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

### 1.1. Product identifier
- **Product form**: Substance
- **Physical state**: Liquid
- **Substance name**: DODECYLTRICHLOROSILANE
- **Product code**: SID4630.0
- **Formula**: C12H25Cl3Si
- **Synonyms**: TRICHLOROSILYLDODECANE; TRICHLORO(DODECYL)SILANE
- **Chemical family**: ORGANOCHLOROSILANE

### 1.2. Relevant identified uses of the substance or mixture and uses advised against
- **Use of the substance/mixture**: 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: Hazards identification

### 2.1. Classification of the substance or mixture
- **Classification (GHS-US)**
  - Skin Corr. 1B H314
  - Eye Dam. 1 H318
- **Full text of H-phrases**: see section 16

### 2.2. Label elements
- **GHS-US labelling**
  - **Hazard pictograms (GHS-US)**
    - GHS05
  - **Signal word (GHS-US)**: Danger
  - **Hazard statements (GHS-US)**: H314 - Causes severe skin burns and eye damage
    - H318 - Causes serious eye damage
- **Precautionary statements (GHS-US)**
  - P280 - Wear protective gloves/protective clothing/eye protection/face protection
  - P260 - Do not breathe vapors
  - P264 - Wash hands thoroughly after handling
  - P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
  - P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
  - 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
  - P310 - Immediately call a doctor
  - P363 - Wash contaminated clothing before reuse
  - P405 - Store locked up
  - P321 - Specific treatment (see first aid instructions on this label)
  - P501 - Dispose of contents/container to licensed waste disposal facility.

### 2.3. Other hazards
- **No additional information available**

### 2.4. Unknown acute toxicity (GHS US)
- **No data available**
SECTION 3: Composition/information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodecyltrichlorosilane</td>
<td>(CAS No) 4484-72-4</td>
<td>&gt; 95</td>
<td>Skin Corr. 1B, H314 Eye Dam. 1, H318</td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>(CAS No) 7647-01-0</td>
<td></td>
<td>Skin Corr. 1A, H314 Eye Dam. 1, H318</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.

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 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 if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries: Causes severe skin burns and eye damage.


Symptoms/injuries after skin contact: Causes (severe) skin burns.

Symptoms/injuries after eye contact: Causes serious eye damage.

Symptoms/injuries 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 hydrochloric acid 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 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".

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 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

### Hydrochloric acid (7647-01-0)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA ACGIH</td>
<td>ACGIH Ceiling (ppm)</td>
<td>2 ppm</td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (ceiling) (mg/m³)</td>
<td>7 mg/m³</td>
</tr>
<tr>
<td>USA NIOSH</td>
<td>NIOSH REL (ceiling) (ppm)</td>
<td>5 ppm</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (Ceiling) (mg/m³)</td>
<td>7 mg/m³</td>
</tr>
<tr>
<td>USA OSHA</td>
<td>OSHA PEL (Ceiling) (ppm)</td>
<td>5 ppm</td>
</tr>
<tr>
<td>USA IDLH</td>
<td>US IDLH (ppm)</td>
<td>50 ppm</td>
</tr>
</tbody>
</table>

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: 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>303.77 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>Straw.</td>
</tr>
<tr>
<td>Odor</td>
<td>Acrid. Similar to hydrogen chloride.</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.4581</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>-30 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>120 °C @ 3 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>165 °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>
</tbody>
</table>
DODECYLTRICHROMOSILANE
Safety Data Sheet

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

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity
Not classified

<table>
<thead>
<tr>
<th>Hydrochloric acid (7647-01-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>238 - 277 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 5010 mg/kg</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>1.68 mg/l (Exposure time: 1 h)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>238,000 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>1.680 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>1.680 mg/l/4h</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Hydrochloric acid (7647-01-0)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC group</td>
<td>3 - Not classifiable</td>
</tr>
</tbody>
</table>

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 skin contact: Causes (severe) skin burns.
Symptoms/Injuries after eye contact: Causes serious eye damage.
Symptoms/Injuries after ingestion: May be harmful if swallowed.
**DODECYLTRICHLOROSILANE**

