



# N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95%

Safety Data Sheet SIA0594.0

Date of issue: 11/17/2014

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Version: 2.0

## SECTION 1: Identification

### 1.1. Product identifier

Product name	: N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95%
Product code	: SIA0594.0
Product form	: Substance
Physical state	: Liquid
Formula	: C <sub>12</sub> H <sub>30</sub> N <sub>2</sub> O <sub>3</sub> Si
Synonyms	: 1,6-HEXANEDIAMINE, N-[3-TRIMETHOXYSILYL]PROPYL]-N-[3-(TRIMETHOXYSILYL)PROPYL]HEXAMETHYLENEDIAMINE
Chemical family	: ORGANOMETHOXYSILANE

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

Recommended use	: Chemical intermediate For research use only
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### 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](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)

### 1.4. Emergency telephone number

Emergency number	: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)
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## SECTION 2: Hazard(s) identification

### 2.1. Classification of the substance or mixture

#### GHS-US classification

Skin corrosion/irritation Category 2	H315
Serious eye damage/eye irritation Category 2A	H319
Specific target organ toxicity (single exposure) Category 3	H335
Full text of H statements : see section 16	

### 2.2. Label elements

#### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

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+P233 - Store in a well-ventilated place. Keep container tightly closed P405 - Store locked up P501 - Dispose of contents/container to licensed waste disposal facility

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### 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.

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

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

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

Name	Product identifier	%	GHS-US classification
1,6-Hexanediamine, N-[3-trimethoxysilyl]propyl]-	(CAS No) 51895-58-0	95 - 100	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

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 respiratory irritation.

Symptoms/injuries after skin contact : Causes 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 ml/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. 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 : 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 : 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.

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### 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".

### 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.

Incompatible materials : Acids. Alcohols. Peroxides. Oxidizing agent.

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 : 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 : Mild. Amine. Ammonia-like.

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

Flash point : > 110 °C

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Flammability (solid, gas) : No data available

Vapor pressure : < 0.01 mm Hg @ 25°C

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Relative vapor density at 20 °C	: > 1
Relative density	: 1.11
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
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.

### 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

Acids. Alcohols. Peroxides. Oxidizing agent.

### 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/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Causes 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

No additional information available

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### 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.  
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

#### N-(6-AMINOHEXYL)AMINOPROPYLTRIMETHOXYSILANE, 95% (51895-58-0)

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

#### 1,6-Hexanediamine, N-[3-trimethoxysilyl]propyl]- (51895-58-0)

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

### 15.2. International regulations

#### CANADA

No additional information available

#### 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

No additional information available

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### 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.

#### HMIS III 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.

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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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