

**BIS(TRIMETHYLSILYL)SELENIDE**

Safety Data Sheet SIB1871.0

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**SECTION 1: Identification****1.1. Identification**

Product name : BIS(TRIMETHYLSILYL)SELENIDE  
 Product code : SIB1871.0  
 Product form : Substance  
 Physical state : Liquid  
 Formula : C<sub>6</sub>H<sub>18</sub>SeSi<sub>2</sub>  
 Synonyms : HEXAMETHYLDISILSELANANE  
 Chemical family : ORGANOSILANE

**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](mailto:info@gelest.com) - [www.gelest.com](http://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 3 H226 Flammable liquid and vapor  
 Acute toxicity (oral) Category 3 H301 Toxic if swallowed  
 Acute toxicity (inhalation:vapor) Category 3 H331 Toxic if inhaled

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) :

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  
 P405 - Store locked up.  
 P501 - Dispose of contents/container to licensed waste disposal facility.

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### 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 : Mono-constituent  
Name : BIS(TRIMETHYLSILYL)SELENIDE  
CAS-No. : 4099-46-1

Name	Product identifier	%	GHS-US classification
Bis(trimethylsilyl)selenide	(CAS-No.) 4099-46-1	97 - 100	Flam. Liq. 3, H226 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Inhalation:vapour), H331

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. 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 (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. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Carbon dioxide. Dry powder.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapor.

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. 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.

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### 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.  
Incompatible materials : Moisture. Water.  
Storage area : Store in a well-ventilated place. Store away from heat.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Bis(trimethylsilyl)selenide (4099-46-1)		
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.2 mg/m <sup>3</sup> (as Se)

### 8.2. Appropriate engineering 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.

### 8.3. Individual protection measures/Personal protective equipment

#### 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

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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
% Volatiles	: > 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

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
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/effects after inhalation	: Toxic if inhaled.
Symptoms/effects after skin contact	: No information available.
Symptoms/effects after eye contact	: No information available.

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Symptoms/effects 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

Effect on the ozone layer : No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Disposal 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

UN-No.(DOT) : 2929  
DOT NA no. UN2929

#### 14.2. UN proper shipping name

Transport document description : UN2929 Toxic liquids, flammable, organic, n.o.s. (BIS(TRIMETHYLSILYL)SELENIDE), 6.1 (3), II

Proper Shipping Name (DOT) : Toxic liquids, flammable, organic, n.o.s. (BIS(TRIMETHYLSILYL)SELENIDE)

Class (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Packing group (DOT) : II - Medium Danger

Hazard labels (DOT) : 6.1 - Poison  
3 - Flammable liquid



DOT Packaging Non Bulk (49 CFR 173.xxx) : 202  
DOT Packaging Bulk (49 CFR 173.xxx) : 243  
DOT Packaging Exceptions (49 CFR 173.xxx) : 153  
DOT Symbols : G - Identifies PSN requiring a technical name

#### 14.3. Additional information

Emergency Response Guide (ERG) Number : 131

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

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DOT Quantity Limitations Cargo aircraft only (49 : 60 L  
CFR 175.75)

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

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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

##### 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::

H226	Flammable liquid and vapor
H301	Toxic if swallowed
H331	Toxic if inhaled

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

Flammability : 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

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.

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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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