# SECTION 1: Identification

## 1. Identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product code</td>
<td>SIA0594.0</td>
</tr>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Formula</td>
<td>C12H30N2O3Si</td>
</tr>
<tr>
<td>Synonyms</td>
<td>1,6-HEXANEDIAMINE, N-[3-TRIMETHOXYSILYL]PROPYL]-</td>
</tr>
<tr>
<td></td>
<td>N-[3-(TRIMETHOXYSILYL)PROPYL]HEXAMETHYLENEDIAMINE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ORGANOMETHOXYSILANE</td>
</tr>
</tbody>
</table>

## 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. Classification of the substance or mixture

**GHS-US classification**

- **Skin corrosion/irritation Category 2**: H315 - Causes skin irritation  
- **Serious eye damage/eye irritation Category 2A**: H319 - Causes serious eye irritation  
- **Specific target organ toxicity (single exposure) Category 3**: H335 - May cause respiratory irritation

Full text of H statements: see section 16

## 2.2. GHS Label elements, including precautionary statements

### GHS US labeling

**Hazard pictograms (GHS US)**: ![Warning]

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

**Hazard statements (GHS US)**

- H315 - Causes skin irritation  
- H319 - Causes serious eye irritation  
- H335 - May cause respiratory irritation

**Precautionary statements (GHS US)**

- P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
- P312 - Call a doctor if you feel unwell  
- P261 - Avoid breathing vapors.  
- P264 - Wash hands thoroughly after handling.  
- P271 - Use only outdoors or in a well-ventilated area.  
- P302+P352 - If on skin: Wash with plenty of soap and water  
- P332+P313 - If skin irritation occurs: Get medical advice/attention.  
- P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
- 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.  
- P321 - Specific treatment (see first aid instructions on this label)  
- P362+P364 - Take off contaminated clothing and wash it before reuse.  
- P403+P405 - Store in a well-ventilated place. Keep container tightly closed.  
- P405 - Store locked up.  
- P501 - Dispose of contents/container to licensed waste disposal facility.

## 2.3. Hazards not otherwise classified (HNOC)

**Other hazards not contributing to the classification**: Additional methanol may be formed by reaction with moisture and water. The US OSHA PEL (TWA) for methanol is 200 ppm.
N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95%
Safety Data Sheet

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Substance type: Mono-constituent
Name: N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95%
CAS-No.: 51895-58-0

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,6-Hexanediame, N-[3-trimethoxysilyl]propyl]-</td>
<td>(CAS-No.) 51895-58-0</td>
<td>95 - 100</td>
<td>Skin Irrit. 2, H315&lt;br&gt;Eye Irrit. 2A, H319&lt;br&gt;STOT SE 3, H335</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.
- 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 (acute and delayed)

- Symptoms/effects after inhalation: May cause respiratory irritation.
- Symptoms/effects after skin contact: Causes skin irritation.
- Symptoms/effects after eye contact: Causes serious eye irritation.
- Symptoms/effects 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. Immediate medical attention and special treatment, if necessary

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: 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.

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”.

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EN (English US)
SDS ID: SIA0594.0
2/6
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.

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 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.
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. 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. NIOSH-certified combination organic vapor - amine gas (brown 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: 278.47 g/mol
Color: Straw.
Odor threshold: No data available
Refractive index: 1.4501
pH: No data available
Relative evaporation rate (butyl acetate=1): < 1
Melting point: No data available
Freezing point: < 0 °C
Boiling point: 160 - 165 °C @ 0.15 mm Hg
N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95%
Safety Data Sheet

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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>&lt; 0.01 mm Hg @ 25°C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.11</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>&lt; 5 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Reacts with 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 in sealed containers.

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

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

10.5. Incompatible materials

10.6. Hazardous decomposition products
Methanol. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified
Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye irritation.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

Reproductive toxicity : Not classified
Specific target organ toxicity – single exposure : May cause respiratory irritation.

Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : Not classified
Potential Adverse human health effects and symptoms : The hydrolysis product of this compound is methanol.

Symptoms/effects after inhalation : May cause respiratory irritation.
Symptoms/effects after skin contact : Causes skin irritation.
Symptoms/effects after eye contact : Causes serious eye irritation.
Symptoms/effects after ingestion : May be harmful if swallowed.
**N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95%**

**Safety Data Sheet**

<table>
<thead>
<tr>
<th>Chronic symptoms</th>
<th>On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason for classification</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

<table>
<thead>
<tr>
<th>12.1. Toxicity</th>
<th>No additional information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.2. Persistence and degradability</td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.3. Bioaccumulative potential</td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.4. Mobility in soil</td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.5. Other adverse effects</td>
<td>Other adverse effects: This substance may be hazardous to the environment. Effect on the ozone layer: No additional information available</td>
</tr>
</tbody>
</table>

**SECTION 13: Disposal considerations**

|------------------------|----------------------------------------------------------------------------------------------------------------------|

**SECTION 14: Transport information**

<table>
<thead>
<tr>
<th>14.1. UN number</th>
<th>Not regulated for transport.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2. UN proper shipping name</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.3. Additional information</td>
<td>Other information: No supplementary information available.</td>
</tr>
</tbody>
</table>

Transport by sea
No additional information available

Air transport
No additional information available

**SECTION 15: Regulatory information**

<table>
<thead>
<tr>
<th>15.1. US Federal regulations</th>
<th>N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95% (51895-58-0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA Exemption/Exclusion</td>
<td>CAUTION: This material is supplied for research and development purposes subject to the R&amp;D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a &quot;technically qualified individual&quot; as defined by 40 CFR 720.3(ee). The use of this material for &quot;commercial purposes&quot; as defined by 40 CFR 720.3(r) is not permitted in the United States.</td>
</tr>
</tbody>
</table>

1,6-Hexanediamine, N-[3-trimethoxysilyl]propyl]- (51895-58-0)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

<table>
<thead>
<tr>
<th>15.2. International regulations</th>
<th>CANADA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA Exemption/Exclusion</td>
<td>No additional information available</td>
</tr>
</tbody>
</table>

EU-Regulations
No additional information available

National regulations
1.6-Hexanediamine, N-[3-trimethoxysilyl]propyl]- (51895-58-0)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

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:

| H315  | Causes skin irritation          |
| H319  | Causes serious eye irritation  |
| H335  | May cause respiratory irritation |

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

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: 11/17/2014 Revision date: 01/04/2017 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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