## SECTION 1: Identification

### 1.1. Identification

- **Product name**: BIS(TRIETHYL Tin)OXIDE
- **Product code**: SNB1826
- **Product form**: Substance
- **Physical state**: Liquid
- **Formula**: C₁₂H₃₀O₄Sn₂
- **Synonyms**: HEXAETHYLDISTANNOXANE, BISTRIETHYLSTANNYL ETHER, BIS(TRIETHYLSTANNYL) OXIDE
- **Chemical family**: ORGANOTIN

### 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

Tel: 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**

- **Acute toxicity (oral) Category 3**: H301 - Toxic if swallowed
- **Acute toxicity (dermal) Category 3**: H311 - Toxic in contact with skin
- **Acute toxicity (inhalation:dust,mist) Category 1**: H330 - Fatal if inhaled
- **Specific target organ toxicity (single exposure) Category 3**: H335 - May cause respiratory irritation
- **Specific target organ toxicity (repeated exposure) Category 1**: H372 - Causes damage to organs through prolonged or repeated exposure
- **Hazardous to the aquatic environment - Acute Hazard Category 1**: H400 - Very toxic to aquatic life

**Full text of H statements**: see section 16

### 2.2. GHS Label elements, including precautionary statements

**GHS US labeling**

**Hazard pictograms (GHS US)**

![Pictograms]

**Signal word (GHS US)**: Danger

**Hazard statements (GHS US)**

- H301+H311 - Toxic if swallowed or in contact with skin  
- H330 - Fatal if inhaled  
- H335 - May cause respiratory irritation  
- H372 - Causes damage to organs through prolonged or repeated exposure  
- H400 - Very toxic to aquatic life

**Precautionary statements (GHS US)**

- P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
- P284 - [In case of inadequate ventilation] wear in case of inadequate ventilation wear respiratory protection.  
- P310 - Immediately call a doctor  
- P260 - Do not breathe vapors.  
- P264 - Wash hands thoroughly after handling.  
- P270 - Do not eat, drink or smoke when using this product.  
- P271 - Use only outdoors or in a well-ventilated area.  
- P273 - Avoid release to the environment.  
- P303 - Rinse mouth.  
- P301+P310 - If swallowed: Immediately call a doctor  
- P302+P352 - If on skin: Wash with plenty of soap and water  
- P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
- P312 - Call a doctor if you feel unwell
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

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Multi-constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>BIS(TRIETHYLTIN)OXIDE</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>1112-63-6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
</table>
| Bis(triethyltin) oxide          | (CAS-No.) 1112-63-6| 95 - 100 | Acute Tox. 3 (Oral), H301  
|                                 |                    |    | Acute Tox. 3 (Dermal), H311  
|                                 |                    |    | Acute Tox. 1 (Inhalation), H330  
|                                 |                    |    | STOT SE 3, H335  
|                                 |                    |    | STOT RE 1, H372  
|                                 |                    |    | Aquatic Acute 1, H400               |
| Other Organotins                |                    | 0 - 5 | Not classified                         |

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. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact: Wash with plenty of soap and water. Immediately call a poison center or doctor/physician.

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. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects: Causes damage to organs through prolonged or repeated exposure.

Symptoms/effects after inhalation: Fatal if inhaled. May cause respiratory irritation. At low levels exposure, may produce coughing, headache and nausea. At higher levels triethyltin compounds has been reported to cause cerebral edema. Human fatalities have been reported from exposure to triethyltin vapors. Laboratory animal studies have demonstrated neurotoxicity, decreases in oxidative phosphorylation associated with mitochondrial binding and inhibition of ATPase.

Symptoms/effects after skin contact: Toxic in contact with skin. May cause skin irritation. Organotins may be absorbed through the skin.

Symptoms/effects after eye contact: May cause eye irritation.

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

Note to physician: Application of corticosteroid creams has been effective in treating severe skin irritation. If blisters develop, they may require abrasion to promote healing.

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

Other information: Extremely toxic, self-contained breathing apparatus should be worn at all times to avoid inhalation.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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

Avoid release to the environment. 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: Collect spillage. Clean up any spills as soon as possible, using an absorbent material to collect it.

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. Use only outdoors or in a well-ventilated area.

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

Storage conditions: Keep container tightly closed. Store locked up. Store in sealed containers in a manner consistent with safe-handling and regulatory requirements for an extremely hazardous substance.

