



The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont  
Material Safety Data Sheet

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"DYMEL" A Aerosol Propellant  
2006FR Revised 7-AUG-2001  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"DYMEL" is a registered trademark of DuPont.

Corporate MSDS Number : DU001206  
Formula : CH<sub>3</sub>OCH<sub>3</sub>

Tradenames and Synonyms

Dimethyl Ether

Company Identification

MANUFACTURER/DISTRIBUTOR  
DuPont Fluoroproducts  
1007 Market Street  
Wilmington, DE 19898

PHONE NUMBERS

Product Information : 1-800-441-7515 (outside the U.S.  
302-774-1000)  
Transport Emergency : CHEMTREC 1-800-424-9300(outside U.S.  
703-527-3887)  
Medical Emergency : 1-800-441-3637 (outside the U.S.  
302-774-1000)

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COMPOSITION/INFORMATION ON INGREDIENTS  
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Components

Material	CAS Number	%
DIMETHYL ETHER	115-10-6	100

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HAZARDS IDENTIFICATION  
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# Potential Health Effects

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. Liquid contact can cause frostbite.

HUMAN HEALTH EFFECTS:

Skin contact with liquid Dimethyl Ether may produce

## (HAZARDS IDENTIFICATION - Continued)

frostbite. There are no reports of human sensitization.

Eye contact with Dimethyl Ether vapor may produce eye irritation with discomfort, tearing, or blurring of vision.

Inhalation may cause nonspecific discomfort, such as nausea, headache, or weakness. Higher exposures may lead to temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; or increased susceptibility to the cardiac arrhythmic effects of epinephrine.

## Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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FIRST AID MEASURES  
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## First Aid

## 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.

## SKIN CONTACT

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

## EYE CONTACT

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

## INGESTION

Ingestion is not considered a potential route of exposure.

## Notes to Physicians

Because of possible disturbances of cardiac rhythm, catecholamine drugs, such as epinephrine, should be used with special caution only in situations of emergency life support.

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FIRE FIGHTING MEASURES  
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## Flammable Properties

Flash Point : -41 C (-42 F)  
Method : TOC  
Flammable limits in Air, % by Volume  
LEL : 3.4  
UEL : 18.0  
Autoignition : 350 C (662 F)  
Autodecomposition : Not determined

## 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 (CO2).

## Fire Fighting Instructions

Keep container cool with water spray or fog. If gas exiting container ignites, stop flow of gas. 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.

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ACCIDENTAL RELEASE MEASURES  
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## Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

## Accidental Release Measures

Close all source valves and guard against sparks or ignition sources. Evacuate area. Keep upwind of leak. Ventilate area, especially low or enclosed places where heavy vapors might collect. Self-contained breathing apparatus (SCBA) should be used for large spills. Comply with Federal, State and local regulations on reporting releases.

If this product is spilled and not recovered, or is recovered as a waste for treatment or disposal, the CERCLA Reportable Quantity is 100 lbs. (Release of an unlisted

## (ACCIDENTAL RELEASE MEASURES - Continued)

Hazardous Waste Characteristic of ignitability).

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HANDLING AND STORAGE  
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## Handling (Personnel)

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 with sufficient ventilation to keep employee exposure below recommended limits.

## Storage

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 deg C (125 deg F). Store away from oxygen cylinders or other oxidizing materials and possible ignition sources. Ground all equipment and cylinders before use.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Normal ventilation for standard manufacturing procedure is generally adequate. Local exhaust should be used when large amounts are released or when flammable or exposure limits might be exceeded. Mechanical ventilation should be used in low or enclosed places. Ground all equipment and cylinders before use. Use explosion-proof electrical equipment rated Class I, Group C of the National Electrical Code in Division I locations. In Division 2 locations, all spark-producing electrical equipment must be explosion-proof and rated Class I, Group C. Non-sparking motors need not be explosion-proof. Equipment should be clean and dry and purged with nitrogen before being put into service.

## Personal Protective Equipment

Impervious gloves should be used when handling liquid. Chemical splash goggles should be worn if liquid contact with the eyes is possible. Fire protective clothing (NOMEX) with antistatic control should be worn when handling this product. Under normal manufacturing conditions, no respiratory protection is required when using this product. Self-contained breathing apparatus (SCBA) is required if a large spill or release occurs.

