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**MSDS: Dimethyl Ether**

## PRODUCT INFORMATION

**PRODUCT:** Dimethyl Ether

**TRADE NAME:** Dimethyl Ether or Methyl Ether

**CHEMICAL NAME:** Dimethyl Ether or Methyl Ether

**SYNONYMS:** None

**FORMULA:** (CH<sub>3</sub>)<sub>2</sub>O

**CHEMICAL FAMILY:** Aliphatic Ether

**SUPPLIER'S NAME:** MEGS Inc.

**SUPPLIER'S ADDRESS:** 2675 De Miniac  
Ville St-Laurent, Qc, H4S 1E5

**EMERGENCY PHONE NUMBER:** (514) 956-7503

**MOLECULAR WEIGHT:** 46.08

**PRODUCT USE:** Various

**PRODUCT IDENTIFICATION UN 1033  
NUMBER:**

## HAZARDOUS INGREDIENTS

CHEMICAL ID	CONCENTRATION	CAS #	LD(50)	LC(50)
Dimethyl	100%	115-10-6	None	None Inhl-mus 386 PPM/15 h

## PHYSICAL DATA

**PHYSICAL STATE:** Gas and liquid under pressure

**APPEARANCE:** Colorless gas and liquid

**ODOR:** Ether-like odor

**ODOR THRESHOLD:** Unknown

**SPECIFIC GRAVITY (H<sub>2</sub>O = 1):** 0.735

**VAPOR PRESSURE:** 424 kPa

VAPOR DENSITY (air = 1): 1.59  
EVAPORATION RATE: Unknown  
BOILING POINT: -24.82°C  
FREEZING POINT: -141.5°C  
pH: Unknown  
GAS DENSITY: 1.92 kg/m<sup>3</sup> @ 15°C, 101.3 kPa  
COEFFICIENT OF WATER/OIL Very soluble in water  
DISTRIBUTION:

### FIRE OR EXPLOSION HAZARD

**CONDITIONS OF FLAMMABILITY:** Flammable in air over a wide range

**MEANS OF EXTINCTION:** Water spray to cool surrounding are, a carbon dioxide, dry chemical. "Stop flow of gas before extinguishing fire.

**FLASHPOINT AND METHOD OF DETERMINATION:** Not applicable (gas)

**UPPER EXPLOSION LIMIT (% BY VOL):** 27

**LOWER EXPLOSION LIMIT (% BY VOL):** 3.4

**AUTO-IGNITION TEMPERATURE:** 350°C

**FLAMMABILITY CLASSIFICATION:** Class 1, Group C

**HAZARDOUS COMBUSTION PRODUCTS:** None

**EXPLOSION DATA:** Yes with oxidizing agents

**SENSITIVITY TO STATIC DISCHARGE:** Yes, may accumulate static electricity

### REACTIVITY DATA

**CHEMICAL STABILITY:** Stable

**INCOMPATIBLE MATERIALS:** Oxidizers

**CONDITIONS OF REACTIVITY:** Peroxide formation may occur in containers that have been opened and remain in storage for more than six months.

**HAZARDOUS DECOMPOSITION PRODUCTS:** See above, peroxides can be detonated by friction, impact or heating.

### TOXICOLOGICAL PROPERTIES

**ROUTES OF ENTRY:**

**SKIN CONTACT:** Concentrated vapor or liquid causes dermatitis or if in the eyes, causes inflammation of the ocular mucous membranes (conjunctivitis). Contact with rapidly evaporating liquid can cause cryogenic "burns" or frostbite.

**SKIN ABSORPTION:** None

**EYE:** See Skin Contact, above

**INHALATION:** Narcotic or anesthetic effects depend on the duration of exposure and vary from incoordination, headache, dizziness, periods of excitation, inability to see well, to anesthesia and eventual unconsciousness.

**INGESTION:** None

**ACUTE OVER EXPOSURE EFFECTS:** As a narcotic or anesthetic it is a depressant on the central nervous system. Its anesthetic "activity" is only about one-fourth that of diethyl ether. Irritation of the skin or eyes is manifested in a reddish inflammation. Frostbite effects are a change in color of the skin to gray or white, possibly followed by blistering.

