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 : ORGANO SILANE

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

1.2.1. Relevant identified uses
Use of the substance/mixture : Chemical intermediate

1.2.2. Uses advised against
No additional information available

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

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F) : 8:00 AM - 4:00 PM
info@gelestdc.com - www.gelestdc.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 according to Regulation (EC) No. 1272/2008 [CLP]
Flammable liquids, Category 3 : H226
Acute toxicity (oral), Category 3 : H301
Acute toxicity (inhalation:vapour) Category 3 : H331
Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]
Hazard pictograms (CLP) : GHS02 GHS06
Signal word (CLP) : Danger
Hazard statements (CLP) : H226 - Flammable liquid and vapour.
H301 + H331 - Toxic if swallowed or if inhaled
Precautionary statements (CLP):
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P261 - Avoid breathing vapours.
P311 - Call a doctor.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Name</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mono-constituent</td>
<td>BIS(TRIMETHYLSILYL)SELENIDE</td>
<td>4099-46-1</td>
</tr>
</tbody>
</table>

Full text of 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 person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

First-aid measures after skin contact: Wash with plenty of 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/doctor.

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

Symptoms/effects after inhalation: Toxic if inhaled.

Symptoms/effects after skin contact: No information available.

Symptoms/effects after eye contact: No information available.

Symptoms/effects 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 vapour.

Explosion hazard: May form flammable/explosive vapour-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 vapour 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 slurrying 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 formation of vapour. Avoid all eye and skin contact and do not breathe vapour 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.
Incompatible materials
- Moisture. 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

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>225.34 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>Strong. Stench.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.481</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>-7 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>58 - 59 °C @ 11 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>43 °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>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>~ 2 mm Hg @ 25°C</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.9</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&gt; 97 %</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>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive 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 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


SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Toxic if swallowed. Toxic if inhaled.</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 sensitisation</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>
</tbody>
</table>
### BIS(TRIMETHYLSILYL)SELENIDE
Safety Data Sheet

<table>
<thead>
<tr>
<th>Reproductive toxicity</th>
<th>: Not classified</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOT-single exposure</td>
<td>: Not classified</td>
</tr>
<tr>
<td>STOT-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>Toxic if inhaled. Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.</td>
</tr>
<tr>
<td>Symptoms/effects after inhalation</td>
<td>Toxic if inhaled.</td>
</tr>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>No information available.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>No information available.</td>
</tr>
<tr>
<td>Symptoms/effects after ingestion</td>
<td>Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.</td>
</tr>
</tbody>
</table>

### SECTION 12: Ecological information

#### 12.1. Toxicity
- Acute aquatic toxicity : Not classified
- Chronic aquatic toxicity : Not classified

#### 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. Results of PBT and vPvB assessment
No additional information available

#### 12.6. Other adverse effects
No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods
- Product/Packaging 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
In accordance with ADR / RID / IMDG / IATA / ADN

<table>
<thead>
<tr>
<th>UN number</th>
<th>: 2929</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No. (ADR)</td>
<td>2929</td>
</tr>
<tr>
<td>UN-No. (IMDG)</td>
<td>2929</td>
</tr>
<tr>
<td>UN-No. (IATA)</td>
<td>2929</td>
</tr>
<tr>
<td>UN-No. (ADN)</td>
<td>2929</td>
</tr>
<tr>
<td>UN-No. (RID)</td>
<td>2929</td>
</tr>
</tbody>
</table>

#### 14.2. UN proper shipping name
- Proper Shipping Name (ADR) : TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
- Proper Shipping Name (IMDG) : TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
- Proper Shipping Name (IATA) : Toxic liquid, flammable, organic, n.o.s.
- Proper Shipping Name (ADN) : TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
- Proper Shipping Name (RID) : TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.
- Transport document description (ADR) : UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S. (BIS(TRIMETHYLSILYL)SELENIDE), 6.1 (3), II, (D/E)
- Transport document description (IMDG) : UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S. (BIS(TRIMETHYLSILYL)SELENIDE), 6.1 (3), II
- Transport document description (IATA) : UN 2929 Toxic liquid, flammable, organic, n.o.s. (BIS(TRIMETHYLSILYL)SELENIDE), 6.1, II
- Transport document description (ADN) : UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S. (BIS(TRIMETHYLSILYL)SELENIDE), 6.1 (3), II
- Transport document description (RID) : UN 2929 TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S. (BIS(TRIMETHYLSILYL)SELENIDE), 6.1 (3), II
BIS(TRIMETHYLSILYL)SELENIDE
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14.3. Transport hazard class(es)