## (EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

## Exposure Guidelines

## Applicable Exposure Limits

## DIMETHYL ETHER

PEL (OSHA)	: None Established
TLV (ACGIH)	: None Established
AEL * (DuPont)	: 1000 ppm, 8 & 12 Hr. TWA
WEEL (AIHA)	: 1000 ppm, 8 Hr. TWA

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

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PHYSICAL AND CHEMICAL PROPERTIES  
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## Physical Data

Boiling Point	: -25 C (-13 F) @ 760 mm Hg
Vapor Pressure	: 71.2 psig at 25 deg C (77 deg F)
Vapor Density	: 1.6 (Air = 1)
% Volatiles	: 100 WT%
Evaporation Rate	: (CCl4 = 1) Greater than 1
Solubility in Water	: 7 WT% @ 17.8 C (64 F)
Odor	: Slight ethereal
Form	: Liquefied gas
Color	: Clear, colorless

Liquid Density : 0.66 g/cc at 25 deg C (77 deg F)

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STABILITY AND REACTIVITY  
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## Chemical Stability

Explosive peroxides may be formed at a low rate (compared to diethyl and diisopropyl ethers) upon long exposure to air. Do not concentrate by distillation or evaporation.

## Incompatibility with Other Materials

Incompatible with oxygen, oxidizers, carbon monoxide, acetic acids, organic acid anhydrides and powdered metals.

## Decomposition

If heated with peroxides present, violent decomposition can occur.

## Polymerization

Polymerization will not occur.

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TOXICOLOGICAL INFORMATION  
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## # Animal Data

Dimethyl Ether

Inhalation 4 hour LC50: 164,000 ppm in rats

Toxic effects in animals from inhalation exposure include anaesthetic effects and decreased blood pressure. Cardiac sensitization occurred in dogs exposed to concentrations of 20% or greater. Repeated exposure caused changes in white blood cell counts, anaesthesia, and reduced weight gain. Long-term exposure of rats to 20,000 ppm caused liver weight reduction and alterations of liver enzymes levels. 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.

Tests in animals demonstrate no carcinogenic or developmental toxicity. Tests in animals for reproductive effects have not been

Dimethyl Ether did not produce genetic damage in bacterial cell cultures but has not been tested in animals.

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ECOLOGICAL INFORMATION  
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## # Ecotoxicological Information

Aquatic Toxicity:

Dimethyl Ether:

48 hour NOEC- Guppies: &gt; 4000 mg/L

48 hour NOEC- Daphnia magna: &gt; 4000 mg/L

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

Remove to a permitted waste disposal facility. Comply with Federal, State, and local regulations.

This material may be a RCRA Hazardous Waste upon disposal due to the ignitability characteristic.

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TRANSPORTATION INFORMATION  
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## Shipping Information

DOT/IMO  
Proper Shipping Name : DIMETHYL ETHER  
Hazard Class : 2.1  
UN No. : 1033  
DOT/IMO Label : FLAMMABLE GAS

## Shipping Containers

Tank Cars.  
Tank Trucks.

Cylinders  
Ton Tanks

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REGULATORY INFORMATION  
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## U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

## TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : No  
Fire : Yes  
Reactivity : No  
Pressure : Yes

## LISTS:

SARA Extremely Hazardous Substance	-No
CERCLA Hazardous Substance	-(*)
SARA Toxic Chemicals	-No

\*See Disposal Information.

"DYMEL" A is a flammable gas as defined by OSHA in 29CFR 1910.1200(c). Use of this product may require compliance with 29CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals.

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OTHER INFORMATION

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## NFPA, NPCA-HMIS

## NFPA Rating

Health	: 2
Flammability	: 4
Reactivity	: 1

## NPCA-HMIS Rating

Health	: 1
Flammability	: 4
Reactivity	: 1

Personal Protection rating to be supplied by user depending on use conditions.

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS : MSDS Coordinator  
> : DuPont Fluoroproducts  
Address : Wilmington, DE 19898  
Telephone : (800) 441-7515

# Indicates updated section.

This information is based upon technical information believed to be reliable. It is subject to revision as additional knowledge and experience is gained.

End of MSDS