



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/Isobutane Blends  
7294FR Revised 14-OCT-2006  
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CHEMICAL PRODUCT/COMPANY IDENTIFICATION  
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Material Identification

"DYMEL" is a registered trademark of DuPont.

Corporate MSDS Number : DU005928

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 ("DYMEL" A)	115-10-6	100-
ISOBUTANE	75-28-5	0-100

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HAZARDS IDENTIFICATION  
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Potential Health Effects

PRINCIPAL HEALTH HAZARDS (Including Significant Routes, Effects, Symptoms of Exposure, and Medical Conditions Aggravated by Exposure)

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. Liquid contact can cause frostbite.

ANIMAL DATA

## (HAZARDS IDENTIFICATION - Continued)

## DIMETHYL ETHER

Inhalation 4 hour LC50: 164,000 ppm in rats

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 cell destruction (hemolysis) occurred at 25,000 ppm.

## ISOBUTANE

Inhalation 15 minute LC50: 570,000 ppm in rats

Toxic effects noted in animals from exposure by inhalation include central nervous system effects, anaesthetic effects, and respiratory effects. No animal test reports are available to define carcinogenic, embryotoxic, or reproductive hazards. Tests in bacterial or mammalian cell cultures demonstrate no mutagenic activity

## HUMAN HEALTH EFFECTS

Skin contact with the liquid may cause frostbite. Eye contact with the vapor may produce eye irritation with discomfort, tearing, or blurring of vision. Overexposure by inhalation of the vapors may cause nonspecific discomfort, such as nausea, headache, or weakness. Higher exposures to the vapors may cause temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; or temporary alteration of the heart's electrical activity with irregular pulse, palpitations or inadequate circulation.

Individuals with preexisting diseases of the central nervous or cardiovascular system may have increased susceptibility to the toxicity of excessive exposures.

## 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

Immediately remove to fresh air. Keep persons calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

## SKIN CONTACT

Flush with plenty of water for 15 minutes. Get medical attention if irritation is present. Treat for frostbite if necessary by gently warming affected area.

## EYE CONTACT

Immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

## INGESTION

Do not induce vomiting. Immediately give two glasses of water or activated charcoal slurry. Never give anything by mouth to an unconscious person. Call a physician.

## Notes to Physicians

To prepare activated charcoal slurry, suspend 50 g activated charcoal in 400 mL water and mix well. 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 :

Dimethyl Ether : -40.6 deg C (-41 deg F)  
Isobutane : Not Determined  
Blends : Not Determined

## Method : TOC

## Autoignition Temperature :

Dimethyl Ether : 328 deg C (622 deg F)  
Isobutane : 543 deg C (1010 deg F)  
Blends : Not Determined

## Flammable Limits in Air, % by Vol. :

## (FIRE FIGHTING MEASURES - Continued)

	Lower	Upper
Dimethyl Ether :	3.4	18.0
Isobutane :	1.8	8.4
Blends :	Not Determined	

Autodecomposition Temperature : Not Determined

## Fire and Explosion Hazards:

Avoid high temperatures and static charges as product is flammable. Containers have pressure and temperature relief devices, but may still rupture under fire conditions. Decomposition may occur. Explosion is possible. Vapors are heavier than air and may travel to a source of ignition.

## Extinguishing Media

Water spray or fog, "alcohol" foam, dry chemical, carbon dioxide or Halon 1301.

## Fire Fighting Instructions

Keep container cool with water spray. 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

Turn off product source valves and all ignition sources. Evacuate area. Ventilate area--especially low or enclosed places where heavy vapors might collect. Wear self-contained breathing apparatus (SCBA) during clean-up and recovery.

This material is an ICR (ignitable, corrosive, reactive) substance under CERCLA. A release of 100 lbs. may trigger the reporting requirements of CERCLA Section 103.

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HANDLING AND STORAGE  
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## Handling (Personnel)

Avoid breathing vapors. Avoid liquid contact with skin or eyes. Use only in a well-ventilated area away from possible ignition sources. Lines and equipment to contain this product should be pretested with nitrogen and soapy water to detect leaks. Use with sufficient ventilation to keep employee below recommended limits.

## Storage

Clean, 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.

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EXPOSURE CONTROLS/PERSONAL PROTECTION  
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## Engineering Controls

Normal ventilation for standard manufacturing procedures is generally adequate. Local exhaust should be used when large amounts are released. 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 in Division 1 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. Although DME is not prone to peroxide formation, equipment should be clean and dry and purged with nitrogen before putting into service.

## Personal Protective Equipment

Impervious gloves and chemical splash goggles should be used when handling liquid. 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 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

## ISOBUTANE

## (Applicable Exposure Limits - Continued)

TLV (ACGIH) : 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

% Volatiles : 100 WT%  
Solubility in Water : <7 WT% @ 25 C (77 F)  
Odor : Slight ethereal  
Form : Liquefied gas  
Color : Clear, colorless

		Liquid Density g/cc @ 25 deg C	Vapor Pressure psig @ 25 deg C	Vapor Density (Air=1)	Boiling Point deg C deg F	
"Dymel"	Isobutane	(77 deg F)	(77 deg F)			
A						
100	0	.66	71.2	1.6	-25	-13
80	20	.63	69.1	1.7	-22.2	- 8.0
60	40	.61	66.1	1.8	-19.6	- 3.3
40	60	.59	61.8	1.8	-17.0	1.5
20	80	.57	54.8	1.9	-14.3	6.2
0	100	.55	35.8	2.0	-11.7	10.9

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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 oxidizers, oxygen, carbon monoxide, acetic acid, organic acid anhydride.

## Decomposition

If distilled to near dryness with peroxides present, violent decomposition can occur.

## Polymerization

Polymerization will not occur.

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DISPOSAL CONSIDERATIONS  
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## Waste Disposal

Contaminated product may be recovered and incinerated or removed to a permitted waste disposal facility. Comply with Federal, State and local regulations.

This material may be a RCRA regulated hazardous waste upon disposal due to the ignitability characteristic.

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TRANSPORTATION INFORMATION  
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## Shipping Information

DOT/IMO/IATA  
Proper Shipping Name : Liquefied Gas, Flammable, N.O.S.  
(Dimethyl Ether, Isobutane)  
Hazard Class : 2.1  
UN No. : 3161  
Label(s) : 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:

Extremely Hazardous Substance - No  
CERCLA Hazardous Substance - No  
Toxic Chemicals - No

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OTHER INFORMATION  
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## NFPA, NPCA-HMIS

NPCA-HMIS Rating  
Health : 2  
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