



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/A-46 Blend
2023FR Revised 14-OCT-2006

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"DYMEL" is a registered trademark of DuPont.

Corporate MSDS Number : DU001246

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)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
DIMETHYL ETHER ("DYMEL" A)	115-10-6	37.5
ISOBUTANE	75-28-5	53.0
PROPANE	74-98-6	9.5

HAZARDS IDENTIFICATION

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. Liquid contact can cause frostbite.

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 include nonspecific discomfort,

(HAZARDS IDENTIFICATION - Continued)

such as nausea, headache, or weakness; or temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness. Inhalation of higher vapor concentrations may lead to temporary alteration of the heart's electrical activity with irregular pulse, palpitations, or inadequate circulation.

Individuals with preexisting diseases of the 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.

FIRST AID MEASURES

First Aid

INHALATION

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

SKIN CONTACT

Flush with plenty of 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

Immediately 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 considered only as a last resort, only in life-threatening emergencies.

FIRE FIGHTING MEASURES

Flammable Properties

Autoignition : Not determined
Autodecomposition : Not determined

Flash Point

Dimethyl Ether : -40.6 deg C (-41 deg F)
Isobutane : Not determined
Propane : -129 deg C (-200 deg F)
Blends : Not determined

This product is a flammable gas.

Flammable Limits in Air, % by Vol.:

	Lower	Upper
"DYMEL" A	3.4	18.0
Isobutane	1.8	8.4
Propane	2.2	9.5
"Dymel" A/A-46	Not determined	

Fire and Explosion Hazards:

Avoid high temperatures and static charges, as product is flammable. Containers have pressure and temperature relief devices, but still may rupture or release under fire conditions. Explosion is possible. Decomposition may occur. 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.

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.

ACCIDENTAL RELEASE MEASURES

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. Comply with Federal, State and Local regulations on reporting releases.

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.

HANDLING AND STORAGE

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 "Dymel" A Aerosol Propellant/A-46 Blend should be pretested with nitrogen and soapy water to detect leaks. Use with sufficient ventilation to keep employee exposure below recommended limits.

Storage

Clean, dry area. Do not heat above 52 deg C (125 deg F). Keep container tightly closed and away from heat, sparks and flame. Store away from oxygen cylinders or other oxidizing materials and possible ignition sources. Ground all equipment and cylinders before use.

EXPOSURE CONTROLS/PERSONAL PROTECTION

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, Division 1 or 2, Group C. Non-sparking motors need not be explosion-proof. Equipment should be clean and dry, and purged with nitrogen before putting into service. Although dimethyl ether is very slow

(EXPOSURE CONTROLS/PERSONAL PROTECTION - Continued)

in 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 worn during manual operation. Add a full-length faceshield and chemical-proof suit when breaking into lines. 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 ("DYMEL" A)

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

ISOBUTANE

TLV (ACGIH) : 1000 ppm, 8 Hr. TWA

PROPANE

PEL (OSHA) : 1,000 ppm, 1,800 mg/m³, 8 Hr. TWA
 AEL * (DuPont) : None Established

* 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.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : -19.4 C (-2.9 F)
 Vapor Pressure : 61.6 psig at 21.1 deg C (70 deg F)
 Vapor Density : 1.8 (Air = 1)
 % Volatiles : 100 WT%
 Solubility in Water : 7 WT% @ 25 C (77 F)
 Odor : Slight ethereal
 Form : Liquefied gas
 Color : Clear, colorless

Liquid Density : 0.59 g/cc @ 25 deg C (77 deg F)

STABILITY AND REACTIVITY

Chemical Stability

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

Incompatibility with Other Materials

Incompatible with Oxygen, oxidizers, carbon monoxide, acetic acid, organic acid anhydrides.

Decomposition

If heated with peroxides present, violent decomposition can occur.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

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, cardiovascular effects with decreased blood pressure 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.

PROPANE

Toxicity in animals occurring only with inhalation exposures at high concentrations (10% or greater) are cardiac sensitization, analgesia, and hypotension. No animal test

(TOXICOLOGICAL INFORMATION - Continued)

reports are available to define carcinogenic, developmental, or reproductive hazards. Tests in bacterial cell cultures demonstrate no mutagenic activity.

DISPOSAL CONSIDERATIONS

Waste Disposal

Remove 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.

TRANSPORTATION INFORMATION

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 Trucks.

Cylinders

REGULATORY INFORMATION

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 - Yes
Toxic Chemicals - No

OTHER INFORMATION

NFPA, NPCA-HMIS

NPCA-HMIS Rating
Health : 1
Flammability : 4
Reactivity : 1

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

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