### SECTION 1: Identification

#### 1.1. Product identifier

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name</td>
<td>BIS(TRIMETHYLSILYL) MALONATE</td>
</tr>
<tr>
<td>Product code</td>
<td>SIB1862.0</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Formula</td>
<td>C9H20O4Si2</td>
</tr>
<tr>
<td>Synonyms</td>
<td>BIS(TRIMETHYLSILYL)PROPANEDIONATE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOSILANE</td>
</tr>
</tbody>
</table>

#### 1.2. Recommended use of the chemical and restrictions on use

- **Recommended use**: Chemical intermediate
- **Restrictions**: 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: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

**GHS-US classification**

- Flammable liquids Category 3  
  H226

Full text of H statements: see section 16

#### 2.2. Label elements

- **Hazard pictograms (GHS-US)**: GHS02

- **Signal word (GHS-US)**: Warning

- **Hazard statements (GHS-US)**: H226 - Flammable liquid and vapor

- **Precautionary statements (GHS-US)**:
  - P280 - Wear protective gloves/protective clothing/eye protection/face protection  
  - P210 - Keep away from heat, open flames, sparks. - No smoking  
  - P233 - Keep container tightly closed  
  - 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  
  - P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower  
  - P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish  
  - P403+P235 - Keep in a cool place  
  - P501 - Dispose of contents/container to licensed waste disposal facility

#### 2.3. Hazards not otherwise classified (HNOC)

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

No data available

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

- **Substance type**: Mono-constituent
**BIS(TRIMETHYLSILYL) MALONATE**
Safety Data Sheet

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(trimethylsilyl) malonate</td>
<td>(CAS No) 18457-04-0</td>
<td>95 - 100</td>
<td>Flam. Liq. 3, H226</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

#### 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. If you feel unwell, seek medical advice.

- **First-aid measures after skin contact**
  
  Wash with plenty of soap and water. Get medical advice/attention.

- **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. Get medical advice/attention.

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

- **Symptoms/injuries after inhalation**
  
  May cause irritation to the respiratory tract.

- **Symptoms/injuries after skin contact**
  
  May cause skin irritation.

- **Symptoms/injuries after eye contact**
  
  May cause eye irritation.

- **Symptoms/injuries after ingestion**
  
  No information available.

#### 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**

- Water spray.
- Foam.
- Carbon dioxide.
- Dry chemical.

**Unsuitable extinguishing media**

- Do not use straight streams.

#### 5.2. Special hazards arising from the substance or mixture

**Fire hazard**

- Flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

**Explosion hazard**

- May form flammable/explosive vapor-air mixture.

#### 5.3. Advice for firefighters

**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.

## SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

**General measures**

- Eliminate every possible source of ignition. Use special care to avoid static electric charges.

**For non-emergency personnel**

- Wear protective equipment as described in Section 8.
- Evacuate unnecessary personnel.

**For emergency responders**

- 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

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. 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: Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Ground/bond container and receiving equipment. Provide good ventilation in process area to prevent accumulation of vapors. Take precautionary measures against static discharge. Use only non-sparking tools.

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

Technical measures: Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions: Keep container tightly closed. Keep in a cool place.


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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

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

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. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid

Appearance: Clear liquid.

Molecular mass: 248.43 g/mol

Color: Straw.

Odor: Mild.

Odor threshold: No data available

Refractive index: 1.416

pH: No data available

Relative evaporation rate (butyl acetate=1): No data available

Melting point: < 0 °C

Freezing point: No data available

Boiling point: 63 - 66 °C @ 1 mm Hg

Flash point: 28 °C

Auto-ignition temperature: No data available

Decomposition temperature: No data available

Flammability (solid, gas): Flammable liquid and vapor

Vapor pressure: < 1 mm Hg @ 25°C

Relative vapor density at 20 °C: > 1

Relative density: 0.9702

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
SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable when stored in sealed containers.

10.3. Possibility of hazardous reactions
Reacts with water and moisture in air liberating hexamethyldisiloxane (flammable) and malonic acid.

10.4. Conditions to avoid
Heat. Sparks. Open flame.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Organic acid vapors.

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
Symptoms/injuries after inhalation : May cause irritation to the respiratory tract.
Symptoms/injuries after skin contact : May cause skin irritation.
Symptoms/injuries after eye contact : May cause eye irritation.
Symptoms/injuries after ingestion : No information available.

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

Other adverse effects : This substance may be hazardous to the environment.
Effect on ozone layer : No additional information available
Effect on the global warming : No known effects from this product.
GWPmix comment : No known effects from this product.
SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations: Do not dispose of waste into sewer.
Waste disposal recommendations: May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Additional information: Handle empty containers with care because residual vapors are flammable.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT) : 1993
DOT NA no. : UN1993

14.2. UN proper shipping name

Transport document description: UN1993 Flammable liquids, n.o.s. (BIS(TRIMETHYLSILYL) MALONATE), 3, III
Proper Shipping Name (DOT) : Flammable liquids, n.o.s. (BIS(TRIMETHYLSILYL) MALONATE)
Class (DOT) : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120
Packing group (DOT) : III - Minor Danger
Hazard labels (DOT) : 3 - Flammable liquid

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
DOT Packaging Bulk (49 CFR 173.xxx) : 242
DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Symbols : G - Identifies PSN requiring a technical name

14.3. Additional information

Emergency Response Guide (ERG) Number : 128
Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

SECTION 15: Regulatory information

15.1. US Federal regulations

**BIS(TRIMETHYLSILYL) MALONATE (18457-04-0)**

| 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) malonate (18457-04-0)**

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

15.2. International regulations

**CANADA**

No additional information available

**EU-Regulations**
BIS(TRIMETHYLSILYL) MALONATE
Safety Data Sheet

Bis(trimethylsilyl) malonate (18457-04-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations
No additional information available

15.3. US State regulations
No additional information available

SECTION 16: Other information

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor</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.

HMIS III Rating
- Health: 2 Moderate Hazard - Temporary or minor injury may occur
- 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.

Date of issue: 01/12/2017
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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