

Chemical Safety Data Sheet MSDS / SDS

GERMANIUM(IV) CHLORIDE

Revision Date:2026-05-31 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking**Product identifier**

Product name : GERMANIUM(IV) CHLORIDE
CBnumber : CB9852574
CAS : 10038-98-9
EINECS Number : 233-116-7
Synonyms : GeCl₄, Germanium tetrachloride

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.
Uses advised against : none

Company Identification

Company : Chemicalbook
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing
Telephone : 010-86108875

SECTION 2: Hazards identification**GHS Label elements, including precautionary statements**

Symbol(GHS)



Signal word

Danger

Precautionary statements

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continuerinsing.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

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

P273 Avoid release to the environment.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P234 Keep only in original container.

Hazard statements

H410 Very toxic to aquatic life with long lasting effects

H335 May cause respiratory irritation

H314 Causes severe skin burns and eye damage

H290 May be corrosive to metals

SECTION 3: Composition/information on ingredients

Substance

Product name	: GERMANIUM(IV) CHLORIDE
Synonyms	: GeCl ₄ , Germanium tetrachloride
CAS	: 10038-98-9
EC number	: 233-116-7
MF	: Cl ₄ Ge
MW	: 214.45

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air. Call in physician.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Remove contact lenses.

If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

4.4 Notes to physician

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

Foam Water

5.2 Special hazards arising from the substance or mixture

Hydrogen chloride gas

Germanium oxides

Not combustible.

Fire may cause evolution of:

Hydrogen chloride gas

May not get in touch with: Water

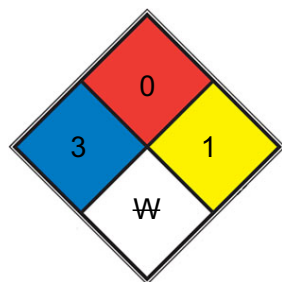
Ambient fire may liberate hazardous vapours.

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

NFPA 704



HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

FIRE 0 Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 820 °C (1,500 °F) for a period of 5 minutes.(e.g. Carbon tetrachloride)

REACT 1 Normally stable, but can become unstable at elevated temperatures and pressures (e.g. [propene](#))

SPEC.
HAZ. W

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®).

Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Keep workplace dry. Do not allow product to come into contact with water.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

No metal containers.

Tightly closed.

Never allow product to get in contact with water during storage.

Recommended storage temperature see product label.

Storage class

Storage class (TRGS 510): 8B: Non-combustible, corrosive hazardous materials

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly

fitting safety goggles

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell,

Internet: www.kcl.de).

Full contact

Material: Viton®

Minimum layer thickness: 0.7 mm

Break through time: 480 min

Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell,

Internet: www.kcl.de).

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 30 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Body Protection

protective clothing

Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physicochemical properties

a) Physical state	liquid
b) Color	colorless
c) Odor	No data available
d) Melting point/freezing point	Melting point: -50 °C
e) Initial boiling point and boiling range	83.1 °C
f) Flammability (solid, gas)	No data available
g) Upper/lower flammability or explosive limits	No data available
h) Flash point	Does not sustain combustion.
i) Autoignition temperature	No data available

j) Decomposition temperature	No data available
k) pH	<1 (H ₂ O, 20 °C)
l) Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 0.529 mPa.s at 37 °C
m) Water solubility	DECOMPOSES
n) Partition coefficient n-octanol/water	No data available
o) Vapor pressure	101.33 hPa at 21 °C 101.33 hPa at 21 °C 92.26 hPa at 20.6 °C
p) Density	ca.1.88 g/cm ³ at 20 °C
Relative density	1.844 g/mL at 25 °C
q) Relative vapor density	No data available
r) Particle characteristics	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available
Solubility	Soluble in ether, benzene, chloroform, carbon tetrachloride. Insoluble in hydrochloric acid and sulphuric acid.
Dielectric constant	2.4 (25 °C)

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Chemical stability

sensitive to moisture

10.2 Possibility of hazardous reactions

can decompose violently in contact with:

Water alkali hydroxides

Violent reactions possible with:

The generally known reaction partners of water.

10.3 Conditions to avoid

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

Moisture.

10.4 Incompatible materials

No data available

10.5 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

LC50 Inhalation - Rat - 4 h - > 3.1 mg/l - dust/mist

Symptoms: restlessness

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Causes severe burns.

(OECD Test Guideline 404)

Remarks: (ECHA)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes burns.

Remarks: (RTECS)

Remarks: Causes serious eye damage.

Respiratory or skin sensitization

Classified based on available data. For more details, see section 2

Germ cell mutagenicity

Classified based on available data. For more details, see section 2

Carcinogenicity

Classified based on available data. For more details, see section 2

Reproductive toxicity

Classified based on available data. For more details, see section 2

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

Classified based on available data. For more details, see section 2

Aspiration hazard

Classified based on available data. For more details, see section 2

11.2 Additional Information

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Quantitative data on the toxicity of this product are not available.

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish LC50 - Danio rerio (zebra fish) - 103.5 mg/l - 96 h (OECD Test Guideline 203)

Remarks: (ECHA)

The value is given in analogy to the following substances: germanium(IV) oxide

Toxicity to daphnia static test EC50 - Daphnia - 67.5 mg/l - 48 h and other aquatic (OECD Test Guideline 202) invertebrates Remarks: (ECHA)

The value is given in analogy to the following substances: germanium(IV) oxide

NOEC - Daphnia - 0.619 mg/l - 21 d

Remarks: (ECHA)

The value is given in analogy to the following substances: germanium(IV) oxide

Toxicity to algae static test EC50 - Navicula pelliculosa (Freshwater diatom) - 0.2067 mg/l - 72 h (OECD Test Guideline 201)

Remarks: (ECHA)

The value is given in analogy to the following substances: germanium(IV) oxide

Toxicity to bacteria static test NOEC - Sludge Treatment - 100 mg/l - 3 h (OECD Test Guideline 209)

Remarks: (ECHA)

The value is given in analogy to the following substances: germanium(IV) oxide

12.2 Persistence and degradability

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

We have no quantitative data concerning the ecological effects of this product.

Biological effects:

Reacts with water to form toxic decomposition products.

Harmful effect due to pH shift.

Further information on ecology

Possible decomposition products in case of hydrolysis are:

Hydrogen chloride gas

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 3265

IMDG: 3265

IATA-DGR: 3265

14.2 UN proper shipping name

ADR/RID: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (germanium(IV) chloride)

IMDG: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (germanium(IV) chloride)

IATA-DGR: Corrosive liquid, acidic, organic, n.o.s. (germanium(IV) chloride)

14.3 Transport hazard class(es)

ADR/RID: 8

IMDG: 8

IATA-DGR: 8

14.4 Packaging group

ADR/RID: I

IMDG: I

IATA-DGR: I

14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA-DGR: no

14.6 Special precautions for user

Based on chemical properties, choose appropriate tools and conditions of transport.

Transporting tools shall be equipped with appropriate and sufficient firefighting equipment and emergency leaking installations. If transporting by road, please go along the specified route.

14.7 Incompatible materials

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulatory information

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : Listed

Other regulations

Please pay attention on the waste treatment should also comply with local regulations requirement.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

LD50: Lethal Dose 50%

LC50: Lethal Concentration 50%

EC50: Effective Concentration 50%

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

IMDG: International Maritime Dangerous Goods Code

IATA: International Air Transport Association

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

DOT: US Department of Transportation

NFPA: National Fire Protection Association

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety and Health Administration

Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.