SECTION 1: Identification

1.1. Product identifier

Product name: 2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE, 95%
Product code: SIT8588.5
Physical state: Liquid
Formula: C₆H₁₅ClO₃Si
Synonyms:
- SEM-CHLORIDE
- CHLOROMETHYL TRIMETHYLSILYLETHYL ETHER
- SILANE, [2-(CHLOROMETHOXY)ETHYL]TRIMETHYL-
- 2-CHLOROMETHYL 2-(TRIMETHYLSILYL)ETHYL ETHER

Chemical family: ORGANOSILANE

1.2. Recommended use of the chemical and restrictions on use

Recommended use: Chemical intermediate
Restrictions: For research use only

1.3. Details of the supplier of the safety data sheet

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484: (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
- Flammable liquids Category 3 H226
- Skin corrosion/irritation Category 1B H314
- Serious eye damage/eye irritation Category 1 H318
- Carcinogenicity Category 1A H350

Full text of H statements: see section 16

2.2. Label elements

GHS-US labeling
- Hazard pictograms (GHS-US):
  - GHS02
  - GHS05
  - GHS08

Signal word (GHS-US): Danger

Hazard statements (GHS-US):
- H226 - Flammable liquid and vapor
- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage
- H350 - May cause cancer

Precautionary statements (GHS-US):
- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P310 - Immediately call a doctor
- P210 - Keep away from heat, open flames, sparks. - No smoking
- P233 - Keep container tightly closed
- P240 - Ground/Bond container and receiving equipment
- P241 - Use explosion-proof electrical equipment
- P242 - Use only non-sparking tools
- P243 - Take precautionary measures against static discharge
- P260 - Do not breathe vapors
- P264 - Wash hands thoroughly after handling
2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE, 95%
Safety Data Sheet

2.3. Hazards not otherwise classified (HNOC)
No additional information available

2.4. Unknown acute toxicity (GHS US)
No data available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Multi-constituent
Name : 2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE, 95%
CAS No : 76513-69-4

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-(Trimethylsilyl)ethoxymethyl chloride</td>
<td>(CAS No) 76513-69-4</td>
<td>95 - 100</td>
<td>Flam. Liq. 3, H226&lt;br&gt; Skin Corr. 1B, H314&lt;br&gt; Eye Dam. 1, H318</td>
</tr>
<tr>
<td>Bis(chlormethyl)ether</td>
<td>(CAS No) 542-88-1</td>
<td>&lt; 0.5</td>
<td>Flam. Liq. 2, H225&lt;br&gt; Acute Tox. 4 (Oral), H302&lt;br&gt; Acute Tox. 3 (Dermal), H311&lt;br&gt; Acute Tox. 2 (Inhalation), H330&lt;br&gt; Carc. 1A, H350</td>
</tr>
</tbody>
</table>

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

3.2. Mixtures
Not applicable

4.1. Description of first aid measures

First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : Wash with plenty of soap and water. Get immediate medical advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

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

Symptoms/injuries : May cause cancer.
Symptoms/injuries after inhalation : May cause irritation to the respiratory tract. May be harmful if inhaled.
Symptoms/injuries after skin contact : Causes (severe) skin burns. May be harmful in contact with skin.
Symptoms/injuries after eye contact : Causes serious eye damage.
Symptoms/injuries 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

Unsuitable extinguishing media : Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to high temperatures or open flame.
Explosion hazard : May form flammable/explosive vapor-air mixture.
5.3. Advice for firefighters  
Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray to cool exposed surfaces.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures  
6.1. Personal precautions, protective equipment and emergency procedures  
General measures: Eliminate ignition sources. Use special care to avoid static electric charges.
6.1.1. For non-emergency personnel  
Protective equipment: Wear protective equipment as described in Section 8.
Emergency procedures: Evacuate unnecessary personnel.
6.1.2. For emergency responders  
Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
6.2. Environmental precautions  
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.
6.3. Methods and material for containment and cleaning up  
For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up: Clean up any spills as soon as possible, using an absorbent material to collect it. Use only non-sparking tools.
6.4. Reference to other sections  
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage  
7.1. Precautions for safe handling  
Additional hazards when processed: Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Precautions for safe handling: Observe special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Provide good ventilation in process area to prevent accumulation of vapors. Take precautionary measures against static discharge. Use only non-sparking tools.
Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
7.2. Conditions for safe storage, including any incompatibilities  
Technical measures: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions: Keep container tightly closed. Keep in a cool place. Store locked up. Store in sealed containers below 5°C.
Incompatible materials: Oxidizers.
Storage area: Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection  
8.1. Control parameters  
2-(Trimethylsilyl)ethoxymethyl chloride (76513-69-4)  
<table>
<thead>
<tr>
<th></th>
<th>ACGIH</th>
<th>ACGIH TWA (mg/m³)</th>
<th>(Gelest recommended TLV: TWA 1ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(chlormethyl)ether (542-88-1)</td>
<td>ACGIH</td>
<td>ACGIH TWA (ppm)</td>
<td>&lt; 5000 ppm</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (ppm)</td>
<td>0.001 ppm carcinogen</td>
<td></td>
</tr>
</tbody>
</table>
8.2. Exposure controls  
Appropriate engineering controls: Provide local exhaust or general room ventilation.
Personal protective equipment: Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Hand protection: Neoprene or nitrile rubber gloves.
### 2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE, 95%

