling</u>
Diethylene Glycol	Dermal - LD50	11.9 g/kg (rabbit)
Diethylene Glycol	Oral - LD50	14.8 g/kg (rat)
Silicone Dioxide	Dermal - LD50	no data available
Silicone Dioxide	Oral - LD50	5000 mg/kg (rat)

**Eye Irritation:** Mild (rabbit)

**Skin Irritation:** Mild

**Carcinogenic Effects:** Does not contain any substances listed by IARC, NTP, OSHA, or ACGIH as carcinogenic.

**Reproductive and Developmental Toxicity:**

Mice exposed continually to high concentrations of diethylene glycol in drinking water showed some reproductive impairment only at doses causing decreased maternal weights.

**Other Testing:**

Repeated oral exposure of experimental animals and humans to diethylene glycol caused kidney toxicity secondary to metabolic acidosis, recognized functionally as hematuria (blood in the urine), increased or decreased urine flow; microscopic crystals of oxalic acid in the urine often is a clinical diagnostic tool. Toxic doses of ingestion are estimated to be 4 ounces for the average human adult.

**Section XIII: Ecological Information**

This section will be updated as ecological reviews are completed for the specific components contained in the product.

**Section XIV: Disposal Considerations**

**General Recommendations:**

If this material becomes a waste, it would not be a hazardous waste by RCRA criteria (40CFR 261). Place in an appropriate disposal facility in compliance with local regulations.

**Disclaimer:**

Contamination of the product may change waste characteristics and requirements. Local disposal regulations may also apply to empty containers.

**Section VI Regulatory Information**

**USA Department of Transportation Classification**

This material is not subject to DOT regulations under 49CFR parts 171 - 180.

**Section VII Regulatory Information**

There is no regulatory information on the product itself.

Regulatory information for Diethylene Glycol (CAS# 111-46-6) and Silicon Dioxide (CAS# 67762-90-7) are stated below.

**Superfund Amendment and Reauthorization Act (SARA) Title III:**

SARA Hazard Categories (311/312): Immediate (Acute) Health Hazard

**Toxic Substance Control Act (TSCA) Status:**

Diethylene glycol is listed in the EPA TSCA Inventory of Chemical Substances.

**OSHA (29 CFR 1910.1200):** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**Section VIII Other Information**

**HMIS Rating**

HMIS Index: 0 - minimal, 1 - slight, 2 - moderate, 3 - serious, 4 - severe

Health: 1

Fire: 1

Reactivity: 0

**Disclaimer:**

The information contained herein is based on the data available to us and is believed to be accurate. However, supplier or manufacturer makes no warranty, expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Supplier or manufacturer assumes no responsibility for injury from the use of this product described herein.