### SECTION 1: Identification

1. **Identification**

   **Product name**: 1-(TRIETHOXYSILYL)-2-(DIETHOXYMETHYLSILYL)ETHANE  
   **Product code**: SIT8185.8  
   **Product form**: Substance  
   **Physical state**: Liquid  
   **Formula**: C13H32O5Si2  
   **Synonyms**: 4,4,7-TRIETHOXY-7-METHYL-3,8-DIOXA-4,7-DISILADECANE  
   **Chemical family**: ORGANOETHOXYSILANE

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**
   - Acute toxicity (oral) Category 4: H302 - Harmful if swallowed  
   - Serious eye damage/eye irritation Category 2B: H320 - Causes eye irritation  
   - Full text of H statements: see section 16

2.2. **GHS Label elements, including precautionary statements**

   **GHS US labeling**
   - **Hazard pictograms (GHS US)**: ![Warning]
   - **Signal word (GHS US)**: Warning  
   - **Hazard statements (GHS US)**:  
     - H302 - Harmful if swallowed  
     - H320 - Causes eye irritation  
   - **Precautionary statements (GHS US)**:  
     - P264 - Wash hands thoroughly after handling.  
     - P270 - Do not eat, drink or smoke when using this product.  
     - P330 - Rinse mouth.  
     - P301+P312 - If swallowed: Call a doctor if you feel unwell  
     - P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
     - P337+P313 - If eye irritation persists: Get medical advice/attention.  
     - P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. **Hazards not otherwise classified (HNOC)**

   **Other hazards not contributing to the classification**: The hydrolysis product of this compound is ethanol. Consequently ingestion of the product is anticipated to have physiological effects similar to alcohol ingestion. This product contains ethanol which is classified as a carcinogen by IARC in alcoholic beverages. The US OSHA PEL (TWA) for ethanol is 1000 ppm.

2.4. **Unknown acute toxicity (GHS US)**

   Not applicable

### SECTION 3: Composition/Information on ingredients

3.1. **Substances**

   **Substance type**: Mono-constituent  
   **Name**: 1-(TRIETHOXYSILYL)-2-(DIETHOXYMETHYLSILYL)ETHANE
1-(TRIETHOXYSILYL)-2-(DIETHOXYMETHYLSILYL)ETHANE
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CAS-No. : 18418-54-7

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
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<tbody>
<tr>
<td>1-(Triethoxysilyl)-2-(diethoxymethylsilyl)ethane</td>
<td>(CAS-No.) 18418-54-7</td>
<td>95 - 100</td>
<td>Acute Tox. 4 (Oral), H302 Eye Irrit. 2B, H320</td>
</tr>
</tbody>
</table>

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. |
| 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. Call a POISON CENTER or doctor/physician if you feel unwell. |

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 eye irritation. |
| Symptoms/effects after ingestion | Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard. |

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


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 : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire.

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

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper 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. Use only non-sparking tools.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.
1-(TRIETHOXYSILYL)-2-(DIETHOXYMETHYLSILYL)ETHANE
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Use only in well ventilated areas. Avoid all eye and skin contact and do not breathe vapor and mist.

Hygiene measures: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

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:
Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Avoid all unnecessary 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: 324.56 g/mol
Color: Colorless.
Odor: Slight.
Odor threshold: No data available
Refractive index: 1.4112
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: < 0 °C
Freezing point: No data available
Boiling point: 100 °C @ 0.5 mm Hg
Flash point: 102 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: < 0.1 mm Hg @ 25°C
Relative vapor density at 20 °C: < 1
Relative density: 0.946
% Volatiles: < 5 %
Solubility: Reacts with water.
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Log Pow : No data available  
Log Kow : No data available  
Viscosity, kinematic : No data available  
Viscosity, dynamic : No data available  
Explosive properties : No data available  
Oxidizing properties : No data available  
Explosion limits : No data available

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  
Material decomposes slowly in contact with moist air or with water liberating ethanol.

10.4. Conditions to avoid  
Heat. Sparks. Open flame.

10.5. Incompatible materials  

10.6. Hazardous decomposition products  

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified  
1-(Triethoxysilyl)-2-(diethoxymethylsilyl)ethane (18418-54-7)  
LD50 oral rat : > 500 mg/kg

Skin corrosion/irritation : Not classified  
Serious eye damage/irritation : Causes eye irritation.  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified  
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 : Harmful if swallowed.  
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 eye irritation.  
Symptoms/effects after ingestion : Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

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
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12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Effect on the ozone layer : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Product/Packaging disposal recommendations : Incinerate. Dispose of contents/container to licensed waste disposal facility.
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

1-(TRIETHOXYSILYL)-2-(DIETHOXYMETHYLSILYL)ETHANE (18418-54-7) TSCA Exemption/Exclusion
Low Volume Exemption in accordance with 40 CFR 723.50(c)(1). Anyone who intends to use this chemical substance for commercial purposes must comply with specific use restrictions and controls specified herein. This LVE limits site of manufacture of this substance to Gelest, Inc. unless otherwise approved by U.S. EPA

1-(Triethoxysilyl)-2-(diethoxymethylsilyl)ethane (18418-54-7)
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:

H302 Harmful if swallowed
H320 Causes eye irritation
1-(TRIETHOXYSILYL)-2-(DIETHOXYMETHYLSILYL)ETHANE
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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

2 Moderate Hazard - Temporary or minor injury may occur

Flammability

1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

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.

Date of issue: 01/09/2015        Revision date: 05/25/2018        Version: 2.1

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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