Incompatible materials: Oxidizers.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Bis(triethyltin) oxide (1112-63-6)

<table>
<thead>
<tr>
<th></th>
<th>ACGIH ACGIH TWA (mg/m³)</th>
<th>OSHA OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.1 mg/m³ as tin</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>0.1 mg/m³ as tin</td>
<td></td>
</tr>
</tbody>
</table>

Other Organotins

<table>
<thead>
<tr>
<th></th>
<th>ACGIH ACGIH TWA (mg/m³)</th>
<th>OSHA OSHA PEL (TWA) (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>0.1 mg/m³ as tin</td>
<td></td>
</tr>
<tr>
<td>OSHA</td>
<td>0.1 mg/m³ as tin</td>
<td></td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls

Appropriate engineering controls: Handle in an enclosing hood with exhaust ventilation. Insure that exhaust is vented properly-caustic scrubbing is recommended.

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 combination organic vapor/acid gas (yellow cartridge) respirator.

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>Liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>427.75 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>Clear to hazy.</td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent. Unpleasant.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.5008</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>&lt; 0 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>125 °C @ 4 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 110 °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>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>4 mm Hg @ 125°C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.377</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>100 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in 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
Direct sunlight causes degradation to an inorganic tin salt.

10.4. Conditions to avoid
No additional information available

10.5. Incompatible materials
Oxidizers.
BIS(TRIETHYLTIN)OXIDE
Safety Data Sheet

10.6. Hazardous decomposition products
Organic acid vapors. Triethyltin oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

BIS(TRIETHYLTIN)OXIDE (1112-63-6)

<table>
<thead>
<tr>
<th>Mode of application</th>
<th>Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral)</td>
<td>100 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>300 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>0.005 mg/l/4h</td>
</tr>
</tbody>
</table>

Acute toxicity additional information: Liver and kidney pathology have been observed.

Bis(triethyltin) oxide (1112-63-6)

<table>
<thead>
<tr>
<th>Mode of application</th>
<th>Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 intraperitoneal mouse</td>
<td>1 mg/kg RTECS Number: JN8760000</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>100 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (dermal)</td>
<td>300 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (gases)</td>
<td>10 ppmV/4h</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>0.05 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>0.005 mg/l/4h</td>
</tr>
</tbody>
</table>

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: May cause respiratory irritation.

Specific target organ toxicity – repeated exposure: Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Not classified

Potential Adverse human health effects and symptoms: Human fatalities have been reported for workers inhaling vapors of triethyltin compounds. Chronic Toxicity: Cumulative toxin. Symptomatic manifestations can follow exposure up to five days. Reported symptoms include memory loss, exhibition of rage and anger, and reduction of sexual function.

Symptoms/effects after inhalation: Fatal if inhaled. May cause respiratory irritation. At low levels exposure, may produce coughing, headache and nausea. At higher levels triethyltin compounds has been reported to cause cerebral edema. Human fatalities have been reported from exposure to triethyltin vapors. Laboratory animal studies have demonstrated neurotoxicity, decreases in oxidative phosphorylation associated with mitochondrial binding and inhibition of ATPase.

Symptoms/effects after skin contact: Toxic in contact with skin. May cause skin irritation. Organotins may be absorbed through the skin.

Symptoms/effects after eye contact: May cause eye irritation.

Symptoms/effects after ingestion: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: Very toxic to aquatic life.

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.
BIS(TRIETHYLTIN)OXIDE
Safety Data Sheet

Effect on the ozone layer : No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Sewage disposal recommendations : Do not dispose of waste into sewer.
Product/Packaging 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) : 2788
DOT NA no. : UN2788

14.2. UN proper shipping name

Transport document description : UN2788 Organotin compounds, liquid, n.o.s. (BIS(TRIETHYLTIN)OXIDE), 6.1, I
Proper Shipping Name (DOT) : Organotin compounds, liquid, n.o.s. (BIS(TRIETHYLTIN)OXIDE)
Packing group (DOT) : I - Great Danger
Hazard labels (DOT) : 6.1 - Poison

Dangerous for the environment : Yes
Marine pollutant : Yes

DOT Packaging Non Bulk (49 CFR 173.xxx) : 201
DOT Packaging Bulk (49 CFR 173.xxx) : 243
DOT Packaging Exceptions (49 CFR 173.xxx) : None

14.3. Additional information

Emergency Response Guide (ERG) Number : 153
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) : 30 L
SECTION 15: Regulatory information

15.1. US Federal regulations

BIS(TRIETHYLTIN)OXIDE (1112-63-6)

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(triethyltin) oxide (1112-63-6)

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

15.2. International regulations

CANADA

No additional information available

EU-Regulations

Bis(triethyltin) oxide (1112-63-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

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:

<table>
<thead>
<tr>
<th>H301</th>
<th>Toxic if swallowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>H311</td>
<td>Toxic in contact with skin</td>
</tr>
<tr>
<td>H330</td>
<td>Fatal if ingested</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H372</td>
<td>Causes damage to organs through prolonged or repeated exposure</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
</tbody>
</table>

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: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

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: 09/19/2017 Version: 1.0

Print date: 04/11/2019 SDS US (GHS HazCom 2012) - Custom SDS ID: SNB1826
According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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