**SECTION 1: Identification**

1. **Product identifier**

<table>
<thead>
<tr>
<th>Product name</th>
<th>TETRAKIS(1-METHOXY-2-PROPOXY)SILANE, tech-95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>SIT7288.0</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>C16H36O8Si</td>
</tr>
<tr>
<td>Synonyms</td>
<td>SILICON TETRAMETHOXYPROPOXIDE ISOPROPYL ORTHOSILICATE, 1-METHOXY-SILICIC ACID, TETRAKIS(2-METHOXY-1-METHYLETHYL) ESTER</td>
</tr>
<tr>
<td>Chemical family</td>
<td>SILICATE ESTER</td>
</tr>
</tbody>
</table>

1.2. **Recommended use of the chemical and restrictions on use**

Recommended use: Chemical intermediate
For research and industrial 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: Not classified

2.2. **Label elements**

GHS-US labeling: No labeling applicable

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**

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Mono-constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>TETRAKIS(1-METHOXY-2-PROPOXY)SILANE, tech-95</td>
</tr>
<tr>
<td>CAS No</td>
<td>18407-95-9</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>Tetrakis(1-methoxy-2-propoxy)silane</td>
<td>(CAS No) 18407-95-9</td>
<td>95 - 100</td>
<td>Not classified</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. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water. Get medical advice/attention.
TETRAKIS(1-METHOXY-2-PROPOXY)SILANE, tech-95
Safety Data Sheet

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, both acute and delayed

Symptoms/injuries after inhalation: May cause irritation to the respiratory tract.
Symptoms/injuries after skin contact: May cause skin irritation.
Symptoms/injuries after eye contact: May cause eye irritation.
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: None known.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Advice for firefighters
Firefighting instructions: Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.
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.

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
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. 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.
Incompatible materials: Oxidizing agent.
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. 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.
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

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>384.54 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor</td>
<td>characteristic.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No data available</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>&lt; 0 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>158 °C @ 1 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>153 °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>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.008</td>
</tr>
<tr>
<td>VOC content</td>
<td>&lt; 3 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Reacts with 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

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

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

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Oxidizing agent.

10.6. Hazardous decomposition products

TETRAKIS(1-METHOXY-2-PROPOXY)SILANE, tech-95
Safety Data Sheet

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>Not classified</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>
<tr>
<td>Specific target organ toxicity – repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Potential Adverse human health effects and symptoms</td>
<td>Material generates methoxypropanol 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/Injuries after inhalation</td>
<td>May cause irritation to the respiratory tract.</td>
</tr>
<tr>
<td>Symptoms/Injuries after skin contact</td>
<td>May cause skin irritation.</td>
</tr>
<tr>
<td>Symptoms/Injuries after eye contact</td>
<td>May cause eye irritation.</td>
</tr>
<tr>
<td>Symptoms/Injuries after ingestion</td>
<td>May be harmful if swallowed.</td>
</tr>
<tr>
<td>Reason for classification</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage disposal recommendations</td>
<td>Do not dispose of waste into sewer.</td>
</tr>
<tr>
<td>Waste disposal recommendations</td>
<td>Incinerate. Dispose in a safe manner in accordance with local/national regulations.</td>
</tr>
<tr>
<td>Ecology - waste materials</td>
<td>Avoid release to the environment.</td>
</tr>
</tbody>
</table>

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
Tetrakis(1-methoxy-2-propoxy)silane (18407-95-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
Tetrakis(1-methoxy-2-propoxy)silane (18407-95-9)
Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations
No additional information available

National regulations
Tetrakis(1-methoxy-2-propoxy)silane (18407-95-9)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

15.3. US State regulations
No additional information available

SECTION 16: Other information

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.

HMIS III Rating
Health: 1 Slight Hazard - Irritation or minor reversible injury possible
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: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.
Date of issue: 01/03/2017 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.

© 2016 Gelest Inc. Morrisville, PA 19067