

Safety data sheet Germanium Tetrafluoride

Creation date : 01.11.2005
Revision date : 04.11.2005

Version : 3.0

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1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name

Germanium Tetrafluoride

Chemical formula GeF₄

Known uses

Industrial Application

Company identification

Linde AG, Gas and Engineering, Linde Gas Division Seitnerstraße
70, D-82049 Höllriegelskreuth

Emergency phone numbers: 089-7446-0

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation: Substance

Components/Impurities

CAS Nr: 7783-58-6

Contains no other components or impurities which will influence the classification of the product.

3 HAZARDS IDENTIFICATION

Classification

Very toxic by inhalation.

Cause severe burns (eyes, respiratory system and skin).

Risk advice to man and the environment

In high concentrations may cause asphyxiation.

Compressed gas

Contact with liquid may cause cold burns/frost bite.

4 FIRST AID MEASURES

Inhalation

Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped. Very toxic by inhalation.

Skin/eye contact

For liquid spillage - flush with water for at least 15 minutes. Immediately flush eyes thoroughly with water for at least 15 minutes. Obtain medical assistance. After contact with skin, wash immediately with plenty of water.

Ingestion

Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards

Exposure to fire may cause containers to rupture/explode.

Suitable extinguishing media

All known extinguishants can be used.

Specific methods

Move container away or cool with water from a protected position. If possible, stop flow of product.

Special protective equipment for fire fighters

Use self-contained breathing apparatus and chemically protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions

Ensure adequate air ventilation. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Evacuate area.

Environmental precautions

Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.

Clean up methods

Ventilate area. Hose down area with water.

7 HANDLING AND STORAGE

Handling and storage

Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to supplier's container handling instructions.

Prevent bottles from falling down. Keep container below 50°C in a well ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value

Value type	value	Note
Germany - MAK	3 ppm	TRGS 900

9 PHYSICAL AND CHEMICAL PROPERTIES

General information

Appearance/Colour: Colourless gas

Odour: Pungent Garlic like Extremely disagreeable

Important information on environment, health and safety

Molecular weight: 148,6 g/mol

Relative density, gas: Heavier than air

Relative density, liquid: Not known

Vapour Pressure -15 °C: 4 bar

Solubility mg/l water: Hydrolyses.

Other data

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity

Reacts with water to form corrosive acids. May react violently with acids.

11 TOXICOLOGICAL INFORMATION

General

May cause chemical burns to skin and cornea (with temporary disturbance to vision)

Acute toxicity

Fatal intoxication possible with low concentrations. Irritation to eyes, skin and respiratory tract. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness.

12 ECOLOGICAL INFORMATION

General

Toxic to water organisms. Endangering to drinking water.

13 DISPOSAL CONSIDERATIONS

General

Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Avoid discharge to atmosphere.

14 TRANSPORT INFORMATION

ADR/RID

Class	2	Classification Code	1TC
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UN number and proper shipping name

UN 3304 Compressed gas, toxic, corrosive, n.o.s.

UN 3304 Compressed gas, toxic, corrosive, n.o.s.

ADR/RID-Labels	2,3, 8	Hazard number	268
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Other transport information

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product

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containers ensure that they are firmly secured and: - cylinder valve is closed and not leaking - valve outlet cap nut or plug (where provided) is correctly fitted - valve protection device (where provided) is correctly fitted - there is adequate ventilation. - compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548

Not included in Annex I.

EC Classification

T+; R26, R35

Labelling

- Symbols

T+ Very toxic.
C Corrosive.

- Risk Phrases

R26 Very toxic by inhalation.
R35 Cause severe burns (eyes, respiratory system and skin).

- Safety Phrases

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water.
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S36 Wear suitable protective clothing.
S9 Keep container in well ventilated place.

Further national regulations

Regulations for the prevention of industrial accidents
Pressure Vessel Regulation
Gefahrstoffverordnung (GefStoffV)
Technical Regulations for hazardous substances (TRGS)

Water pollution class

according to §19 WGH Annex 1 : WGK 1 (slightly water endangering)

16 OTHER INFORMATION

Ensure all national/local regulations are observed. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted. Details given in this document are believed to be correct at the time of going to press. Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Advice

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