SECTION 1: Identification

1.1. Product identifier

Product name: 3-CHLOROPROPYLTRIMETHOXYSILANE
Product code: SIC2410.0
Product form: Substance
Physical state: Liquid
Formula: C6H15ClO3Si
Synonyms: 1-CHLORO-3-(TRIMETHOXYSILYL)PROPANE
Chemical family: ORGANOMETHTOXYSILANE

1.2. Recommended use of the chemical and restrictions on use

Recommended use: 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: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
Flammable liquids Category 4: H227
Skin corrosion/irritation Category 2: H315
Serious eye damage/eye irritation Category 2A: H319
Full text of H statements: see section 16

2.2. Label elements

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

Signal word (GHS-US): Warning
Hazard statements (GHS-US):
H227 - Combustible liquid
H315 - Causes skin irritation
H319 - Causes serious eye irritation
Precautionary statements (GHS-US):
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P210 - Keep away from heat, open flames, sparks. - No smoking
P264 - Wash hands thoroughly after handling
P302 + P352 - If on skin: Wash with plenty of water
P332 + P313 - If skin irritation occurs: Get medical advice/attention
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
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)

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.
3-CHLOROPROPYLTRIMETHOXYSILANE
Safety Data Sheet

2.4. Unknown acute toxicity (GHS US)
No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance
Substance type : Mono-constituent
Name : 3-CHLOROPROPYLTRIMETHOXYSILANE
CAS No : 2530-87-2

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Chloropropyltrimethoxysilane (CAS No) 2530-87-2</td>
<td>95 - 100</td>
<td>Flam. Liq. 4, H227, Skin Irrit. 2, H315, Eye Irrit. 2A, H319</td>
<td></td>
</tr>
</tbody>
</table>

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

3.2. Mixture
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 : Causes skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.
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
Unsuitable extinguishing media : Do not use straight streams.

5.2. Special hazards arising from the substance or mixture
Fire hazard : Combustible liquid. 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
General measures : Remove ignition sources. Use special care to avoid static electric charges.

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".

### 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 Section 8: "Exposure controls/personal protection".

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Additional hazards when processed**: Keep away from heat, open flames, sparks. - No smoking.

**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. Take precautionary measures against static discharge. Use only non-sparking tools.

**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. 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**: 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/acid gas (yellow 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**: 198.72 g/mol

**Color**: Straw.

**Odor**: Mild.

**Odor threshold**: No data available

**Refractive index**: 1.4183 @ 25°C

**pH**: No data available

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

**Melting point**: No data available

**Freezing point**: < 0 °C

**Boiling point**: 100 °C @ 40 mm Hg

**Flash point**: 78 °C

**Auto-ignition temperature**: No data available
3-CHLOROPROPYLTRIMETHOXYSILANE
Safety Data Sheet

Decomposition temperature : No data available
Flammability (solid, gas) : Combustible liquid
Vapor pressure : 40 mm Hg @ 100°C
Relative vapor density at 20 °C : 6.9
Relative density : 1.077
Solubility : Reacts with water.
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : 0.56 cSt @ 20°C
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 stored under dry nitrogen.

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

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

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

3-Chloropropyltrimethoxysilane (2530-87-2)

LD50 oral rat 5628 mg/kg
LD50 dermal rabbit 2830 µl/kg

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
A recent study indicated that the related compound, chloropropyltrimethoxysilane, is a genetically active material via inhalation in a bone marrow micronucleus assay in female rats exposed to 200ppm daily over a 28 day period. However, using the same assay, no evidence of genetic activity was found in mice exposed to 500, 1000, or 1625 mg/kg by intraperitoneal injection. The relevance of this information to humans has not yet been determined

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) : 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 : Causes skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
3-CHLOROPROPYLTRIMETHOXYSILANE
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Symptoms/injuries after ingestion: Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness.

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

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: 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
DOT NA no.: NA1993

14.2. UN proper shipping name
Transport document description: NA1993 Combustible liquid, n.o.s. (3-CHLOROPROPYLTRIMETHOXYSILANE), 3, III

Proper Shipping Name (DOT): Combustible liquid, n.o.s. (3-CHLOROPROPYLTRIMETHOXYSILANE)

Class (DOT): 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Packing group (DOT): III - Minor Danger

DOT Packaging Non Bulk (49 CFR 173.xxx): 203

DOT Packaging Bulk (49 CFR 173.xxx): 241

DOT Packaging Exceptions (49 CFR 173.xxx): 150

DOT Symbols: D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name

14.3. Additional information
Emergency Response Guide (ERG) Number: 128

Other information: No supplementary information available.

Special transport precautions: This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the US in container > 119 gallons. The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations.

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

**3-Chloropropyltrimethoxysilane (2530-87-2)**

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

**CANADA**

**3-Chloropropyltrimethoxysilane (2530-87-2)**

Listed on the Canadian DSL (Domestic Substances List)

**EU-Regulations**

**3-Chloropropyltrimethoxysilane (2530-87-2)**

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

**National regulations**

**3-Chloropropyltrimethoxysilane (2530-87-2)**

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
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)

15.3. US State regulations

No additional information available

SECTION 16: Other information

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H227</th>
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<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</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**

3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

**Flammability**

2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)

**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: 01/05/2015 Revision date: 10/31/2016 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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