

## Material Safety Data Sheet

Version 4.1  
Revision Date 02/12/2011  
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## 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Diethylene glycol dimethyl ether

Product Number : 281662  
Brand : Sigma-Aldrich  
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich      Manufacturer : Sigma-Aldrich Corporation  
3050 Spruce Street      3050 Spruce St.  
SAINT LOUIS MO 63103      St. Louis, Missouri 63103  
USA      USA

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Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

## 2. HAZARDS IDENTIFICATION

## Emergency Overview

## OSHA Hazards

Combustible Liquid, Target Organ Effect, Teratogen, Reproductive hazard

## Target Organs

Female reproductive system., Male reproductive system.

## GHS Classification

Flammable liquids (Category 3)

Reproductive toxicity (Category 1B)

## GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H226 Flammable liquid and vapour.  
H360 May damage fertility or the unborn child.

Precautionary statement(s)

P201 Obtain special instructions before use.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

## HMIS Classification

Health hazard: 0  
Chronic Health Hazard: \*  
Flammability: 2  
Physical hazards: 0

## NFPA Rating

Health hazard: 0

Fire: 2  
Reactivity Hazard: 0

## Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.  
Skin May be harmful if absorbed through skin. May cause skin irritation.  
Eyes May cause eye irritation.  
Ingestion May be harmful if swallowed.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 2-Methoxyethyl ether  
'Diglyme'  
Dimethyldiglycol  
Bis(2-methoxyethyl) ether

Formula : C<sub>6</sub>H<sub>14</sub>O<sub>3</sub>  
Molecular Weight : 134.17 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Bis(2-methoxyethyl)ether			
111-96-6	203-924-4	603-139-00-0	-

## 4. FIRST AID MEASURES

## General advice

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

## If Inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

## In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

## In case of eye contact

Flush eyes with water as a precaution.

## If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

## 5. FIRE-FIGHTING MEASURES

## Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

## Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

## Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

## Hazardous combustion products

Hazardous decomposition products formed under fire conditions: - Carbon oxides

## Further Information

Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

## Personal precautions

Use personal protective equipment. 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.

**Environmental precautions**

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

**Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

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**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Conditions for safe storage**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.

**Personal protective equipment****Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Impervious clothing, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

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

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form	clear, liquid
Colour	colourless

**Safety data**

pH	no data available
Melting point/freezing point	Melting point/range: -64 °C (-83 °F) - lit.
Boiling point	162 °C (324 °F) - lit.
Flash point	57 °C (135 °F) - closed cup
Ignition temperature	188 °C (370 °F)
Autoignition temperature	no data available

Lower explosion limit	1.5 %(V)
Upper explosion limit	17.4 %(V)
Vapour pressure	4 hPa (3 mmHg) at 20 °C (68 °F)
Density	0.943 g/cm <sup>3</sup> at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	4.63 - (Air = 1.0)
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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**10. STABILITY AND REACTIVITY****Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

no data available

**Conditions to avoid**

Heat, flames and sparks.

**Materials to avoid**

Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides  
Other decomposition products - no data available

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**11. TOXICOLOGICAL INFORMATION****Acute toxicity****Oral LD50**

LD50 Oral - rat - 5,400 mg/kg

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia. Respiratory disorder

**Inhalation LC50**

no data available

**Dermal LD50**

no data available

**Other information on acute toxicity**

no data available

**Skin corrosion/irritation**

no data available

**Serious eye damage/eye irritation**

no data available

**Respiratory or skin sensitization**

no data available

**Germ cell mutagenicity**

no data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

#### Teratogenicity

Laboratory experiments have shown teratogenic effects.

Presumed human reproductive toxicant

#### Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

#### Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

#### Aspiration hazard

no data available

#### Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

#### Synergistic effects

no data available

#### Additional Information

RTECS: KN3339000

## 12. ECOLOGICAL INFORMATION

#### Toxicity

no data available

#### Persistence and degradability

no data available

#### Bioaccumulative potential

no data available

#### Mobility in soil

no data available

#### PBT and vPvB assessment

no data available

#### Other adverse effects

no data available

## 13. DISPOSAL CONSIDERATIONS

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Delivery 0837946488-000010 Purchase Order 40534G

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

## 14. TRANSPORT INFORMATION

#### DOT (US)

UN number: 3271 Class: 3 Packing group: III  
Proper shipping name: Ethers, n.o.s.  
Marine pollutant: No  
Poison Inhalation Hazard: No

#### IMDG

UN number: 3271 Class: 3 Packing group: III EMS-No: F-E, S-D  
Proper shipping name: ETHERS, N.O.S. (Bis(2-methoxyethyl)ether)  
Marine pollutant: No

#### IATA

UN number: 3271 Class: 3 Packing group: III  
Proper shipping name: Ethers, n.o.s. (Bis(2-methoxyethyl)ether)

## 15. REGULATORY INFORMATION

#### OSHA Hazards

Combustible Liquid, Target Organ Effect, Teratogen, Reproductive hazard

#### SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

Bis(2-methoxyethyl)ether	CAS-No. 111-96-6	Revision Date 1995-01-01
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#### SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard

#### Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

#### Pennsylvania Right To Know Components

Bis(2-methoxyethyl)ether	CAS-No. 111-96-6	Revision Date 1995-01-01
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#### New Jersey Right To Know Components

Bis(2-methoxyethyl)ether	CAS-No. 111-96-6	Revision Date 1995-01-01
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#### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## 16. OTHER INFORMATION

#### Further Information

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