1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 1,2-Dimethoxyethane
Product Number : 259527
Brand : Sigma-Aldrich
Supplier : Sigma-Aldrich
            3050 Spruce Street
            SAINT LOUIS MO  63103
            USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
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
Flammable liquid, Target Organ Effect, Teratogen, Reproductive hazard

Target Organs
Liver, Kidney, Blood, Central nervous system, Female reproductive system., Male reproductive system.

GHS Classification
Flammable liquids (Category 2)
Acute toxicity, Oral (Category 5)
Acute toxicity, Inhalation (Category 4)
Reproductive toxicity (Category 1B)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H303 May be harmful if swallowed.
H332 Harmful if inhaled.
H360 May damage fertility or the unborn child.

Precautionary statement(s)
P201 Obtain special instructions before use.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

HMIS Classification
Health hazard: 1
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

NFPA Rating
Health hazard: 1
Fire: 3
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: Monoglyme, Dimethylglycol, mono-Glyme, Ethylene glycol dimethyl ether

Formula: $C_4H_{10}O_2$
Molecular Weight: 90.12 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol dimethyl ether</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>110-71-4</td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-794-9</td>
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<tr>
<td>Index-No.</td>
<td>603-031-00-3</td>
</tr>
<tr>
<td>Registration number</td>
<td>01-2119485981-24-XXXX</td>
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</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.
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).

7. HANDLING AND STORAGE

**Precautions for safe handling**
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.

**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.

**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**
Complete suit protecting against chemicals, 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>liquid, clear</td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
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</table>

**Safety data**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting</td>
<td>Melting point/range: -58 °C (-72 °F) - lit.</td>
</tr>
</tbody>
</table>
point/freezing point
Boiling point 85 °C (185 °F) - lit.
Flash point 5 °C (41 °F) - closed cup
Ignition temperature 202 °C (396 °F)
Autoignition temperature no data available
Lower explosion limit 1.6 % (V)
Upper explosion limit 10.4 % (V)
Vapour pressure 64 hPa (48 mmHg) at 20 °C (68 °F)
Density 0.867 g/cm³ at 25 °C (77 °F)
Water solubility soluble
Partition coefficient: n-octanol/water no data available
Relative vapour density 3.11 - (Air = 1.0)
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
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid
Oxidizing agents, Strong acids

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 - mouse - 3,200 mg/kg

Inhalation LC50

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

May cause reproductive disorders.

Teratogenicity

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.

Signs and Symptoms of Exposure
narcosis, Exposure to and/or consumption of alcohol may increase toxic effects.

Synergistic effects
no data available

Additional Information
RTECS: K11451000

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: 2252  Class: 3  Packing group: II
Proper shipping name: 1,2-Dimethoxyethane
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2252  Class: 3  Packing group: II  EMS-No: F-E, S-D
Proper shipping name: 1,2-DIMETHOXYETHANE
Marine pollutant: No

IATA
UN number: 2252  Class: 3  Packing group: II
Proper shipping name: 1,2-Dimethoxyethane

15. REGULATORY INFORMATION

OSHA Hazards
Flammable 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
The following components are subject to reporting levels established by SARA Title III, Section 313:

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SARA 313/312 Hazards
Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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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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