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

1.1. Product identifier
Product form: Substance
Physical state: Liquid
Substance name: n-OCTADECYLTRICHLOROSILANE, 95%
Product code: SIO6640.0
Formula: C18H37Cl3Si
Synonyms: OTS; TRICHLOROSILYLOCTADECANE; TRICHLOROOCTADECYLSILANE
Chemical family: CHLOROSILANE

1.2. Relevant identified uses of the substance or mixture and uses advised against
1.2.1. Relevant identified uses
Use of the substance/mixture: Chemical intermediate

1.2.2. Uses advised against
No additional information available

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

GELEST INC.
Fritz-Klatte-Strasse 8
65933 Frankfurt
Germany
T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM
info@gelestde.com - www.gelestde.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 according to Regulation (EC) No. 1272/2008 [CLP]
Skin corrosion/irritation, Category 1B: H314
Serious eye damage/eye irritation, Category 1: H318
Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements
Labelling according to Regulation (EC) No. 1272/2008 [CLP]
Hazard pictograms (CLP): GHS05

Signal word (CLP): Danger
Hazard statements (CLP): H314 - Causes severe skin burns and eye damage.
Precautionary statements (CLP): P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Wash hands thoroughly after handling.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing.
n-OCTADECYLTRICHLOROSILANE, 95%
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Rinse skin with water/shower. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 - Immediately call a POISON CENTER or doctor/physician P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances
Substance type: Mono-constituent
Name: n-OCTADECYLTRICHLOROSILANE, 95%
CAS-No.: 112-04-9
EC-No.: 203-930-7

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Octadecyltrichlorosilane</td>
<td>(CAS-No.) 112-04-9</td>
<td>95 - 100</td>
<td>Skin Corr. 1B, H314, Eye Dam. 1, H318</td>
</tr>
<tr>
<td></td>
<td>(EC-No.) 203-930-7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of 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 person to fresh air and keep comfortable for breathing. Get medical advice/attention.

First-aid measures after skin contact: Wash with plenty of water/…. Get immediate 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 immediate 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/effects: Causes severe skin burns and eye damage.
Symptoms/effects after inhalation: May be irritating to the respiratory system. Overexposure may cause: Cough. Headache. Nausea.
Symptoms/effects after skin contact: Causes (severe) skin burns.
Symptoms/effects after eye contact: Causes serious eye damage.
Symptoms/effects after ingestion: May be harmful if swallowed.

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: Water.

5.2. Special hazards arising from the substance or mixture
Fire hazard: Irritating fumes of hydrogen chloride and organic acid vapors may develop when material is exposed to water 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 vapour and mist.

Print date: 10/04/2019  EN (English)  SDS ID: SIO6640.0  2/9
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**SECTION 6: Accidental release measures**

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. 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 vapour and mist. Provide good ventilation in process area to prevent formation of vapour.

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

| Octadecyltrichlorosilane (112-04-9) | USA OSHA | OSHA PEL (TWA) (ppm) | 5 ppm hydrogen chloride |

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 or face shield. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

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

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>387.93 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Straw.</td>
</tr>
<tr>
<td>Odour</td>
<td>Acrid. Similar to hydrogen chloride.</td>
</tr>
</tbody>
</table>
n-OCTADECYLTRICHLOROSILANE, 95%
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.4602</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>22 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>160 - 162 °C @ 3 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>189 °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>Vapour pressure</td>
<td>&lt; 0.01 mm Hg 25°C</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>0.95</td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in water. 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>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive 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 stored under a dry inert atmosphere.

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

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

10.5. Incompatible materials
Acids. alcohols. Oxidizing agent.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified
Skin corrosion/irritation : Causes severe skin burns and eye damage.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified
Symptoms/effects after inhalation : May be irritating to the respiratory system. Overexposure may cause: Cough. Headache. Nausea.
Symptoms/effects after skin contact : Causes (severe) skin burns.
Symptoms/effects after eye contact : Causes serious eye damage.
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Symptoms/effects after ingestion : May be harmful if swallowed.
Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

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. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
Other adverse effects : This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging 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
In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number
UN-No. (ADR) : 1800
UN-No. (IMDG) : 1800
UN-No. (IATA) : 1800
UN-No. (ADN) : 1800
UN-No. (RID) : 1800

14.2. UN proper shipping name
Proper Shipping Name (ADR) : OCTADECYLTRICHLOROSILANE
Proper Shipping Name (IMDG) : OCTADECYLTRICHLOROSILANE
Proper Shipping Name (IATA) : Octadecyltrichlorosilane
Proper Shipping Name (ADN) : OCTADECYLTRICHLORO- SILANE
Proper Shipping Name (RID) : OCTADECYLTRICHLOROSILANE
Transport document description (ADR) : UN 1800 OCTADECYLTRICHLOROSILANE, 8, II, (E)
Transport document description (IMDG) : UN 1800 OCTADECYLTRICHLOROSILANE, 8, II
Transport document description (IATA) : UN 1800 Octadecyltrichlorosilane, 8, II
Transport document description (ADN) : UN 1800 OCTADECYLTRICHLORO- SILANE, 8, II
Transport document description (RID) : UN 1800 OCTADECYLTRICHLOROSILANE, 8, II

