

## Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

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1 - Product and Company Information

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Product Name	TRICHLOROSILANE, 99%
Product Number	175552
Company	Sigma-Aldrich Pty. Ltd. 12 Anella Avenue Castle Hill NSW 2154 Australia
Technical Phone #	+61 2 9841 0555 (1800 800 097)
Fax	+61 2 9841 0500 (1800 800 096)
Emergency Phone #	+44 8701906777 (1800 448 465)

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2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
TRICHLOROSILANE	10025-78-2	233-042-5	014-001-00-9
Formula	Cl <sub>3</sub> HSi		
Molecular Weight	135.45 AMU		
Synonyms	Silane A-19 * Silici-chloroforme (French) * Siliciumchloroform (German) * Silicochloroform * Trichloorsilaan (Dutch) * Trichloromonosilane * Trichlorsilan (German) * Triclorosilano (Italian)		

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3 - Hazards Identification

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## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Extremely flammable. Reacts violently with water. Spontaneously flammable in air. Harmful by inhalation and if swallowed. Contact with water liberates toxic gas. Causes severe burns.

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4 - First Aid Measures

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## AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

## AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

## AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

#### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

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### 5 - Fire Fighting Measures

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#### CONDITIONS OF FLAMMABILITY

Water hydrolyzes material liberating acidic gas which in contact with metal surfaces can generate flammable and/or explosive hydrogen gas. Catches fire if exposed to air.

#### EXTINGUISHING MEDIA

Suitable: Carbon dioxide.

Unsuitable: Do not use water.

#### SPECIAL RISKS

Specific Hazard(s): Extremely flammable. Vapor may travel considerable distance to source of ignition and flash back.

Pyrophoric material. Water reactive material. Emits toxic fumes under fire conditions.

Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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### 6 - Accidental Release Measures

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#### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Always open containers slowly to allow any excess pressure to vent. Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Pyrophoric material.

#### STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat, sparks, and open flame. Handle and store under nitrogen.

Incompatible Materials: Do not allow contact with water

Store at 2-8°C

SPECIAL REQUIREMENTS: May develop pressure. Open carefully.

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### 8 - Exposure Controls / Personal Protection

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## ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

## GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

## PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Faceshield (8-inch minimum).

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## 9 - Physical and Chemical Properties

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Appearance	N/A	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	32.0 - 34.0 °C	
MP/MP Range	N/A	
Flash Point	- 27.0 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 6.9 % Upper: 70 %	
Vapor Pressure	504.075 mmHg	20 °C
SG/Density	1.341 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	1 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

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## 10 - Stability and Reactivity

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### STABILITY

Conditions to Avoid: Do not allow water to enter container because of violent reaction.

Materials to Avoid: Amines, Alcohols, Strong oxidizing agents, Strong bases, Strong acids.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Silicon oxide, Hydrogen chloride gas.

Hazardous Decomposition Products Formed Upon Contact with Water: Hydrogen chloride gas

### HAZARDOUS POLYMERIZATION

## 11 - Toxicological Information

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RTECS NUMBER: VV5950000

### ACUTE TOXICITY

LD50  
Oral  
Rat  
1030 mg/kg

LC50  
Inhalation  
Mouse  
1,500 mg/m3  
2H

LC50  
Inhalation  
Mammal  
1,000 mg/m3  
Remarks: Lungs, Thorax, or Respiration:Acute pulmonary edema.  
Liver:Fatty liver degeneration. Blood:Other changes.

### SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynxand bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

### ROUTE OF EXPOSURE

Skin Contact: Causes burns.  
Skin Absorption: Readily absorbed through skin. May be harmful if absorbed through the skin.  
Eye Contact: Causes burns.  
Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Toxic if inhaled.  
Ingestion: Harmful if swallowed.

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## 12 - Ecological Information

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No data available.

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

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## 14 - Transport Information

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RID/ADR  
UN#: 1295

Class: 4.3  
PG: I  
Subrisk: 38  
Proper Shipping Name: Trichlorosilane

#### IMDG

UN#: 1295  
Class: 4.3  
PG: I  
Subrisk: 8/3  
Proper Shipping Name: Trichlorosilane  
Marine Pollutant: No  
Severe Marine Pollutant: No

#### IATA

UN#: 1295  
Class: 4.3  
PG: I  
Subrisk: 38  
Proper Shipping Name: Trichlorosilane  
Inhalation Packing Group I: No

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### 15 - Regulatory Information

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#### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 014-001-00-9

INDICATION OF DANGER: F+-C

Extremely Flammable. Corrosive.

R-PHRASES: 12-14-17-20/22-29-35

Extremely flammable. Reacts violently with water. Spontaneously flammable in air. Harmful by inhalation and if swallowed.

Contact with water liberates toxic gas. Causes severe burns.

S-PHRASES: 7/9-16-26-36/37/39-43-45

Keep container tightly closed and in well-ventilated place.

Keep away from sources of ignition - no smoking. In case of

contact with eyes, rinse immediately with plenty of water and

seek medical advice. Wear suitable protective clothing, gloves,

and eye/face protection. In case of fire, use dry powder. Never

use water. In case of accident or if you feel unwell, seek

medical advice immediately (show the label where possible).

#### COUNTRY SPECIFIC INFORMATION

##### Germany

WGK: 1

##### SWITZERLAND

SWISS POISON CLASS: 2

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### 16 - Other Information

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#### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.  
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