

Product Information

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Siridion[®] TCS

Trichlorosilane, TCS

Chemical Formula



Description

Trichlorosilane (SiHCl_3) is a chlorosilane which is formed by reaction of metallic silicon or ferrosilicon with hydrogen chloride.

Technical data

Property	Value	Unit	Method
molecular weight	135.44	-	-
density (20 °C)	1.34	g/cm ³	DIN 51757
refractive index (n_D 20 °C)	1.402	-	DIN 51423
boiling point (1 bar)	31.8	°C (°F)	DIN 51751
melting point	-126.6	°C (°F)	-
flash point	-20 °C	-	DIN 51755
purity	min. 99.9	%	GC (Degussa)
appearance	clear, colourless liquid	-	-
The values given in this Product Information are intended to describe the product.			Decisive documents are agreed specifications and the Material Data Sheet (MSDS).

This information and all further technical advice is based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

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Reactivity

Trichlorosilane is sensitive to hydrolysis. It must be stored and transported in closed containers excluding moisture and air. Protection from direct sunlight and heat is necessary.

Trichlorosilane is combustible. Mixtures of the vapours with air are explosive and can ignite spontaneously under certain conditions.

The containers must be closed tightly after each time that material is taken out. Owing to the combustibility of trichlorosilane, handling has to be carried out under a blanket of inert gas (e.g. nitrogen).

Trichlorosilane and its vapours decompose on contact with moisture to form SiO₂ gel and hydrochloric acid. They react vigorously with water or aqueous solutions and with alcohols or compounds containing active hydrogen atoms.

Trichlorosilanes is classified as highly corrosive. Inhaling of the product must be avoided. When handling the product, skin and eyes must be protected by the wearing of 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.

Applications

High-purity Trichlorosilane is the most important raw material for the production of solar and semiconductor silicon. Trichlorosilane is widely used for the deposition of epitaxial silicon layers on silicon wafers in semiconductor production. Trichlorosilane is also used starting material for organosilicon compounds. Degussa AG offers a large number of organosilanes under the **Dynasylan**[®] trademark.

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Registration

EINECS/ELINCS (EU):	Yes
AICS (Australia):	Yes
DSL (Canada):	Yes
PICCS (Philippines):	Yes
TSCA (USA):	Yes
IECSC (P.R. China):	Yes
ENCS (Japan):	Yes
ECL (South Korea):	Yes

Safety and Handling

Before considering the use of any chemical thoroughly read its Material Safety Data Sheet (MSDS) for safety and toxicological data as well as for information on proper transportation, storage and use. The Material Safety Data Sheet is available after registration on our website <http://www.siridion.com> or upon request from your local representative.

Trichlorosilane:

Hazard class (VbF): A I

Hazard symbol: F+ = highly flammable; C = corrosive

(Safety phrases: 7/9-16-26-36/37/39)

Keep container tightly closed and dry. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of fire, never use water. Information on the classification of the products under dangerous goods regulations and the German regulation on dangerous substances, safety data and data on toxicology and storage may be found in our material safety data sheets (MSDS).

Packaging and Storage

- Stainless steeldrum, content: 240 kg
- Tank container, content: 1.250 kg
- Rail tank car, contents about 20 tons

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