1,1-BIS(TRIMETHOXYSILYLMETHYL)ETHYLENE, tech-95

Safety Data Sheet SIB1832.5
Date of issue: 12/02/2015  Version: 1.0

SECTION 1: Identification

1.1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>1,1-BIS(TRIMETHOXYSILYLMETHYL)ETHYLENE, tech-95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>SIB1832.5</td>
</tr>
<tr>
<td>Product form</td>
<td>Substance</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Formula</td>
<td>C10H24O6Si2</td>
</tr>
<tr>
<td>Synonyms</td>
<td>2-(TRIMETHOXYSILYLMETHYL)-3-TRIMETHOXYSILYLPROPENE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOMETHOXYSILANE</td>
</tr>
</tbody>
</table>

1.2. Recommended use and restrictions on use

Recommended use:  Chemical intermediate

1.3. Supplier

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

<table>
<thead>
<tr>
<th>Serious eye damage/eye irritation Category 2A</th>
<th>H319</th>
<th>Causes serious eye irritation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full text of H statements: see section 16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US):

Signal word (GHS US): Warning

Hazard statements (GHS US): H319 - Causes serious eye irritation


2.3. Hazards not otherwise classified (HNOC)

Other hazards not contributing to the classification: Additional methanol may be formed by reaction with moisture and water. The US OSHA PEL (TWA) for methanol is 200 ppm.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Mono-constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>1,1-BIS(TRIMETHOXYSILYLMETHYL)ETHYLENE, tech-95</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>43727-20-2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,1-Bis(trimethoxysilylmethyl)ethylene</td>
<td>(CAS-No.) 143727-20-2</td>
<td>90 - 100</td>
<td>Eye Irrit. 2A, H319</td>
</tr>
</tbody>
</table>
### 1,1-BIS(TRIMETHOXYSILYLMETHYL)ETHYLENE, tech-95

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

#### 3.2. Mixtures

**Not applicable**

### SECTION 4: First-aid measures

**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. If you feel unwell, seek medical advice. |
| First-aid measures after skin contact | Wash with plenty of soap and water. Get 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 medical advice/attention. |
| First-aid measures after ingestion | Never give anything by mouth to an unconscious person. Get medical advice/attention. |

#### 4.2. Most important symptoms and effects (acute and delayed)

| Symptoms/effects after inhalation | May cause irritation to the respiratory tract. |
| Symptoms/effects after skin contact | May cause skin irritation. |
| Symptoms/effects after eye contact | Causes serious eye irritation. |
| Symptoms/effects after ingestion | Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness. |
| Chronic symptoms | On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision. |

#### 4.3. Immediate medical attention and special treatment, if necessary

**NOTE TO PHYSICIAN**: This product reacts with water in the acid contents of the stomach to form methanol. The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 mls/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

### SECTION 5: Fire-fighting measures

**5.1. Suitable (and unsuitable) extinguishing media**

| Unsuitable extinguishing media | Do not use straight streams. |

**5.2. Specific hazards arising from the chemical**

| Fire hazard | Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame. |

**5.3. Special protective equipment and precautions for fire-fighters**

| 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**

**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. Sweep or shovel spills into appropriate container for disposal. |

**6.4. Reference to other sections**

See Heading 8. Exposure controls and personal protection.
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SECTION 7: Handling and storage
7.1. Precautions for safe handling
Precautions for safe handling: 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.
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
Storage conditions: Keep container tightly closed.
Storage area: Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
No additional information available

8.2. Appropriate engineering controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.

8.3. Individual protection measures/Personal protective equipment
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
Eye protection:
Chemical goggles. 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 organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties
9.1. Information on basic physical and chemical properties
Physical state: Liquid
Appearance: Clear liquid.
Molecular mass: 296.47 g/mol
Color: Straw.
Odor: Mild.
Odor threshold: No data available
Refractive index: 1.429
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: < 0 °C
Boiling point: 230 - 233 °C
Flash point: > 65 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: No data available
Relative vapor density at 20 °C: > 1
Relative density: 1.05
Solubility: Insoluble in water. Reacts with water.
1,1-BIS(TRIMETHOXYSILYL METHYL)ETHYLENE, tech-95

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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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**

**10.1. Reactivity**

No additional information available

**10.2. Chemical stability**

Stable in sealed containers.

**10.3. Possibility of hazardous reactions**

Reacts with water and moisture in air, liberating methanol.

**10.4. Conditions to avoid**

Heat. Sparks. Open flame.

**10.5. Incompatible materials**

Moisture. Water.

**10.6. Hazardous decomposition products**

Methanol. Organic acid vapors.

**SECTION 11: Toxicological information**

**11.1. Information on toxicological effects**

<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – single exposure</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

**Specific target organ toxicity – repeated exposure**

<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Potential Adverse human health effects and symptoms</td>
<td>This material liberates small amounts of methanol on contact with moisture. Material generates methanol on contact with water or moisture in skin, eyes and mucous membranes and has an irritating, dehydrating effect on overexposed tissue.</td>
</tr>
<tr>
<td>Symptoms/effects after inhalation</td>
<td>May cause irritation to the respiratory tract.</td>
</tr>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after ingestion</td>
<td>Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.</td>
</tr>
<tr>
<td>Chronic symptoms</td>
<td>On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.</td>
</tr>
<tr>
<td>Reason for classification</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

**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 the ozone layer: No additional information available

SECTION 13: Disposal considerations

13.1.  Disposal methods
Sewage disposal recommendations: Do not dispose of waste into sewer.
Product/Packaging disposal recommendations: May be incinerated. Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1.  UN number
Not regulated for transport.

14.2.  UN proper shipping name
Not applicable

14.3.  Additional information
Other information: No supplementary information available.

Transport by sea
No additional information available

Air transport
No additional information available

SECTION 15: Regulatory information

15.1.  US Federal regulations
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.

1,1-Bis(trimethoxysilylmethyl)ethylene (143727-20-2)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2.  International regulations
CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3.  US State regulations
California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information
Full text of H-phrases:

H319 Causes serious eye irritation
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Abbreviations and acronyms
Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: 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; APF: Assigned Protection Factor.

Hazard Rating
Health
3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability
2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

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.

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

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