

SAFETY DATA SHEET

1. PRODUCT

1.1 Product identifiers

Name: Chlorotrimethylsilane

CAS-No.: 75-77-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225

Acute toxicity, Oral (Category 3), H301

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 4), H312


Skin corrosion (Category 1A), H314

Serious eye damage (Category 1), H318

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

| | |
|---------------------|--|
| Pictogram |  |
| Signal word | Danger |
| Hazard statement(s) | H225 Highly flammable liquid and vapour. H301 + H331 Toxic if swallowed or if inhaled H312 Harmful in contact with skin. H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H335 May cause respiratory irritation. |

| | |
|----------------------------|---|
| Precautionary statement(s) | <p>P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.</p> <p>P233 Keep container tightly closed.</p> <p>P240 Ground/bond container and receiving equipment.</p> <p>P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.</p> <p>P242 Use only non-sparking tools.</p> <p>P243 Take precautionary measures against static discharge.</p> <p>P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.</p> <p>P264 Wash skin thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.</p> <p>P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.</p> <p>P304 + P340 + P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.</p> <p>P305 + P351 + P338 + P310 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.</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.</p> <p>P403 + P233 Store in a well-ventilated place. Keep container tightly closed.</p> <p>P403 + P235 Store in a well-ventilated place. Keep cool.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/ container to an approved waste disposal plant.</p> |
|----------------------------|---|

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Reacts violently with water., Corrosive to the respiratory tract.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| | |
|-------------------|---|
| Synonyms: | TMCS Trimethylchlorosilane Trimethylsilyl chloride Silane M3 |
| Formula: | C ₃ H ₉ ClSi |
| Molecular weight: | 108.64 g/mol |
| CAS-No.: | 75-77-4 |
| EC-No.: | 200-900-5 |

Hazardous components

| Component | Classification | Concentration |
|-----------------------|---|---------------|
| Chlorotrimethylsilane | Flam. Liq. 2; Acute Tox. 3; Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; STOT SE 3; H225, H301 + H331, H312, H314, H318, H335 | <= 100 % |

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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| 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.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.2 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Dry powder

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen chloride gas, silicon oxides

Flash back possible over considerable distance., Container explosion may occur under fire conditions.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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.

For personal protection see section 8.

6.2 Environmental precautions

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

6.3 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.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 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.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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.

Store under inert gas.

Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

| Component | CAS-No. | Value | Control parameters | Basis |
|-----------------------|---------|-------|--------------------|---|
| Chlorotrimethylsilane | 75-77-4 | CEIL | 5.000000 ppm | USA. Workplace Environmental Exposure Levels (WEEL) |
| | | CEIL | 5 ppm | USA. Workplace Environmental Exposure Levels (WEEL) |

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

| | |
|-----------------------------------|---|
| Eye/face 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 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. Full contact Material: Nitrile rubber Minimum layer thickness: 0.4 mm Break through time: 480 min Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M) Splash contact Material: Nitrile rubber Minimum layer thickness: 0.2 mm Break through time: 30 min Material tested: Dermatril® P (KCL 743 / Aldrich Z677388, 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. |
| 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. |
| 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). |
| Control of environmental exposure | Prevent further leakage or spillage if safe to do so. Do not let product enter drains. |

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

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|--|---|
| Appearance | Form: liquid, clear Colour: colourless |
| Odour | pungent |
| Odour Threshold | No data available |
| pH | No data available |
| Melting point/freezing point | Melting point/range: -40 °C (-40 °F) |
| Initial boiling point and boiling range | 57 °C (135 °F) |
| Flash point | -27.99 °C (-18.38 °F) - closed cup |
| Evaporation rate | No data available |
| Flammability (solid, gas) | No data available |
| Upper/lower flammability or explosive limits | Upper explosion limit: 46 %(V) Lower explosion limit: 1.5 %(V) |
| Vapour pressure | 250 hPa (188 mmHg) at 20 °C (68 °F) 800 hPa (600 mmHg) at 50 °C (122 °F) |
| Vapour density | No data available |
| Relative density | 0.856 g/mL at 25 °C (77 °F) |
| Water solubility | hydrolyses |
| Partition coefficient: n-octanol/water | Not applicable |
| Auto-ignition temperature | 400.0 °C (752.0 °F) |
| Decomposition temperature | No data available |
| Viscosity | 0.4 mm ² /s at 25 °C (77 °F) - |
| Explosive properties | No data available |
| Oxidizing properties | No data available |

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air. Reacts violently with water.

