## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product form</td>
<td>Substance</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Substance name</td>
<td>HEXADECYLTRIETHOXYSSILANE, 95%</td>
</tr>
<tr>
<td>Product code</td>
<td>SIH5922.0</td>
</tr>
<tr>
<td>Formula</td>
<td>C22H48O3Si</td>
</tr>
<tr>
<td>Synonyms</td>
<td>TRIETHOXYSILYLHEXADECANE; CETYLTRIETHOXYSSILANE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOETHOXYSSILANE</td>
</tr>
</tbody>
</table>

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

| Use of the substance/mixture | \(\text{Chemical intermediate} \)  | \(\text{For research and industrial use only}\) |

### 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)**: ![GHS07]

- **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**:  
  - Additional ethanol may be formed by reaction with moisture and water. The hydrolysis product of this compound is ethanol. Overexposure to ethanol by skin absorption, inhalation or ingestion may have a narcotic effect (headache, nausea, drowsiness). Ethanol is metabolized to acetaldehyde and acetic acid which in large quantities result in metabolic acidosis, CNS depression and death due to respiratory arrest. The US OSHA PEL (TWA) for ethanol is 1000 ppm. This product contains ethanol which is classified as a carcinogen by IARC in alcoholic beverages.

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

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

- **Substance type**: Multi-constituent
HEXADECYLTRIETHOXYSILANE, 95%
Safety Data Sheet

Name: HEXADECYLTRIETHOXYSILANE, 95%
CAS No: 16415-13-7
EC no: 240-465-9

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethoxyhexadecylsilane</td>
<td>(CAS No) 16415-13-7</td>
<td>95 - 100</td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td>Hexadecyltriethoxysilane, mixed isomers</td>
<td>(CAS No) Not found</td>
<td>85 - 90</td>
<td>Eye Irrit. 2A, H319</td>
</tr>
</tbody>
</table>

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. 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. 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: Causes serious eye irritation.
Symptoms/injuries after ingestion: May be harmful if swallowed.
Chronic symptoms: On contact with water this compound liberates ethanol 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
No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media
Unsuitable extinguishing media: Do not use straight streams.

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.

5.3. Advice for firefighters
Firefighting instructions: Use water spray to cool exposed surfaces. 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
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. Fire resistant clothing and gloves must be worn.

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: 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
No additional information available

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: 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: 388.71 g/mol
Color: Straw.
Odor: No data available
Odor threshold: No data available
Refractive index: 1.437
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: No data available
Freezing point: -9 °C
Boiling point: 160 - 161 °C @ 1 mm Hg
Flash point: > 150 °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: 0.888
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.

10.3. Possibility of hazardous reactions
Reacts with water and moisture in air, liberating ethanol.

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

10.5. Incompatible materials
Moisture. Water.

10.6. Hazardous decomposition products
Ethanol. Organic acid vapors.

### SECTION 11: Toxicological information

11.1. Information on toxicological effects

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity (single exposure)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity (repeated exposure)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Potential Adverse human health effects and symptoms</td>
<td>This compound liberates ethanol on contact with moisture. Material generates ethanol on contact with water or moisture in skin, eyes and mucous membranes and has an irritating, dehydrating effect on overexposed tissue.</td>
</tr>
</tbody>
</table>

**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 ethanol 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
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 ecological damage caused by this product.
## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<table>
<thead>
<tr>
<th>Waste disposal recommendations</th>
<th>Ecology - waste materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not dispose of waste into sewer.</td>
<td>Avoid release to the environment.</td>
</tr>
<tr>
<td>May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.</td>
<td></td>
</tr>
</tbody>
</table>

### 14. Transport information

#### 14.1. UN number

<table>
<thead>
<tr>
<th>DOT NA no.</th>
<th>NA1993</th>
</tr>
</thead>
</table>

#### 14.2. UN proper shipping name

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustible liquid, n.o.s.</td>
<td>3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120</td>
<td>D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name</td>
<td>III - Minor Danger</td>
<td>150</td>
<td>203</td>
<td>241</td>
</tr>
</tbody>
</table>

#### 14.3. Additional information

<table>
<thead>
<tr>
<th>Special transport precautions</th>
<th>Other information</th>
</tr>
</thead>
<tbody>
<tr>
<td>This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container &gt; 119 gallons. The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations.</td>
<td>No supplementary information available.</td>
</tr>
</tbody>
</table>

**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 173.75) | 220 L |

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

| Triethoxyhexadecylsilane (16415-13-7) | Listed on the United States TSCA (Toxic Substances Control Act) inventory |

### 15.2. International regulations

| Triethoxyhexadecylsilane (16415-13-7) | Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) Listed on PICCS (Philipines Inventory of Chemicals and Chemical Substances) |

### 15.3. US State regulations

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No significance risk level (NSRL)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
HEXADECYLTRIETHOXYSILANE, 95%
Safety Data Sheet

<table>
<thead>
<tr>
<th>Triethoxyhexadecylsilane (16415-13-7)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hexadecyltriethoxysilane, mixed isomers (Not found)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Carcinogens List</td>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

SECTION 16: Other information

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.

Full text of H-phrases:

- Eye Irrit. 2A: Serious eye damage/eye irritation Category 2A
- H319: Causes serious eye irritation

HMIS III Rating

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

Prepared by safety and environmental affairs.

Date of issue: 01/06/2015 Revision date: 09/03/2015 Version: 2.0

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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