**SECTION 1: Identification**

1.1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>TRIS(TRIMETHYLSILYL)PHOSPHATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>SIT8723.0</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>C9H27O4PSi3</td>
</tr>
<tr>
<td>Synonyms</td>
<td>TRIS(TRIMETHYLSILYLOXY)PHOSPHINE OXIDE; PHOSPHORIC ACID, TRIS(TRIMETHYLSILYL) ESTER; SILANOL, 1,1,1-TRIMETHYL-, 1',1'',1''-PHOSPHATE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOSILANE</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

<table>
<thead>
<tr>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/iritation Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
</tbody>
</table>

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

<table>
<thead>
<tr>
<th>GHS US labeling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard pictograms (GHS US)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signal word (GHS US)</th>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard statements (GHS US)</td>
<td>H315 - Causes skin irritation</td>
</tr>
<tr>
<td></td>
<td>H319 - Causes serious eye irritation</td>
</tr>
<tr>
<td>Precautionary statements (GHS US)</td>
<td>P280 - Wear protective gloves/protective clothing/eye protection/face protection. P564 - Wash hands thoroughly after handling. P302+P352 - If on skin: Wash with plenty of water. P332+P313 - If skin irritation occurs: Get medical advice/attention. 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. P321 - Specific treatment (see first aid instructions on this label) P362+P364 - Take off contaminated clothing and wash it before reuse.</td>
</tr>
</tbody>
</table>

2.3. Hazards not otherwise classified (HNOC)

No additional information available

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>TRIS(TRIMETHYLSILYL)PHOSPHATE</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>10497-05-9</td>
</tr>
</tbody>
</table>
TRIS(TRIMETHYLSILYL)PHOSPHATE
Safety Data Sheet

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 | Causes skin irritation. |
| Symptoms/effects after eye contact | Causes serious eye irritation. |
| Symptoms/effects after ingestion | May be harmful if swallowed. |

#### 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

| 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.
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.


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 combination organic vapor - amine gas (brown 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: 314.54 g/mol

Color: Straw.

Odor: No data available

Odor threshold: No data available

Refractive index: 1.4089

pH: No data available

Relative evaporation rate (butyl acetate=1): No data available

Melting point: No data available

Freezing point: 2 - 4 °C

Boiling point: 85 - 87 °C @ 4 mm Hg

Flash point: > 110 °C

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Flammability (solid, gas): No data available

Vapor pressure: < 1 mm Hg @ 25°C

Relative vapor density at 20 °C: > 1

Relative density: 0.959

% Volatiles: < 5 %

Solubility: Reacts with water.
TRIS(TRIMETHYLSILYL)PHOSPHATE
Safety Data Sheet

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 when stored in sealed containers.

10.3. Possibility of hazardous reactions
Reacts with water and moisture.

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

10.5. Incompatible materials

10.6. Hazardous decomposition products
Organic acid vapors. Phosphates.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Tris(trimethylsilyl)phosphate (10497-05-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>3440 mg/kg</td>
</tr>
<tr>
<td>ATE US (oral)</td>
</tr>
<tr>
<td>3440 mg/kg body weight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious 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
Symptoms/effects after inhalation : May cause irritation to the respiratory tract.
Symptoms/effects after skin contact : Causes skin irritation.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects 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 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. 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
Tris(trimethylsilyl)phosphate (10497-05-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
CANADA
Tris(trimethylsilyl)phosphate (10497-05-9)
Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations
Tris(trimethylsilyl)phosphate (10497-05-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations
Tris(trimethylsilyl)phosphate (10497-05-9)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

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:

<table>
<thead>
<tr>
<th>H315</th>
<th>Causes skin irritation</th>
</tr>
</thead>
<tbody>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
</tbody>
</table>
TRIS(TRIMETHYLSILYL)PHOSPHATE
Safety Data Sheet

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: 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: 10/26/2015 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.

© 2019 Gelest Inc. Morrisville, PA 19067