Safety Data Sheet

<table>
<thead>
<tr>
<th>Reason for classification</th>
<th>:</th>
<th>Expert judgment</th>
</tr>
</thead>
</table>

**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

<table>
<thead>
<tr>
<th>Other adverse effects</th>
<th>:</th>
<th>This substance may be hazardous to the environment.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Effect on ozone layer</th>
<th>:</th>
<th>No additional information available</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Effect on the global warming</th>
<th>:</th>
<th>No known ecological damage caused by this product.</th>
</tr>
</thead>
</table>

**SECTION 13: Disposal considerations**

**13.1.** Waste treatment methods

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

<table>
<thead>
<tr>
<th>UN-No.(DOT)</th>
<th>:</th>
<th>2987</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT NA no.</td>
<td>:</td>
<td>UN2987</td>
</tr>
</tbody>
</table>

**14.2.** UN proper shipping name

<table>
<thead>
<tr>
<th>Proper Shipping Name (DOT)</th>
<th>:</th>
<th>Chlorosilanes, corrosive, n.o.s. (DODECYLTRICHLOROSILANE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Transportation (DOT) Hazard Classes</td>
<td>:</td>
<td>8 - Class 8 - Corrosive material 49 CFR 173.136</td>
</tr>
<tr>
<td>Hazard labels (DOT)</td>
<td>:</td>
<td>8 - Corrosive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Packing group (DOT)</th>
<th>:</th>
<th>II - Medium Danger</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Packaging Exceptions (49 CFR 173.xxx)</td>
<td>:</td>
<td>None</td>
</tr>
<tr>
<td>DOT Packaging Non Bulk (49 CFR 173.xxx)</td>
<td>:</td>
<td>206</td>
</tr>
<tr>
<td>DOT Packaging Bulk (49 CFR 173.xxx)</td>
<td>:</td>
<td>242</td>
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</table>

**14.3.** Additional information

<table>
<thead>
<tr>
<th>Emergency Response Guide (ERG) Number</th>
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<th>60</th>
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</thead>
<tbody>
<tr>
<td>Other information</td>
<td>:</td>
<td>No supplementary information available.</td>
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</tbody>
</table>

**Transport by sea**

<table>
<thead>
<tr>
<th>DOT Vessel Stowage Location</th>
<th>:</th>
<th>C - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Vessel Stowage Other</td>
<td>:</td>
<td>40 - Stow “clear of living quarters”</td>
</tr>
</tbody>
</table>

**Air transport**

<table>
<thead>
<tr>
<th>DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)</th>
<th>:</th>
<th>Forbidden</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)</td>
<td>:</td>
<td>30 L</td>
</tr>
</tbody>
</table>

**SECTION 15: Regulatory information**

**15.1.** US Federal regulations
DODECYLTRICHLOROSILANE
Safety Data Sheet

Hydrochloric acid (7647-01-0)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on the United States SARA Section 302
Listed on United States SARA Section 313
SARA Section 302 Threshold Planning Quantity (TPQ) 500 (gas only)
SARA Section 313 - Emission Reporting 1.0 % (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)

Dodecytrichlorosilane (4484-72-4)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

Hydrochloric acid (7647-01-0)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
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)
Japanese Poisonous and Deleterious Substances Control Law
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)
Listed on Turkish inventory of chemical

Dodecytrichlorosilane (4484-72-4)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian NDSL (Non-Domestic Substances List)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican national Inventory of Chemical Substances)

15.3. US State regulations

DODECYLTRICHLOROSILANE (4484-72-4)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid (7647-01-0)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Dodecytrichlorosilane (4484-72-4)</td>
<td>No</td>
<td>No</td>
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<td>No</td>
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</table>

Dodecytrichlorosilane (4484-72-4)

<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>

Dodecytrichlorosilane (4484-72-4)

<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>

Dodecytrichlorosilane (4484-72-4)

No significance risk level (NSRL)
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 Dam. 1 | Serious eye damage/eye irritation Category 1 |
| Skin Corr. 1A | Skin corrosion/irritation Category 1A |
| Skin Corr. 1B | Skin corrosion/irritation Category 1B |
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage |

HMIS III Rating

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

Flammability: 1 Slight Hazard

Physical: 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 08/07/2015
Version: 1.0

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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