SECTION 1: Identification

1.1. Identification

Product name : TRIMETHYLGERMANE
Product code : GET8560
Product form : Substance
Physical state : Liquid
Formula : C3H10Ge
Synonyms : TRIMETHYLGERMANIUM
Chemical family : ORGANOGERMANIUM

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
Flammable liquids Category 1 H224 Extremely flammable liquid and vapor
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling
Hazard pictograms (GHS US) : 

Signal word (GHS US) : Danger
Hazard statements (GHS US) : H224 - Extremely flammable liquid and vapor
Precautionary statements (GHS US) : P280 - Wear protective gloves/protective clothing/eye protection/face protection.
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.
P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish.
P403+P235 - Keep in a cool place
P501 - Dispose of contents/container to licensed waste disposal facility.

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

Substance type : Multi-constituent
Name : TRIMETHYLGERMANE
CAS-No. : 1449-63-4
**TRIMETHYLGERMANCE**

Safety Data Sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethylgermane</td>
<td>(CAS-No.) 1449-63-4</td>
<td>95 - 100</td>
<td>Flam. Liq. 1, H224</td>
</tr>
<tr>
<td>Other Organogermaniums</td>
<td></td>
<td>0 - 5</td>
<td>Not classified</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. 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: May cause eye irritation.

Symptoms/effects after ingestion: No information available.

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: Extremely flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Explosion hazard: May form flammable/explosive vapor-air mixture.

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**

General measures: Eliminate every possible source of ignition. 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. 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.
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: 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.

Incompatible materials: Oxidizing agent.

Storage area: Store in a well-ventilated place. Store away from heat. Store in a cool area.

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: 118.7 g/mol
Color: Straw.
Odor: Mild.
Odor threshold: No data available
Refractive index: 1.389
pH: No data available
Relative evaporation rate (butyl acetate=1): > 1
Melting point: No data available
Freezing point: -123 °C
Boiling point: 26 - 27 °C
Flash point: < -20 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Extremely flammable liquid and vapor
### Vapor pressure
- 270 mm Hg @ 0°C

### Relative vapor density at 20 °C
- > 1

### Relative density
- 1.013

### % Volatiles
- 100%

### Solubility
- Insoluble in water.

### 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 under inert atmosphere. Slowly oxidizes in air.

### 10.3. Possibility of hazardous reactions
No additional information available

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

### 10.5. Incompatible materials
Alkalis. Oxidizing agent.

### 10.6. Hazardous decomposition products
Germanium oxides. Organic acid vapors.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects
- Acute toxicity: Not classified
- Skin corrosion/irritation: Not classified
- Serious eye damage/irritation: Not classified
- 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
- May cause skin irritation.

### Symptoms/effects after eye contact
- May cause eye irritation.

### Symptoms/effects after ingestion
- No information available.

## 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
### SECTION 12: Mobility in soil
No additional information available

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

### SECTION 13: Disposal considerations

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Description</th>
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</table>

### SECTION 14: Transport information

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number</td>
<td>UN-No. (DOT): 1993 DOT NA no.: UN1993</td>
</tr>
</tbody>
</table>

### Transport by sea
DOT Vessel Stowage Location: E - The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length, but is prohibited from carriage on passenger vessels in which the limiting number of passengers is exceeded.

### 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

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.1. US Federal regulations</td>
<td><strong>TRIMETHYLGERMANE (1449-63-4)</strong> TSCA Exemption/Exclusion: <strong>CAUTION:</strong> This material is supplied for research and development purposes subject to the R&amp;D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a &quot;technically qualified individual&quot; as defined by 40 CFR 720.3(ee). The use of this material for &quot;commercial purposes&quot; as defined by 40 CFR 720.3(r) is not permitted in the United States.</td>
</tr>
</tbody>
</table>
Trimethylgermane (1449-63-4)
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:

H224 Extremely flammable liquid and vapor

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: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

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: 01/25/2016 Version: 1.0

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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Print date: 04/10/2019 EN (English US) SDS ID: GET8560