1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Description</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>Diethylene glycol dimethyl ether</td>
</tr>
<tr>
<td>Product Number</td>
<td>281662</td>
</tr>
<tr>
<td>Brand</td>
<td>Sigma-Aldrich</td>
</tr>
<tr>
<td>Supplier</td>
<td>Sigma-Aldrich Corporation</td>
</tr>
<tr>
<td>Supplier Address</td>
<td>3050 Spruce Street, SAINT LOUIS MO 63103 USA</td>
</tr>
<tr>
<td>Telephone</td>
<td>+1 800-325-5832</td>
</tr>
<tr>
<td>Fax</td>
<td>+1 800-325-5052</td>
</tr>
<tr>
<td>Emergency Phone #</td>
<td>(314) 776-6555</td>
</tr>
<tr>
<td>Preparation Information</td>
<td>Sigma-Aldrich Corporation Product Safety - Americas Region</td>
</tr>
<tr>
<td></td>
<td>1-800-521-8956</td>
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</table>

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**

<table>
<thead>
<tr>
<th>Pictogram</th>
<th>Safety Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Danger</td>
</tr>
</tbody>
</table>

**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.

**Other hazards**
May form explosive peroxides.

**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**
\[ \text{C}_6\text{H}_{14}\text{O}_3 \]

**Molecular Weight**
134.17 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
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<tbody>
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<td>Bis(2-methoxyethyl)ether</td>
<td>Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
</tr>
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<tbody>
<tr>
<td>111-96-6</td>
<td>203-924-4</td>
<td>603-139-00-0</td>
</tr>
</tbody>
</table>

### 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. FIREFIGHTING 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 firefighters**
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.
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).

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.

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.

Full contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash protection
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

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
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)
- Auto-ignition 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/cm³ at 25 °C (77 °F)
- Water solubility: no data available
- Partition coefficient: n-octanol/water: no data available
- Relative vapor density: 4.63
- Odour: no data available
- Odour Threshold: no data available
- Evaporation rate: no data available

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

11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

**Oral LD50**
LD50 Oral - rat: 5,400 mg/kg

**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

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
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<tbody>
<tr>
<td>Bis(2-methoxyethyl)ether</td>
<td>111-96-6</td>
<td>1995-01-01</td>
</tr>
</tbody>
</table>

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

New Jersey Right To Know Components

Bis(2-methoxyethyl)ether
CAS-No. 111-96-6
Revision Date 1995-01-01

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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