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

### 1.1. Product identifier
- **Product form**: Substance
- **Physical state**: Liquid
- **Substance name**: BIS(TRIMETHYLSILYL)SELENIDE
- **Product code**: SIB1871.0
- **Formula**: C6H18SeSi2
- **Synonyms**: HEXAMETHYLDISILSELANANE
- **Chemical family**: ORGANOSILANE

### 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. 3 : H226
- Acute Tox. 3 (Oral) : H301
- Acute Tox. 3 (Inhalation: vapour) : H331

**Full text of H-phrases: see section 16**

### 2.2. Label elements

**GHS-US labeling**
- **Hazard pictograms (GHS-US)**: [GHS02, GHS06]
- **Signal word (GHS-US)**: Danger
- **Hazard statements (GHS-US)**: H226 - Flammable liquid and vapor
- H301 + H331 - Toxic if swallowed or if inhaled
- **Precautionary statements (GHS-US)**:
  - P280 - Wear eye protection, protective gloves, protective clothing
  - P261 - Avoid breathing vapors
  - P270 - Do not eat, drink or smoke when using this product
  - P264 - Wash hands thoroughly after handling
  - P311 - Call a doctor
  - P210 - Keep away from heat, ignition sources. - No smoking
  - 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
  - P370 + P378 - In case of fire: Use carbon dioxide or dry powder to extinguish
  - P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
  - P330 - Rinse mouth
  - P301 + P310 - If swallowed: Immediately call a doctor
  - P303 + P361 + P353 - If on skin (or hair): take off immediately all contaminated clothing, rinse skin with water/shower
  - P271 - Use only outdoors or in a well-ventilated area
  - P233 - Keep container tightly closed
  - P403 + P235 - Keep in a cool place
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
Substance type : Mono-constituent
Name : BIS(TRIMETHYLSILYL)SELENIDE
CAS No : 4099-46-1

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(trimethylsilyl)selenide</td>
<td>(CAS No) 4099-46-1</td>
<td>97 - 100</td>
<td>Flam. Liq. 3, H226&lt;br/&gt;Acute Tox. 3 (Oral), H301&lt;br/&gt;Acute Tox. 3 (Inhalation: vapour), H331</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. Call a POISON CENTER or doctor/physician if you feel unwell.

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. Get medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : Toxic if inhaled.
Symptoms/injuries after skin contact : No information available.
Symptoms/injuries after eye contact : No information available.
Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media : Carbon dioxide. Dry powder.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapor.
Explosion hazard : May form flammable/explosive vapor-air mixture.

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Material readily ignited with flame, sparks, friction or heat. Burning material may release toxic and corrosive fumes. Leave the area unless fitted with a self-contained breathing apparatus and fire protective clothing.

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 : Remove ignition sources. Use special care to avoid static electric charges.

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. Leave the area unless fitted with a self-contained breathing apparatus.

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
Methods for cleaning up: Spillage of the material can create widespread odor problem. Small spills can be absorbed into vermiculite or other suitable absorbent. Odor can be attenuated by slurring material adsorbed onto vermiculite with 3-5% aqueous sodium hypochlorite (bleach). 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: Keep away from heat, open flames, sparks. - No smoking.
Precautions for safe handling: Containers must be properly grounded before beginning transfer. Provide good ventilation in process area to prevent accumulation of vapors. Avoid all eye and skin contact and do not breathe vapor and mist.
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: Proper grounding procedures to avoid static electricity should be followed.
Storage conditions: Keep container tightly closed.
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

<table>
<thead>
<tr>
<th>Bis(trimethylsilyl)selenide (4099-46-1)</th>
<th>USA OSHA</th>
<th>OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.2 mg/m³ (as Se)</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls: Provide local exhaust or general room ventilation. Handle in an enclosing hood with exhaust ventilation. Mechanical with caustic scrubber is recommended.
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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state: Liquid
Appearance: Clear liquid.
Molecular mass: 225.34 g/mol
Color: Colorless.
Odor: Strong. Stench.
Odor threshold: No data available
Refractive index: 1.481
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: -7 °C
Freezing point: No data available
Boiling point: 58 - 59 °C @ 11 mm Hg
Flash point: 43 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): Flammable liquid and vapor
Vapor pressure: ~ 2 mm Hg @ 25°C
Relative vapor density at 20 °C: > 1
Relative density: 0.9
VOC content: > 97 %
Solubility: Insoluble in water. Reacts with 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 in sealed containers stored under moisture free atmosphere.

10.3. Possibility of hazardous reactions
Material decomposes slowly in contact with moist air or with water liberating hydrogen selenide.

10.4. Conditions to avoid
Heat, ignition sources.

10.5. Incompatible materials
Moisture, Water.

10.6. Hazardous decomposition products
Carbon monoxide, Hydrogen selenide, Organic fumes, Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

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
Potential Adverse human health effects and symptoms: Toxic if inhaled. Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.
Symptoms/injuries after inhalation: Not classified
Symptoms/injuries after skin contact: No information available.
Symptoms/injuries after eye contact: No information available.
Symptoms/injuries after ingestion: Toxic 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

## 12.4. Mobility in soil
No additional information available

## 12.5. Other adverse effects

<table>
<thead>
<tr>
<th>Effect on ozone layer</th>
<th>Effect on the global warming</th>
</tr>
</thead>
<tbody>
<tr>
<td>: No additional information available</td>
<td>: No known ecological damage caused by this product.</td>
</tr>
</tbody>
</table>

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Waste disposal recommendations: Incinerate. 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

<table>
<thead>
<tr>
<th>UN-No.(DOT)</th>
<th>DOT NA no.</th>
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<tbody>
<tr>
<td>: 2929</td>
<td>: UN2929</td>
</tr>
</tbody>
</table>

#### 14.2. UN proper shipping name

<table>
<thead>
<tr>
<th>Proper Shipping Name (DOT)</th>
<th>Department of Transportation (DOT) Hazard Classes</th>
<th>Hazard labels (DOT)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>G - Identifies PSN requiring a technical name</td>
<td>II - Medium Danger</td>
<td>: 153</td>
<td>: 202</td>
<td>: 243</td>
</tr>
</tbody>
</table>

#### 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): 5 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75): 60 L
SECTION 15: Regulatory information

15.1. US Federal regulations

BIS(TRIMETHYLSILYL)SELENIDE (4099-46-1)

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.

Bis(trimethylsilyl)selenide (4099-46-1)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

No additional information available

15.3. US State regulations

BIS(TRIMETHYLSILYL)SELENIDE(4099-46-1)

| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |

HMSI Rating

Health: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

Flammability: 3 Serious Hazard

Physical: 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 07/11/2014  Revision date: 08/31/2015  Version: 2.0

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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