**CHRONIC OVER EXPOSURE EFFECTS:** None reported

**EXPOSURE LIMITS:** No TWA is listed (ACGIH, 1995-1996)

**IRRITANCY OF PRODUCT:** See Skin and Eyes, above.

**SENSITIZATION TO MATERIAL:** None

**CARCINOGENICITY, REPRODUCTIVE EFFECTS:** None known

**TERATOGENICITY, MUTAGENICITY:** None known

**TOXICOLOGICALLY SYNERGISTIC PRODUCTS:** Diethyl ether

## **PREVENTIVE MEASURES**

**PERSONAL PROTECTIVE EQUIPMENT:** Buna N® or rubber gloves. Safety goggles or safety glasses. Safety shoes, safety shower, eyewash "fountain".

**SPECIFIC ENGINEERING CONTROLS:** Dimethyl ether is non-corrosive and can be used with most common structural metals. Buna N® rubber is the only elastomer which exhibits reasonable resistance to its attack.

**LEAK AND SPILL PROCEDURES:** EVACUATE ALL PERSONNEL FROM AFFECTED AREA.

Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is on container or container valve, contact the closest MEGS location.

**WASTE DISPOSAL:** Do not attempt to dispose of waste or unused quantities. Return in the shipping container properly labeled, with any valve outlet plugs or caps secured and valve protection cap in place to MEGS for proper disposal. For emergency disposal, contact the closest MEGS location.

**HANDLING PROCEDURES AND EQUIPMENT:** USE ONLY IN WELL-VENTILATED AREAS.

Valve protection caps must remain in place unless container is secured with valve outlet piped to the point of use. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Use a pressure reducing regulator when connecting cylinder to lower pressure piping or systems. Do not heat cylinder by any means to increase the discharge rate of product from the cylinder. Use a check valve or trap in the discharge line to prevent hazardous back flow into the cylinder. Do not tamper with (valve) safety device. Close valve after each use and when empty.

**STORAGE REQUIREMENTS:** Protect cylinders from physical damage. Store in cool, dry, well-ventilated area of non combustible construction away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 52°C. Cylinders must be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated. Use a "first in - first out" inventory system to prevent full cylinders from being stored for excessive periods of time. Post "No Smoking or Open Flames" signs in the storage or use area. There should be no sources of ignition in the storage or use area.

**TDG CLASSIFICATION:** 2.1

**WHMIS CLASSIFICATION:** A, B1

**SPECIAL SHIPPING INFORMATION:** Always secure cylinders in an upright position before transporting them. NEVER transport cylinders in trunks of vehicles, enclosed vans, truck cabs or in passenger compartments. Transport cylinders secured in open flatbed or in open pick-up type vehicles.

## **FIRST AID MEASURES**

**SPECIFIC FIRST AID PROCEDURES:** PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVEREXPOSURE TO DIMETHYL ETHER. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS AND BE COGNIZANT OF EXTREME FIRE AND

EXPLOSION HAZARD.

**INHALATION:** Conscious persons should be assisted to an uncontaminated area and inhale fresh air. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area and given assisted respiration and supplemental oxygen. Further treatment should be symptomatic and supportive.

**EYE CONTACT:** PERSONS WITH POTENTIAL EXPOSURE TO DIMETHYL ETHER SHOULD NOT WEAR CONTACT LENSES.

Flush contaminated eye(s) with copious quantities of water. Part eyelids with fingers to assure complete flushing. Continue for minimum of 15 minutes.

**SKIN CONTACT:** Dermal Contact or Frostbite: Remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if the cryogenic "burn" has resulted in blistering of the dermal surface or deep tissue freezing.

## PREPARATION INFORMATION

**PREPARED BY:** Safety Department

**DATE PREPARED:** 09/01/1999

**LAST REVISION DATE:** 05/21/2002

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