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(TRIMETHOXYSILYLETHYL)BENZENE, tech-95
Product code : SIB1831.0
Formula : C16H30O6Si2
Synonyms : BIS(TRIMETHOXYSILYLETHYL)BENZENE
Chemical family : ORGANOMETHOXYSILANE

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

Use of the substance/mixture : Chemical intermediate
For research and industrial 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: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)
Eye Irrit. 2A  H319
Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling
Hazard pictograms (GHS-US) :

Signal word (GHS-US) : Warning
Hazard statements (GHS-US) : H319 - Causes serious eye irritation
Precautionary statements (GHS-US) :
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P264 - Wash hands thoroughly after handling
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337+P313 - IF eye irritation persists: Get medical advice/attention

2.3. Other hazards

Other hazards not contributing to the classification : Note: The hydrolysis product of bis(trimethoxysilyl)benzene is methanol. Swallowing methanol can cause drowsiness, unconsciousness, blindness and death.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Multi-constituent
Name : BIS(TRIMETHOXYSILYLETHYL)BENZENE, tech-95
CAS No : 266317-71-9

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bis(trimethoxysilyl)benzene, mixed isomers</td>
<td>(CAS No) 266317-71-9</td>
<td>&gt; 85</td>
<td>Eye Irrit. 2A, H319</td>
</tr>
</tbody>
</table>
Name | Product identifier | % | Classification (GHS-US) |
--- | --- | --- | --- |
Ethylphenethyltrimethoxysilane, mixed isomers | (CAS No) 259818-29-6 | ≤ 15 | Eye Irrit. 2A, H319 |
Methanol | (CAS No) 67-56-1 | | Flam. Liq. 2, H225, Acute Tox. 3 (Oral), H301, Acute Tox. 3 (Dermal), H311, Acute Tox. 3 (inhalation:vapour), H331, Skin Irrit. 2, H315, Eye Dam. 1, H318, STOT SE 1, H370, STOT SE 3, H336 |

### 3.2. Mixture
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 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.

**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:** Causes serious eye irritation.

**Symptoms/injuries after ingestion:** May be harmful if swallowed.

**Chronic symptoms:** On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

#### 4.3. Indication of any immediate medical attention and special treatment needed

**NOTE TO PHYSICIAN:** This product reacts with water in the acid contents of the stomach to form methanol. The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 mls/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

**Suitable extinguishing media:** Water spray. Water fog. Alcohol-resistant foam. Carbon dioxide. Dry chemical.

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

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

### SECTION 6: Accidental release measures

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

**For non-emergency personnel**

**Emergency procedures:** Evacuate unnecessary personnel.

**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

**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: Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors.
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
Storage conditions: Keep container tightly closed.
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></th>
<th>USA ACGIH</th>
<th>USA NIOSH</th>
<th>USA OSHA</th>
<th>USA IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol (67-56-1)</td>
<td>ACGIH TWA (ppm)</td>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>US IDLH (ppm)</td>
</tr>
<tr>
<td>ACGIH TWA (ppm)</td>
<td>200 ppm</td>
<td>260 mg/m³</td>
<td>260 mg/m³</td>
<td>6000 ppm</td>
</tr>
<tr>
<td>ACGIH STEL (ppm)</td>
<td>250 ppm</td>
<td>200 ppm</td>
<td>250 ppm</td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.
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: 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: 374.58 g/mol
Color: No data available
Odor: Characteristic.
Odor threshold: No data available
Refractive index: 1.4734
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: < 0 °C
Freezing point: No data available
Boiling point: 148 - 150 °C @ 0.1 mm Hg
Flash point: 193 °C
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: < 0.01 mm Hg @ 20°C
Relative vapor density at 20 °C: > 1
Relative density: 1.08
VOC content: < 5 %
Solubility: 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
Explosive 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.

10.3. Possibility of hazardous reactions
Material decomposes slowly in contact with moist air or with water liberating methanol. Hazardous polymerization will not occur.

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

10.5. Incompatible materials
Oxidizing agent.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity: Not classified

Methanol (67-56-1)

LD50 oral rat: 6200 mg/kg
LD50 dermal rabbit: 20 g/kg
LC50 inhalation rat (ppm): 22500 ppm (Exposure time: 8 h)
ATE US (oral): 100,000 mg/kg body weight
ATE US (dermal): 300,000 mg/kg body weight
ATE US (vapors): 3.000 mg/l/4h

Skin corrosion/irritation: Not classified
Serious eye damage/irritation: Causes serious eye irritation.
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: Causes serious eye irritation.
Symptoms/injuries after ingestion: May be harmful if swallowed.
Chronic symptoms: On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.

