

Siridion® HCDS

Hexachlorodisilane, HCDS

Technical data

Properties and test methods	Value	Unit	Method
molecular weight	268.86		
density (20 °C)	1.562	g/cm ³	DIN 51757
boiling point (1 bar)	144 - 145	°C	DIN 51751
melting point	3	°C	DIN 91597
flash point	78	°C	DIN 51755
appearance	clear, colourless liquid		

Registration

Siridion® HCDS

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
New Zealand (NZIoC)	YES
Taiwan (TSCI)	YES

Description

Hexachlorodisilane (Si₂Cl₆) is a colourless liquid with a pungent odor.

Chemical formula



Reactivity

Hexachlorodisilane is sensitive to hydrolysis and reacts vigorously with water and alcohols as well as with other compounds containing active hydrogen atoms. Hexachlorodisilane and its vapours decompose in the presence of moisture to form silicon dioxide and acidic hydrogen chloride gas. In the case of hexachlorodisilane the hydrolysis products are shock sensitive and represent an explosion hazard. Therefore, hexachlorodisilane 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.

Hexachlorodisilane 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 Sheets of our Siridion HCDS is available upon request from your local representative.

Hazard Statement(s): 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). P310: Immediately call a POISON CENTER /DOCTOR.
- Storage: P405: Store locked up.

Other hazards:

- Hydrolysis products of hexachlorodisilane are potentially explosive and sensitive to impact. Additionally, alkaline hydrolysis generates hydrogen gas.
- In the case of a leakage, hexachlorodisilane will react with humidity into white deposits. Please do not remove these solids mechanically. These residues need to be diluted and wasted in plenty of water. Please observe the SDS instructions.
- In the case of a product outlet, use binders specified in the SDS.
- In the case of fire, the instruction given in the SDS must be observed.

Applications

High purity hexachlorodisilane is used as precursor for low temperature chemical vapour deposition of thin film layers of SiN, SiON or epitaxial Si in semiconductor manufacturing processes. In addition, hexachlorodisilane can be utilized for the selective reduction of phosphine oxides in the pharmaceutical industry.

Packaging and storage

Hexachlorodisilane is filled in stainless steel containers of various sizes. Please contact your local sales representative for more information about available container sizes.

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.

**Europe/Middle East/Africa/
Region Central and South America
Evonik Operations GmbH**
Silanes Business Line
Rodenbacher Chaussee 4
63457 Hanau-Wolfgang
Germany
PHONE +49 6181 59 13915
FAX +49 6181 59 713915
siridion@evonik.com
www.siridion.com

**North America
Evonik Corporation**
Silanes Business Line
299 Jefferson Road
Parsippany, NJ 07054
USA
PHONE +1 973 541 8513
siridion@evonik.com
www.siridion.com

**Asia-Pacific
Evonik Specialty Chemicals (Shanghai) Co.,Ltd**
Silanes Business Line
55, Chundong Road
Xinzhuang Industry Park
Shanghai 201108
P.R. China
PHONE +86 21 61191 3687
FAX +86 21 61191 1648
siridion@evonik.com
www.siridion.com