

# Siridion® STC

## Silicon tetrachloride, Tetrachlorosilane, Siltet, STC

### Technical data

Properties and test methods	Value	Unit	Method
molecular weight	169.89	-	-
density (20 °C)	1.48	g/cm <sup>3</sup>	DIN 51757
refractive index (n <sub>D</sub> 20° C)	1.413	-	DIN 51423
boiling point (1 bar)	56.7 (134)	°C (°F)	DIN 51751
melting point	-68 (-90)	°C (°F)	-
flash point	non-flammable	-	DIN 51755
purity	min. 99.8	%	GC (Evonik)
appearance	clear, colourless liquid	-	-

The values given in this product information are intended to describe the product. Decisive documents are agreed specifications and the Safety Data Sheets (SDS).

### Registration

#### Siridion® STC

Europe (REACH)	YES
Australia (AICS)	YES
Canada (DSL)	YES
Philippines (PICCS)	YES
USA (TSCA)	YES
P.R. China (IECSC)	YES
Japan (ENCS)	YES
South Korea (TCCL)	YES
Taiwan (TCSI)	YES
New Zealand (NZIoC)	YES

### Description

Silicon tetrachloride (SiCl<sub>4</sub>) is a colorless liquid with a pungent odor. It is a chlorosilane which is formed by reaction of metallurgic silicon or ferrosilicon with hydrogen chloride or chlorine.

### Chemical formula



### Reactivity

Silicon tetrachloride is sensitive to hydrolysis and react vigorously with water and alcohols as well as with other compounds containing active hydrogen atoms. Chlorosilanes and their vapours decompose in presence of moisture to form silicon dioxide and acidic hydrogen chloride gas. They react vigorously with water and with alcohols or other compounds containing active hydrogen atoms. Therefore, silicon tetrachloride must be stored and transported under inert gas condition in closed containers excluding moisture and air. Protection from direct sunlight and heat is necessary.

The container must be flushed with inert gas and closed tightly after each time that material is taken out.

Silicon tetrachloride is classified as highly corrosive. Inhalation of the product must be avoided. When handling the product, skin and eyes must be protected by wearing impermeable gloves, eye protection and, if appropriate, a breathing mask. Should splashes nevertheless get onto the skin or into the eyes, the affected area must first be rinsed with plenty of water and, if contact with the eyes has occurred, an eye specialist should be consulted.

## Safety and handling

Before considering the use of any chemical thoroughly read its Safety Data Sheet (SDS) for safety and toxicological data as well as for information on proper transportation, storage and use. The Safety Data Sheet of our Siridion® STC products is available upon request from your local representative.

Hazard statements: H301+H331: Toxic if swallowed or if inhaled. H314: Causes severe skin burns and eye damage.

Supplemental label information: EUH014: Reacts violently with water. EUH071: Corrosive to the respiratory tract.

### Precautionary Statements

Prevention: P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response: 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 (or 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 POISON CENTER/DOCTOR.

Storage: P403+P233: Store in a well-ventilated place. Keep container tightly closed.

## Applications

Silicon tetrachloride is used in large scale for the production of pyrogenic silica, silicic acid esters and ester hydrolysates. In addition, it is used for cross- and end-linking of polymer chains either in anionic polymerization of styrene-butadiene-rubber (SBR).

High-purity silicon tetrachloride is used in the manufacturing of optical fibres, fused silica tubes or other geometries. Depending on your process and requirements we offer various high and ultra-high purity grades to ensure the purity for glass fibers with low attenuation rates and therefore enabling excellent signal flow and data to transfer with ultra-high speed.

Furthermore, ultrapure silicon tetrachloride is an important precursor for deposition of the first layer of crystalline silicone by epitaxy within semiconductor manufacturing.

## Packaging and storage

Silicon tetrachloride is filled in stainless steel containers of various sizes.

- Stainless steel drum with 25 kg content
- Stainless steel drum with 275 kg content
- Tank container with 1.050 kg content
- ISO-container with 20 MT content
- Customized package and filling weight can be provided upon consultation.

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