SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance name</td>
<td>TRIMETHYLCHLOROGERMANE</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Product code</td>
<td>GET8500</td>
</tr>
<tr>
<td>Formula</td>
<td>C3H9ClGe</td>
</tr>
<tr>
<td>Synonyms</td>
<td>TRIMETHYLGERMANIUM CHLORIDE; CHLOROTRIMETHYLGERMANE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOCHLOROGERMANE</td>
</tr>
</tbody>
</table>

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Chemical intermediate
For research 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: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)
Flam. Liq. 2 H225
Skin Corr. 1B H314
Eye Dam. 1 H318

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US):

Signal word (GHS-US) : Danger
Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapor
H314 - Causes severe skin burns and eye damage
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 - Use only non-sparking tools
P240 - Ground/bond container and receiving equipment
P241 - Use explosion-proof electrical equipment
P242 - Take precautionary measures against static discharge
P260 - Do not breathe vapors
P264 - Wash hands thoroughly after handling
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a doctor
P321 - Specific treatment (see first aid instructions on this label)
P363 - Wash contaminated clothing before reuse
P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish
TRIMETHYLCHLOROGERMANE
Safety Data Sheet

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorotrimethylgermane</td>
<td>(CAS No) 1529-47-1</td>
<td>&gt; 95</td>
<td>Flam. Liq. 2, H225</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Corr. 1B, H314</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Dam. 1, H318</td>
</tr>
<tr>
<td>Other Organogermaniums</td>
<td></td>
<td>&lt; 5</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

3.2. Mixture
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 immediate 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 immediate 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: Causes severe skin burns and eye damage.


Symptoms/injuries after skin contact: Causes (severe) skin burns.

Symptoms/injuries after eye contact: Causes serious eye damage.

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: Water.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Highly flammable liquid and vapor. Irritating fumes of hydrogen chloride and organic acid vapors may develop when material is exposed to water or open flame.

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

5.3. Advice for firefighters
Firefighting instructions: Use water spray to cool exposed surfaces. 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
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
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. Containers and transfer lines require grounding during use. Take precautionary measures against static discharge. Use only non-sparking tools.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Ground/bond container and receiving equipment. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions: Keep container tightly closed.
Incompatible materials: Water.
Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available.

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 or face shield. 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/acid gas (yellow 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: 153.15 g/mol
Color: Straw.
Odor: Acrid. Similar to hydrogen chloride.
Odor threshold: No data available
Refractive index: 1.4337
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
### TRIMETHYLCHLOROGERMANE Safety Data Sheet

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>&lt; -14 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>102 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>1 °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>Highly flammable liquid and vapor</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>1.249</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water. 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
Slowly reacts with water to form hydrogen chloride.

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

#### 10.5. Incompatible materials
Water.

#### 10.6. Hazardous decomposition products

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye damage.</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>Symptoms/injuries after skin contact</td>
<td>Causes (severe) skin burns.</td>
</tr>
<tr>
<td>Symptoms/injuries after eye contact</td>
<td>Causes serious eye damage.</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>

8/11/2015 EN (English US) SDS ID: GET8500
## 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 ecological damage caused by this product.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods
- **Waste disposal recommendations**: 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
- **UN-No.(DOT)**: 2924
- **DOT NA no.**: UN2924

### 14.2. UN proper shipping name
- **Proper Shipping Name (DOT)**: Flammable liquids, corrosive, n.o.s. (TRIMETHYLCHLOROGERMANE)
- **Department of Transportation (DOT) Hazard Classes**: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173,120
- **Hazard labels (DOT)**: 3 - Flammable liquid 8 - Corrosive

- **DOT Symbols**: G - Identifies PSN requiring a technical name
- **Packing group (DOT)**: II - Medium Danger
- **DOT Packaging Exceptions (49 CFR 173.xxx)**: 150
- **DOT Packaging Non Bulk (49 CFR 173.xxx)**: 202
- **DOT Packaging Bulk (49 CFR 173.xxx)**: 243

### 14.3. Additional information
- **Other information**: No supplementary information available.

### Transport by sea
- **DOT Vessel Stowage Location**: B - (i) 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; and (ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.
- **DOT Vessel Stowage Other**: 40 - Stow “clear of living quarters”

### Air transport
- **DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)**: 1 L
- **DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)**: 5 L
SECTION 15: Regulatory information

15.1. US Federal regulations

TRIMETHYLCHLOROGERMANE (1529-47-1)

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.

Chlorotrimethylgermane (1529-47-1)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

Chlorotrimethylgermane (1529-47-1)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.3. US State regulations

TRIMETHYLCHLOROGERMANE(1529-47-1)

<table>
<thead>
<tr>
<th></th>
<th>U.S. - California - Proposition 65 - Carcinogens List</th>
<th>U.S. - California - Proposition 65 - Developmental Toxicity</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</th>
<th>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</th>
<th>Other Organogermaniums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorotrimethylgermane (1529-47-1)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<td>U.S. - California - Proposition 65 - Carcinogens List</td>
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<td>No</td>
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<tr>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Other Organogermaniums

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.

Full text of H-phrases:

| H314                                      | Causes severe skin burns and eye damage |
| H318                                      | Causes serious eye damage               |
| H225                                      | Highly flammable liquid and vapor        |
| Skin Corr. 1B                            | Skin corrosion/irritation Category 1B   |
| Flam. Liq. 2                             | Flammable liquids Category 2            |
| Eye Dam. 1                                | Serious eye damage/eye irritation Category 1 |

HMIS III Rating

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

Flammability: 4 Severe Hazard

Physical: 1 Slight Hazard
TRIMETHYLCHLOROGERMANE
Safety Data Sheet

Prepared by safety and environmental affairs.
Date of issue: 08/11/2015 Version: 1.0

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

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