



# DIMETHYL ETHER (D6, 99%)

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Version: 2.0

DLM-340

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Product form	: Substance
Substance name	: DIMETHYL ETHER (D6, 99%)
EC-No.	: 204-065-8 (Unlabeled)
CAS-No.	: 17222-37-6
Product code	: DLM-340
Formula	: CD3OCD3
Synonyms	: Methyl ether

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810  
USA

USA: 1-800-322-1174 Int: 1-978-749-8000  
[cilsales@isotope.com](mailto:cilsales@isotope.com) [www.isotope.com](http://www.isotope.com)

### Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)  
International: 1-703-741-5970 (24 hours)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flam. Gas 1 H220  
Press. Gas (Liq.) H280

Full text of hazard classes and H-statements : see section 16

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

F+; R12  
R5

Full text of R-phrases: see section 16

#### GHS-US classification

Flam. Gas 1 H220  
Press. Gas (Comp.) H280

Full text of H statements : see section 16

#### Adverse physicochemical, human health and environmental effects

No additional information available

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### 2.2. Label elements

#### Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

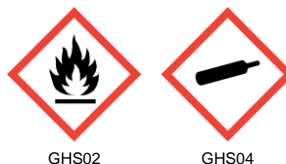
H220 - Extremely flammable gas  
H280 - Contains gas under pressure; may explode if heated

Precautionary statements (CLP) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so.  
P403 - Store in a well-ventilated place.  
P410+P403 - Protect from sunlight. Store in a well-ventilated place.

#### GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H220 - Extremely flammable gas  
H280 - Contains gas under pressure; may explode if heated

Precautionary statements (GHS-US) :

P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 - Eliminate all ignition sources if safe to do so.  
P403 - Store in a well-ventilated place.  
P410+P403 - Protect from sunlight. Store in a well-ventilated place.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
DIMETHYL ETHER (D6, 99%)	(CAS-No.) 17222-37-6 (EC-No.) 204-065-8 (Unlabeled)	100	F+; R12 R5

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
DIMETHYL ETHER (D6, 99%)	(CAS-No.) 17222-37-6 (EC-No.) 204-065-8 (Unlabeled)	100	Flam. Gas 1, H220 Press. Gas (Liq.), H280

Full text of R- and H- phrases: see section 16

Name	Product identifier	%	GHS-US classification
DIMETHYL ETHER (D6, 99%) (Main constituent)	(CAS-No.) 17222-37-6	100	Flam. Gas 1, H220 Press. Gas (Comp.), H280

Full text of H-phrases: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general

: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

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First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash off with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eyes with water as a precaution.
First-aid measures after ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Extremely flammable gas. Contains gas under pressure; may explode if heated.

### 5.3. Advice for firefighters

Firefighting instructions	: Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use water spray to cool unopened containers.

#### 6.1.1. For non-emergency personnel

Emergency procedures : Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 6.3. Methods and material for containment and cleaning up

For containment	: Clean up any spills as soon as possible, using an absorbent material to collect it. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal.
Methods for cleaning up	: This material and its container must be disposed of in a safe way, and as per local legislation.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed	: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store at room temperature away from light and moisture.

### 7.3. Specific end use(s)

No additional information available

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### DIMETHYL ETHER (D6, 99%) (17222-37-6)

USA OSHA

Remark (OSHA)

TWA 1,000 ppm USA. Workplace Environmental Exposure Levels (WEEL)

#### 8.2. Exposure controls

Appropriate engineering controls

: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

: Gloves. Protective clothing. Protective goggles. Respiratory protection of the dependent type.



Materials for protective clothing

: Wear suitable protective clothing and gloves.

Hand protection

: Wear suitable protective clothing and gloves.

Eye protection

: Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection

: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection

: When appropriate, use NIOSH/CEN approved respirator.

Environmental exposure controls

: Avoid release to the environment.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state

: Gas

Appearance

: Liquefied gas

Molecular mass

: 52.11 g/mol (Labeled)

Color

: Colorless

Odor

: No data available

Odor threshold

: No data available

pH

: No data available

Relative evaporation rate (butyl acetate=1)

: No data available

Melting point

: -141 °C (-222 °F) - lit

Freezing point

: No data available

Boiling point

: -24.8 °C (-12.6 °F) - lit

Flash point

: -40.99 °C (-41.78 °F) - closed cup

Auto-ignition temperature

: 226 °C (439 °F) at 1,013 hPa (760 mmHg)

Decomposition temperature

: No data available

Flammability (solid, gas)

: No data available

Vapor pressure

: 5333 hPa (4,000 mmHg) at 20 °C (68 °F)

Relative vapor density at 20 °C

: 1.59 - (Air = 1.0)

Relative density

: No data available

Solubility

: Water.  
Water: 353 g/l at 24 °C (75 °F) at 1,013 hPa (760 mmHg)

Log Pow

: No data available

Log Kow

: No data available

Viscosity, kinematic

: No data available

Viscosity, dynamic

: No data available

Explosive properties

: No data available

Oxidizing properties

: No data available

Explosion limits

: 3.4 - 27 % (V)

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

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### 10.2. Chemical stability

Stable if stored under recommended conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

Strong oxidizing agents, Strong acids.

### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

DIMETHYL ETHER (D6, 99%) (17222-37-6)	
LC50 inhalation rat (mg/l)	308000 mg/m <sup>3</sup> General anesthetic
LC50 inhalation rat (ppm)	164000 ppm/4h Male - Remarks: Behavioral: Ataxia - Behavioral: General anesthetic - Behavioral: Coma
ATE CLP (vapors)	308.000 mg/l/4h
ATE CLP (dust, mist)	308.000 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: AMES test : S. typhimurium - Result: Negative - Chromosome aberration test in vitro - Human lymphocytes - Result: Negative - (OECD 477 method) - Drosophila - Male - Result: Negative
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Blurred vision. Headache. Dizziness. Convulsions. Unconsciousness. Liver disorders. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: May cause eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

DIMETHYL ETHER (D6, 99%) (17222-37-6)	
LC50 fish 1	> 4.1 g/l - semi-static test - Poecilia reticulata (guppy) - 96 h
EC50 Daphnia 1	> 4.4 g/l - semi-static test - Daphnia magna (water flea) - 48 h
Additional information	Toxicity to bacteria EC10 - Pseudomonas putida - ca. > 1,600 mg/l - 30 min

### 12.2. Persistence and degradability

DIMETHYL ETHER (D6, 99%) (17222-37-6)	
Persistence and degradability	Aerobic - exposure time: 28 d. Biodegradability Result: < 5 % - Not readily biodegradable. (OECD 301D method).

### 12.3. Bioaccumulative potential

No additional information available

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### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

- Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.
- Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
- Ecology - waste materials : Dispose of as unused product.

## SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

- UN-No.(DOT) : 1033
- DOT NA no. UN1033

### 14.2. UN proper shipping name

- Proper Shipping Name (DOT) : Dimethyl ether
- Class (DOT) : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115
- Hazard labels (DOT) : 2.1 - Flammable gas



- DOT Special Provisions (49 CFR 172.102) : T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 306
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 304
- DOT Packaging Bulk (49 CFR 173.xxx) : 314;315
- Marine pollutant : No

### 14.3. Additional information

- Emergency Response Guide (ERG) Number : 115
- Other information : No supplementary information available.

### Overland transport

- Class (ADR) : 2 - Gases
- Hazard identification number (Kemler No.) : 23
- Classification code (ADR) : 2F
- Hazard labels (ADR) : 2.1 - Flammable gases



- Orange plates : 

- Tunnel restriction code (ADR) : B/D
- Limited quantities (ADR) : 0

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EAC : 2YE  
Excepted quantities (ADR) : E0

### Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.  
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"  
MFAG-No : 115

### Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 150 kg  
Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

### 14.4. Environmental hazards

Other information : No supplementary information available.

### 14.5. Special precautions for user

### 14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

DIMETHYL ETHER (D6, 99%) (17222-37-6)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302
SARA Section 311/312 Hazard Classes	Fire hazard Sudden release of pressure hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313

### 15.2. International regulations

#### CANADA

DIMETHYL ETHER (D6, 99%) (17222-37-6)	
Listed on the Canadian DSL (Domestic Substances List)	

#### 15.2.1. National regulations

No additional information available

### 15.3. US State regulations

DIMETHYL ETHER (D6, 99%)(17222-37-6)	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

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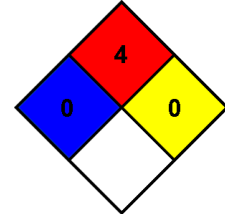
Full text of R-, H- and EUH-phrases:

Flam. Gas 1	Flammable gases Category 1
Press. Gas (Liq.)	Gases under pressure Liquefied gas
H220	Extremely flammable gas
H280	Contains gas under pressure; may explode if heated
R12	Extremely flammable
R5	Heating may cause an explosion
F+	Extremely flammable

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 4 - Materials that rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and burn readily.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



### Hazard Rating

Health : 0 Minimal Hazard - No significant risk to health

Flammability : 4 Severe Hazard

Physical : 3 Serious Hazard

CIL Substance SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*