**Safety Data Sheet**

**Eye protection:** Chemical goggles or face shield. Contact lenses should not be worn.

**Skin and body protection:** Wear suitable protective clothing.

**Respiratory protection:** Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor/acid gas (yellow cartridge) respirator.

### SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>166.72 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>Straw</td>
</tr>
<tr>
<td>Odor</td>
<td>Distinct, Acrid</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.435</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>&lt; 0 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>57 - 59 °C @ 8 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>46 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt; 2 mm Hg @ 20°C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.942</td>
</tr>
<tr>
<td>VOC content</td>
<td>100 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**9.2. Other information**

No additional information available

### SECTION 10: Stability and reactivity

<table>
<thead>
<tr>
<th>Section</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1. Reactivity</td>
<td>No additional information available</td>
</tr>
<tr>
<td>10.2. Chemical stability</td>
<td>Stable in sealed containers stored under a dry inert atmosphere.</td>
</tr>
<tr>
<td>10.3. Possibility of hazardous reactions</td>
<td>No additional information available</td>
</tr>
<tr>
<td>10.4. Conditions to avoid</td>
<td>Heat, Open flame, Sparks.</td>
</tr>
<tr>
<td>10.5. Incompatible materials</td>
<td>Oxidizers.</td>
</tr>
</tbody>
</table>

### SECTION 11: Toxicological information

<table>
<thead>
<tr>
<th>Section</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1. Information on toxicological effects</td>
<td>Acute toxicity: Not classified</td>
</tr>
</tbody>
</table>
2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE, 95%
Safety Data Sheet

**Bis(chlormethyl)ether (542-88-1)**

<table>
<thead>
<tr>
<th>ATE US (oral)</th>
<th>500.000 mg/kg body weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (dermal)</td>
<td>300.000 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (gases)</td>
<td>100.000 ppmV/4h</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>0.500 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>0.050 mg/l/4h</td>
</tr>
</tbody>
</table>

**Skin corrosion/irritation**: Causes severe skin burns and eye damage.

**Serious eye damage/irritation**: Causes serious eye damage.

**Respiratory or skin sensitization**: Not classified

**Germ cell mutagenicity**: Not classified

**Carcinogenicity**: May cause cancer.

Many chloromethyl ethers have been found to be carcinogenic. This compound should be treated as a potential carcinogen.

**BIS(CHLOROMETHYL)ETHER** is found in trace quantities <5000ppm in this product.

**BIS(CHLOROMETHYL)ETHER is a confirmed carcinogen.**

<table>
<thead>
<tr>
<th>IARC group</th>
<th>1 - Carcinogenic to humans</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Toxicology Program (NTP) Status</td>
<td>2 - Known Human Carcinogens</td>
</tr>
</tbody>
</table>

**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**: This product contains components, BIS(CHLOROMETHYL)ETHER and related compounds, which are cancer hazards. Notification of carcinogenic ingredients in less than 0.1% is not required under Federal Hazard Communication Law.

