1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Trichlorosilane
Product Number : 175552
Brand : Aldrich
Supplier : Sigma-Aldrich Corporation
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555
Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Water Reactive, Toxic by inhalation., Harmful by ingestion., Corrosive

Other hazards which do not result in classification
Lachrymator.

GHS Classification
Flammable liquids (Category 1)
Pyrophoric liquids (Category 1)
Acute toxicity, Oral (Category 4)
Acute toxicity, Inhalation (Category 2)
Skin corrosion (Category 1A)
Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word : Danger

Hazard statement(s)
H224 Extremely flammable liquid and vapour.
H250 Catches fire spontaneously if exposed to air.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H330 Fatal if inhaled.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P222 Do not allow contact with air.
P231 Handle under inert gas.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Wear respiratory protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Store contents under inert gas.

Other hazards
Reacts violently with water. Contact with water liberates toxic gas.

HMIS Classification
- Health hazard: 3
- Flammability: 4
- Physical hazards: 2

NFPA Rating
- Health hazard: 4
- Fire: 4
- Reactivity Hazard: 2
- Special hazard: W

Potential Health Effects
- Inhalation: Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
- Skin: Harmful if absorbed through skin. Causes skin burns.
- Eyes: Causes eye burns. Causes severe eye burns.
- Ingestion: Harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: HCl₃Si
Molecular Weight: 135.45 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichlorosilane</td>
<td>&lt;= 100 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>10025-78-2</td>
</tr>
<tr>
<td>EC-No.</td>
<td>233-042-5</td>
</tr>
<tr>
<td>Index-No.</td>
<td>014-001-00-9</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. May burn in presence of air, or emit a flammable gas in the presence of water or water vapour. Keep away from heat/sparks/open flame/hot surface. No smoking. Keep away from heat/sparks/open flame/hot surface/air/water. No smoking.
Suitable extinguishing media
Dry powder

Special protective equipment for firefighters
Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, silicon oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Never allow product to get in contact with water during storage.

Recommended storage temperature: 2 - 8 °C

Store under inert gas. Moisture sensitive. Over time, pressure may increase causing containers to burst. Handle and open container with care.

8. EXPOSURE CONTROLS/PERSOANAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichlorosilane</td>
<td>10025-78-2</td>
<td>CEIL</td>
<td>0.5 ppm</td>
<td>USA, Workplace Environmental Exposure Levels (WEEL)</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Protective gloves against thermal risks
Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Eye protection**
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
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<tr>
<td>Colour</td>
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</tr>
<tr>
<td><strong>Safety data</strong></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>no data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>no data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>32 - 34 °C (90 - 93 °F) - lit.</td>
</tr>
<tr>
<td>Flash point</td>
<td>-51 °C (-60 °F) - closed cup</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>The substance or mixture is pyrophoric with the category 1.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>6.9 % (V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>70 % (V)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>672.1 hPa (504.1 mmHg) at 20 °C (68 °F)</td>
</tr>
<tr>
<td></td>
<td>2,122.2 hPa (1,591.8 mmHg) at 55 °C (131 °F)</td>
</tr>
<tr>
<td>Density</td>
<td>1.342 g/cm3 at 25 °C (77 °F)</td>
</tr>
<tr>
<td>Water solubility</td>
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</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>no data available</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>4.68</td>
</tr>
<tr>
<td>Odour</td>
<td>- (Air = 1.0)</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Reacts violently with water.
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight. Exposure to moisture.

Materials to avoid
Strong acids, Strong bases, Strong oxidizing agents, Alcohols, Amines

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Hydrogen chloride gas, silicon oxides
Reacts with water to form: - Hydrogen chloride gas
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Oral LD50
LD50 Oral - rat - 1,030 mg/kg

Inhalation LC50
LC50 Inhalation - mouse - 2 h - 1,500 mg/m3

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Teratogenicity
no data available
Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation: Toxic if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: Harmful if swallowed.

Skin: Harmful if absorbed through skin. Causes skin burns.

Eyes: Causes eye burns. Causes severe eye burns.

Signs and Symptoms of Exposure
Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Synergistic effects
no data available

Additional Information
RTECS: VV5950000

12. ECOLOGICAL INFORMATION

Toxicity
no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects
no data available

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1295  Class: 4.3 (3, 8)  Packing group: I

Proper shipping name: Trichlorosilane

Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No
15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Water Reactive, Toxic by inhalation., Harmful by ingestion., Corrosive

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Fire Hazard, Reactivity Hazard, Acute Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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