SECTION 1: Identification

1.1. Identification

Product name: DI-n-BUTYLBIS(2-ETHYLHEXYLMALEATE)TIN, tech-95
Product code: SND2930
Product form: Substance
Physical state: Liquid
Formula: C32H56O8Sn
Synonyms: DI-n-BUTYLTIN DIOSOCTYLMALEATE
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
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: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral) Category 4: H302 - Harmful if swallowed
Skin corrosion/irritation Category 2: H315 - Causes skin irritation
Serious eye damage/eye irritation Category 2A: H319 - Causes serious eye irritation
Germ cell mutagenicity Category 2: H341 - Suspected of causing genetic defects
Reproductive toxicity Category 1B: H360 - May damage fertility or the unborn child

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):
H302 - Harmful if swallowed
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H341 - Suspected of causing genetic defects
H360 - May damage fertility or the unborn child

Precautionary statements (GHS US):
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear eye protection, face protection, protective clothing, protective gloves.
P301+P312 - If swallowed: Call a doctor if you feel unwell.
P302+P352 - If on skin: Wash with plenty of soap and water.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P405 - Store locked up.
P501 - Dispose of contents/container to licensed waste disposal facility.
DI-n-BUTYLBIS(2-ETHYLHEXYLMALEATE)TIN, tech-95
Safety Data Sheet

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>Name</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-constituent</td>
<td>DI-n-BUTYLBIS(2-ETHYLHEXYLMALEATE)TIN, tech-95</td>
<td>25168-21-2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Butenoic acid, 4,4'-(dibutylstannylene)bis(oxy)]bis[4-oxo, diisooctyl ester, (Z,Z)- (CAS-No.)</td>
<td>25168-21-2</td>
<td>&gt; 90</td>
<td>Acute Tox. 4 (Oral), H302</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mut. 2, H341</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Repr. 1B, H360</td>
</tr>
<tr>
<td>Other Organotins</td>
<td></td>
<td>&lt; 10</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

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. IF exposed or concerned: Get medical advice/attention.

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. Wash contaminated clothing before reuse. Get medical advice/attention.

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Immediately flush eyes thoroughly with water for at least 15 minutes. Get medical advice/attention. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

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

Symptoms/effects: Suspected of causing genetic defects (dermal). May damage fertility or the unborn child (dermal).

Symptoms/effects after skin contact: Causes skin irritation.

Symptoms/effects after eye contact: Causes serious eye irritation.

Symptoms/effects after ingestion: 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


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.

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

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.
DI-n-BUTYLBIS(2-ETHYLHEXYLMALEATE)TIN, tech-95
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6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper 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.

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: Provide good ventilation in process area to prevent accumulation of vapors. Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood.
Hygiene measures: Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Keep container tightly closed.
Storage area: Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Other Organotins

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

8.2. Appropriate engineering controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state:</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance:</td>
<td>Pale yellow or light brown oily liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>687.46 g/mol</td>
</tr>
<tr>
<td>Color:</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor:</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odor threshold:</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index:</td>
<td>No data available</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available</td>
</tr>
</tbody>
</table>
DI-n-BUTYLBIS(2-ETHYLHEXYLMALEATE)TIN, tech-95
Safety Data Sheet

Relative evaporation rate (butyl acetate=1) : No data available
Melting point : No data available
Freezing point : -25 °C
Boiling point : No data available
Flash point : 123 °C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : 1.145
Solubility : Insoluble, reacts slowly.
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. Direct sunlight causes degradation to an inorganic tin salt.

10.3. Possibility of hazardous reactions
Reacts with moisture in air and water, slowly releasing butanol and dibutyltin oxide.

10.4. Conditions to avoid

10.5. Incompatible materials

10.6. Hazardous decomposition products
Organic acid vapors. n-Butanol. Tin oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>DI-n-BUTYLBIS(2-ETHYLHEXYLMALEATE)TIN, tech-95 (25168-21-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (oral) : 1690 mg/kg body weight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2-Butenoic acid, 4,4'-(dibutylstannylene)bis(oxy))bis[4-oxo-, diisooctyl ester, (Z,Z)- (25168-21-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat : 1690 mg/kg</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Suspected of causing genetic defects.
Carcinogenicity : Not classified

Reproductive toxicity : May damage fertility or the unborn child.
Specific target organ toxicity – single exposure : Not classified
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified

Print date: 04/11/2019 EN (English US) SDS ID: SND2930
## Potential Adverse Human Health Effects and Symptoms

- **Harmful if swallowed.**
- **Causes skin irritation.**
- **Causes serious eye irritation.**
- **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:** 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
- Not regulated for transport.

#### 14.2. UN Proper Shipping Name
- Not applicable

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

- **Transport by sea:** No additional information available
- **Air transport:** No additional information available

### SECTION 15: Regulatory Information

#### 15.1. US Federal Regulations

- **2-Butenoic acid, 4,4’-[(dibutylstannylene)bis(oxy)]bis[4-oxo-, disooctyl ester, (Z,Z) - (25168-21-2)]**
  - Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International Regulations

**CANADA**

- **2-Butenoic acid, 4,4’-[(dibutylstannylene)bis(oxy)]bis[4-oxo-, disooctyl ester, (Z,Z) - (25168-21-2)]**
  - Listed on the Canadian DSL (Domestic Substances List)

**EU Regulations**

- **2-Butenoic acid, 4,4’-[(dibutylstannylene)bis(oxy)]bis[4-oxo-, disooctyl ester, (Z,Z) - (25168-21-2)]**
  - Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
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Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

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>H302</th>
<th>Harmful if swallowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H341</td>
<td>Suspected of causing genetic defects</td>
</tr>
<tr>
<td>H360</td>
<td>May damage fertility or the unborn child</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: 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability: 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)

Physical: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.

Date of issue: 07/27/2015 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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