Reason for classification: Expert judgment
SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>&gt; 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Methanol (67-56-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>Log Pow</td>
<td>-0.77</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects

| Effect on ozone layer | No additional information available |
| Effect on the global warming | No known ecological damage caused by this product. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| Waste disposal recommendations | Incinerate. Dispose in a safe manner in accordance with local/national regulations. |
| 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

| Ethylphenethyltrimethoxysilane, mixed isomers (259818-29-6) | Listed on the United States TSCA (Toxic Substances Control Act) inventory |
| Bis(trimethoxysilyl)benzene, mixed isomers (266317-71-9) | Listed on the United States TSCA (Toxic Substances Control Act) inventory |

| Methanol (67-56-1) | Listed on the United States TSCA (Toxic Substances Control Act) inventory |
| Listed on United States SARA Section 313 |
| SARA Section 313 - Emission Reporting | 1.0 % |

15.2. International regulations

| Ethylphenethyltrimethoxysilane, mixed isomers (259818-29-6) | Listed on the Canadian NDSL (Non-Domestic Substances List) |
| Bis(trimethoxysilyl)benzene, mixed isomers (266317-71-9) | Listed on the Canadian NDSL (Non-Domestic Substances List) |
## Methanol (67-56-1)

- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
- Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
- Listed on the Korean ECL (Existing Chemicals List)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on the Canadian IDL (Ingredient Disclosure List)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
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- Listed on the Canadian IDL (Ingredient Disclosure List)

### 15.3. US State regulations

#### BIS(TRIMETHOXYSYLYLETHYL)BENZENE, tech-95 (266317-71-9)

<table>
<thead>
<tr>
<th>State</th>
<th>Carcinogens List</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity - Male</th>
<th>Reproductive Toxicity - Female</th>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

#### Ethylphenyltrimethoxysilane, mixed isomers (259818-29-6)

<table>
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<tr>
<th>State</th>
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<th>Developmental Toxicity</th>
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<th>No significance risk level (NSRL)</th>
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</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

#### Bis(trimethoxysilyl)benzene, mixed isomers (266317-71-9)

<table>
<thead>
<tr>
<th>State</th>
<th>Carcinogens List</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity - Male</th>
<th>Reproductive Toxicity - Female</th>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

#### Methanol (67-56-1)

<table>
<thead>
<tr>
<th>State</th>
<th>Carcinogens List</th>
<th>Developmental Toxicity</th>
<th>Reproductive Toxicity - Male</th>
<th>Reproductive Toxicity - Female</th>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

- U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)
- U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Acute
- U.S. - California - SCAQMD - Toxic Air Contaminants - Non-Cancer Chronic
- U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
- U.S. - Colorado - Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues
- U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
- U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
- U.S. - Connecticut - Volatile Substances
- U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
- U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
- U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
- U.S. - Idaho - Occupational Exposure Limits - TWAs
- U.S. - Illinois - Toxic Air Contaminants
- U.S. - Louisiana - Reportable Quantity List for Pollutants
- U.S. - Maine - Air Pollutants - Hazardous Air Pollutants
- U.S. - Maine - Chemicals of High Concern
- U.S. - Massachusetts - Allowable Ambient Limits (AAALs)
- U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
- U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
- U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
- U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
- U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
- U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
- U.S. - Massachusetts - Right To Know List
- U.S. - Massachusetts - Threshold Effects Exposure Limits (TELS)
- U.S. - Massachusetts - Toxics Use Reduction Act
- U.S. - Michigan - Occupational Exposure Limits - Skin Designations
- U.S. - Michigan - Occupational Exposure Limits - STELS
SECTION 16: Other information

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3 (Dermal)</td>
<td>Acute toxicity (dermal) Category 3</td>
</tr>
<tr>
<td>Acute Tox. 3 (Inhalation:vapour)</td>
<td>Acute toxicity (inhalation:vapor) Category 3</td>
</tr>
<tr>
<td>Acute Tox. 3 (Oral)</td>
<td>Acute toxicity (oral) Category 3</td>
</tr>
<tr>
<td>Eye Dam. 1</td>
<td>Serious eye damage/eye irritation Category 1</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Flam. Liq. 2</td>
<td>Flammable liquids Category 2</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/Irritation Category 2</td>
</tr>
<tr>
<td>STOT SE 1</td>
<td>Specific target organ toxicity (single exposure) Category 1</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H311</td>
<td>Toxic in contact with skin</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H331</td>
<td>Toxic if inhaled</td>
</tr>
</tbody>
</table>

The full text of H-phrases is as follows:

- **Acute Tox. 3 (Dermal)**: Acute toxicity (dermal) Category 3
- **Acute Tox. 3 (Inhalation:vapour)**: Acute toxicity (inhalation:vapor) Category 3
- **Acute Tox. 3 (Oral)**: Acute toxicity (oral) Category 3
- **Eye Dam. 1**: Serious eye damage/eye irritation Category 1
- **Eye Irrit. 2A**: Serious eye damage/eye irritation Category 2A
- **Flam. Liq. 2**: Flammable liquids Category 2
- **Skin Irrit. 2**: Skin corrosion/Irritation Category 2
- **STOT SE 1**: Specific target organ toxicity (single exposure) Category 1
- **STOT SE 3**: Specific target organ toxicity (single exposure) Category 3
- **H225**: Highly flammable liquid and vapor
- **H301**: Toxic if swallowed
- **H311**: Toxic in contact with skin
- **H315**: Causes skin irritation
- **H318**: Causes serious eye damage
- **H319**: Causes serious eye irritation
- **H331**: Toxic if inhaled
**BIS(TRIMETHOXYSILYLETHYL)BENZENE, tech-95**

Safety Data Sheet

<table>
<thead>
<tr>
<th>H336</th>
<th>May cause drowsiness or dizziness</th>
</tr>
</thead>
<tbody>
<tr>
<td>H370</td>
<td>Causes damage to organs</td>
</tr>
</tbody>
</table>

**HMIS III Rating**

- **Health**: 2 Moderate Hazard - Temporary or minor injury may occur
- **Flammability**: 1 Slight Hazard
- **Physical**: 0 Minimal Hazard

Prepared by safety and environmental affairs.

Date of issue: 12/04/2014  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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