SILVER FERN CHEMICAL

Safety Data Sheet

Diethylene Glycol Methyl Ether
(Glycol Ether DM)

SECTION 1: IDENTIFICATION

Product Name: Glycol Ether DM
CAS Number: 111-77-3
Chemical Name: Diethylene Glycol Methyl Ether
Synonyms: 2-(2-Methoxyethoxy)ethanol; Methyldiglycol
Uses: Laboratory chemicals, Manufacture of substances

Company
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Seattle WA 98109, USA

Business Contact
Customer Service: 1-866-282-3384
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SECTION 2: HAZARD IDENTIFICATION

Warning

Classification of the substance or mixture:

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 4), H227
Reproductive toxicity (Category 2), H361

Hazard statement(s):
H227 Combustible liquid.
H361 Suspected of damaging fertility or the unborn child.
Precautionary statement(s):

P201   Obtain special instructions before use.
P202   Do not handle until all safety precautions have been read and understood.
P210   Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280   Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313  IF exposed or concerned: Get medical advice/ attention.
P370 + P378  In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction
P403 + P235  Store in a well-ventilated place. Keep cool.
P405   Store locked up.
P501    Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS #</th>
<th>Content (W/W)</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>111-77-3</td>
<td>&lt;=100%</td>
<td>Diethylene Glycol</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methyl Ether</td>
</tr>
</tbody>
</table>

Formula :  \( \text{C}_5\text{H}_{12}\text{O}_3 \)

Molecular weight : 120.15 g/mol

SECTION 4: FIRST AID MEASURES

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

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

Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling

Indication of any immediate medical attention and special treatment needed: no data available

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: 87 °C (189 °F) - closed cup

Lower/Upper explosion limit: Upper explosion limit: 22.7 %(V)/ Lower explosion limit: 1.38 %(V)

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

Special hazards arising from the substance or mixture: Carbon oxides

Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary

Further information : Use water spray to cool unopened containers
SECTION 6: ACCIDENTAL RELEASE MEASURES

Containment and clean up procedures: 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. Keep in suitable, closed containers for disposal.

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapours, 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.

SECTION 7: HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

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. Store under inert gas. hygroscopic.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters: Contains no substances with occupational exposure limit values.

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 (PPE)

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose 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: Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Body protection: impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

General safety and hygiene measures: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| Appearance | Form: clear, liquid |
| Color: light yellow |
| Odor | no data available |
Odor Threshold: no data available
pH: no data available
Melting point/freezing Point: Melting point/range: -70 °C (-94 °F) - lit.
Initial boiling point and boiling range: 194 °C (381 °F) - lit.
Flash point: 87 °C (189 °F) - closed cup
Evaporation rate: no data available
Flammability (solid, gas): no data available
Upper/lower flammability or explosive limits: Upper explosion limit: 22.7 %(V)/ Lower explosion limit: 1.38 %(V)
Vapor pressure: 0.3 hPa (0.2 mmHg) at 20 °C (68 °F)
Vapor density: 4.15 - (Air = 1.0)
Relative density: 1.023 g/cm3 at 25 °C (77 °F)
Water solubility: completely miscible
Partition Coefficient: log Pow: -0.47 at 20 °C (68 °F)
Auto-ignition temperature: no data available
Decomposition temperature: no data available
Viscosity: no data available
Explosive properties: no data available
Relative vapour density: 4.15 - (Air = 1.0)

SECTION 10: STABILITY AND REACTIVITY

Conditions to avoid: Heat, flames and sparks
Substances to avoid: Strong oxidizing agents
Hazardous reactions: no data available
Decomposition products: no data available
Chemical stability: Stable under recommended storage conditions

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity:
LD50 Oral - Rat - > 7,000 mg/kg
Inhalation: No data available
LD50 Dermal - Rabbit - > 20,400 mg/kg
LD50 Dermal - Rabbit - 9,404 mg/kg

Skin corrosion/irritation: Skin – Rabbit/ Result: No skin irritation - 72 h

Serious eye damage/eye irritation: Skin – Rabbit/ Result: No skin irritation - 72 h
Respiratory or skin sensitization: Maximisation Test (GPMT) - Guinea pig/ Result: Does not cause skin sensitisation.

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: Possible risk of congenital malformation in the fetus. Suspected human reproductive toxicant Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure: no data available

Specific target organ toxicity - repeated exposure: no data available

Aspiration hazard: no data available

Additional Information:
RTECS: KL6125000
Stomach - Irregularities - Based on Human Evidence

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:
Toxicity to fish
   LC50 - Lepomis macrochirus - 7,500 mg/l - 96 h
   LC50 - Pimephales promelas (fathead minnow) - 5,741 mg/l - 96 h

Toxicity to daphnia and
   EC50 - Daphnia magna (Water flea) - 1,192 mg/l - 48 h
   other aquatic invertebrates

Toxicity to algae
   EC50 - Selenastrum capricornutum (green algae) - > 1,000 mg/l - 96 h

Biodegradability:
Result: 100 % - Readily biodegradable

Bioaccumulative
Potential: no data available

Other: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

SECTION 13: DISPOSAL CONSIDERATIONS

Waste disposal of substance: This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Container disposal: Dispose of as unused product.
SECTION 14: TRANSPORT INFORMATION

DOT (US)
NA-Number: 1993   Class: NONE   Packing group: III
Proper shipping name: Combustible liquid, n.o.s. (2-(2-Methoxyethoxy)ethanol)
Poison Inhalation Hazard: No
Reportable Quantity (RQ): no

IMDG
Not dangerous good

IATA
Not dangerous good

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15: REGULATORY INFORMATION

SARA 302 Component
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

2-(2-Methoxyethoxy)ethanol    CAS-No 111-77-3  Revision Date 1993-04-24

SARA 311/312 Hazards
Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components
2-(2-Methoxyethoxy)ethanol    CAS-No 111-77-3  Revision Date 1993-04-24

Pennsylvania Right To Know Components
2-(2-Methoxyethoxy)ethanol    CAS-No 111-77-3  Revision Date 1993-04-24

New Jersey Right To Know Components
2-(2-Methoxyethoxy)ethanol    CAS-No 111-77-3  Revision Date 1993-04-24

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.

SECTION 16: OTHER INFORMATION

HMIS Rating
Health hazard:  0
Chronic Health Hazard: *
Flammability:  2
Physical Hazard  0

NFPA Rating
Health hazard:  0
Fire Hazard:  2
Reactivity Hazard:  0

Effective Date: 06/16/2015
DISCLAIMER OF RESPONSIBILITY

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