**Symptoms/injuries after inhalation**: May cause irritation to the respiratory tract. May be harmful if inhaled.

**Symptoms/injuries after skin contact**: Causes (severe) skin burns. May be harmful in contact with skin.

**Symptoms/injuries after eye contact**: Causes serious eye damage.

**Symptoms/injuries after ingestion**: May be harmful if swallowed.

**Reason for classification**: Expert judgment

### SECTION 12: Ecological information

**12.1. Toxicity**
No additional information available

**12.2. Persistence and degradability**
No additional information available

**12.3. Bioaccumulative potential**
No additional information available

**12.4. Mobility in soil**
No additional information available

**12.5. Other adverse effects**

**Other adverse effects**: This substance may be hazardous to the environment.

**Effect on ozone layer**: No additional information available

**Effect on the global warming**: No known effects from this product.

**GWPmix comment**: No known effects from this product.

### SECTION 13: Disposal considerations

**13.1. Waste treatment methods**

**Sewage disposal recommendations**: Do not dispose of waste into sewer.

**Waste disposal recommendations**: May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.

**Additional information**: Handle empty containers with care because residual vapors are flammable.

**Ecology - waste materials**: Avoid release to the environment.

Print date: 01/27/2017

EN (English US)

SDS ID: SIT8588.5
SECTION 14: Transport information

14.1. UN number
UN-No.(DOT) : 2920
DOT NA no. : UN2920

14.2. UN proper shipping name
Transport document description : UN2920 Corrosive liquids, flammable, n.o.s. (2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE), 8 (3), II
Proper Shipping Name (DOT) : Corrosive liquids, flammable, n.o.s. (2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE)
Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136
Packing group (DOT) : II - Medium Danger
Hazard labels (DOT) : 8 - Corrosive
3 - Flammable liquid

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243
DOT Packaging Exceptions (49 CFR 173.xxx) : None
DOT Symbols : G - Identifies PSN requiring a technical name

14.3. Additional information
Emergency Response Guide (ERG) Number : 132
Other information : No supplementary information available.

Transport by sea
DOT Vessel Stowage Location : C - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel
DOT Vessel Stowage Other : 25 - Shade from radiant heat.40 - Stow “clear of living quarters”

Air transport
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 30 L

SECTION 15: Regulatory information

15.1. US Federal regulations
2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE, 95% (76513-69-4)
TSCA Exemption/Exclusion
CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States

2-(Trimethylsilyl)ethoxymethyl chloride (76513-69-4)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Bis(chlormethyl)ether (542-88-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313
CERCLA RQ : 10 lb
SARA Section 302 Threshold Planning Quantity (TPQ) : 100 lb

15.2. International regulations
CANADA
No additional information available
2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE, 95%
Safety Data Sheet

Bis(chlormethyl)ether (542-88-1)
Listed on the Canadian DSL (Domestic Substances List)

**EU-Regulations**

2-(Trimethylsilyl)ethoxymethyl chloride (76513-69-4)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Bis(chlormethyl)ether (542-88-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**National regulations**

2-(Trimethylsilyl)ethoxymethyl chloride (76513-69-4)
Listed on NZIoC (New Zealand Inventory of Chemicals)

Bis(chlormethyl)ether (542-88-1)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Korean ECL (Existing Chemicals List)
Listed on IARC (International Agency for Research on Cancer)
Listed as carcinogen on NTP (National Toxicology Program)

**15.3. US State regulations**

Bis(chlormethyl)ether (542-88-1)

<table>
<thead>
<tr>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>No significant risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

Bis(chlormethyl)ether (542-88-1)

<table>
<thead>
<tr>
<th>U.S. - New Jersey - Right to Know Hazardous Substance List</th>
<th>U.S. - Pennsylvania - RTK (Right to Know) List</th>
</tr>
</thead>
</table>

**SECTION 16: Other information**

Full text of H-phrases:·

| H225 | Highly flammable liquid and vapor |
| H226 | Flammable liquid and vapor          |
| H302 | Harmful if swallowed               |
| H311 | Toxic in contact with skin          |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage           |
| H330 | Fatal if inhaled                    |
| H350 | May cause cancer                    |

Abbreviations and acronyms: Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling.

**HMIS III Rating**

Health: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

Flammability: 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

Physical: 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Print date: 01/27/2017
EN (English US)  SDS ID: SIT8588.5  7/8
2-(TRIMETHYLSILYL)ETHOXYMETHYL CHLORIDE, 95%
Safety Data Sheet

Prepared by safety and environmental affairs.
Date of issue: 01/27/2017 Version: 1.0

SDS US (GHS HazCom 2012) - Custom
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

© 2017 Gelest Inc. Morrisville, PA 19067