

Siridion® GTC

Germanium tetrachloride, GTC

Technical data

Properties and test methods	Value	Unit	Method
synonyms	Germanium (IV) Chloride; GeCl ₄	-	-
purity	> 99.999	%	-
formula weight	214.45	-	-
boiling point	83	°C	DIN 51751
theoretical Germanium content	33.873	%	-
specific gravity (20°C)	1.875 g	g/cm ³	-
Vapor Pressure (20°C)	76mm Hg	-	-
appearance	clear, colorless fuming liquid	-	-

This product data sheet is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices.

Description

Germanium tetrachloride (GeCl₄) is a colorless liquid. It is used as an intermediate in the production of purified germanium dioxide and germanium metal, but more predominantly used as a reagent in fiber optic production.

Chemical formula

GeCl₄

Reactivity

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

The containers must be closed tightly after each time that material is taken out.

Germanium chloride and their vapours decompose in presence of moisture to form hydrochloric acid. It reacts vigorously with water or aqueous solutions and with alcohols or compounds containing active hydrogen atoms.

GTC is classified as highly corrosive. Inhalation of the product must be avoided. When handling the products, 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.

Applications

In fiber optics, germanium tetrachloride is converted into germanium dioxide and then deposited, along with silicon dioxide, using vapor deposition techniques. Germanium dioxide provides a higher refractive index fiber core, which prevents signal loss during transmission.

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 is available upon request from your local representative.

Germanium tetrachloride:
Hazard symbol: toxic, corrosive
(Hazard statements: H335/H314, EUH014)

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.

Information on the classification of the products under dangerous goods regulations and the German regulation on dangerous substances, safety data, detailed precautionary statements and data on toxicology and storage may be found in our safety data sheets (SDS).

Packaging and storage

Stainless steel container with Swagelok valve manifold arrangement with manual operation. Other packaging and valve manifold options available on request. Material is shipped in packaging compliant with the United Nations/Department of Transportation (UN/DOT), the International Air Transportation Association (IATA), and the International Maritime Dangerous Goods (IMDG) code.

Keep the container tightly closed in a dry, cool, and ventilated area. Avoid contact with water. In the originally closed container Siridion® GTC has a shelf life of at least 12 months after delivery.

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