

Material Safety Data Sheet

DIMETHYL ETHER

Revision 9/04

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Advanced Gas Technologies
1401 Stauffer Road
Palm, PA 18070.

Telephone Number: (215) 541-4116

MSDS IDENTIFICATION CODE / NUMBER: DE

EMERGENCY TELEPHONE NUMBER

CHEMTREC (800) 424-9300

PRODUCT NAME: DIMETHYL ETHER

CAS NUMBER: 115-10-6

CHEMICAL NAME: DIMETHYL ETHER

CHEMICAL FORMULA: CH₃OCH₃

SYNONYMS: DME

2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME		% VOLUME
Dimethyl Ether	AEL TWA: 1000ppm	100
CAS NUMBER: 115-10-6	AIHA WEEL: 1000ppm	

3. HAZARDS IDENTIFICATION

Inhalation of high concentrations of vapor is harmful and may cause heart irregularities, unconsciousness or death. Intentional misuse or deliberate inhalation may cause death without warning. Vapor reduces oxygen available for breathing and is heavier than air. Decomposition products are hazardous. Liquide contact can cause frostbite.

4. FIRST AID MEASURES

EYES

In case of contact, flush eyes with plenty of water for at least 15 minutes. Call a physician.

SKIN

In case of contact, flush skin with water for at least 15 mins. Treat for frostbite if necessary by gently warming affected area. Call a physician if irritation is present.

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INHALATION

If high concentrations are inhaled, immediately remove to fresh air. Keep person calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: -42 F -41 C METHOD: TOC

AUTOIGNITION: 662 F 350 C

LOWER EXPLOSIVE LIMIT: (%): 3.4

UPPER EXPLOSIVE LIMIT: (%): 18.0

FIRE AND EXPLOSION HAZARDS

Extremely flammable. Vapors are heavier than air and may travel to source of ignition and flash back. Avoid high temperature and static charges. Containers have pressure and temperature relief devices, but still may rupture under fire conditions. Explosion is possible.

EXTINGUISHING MEDIA :

Water Spray, Water Fog, Dry Chemical, Alcohol Foam, Carbon Dioxide.

FIRE FIGHTING INSTRUCTIONS

Keep container cool with water spray or fog. Stop the flow of gas if the gas exiting the container ignites. Do not put out the fire unless leak can be stopped immediately. Self-contained breathing apparatus (SCBA) is required if containers rupture and contents are released under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected areas. 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 in container or container valve, contact CHEMTREC for emergency assistance or call ADVANCED GAS TECHNOLOGIES.

7. HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS

Avoid breathing high concentrations of vapors and avoid liquid contact with skin or eyes. Use in well-ventilated area away from possible ignition sources. Lines and equipment which will contain dimethyl ether should be pretested with nitrogen using soapy water to detect leaks. Use sufficient ventilation to keep employee exposures below recommended limits. Keep container tightly closed and away from heat, sparks, and flame. Keep container in a cool, clean and dry area. Do not heat above 52 C. (125 F). Store away from oxygen cylinders or other oxidizing materials and possible ignition sources. Ground all equipment and cylinders before use. For additional handling recommendations, consult Compressed Gas Association's Pamphlets P-1.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Class I, Group C. Local exhaust should be used when large amounts are released .

EYE / FACE PROTECTION

Fire protective clothing.

SKIN PROTECTION

Butyl rubber, PVC or polyethylene.

RESPIRATORY PROTECTION

Air purifying respirators must be equipped with suitable cartridges. Do not exceed maximum use concentrations. Do not use air purifying respirators in an oxygen deficient/immediately dangerous to life and health (IDLH) atmospheres. Consult manufacturers instructions before use. Level C respiratory protection with full face full-face mask and escape bottle or a self-contained breathing apparatus should be available for emergency use. Operate this equipment in the positive pressure demand mode.

OTHER / GENERAL PROTECTION

Safety shoes, safety shower, eyewash fountain, faceshield and polyethylene or butyl rubber apron.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear, colorless

ODOR

Slight Ethereal

BASIC PHYSICAL PROPERTIES

BOILING POINT:	-13 F	-25 CC
VAPOR PRESSURE:	71.2 psig	
VAPOR DENSITY: (AIR=1)	1.6	
SOLUBILITY (H2O):	Soluble.	

10. STABILITY AND REACTIVITY

STABILITY: Explosive peroxides may be formed at a low rate upon long exposure to air. Do not concentrate by distillation or evaporation.

INCOMPATIBLE MATERIALS

Incompatible with oxygen, oxidizers, carbon monoxide, acetic acids, organic anhydrides.

HAZARDOUS DECOMPOSITION PRODUCTS

If heated with peroxide present, violent decomposition can occur.

HAZARDOUS POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

Inhalation 4 hour LC 50. The compound is untested for skin and eye irritancy, and is untested for animal sensitization. Toxicity described in animals exposed by inhalations includes anesthetic effects, depression of arterial blood pressure, changes in blood cell counts, and weight gain suppression. Cardiac sensitization occurred in dogs exposed to concentrations of 20% and greater. Long-term exposure of rats to 20,000ppm caused liver weight reduction and alterations of liver enzymes. In another study, observations include decreased red blood cell counts, spleen changes, and decreased survival of males at 10,000 and 25,000 ppm. Red blood cell destruction (hemolysis) occurred at 25,000 ppm. Test in animals demonstrated no carcinogenic or developmental toxicity. The compound does not produce genetic damage in bacterial cell cultures.

12. ECOLOGICAL INFORMATION

NO DATA GIVEN

13. DISPOSAL INFORMATION

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 Advanced Gas Technologies for proper disposal. This material may be a RCRA Hazardous Waste upon disposal due to the ignitability characteristic.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: Dimethyl Ether
HAZARD CLASS: 2.1
DOT IDENTIFICATION NUMBER: UN 1033
DOT SHIPPING LABEL: Flammable Gas

15 REGULATORY INFORMATION

SARA TITLE III NOTIFICATION AND INFORMATION

Dimethyl Ether is a flammable gas as defined by OSHA in 29CFR 1910. 1200 ©. Use of this product may require compliance with 29CFR 1910.199, Process Safety Management of highly Hazardous Chemicals.

SARA TITLE III - HAZARD CLASSES: Acute Health Hazard
Fire Hazard
Sudden Pressure Release Hazard

NFPA HAZARD RATING - HEALTH	2 Moderate Hazard
FIRE	4 Severe Hazard
REACTIVITY	1 Slight Hazard

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