10.4 Conditions to avoid

Heat, flames and sparks. Exposure to moisture

10.5 Incompatible materials

Strong acids, Strong bases, Strong oxidizing agents, Ketones, Aldehydes, Water

10.6 Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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| Acute toxicity |
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| LD50 Oral - Rat - < 214 mg/kg (OECD Test Guideline 401) LC50 Inhalation - Rat - 1 h - 19 mg/l LD50 Dermal - Rabbit - 1,527 mg/kg Remarks: Behavioral: Altered sleep time (including change in righting reflex). Diarrhoea Nutritional and Gross Metabolic: Weight loss or decreased weight gain. No data available |
| Skin corrosion/irritation |
| Skin - Rabbit Result: Severe skin irritation |
| Serious eye damage/eye irritation |
| Eyes - Rabbit Result: Irreversible effects on the eye (Draize Test) |
| Respiratory or skin sensitisation |
| No data available |
| Germ cell mutagenicity |
| No data available |
| Carcinogenicity |
| This material has not been classified by IARC, OSHA, ACGIH, EPA, or NTP as to its carcinogenicity, however, some studies have shown that this material may induce certain types of cancers. 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 No data available |
| Specific target organ toxicity -single exposure |
| May cause respiratory irritation. |
| Specific target organ toxicity -repeated exposure |
| No data available |
| Aspiration hazard |
| No data available |
| Additional Information |
| RTECS: VV2710000 Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Nerves. - Irregularities - Based on Human Evidence Nerves. - Irregularities - Based on Human Evidence |

12. ECOLOGICAL INFORMATION

12.1 Toxicity

| | |
|---|--|
| Toxicity to fish | semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - 271 mg/l - 96 h (OECD Test Guideline 203) Remarks: No data available |
| Toxicity to daphnia and other aquatic invertebrates | semi-static test EC50 - Daphnia magna (Water flea) - 124 mg/l - 48 h (OECD Test Guideline 202) |
| Toxicity to algae | static test EC50 - Pseudokirchneriella subcapitata (green algae) - > 750 mg/l - 72 h (OECD Test Guideline 201) |
| Toxicity to bacteria | No data available |

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

| 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: 1298 Class: 3 (8) Packing group: II

Proper shipping name: Trimethylchlorosilane

Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1298 Class: 3 (8) Packing group: II EMS-No: F-E, S-C

Proper shipping name: TRIMETHYLCHLOROSILANE

IATA

UN number: 1298 Class: 3 (8) Packing group: II

Proper shipping name: Trimethylchlorosilane

IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

| Component | CAS-No. | Revision Date |
|-----------------------|---------|---------------|
| Chlorotrimethylsilane | 75-77-4 | 2007-07-01 |

SARA 313 Components

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, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

| Component | CAS-No. | Revision Date |
|-----------|---------|---------------|
|-----------|---------|---------------|

| | | |
|-----------------------|---------|------------|
| Chlorotrimethylsilane | 75-77-4 | 2007-07-01 |
|-----------------------|---------|------------|

Pennsylvania Right To Know Components

| Component | CAS-No. | Revision Date |
|-----------------------|----------------|----------------------|
| Chlorotrimethylsilane | 75-77-4 | 2007-07-01 |

New Jersey Right To Know Components

| Component | CAS-No. | Revision Date |
|-----------------------|----------------|----------------------|
| Chlorotrimethylsilane | 75-77-4 | 2007-07-01 |

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

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity

Eye Dam. Serious eye damage

Flam. Liq. Flammable liquids

H225 Highly flammable liquid and vapour.

H301 Toxic if swallowed.

H301 + H331 Toxic if swallowed or if inhaled

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H331 Toxic if inhaled.

H335 May cause respiratory irritation.

Skin Corr. Skin corrosion

HMIS Rating

Health hazard: 3

Chronic Health Hazard: *

Flammability: 3

Physical Hazard 0

NFPA Rating

Health hazard: 3

Fire Hazard: 3

Reactivity Hazard: 0