14.3. Transport hazard class(es)
ADR
Transport hazard class(es) (ADR) : 8
Danger labels (ADR) : 8
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Transport hazard class(es) (IMDG) : 8
Danger labels (IMDG) : 8

IATA
Transport hazard class(es) (IATA) : 8
Hazard labels (IATA) : 8

ADN
Transport hazard class(es) (ADN) : 8
Danger labels (ADN) : 8

RID
Transport hazard class(es) (RID) : 8
Danger labels (RID) : 8

14.4. Packing group
Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

14.5. Environmental hazards
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user
- Overland transport
  Classification code (ADR) : C3
  Limited quantities (ADR) : 0
  Excepted quantities (ADR) : E0
  Packing instructions (ADR) : P010
  Mixed packing provisions (ADR) : MP15
  Portable tank and bulk container instructions (ADR) : T10
# n-OCTADECYLTRICHLOROSILANE, 95%
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<table>
<thead>
<tr>
<th>Portable tank and bulk container special provisions (ADR)</th>
<th>TP2, TP7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank code (ADR)</td>
<td>L4BN</td>
</tr>
<tr>
<td>Vehicle for tank carriage</td>
<td>AT</td>
</tr>
<tr>
<td>Transport category (ADR)</td>
<td>2</td>
</tr>
<tr>
<td>Hazard identification number (Kemler No.)</td>
<td>X80</td>
</tr>
</tbody>
</table>

**Orange plates**

| Tunnel restriction code (ADR) | E        |
| EAC code                     | 4W       |

**- Transport by sea**

| Limited quantities (IMDG) | 0        |
| Excepted quantities (IMDG) | E0       |
| Packing instructions (IMDG) | P010    |
| Tank instructions (IMDG)   | T10      |
| Tank special provisions (IMDG) | TP2, TP7, TP13 |
| EmS-No. (Fire)            | F-A      |
| EmS-No. (Spillage)        | S-B      |
| Stowage category (IMDG)   | C        |
| Stowage and handling (IMDG) | SW2     |
| Properties and observations (IMDG) | Colourless liquid with a pungent odour. Reacts violently with water, evolving hydrogen chloride, an irritating and corrosive gas apparent as white fumes. When involved in a fire, evolves toxic gases. In the presence of moisture, highly corrosive to most metals. Vapour irritates mucous membranes. |

**- Air transport**

| PCA Excepted quantities (IATA) | E0       |
| PCA Limited quantities (IATA) | Forbidden |
| PCA limited quantity max net quantity (IATA) | Forbidden |
| PCA packing instructions (IATA) | Forbidden |
| PCA max net quantity (IATA)   | Forbidden |
| CAO packing instructions (IATA) | 876      |
| CAO max net quantity (IATA)   | 30L      |
| Special provisions (IATA)     | A1       |
| ERG code (IATA)               | 8L       |

**- Inland waterway transport**

| Classification code (ADN) | C3       |
| Limited quantities (ADN)  | 0        |
| Excepted quantities (ADN) | E0       |
| Equipment required (ADN)  | PP, EP   |
| Number of blue cones/lights (ADN) | 0       |

**- Rail transport**

| Classification code (RID) | C3       |
| Limited quantities (RID)  | 0        |
| Excepted quantities (RID) | E0       |
| Packing instructions (RID) | P010    |
| Mixed packing provisions (RID) | MP15     |
| Portable tank and bulk container instructions (RID) | T10      |
| Portable tank and bulk container special provisions (RID) | TP2, TP7 |
| Tank codes for RID tanks (RID) | L4BN    |
| Transport category (RID)  | 2        |
| Colis express (express parcels) (RID) | CE6     |
| Hazard identification number (RID) | X80     |
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SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions
n-OCTADECYLTRICHLOROSILANE, 95% is not on the REACH Candidate List
n-OCTADECYLTRICHLOROSILANE, 95% is not on the REACH Annex XIV List
n-OCTADECYLTRICHLOROSILANE, 95% is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

15.1.2. National regulations

Germany
Reference to AwSV : Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to VwVwS, Annex 1 or 2; ID No. 557)

Netherlands
SZW-lijst van kankerverwekkende stoffen : n-OCTADECYLTRICHLOROSILANE, 95% is listed
SZW-lijst van mutagene stoffen : The substance is not listed
NIET-imitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed
NIET-imitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed
NIET-imitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

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; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |

SDS EU (REACH Annex II) - Custom

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