ADR
Transport hazard class(es) (ADR) : 6.1 (3)
Danger labels (ADR) : 6.1, 3

IMDG
Transport hazard class(es) (IMDG) : 6.1 (3)
Danger labels (IMDG) : 6.1, 3

IATA
Transport hazard class(es) (IATA) : 6.1 (3)
Hazard labels (IATA) : 6.1, 3

ADN
Transport hazard class(es) (ADN) : 6.1 (3)
Danger labels (ADN) : 6.1, 3

RID
Transport hazard class(es) (RID) : 6.1 (3)
Danger labels (RID) : 6.1, 3

14.4. Packing group

Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available
14.6. Special precautions for user

- Overland transport

Classification code (ADR) : TF1
Special provisions (ADR) : 274
Limited quantities (ADR) : 100ml
Excepted quantities (ADR) : E4
Packing instructions (ADR) : P001, IBC02
Mixed packing provisions (ADR) : MP15
Portable tank and bulk container instructions (ADR) : T11
Portable tank and bulk container special provisions (ADR) : TP2, TP27
Tank code (ADR) : L4BH
Tank special provisions (ADR) : TU15, TE19
Vehicle for tank carriage : FL
Transport category (ADR) : 2
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13, CV28
Special provisions for carriage - Operation (ADR) : S2, S9, S19
Hazard identification number (Kemler No.) : 63
Orange plates : 

Tunnel restriction code (ADR) : D/E

- Transport by sea

Special provisions (IMDG) : 274
Limited quantities (IMDG) : 100 ml
Excepted quantities (IMDG) : E4
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T11
Tank special provisions (IMDG) : TP2, TP13, TP27
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : B
Stowage and handling (IMDG) : SW2
Properties and observations (IMDG) : Toxic if swallowed, by skin contact or by inhalation.

- Air transport

PCA Excepted quantities (IATA) : E4
PCA Limited quantities (IATA) : Y641
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 654
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 662
CAO max net quantity (IATA) : 60L
Special provisions (IATA) : A4, A137
ERG code (IATA) : 6F

- Inland waterway transport

Classification code (ADN) : TF1
Special provisions (ADN) : 274, 802
Limited quantities (ADN) : 100 ml
Excepted quantities (ADN) : E4
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EP, EX, TOX, A
BIS(TRIMETHYLSILYL)SELENIDE
Safety Data Sheet

Ventilation (ADN) : VE01, VE02
Number of blue cones/lights (ADN) : 2

- Rail transport
Classification code (RID) : TF1
Special provisions (RID) : 274
Limited quantities (RID) : 100ml
Excepted quantities (RID) : E4
Packing instructions (RID) : P001, IBC02
Mixed packing provisions (RID) : MP15
Portable tank and bulk container instructions (RID) : T11
Portable tank and bulk container special provisions (RID) : TP2, TP27
Tank codes for RID tanks (RID) : L4BH
Special provisions for RID tanks (RID) : TU15
Transport category (RID) : 2
Special provisions for carriage - Loading, unloading and handling (RID) : CW13, CW28, CW31
Colis express (express parcels) (RID) : CE5
Hazard identification number (RID) : 63

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations
No REACH Annex XVII restrictions
BIS(TRIMETHYLSILYL)SELENIDE is not on the REACH Candidate List
BIS(TRIMETHYLSILYL)SELENIDE is not on the REACH Annex XIV List
BIS(TRIMETHYLSILYL)SELENIDE is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

% Volatiles : > 97 %

15.1.2. National regulations

Germany
12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands
SZW-lijst van kankerverwekkende stoffen : The substance is not listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Class for fire hazard : Class II-1
Store unit : 5 liter
Classification remarks : R10 +H226;H301+H331; Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment
No additional information available

Print date: 12/04/2019 EN (English) SDS ID: SIB1871.0 8/9
**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; APF: Assigned Protection Factor

**Other information:** Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Inhalation: vapour)</th>
<th>Acute toxicity (inhalation:vapour) Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3 (Oral)</td>
<td>Acute toxicity (oral), Category 3</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
<td>Flammable liquids, Category 3</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapour.</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed.</td>
</tr>
<tr>
<td>H331</td>
<td>Toxic if inhaled.</td>
</tr>
</tbody>
</table>

**SDS EU (REACH Annex II) - Custom**

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. This 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.

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