

## Chemical Safety Data Sheet MSDS / SDS

## Titanium tetrafluoride

Revision Date:2026-03-21 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Titanium tetrafluoride  
CBnumber : CB5108611  
CAS : 7783-63-3  
EINECS Number : 232-017-6  
Synonyms : TiF4;Titanium(IV) fluoride

## 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.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

## Hazard statements

H314 Causes severe skin burns and eye damage

## SECTION 3: Composition/information on ingredients

## Substance

Product name	: Titanium tetrafluoride
Synonyms	: TiF <sub>4</sub> ; Titanium(IV) fluoride
CAS	: 7783-63-3
EC number	: 232-017-6
MF	: F4Ti
MW	: 123.86

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## SECTION 4: First aid measures

### General advice

Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure. First aiders need to protect themselves. Show this safety data sheet to the doctor in attendance.

### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

### In case of skin contact

First treatment with calcium gluconate paste. 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.

### Most important symptoms and effects, both acute and delayed

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

### Protection of first-aiders

For personal protection see section 8.

### Notes to physician

No data available

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## SECTION 5: Firefighting measures

### Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### Specific hazards during fire fighting

Not combustible. Ambient fire may liberate hazardous vapours.

### Hazardous combustion products

Hydrogen fluoride Titanium/titanium oxides

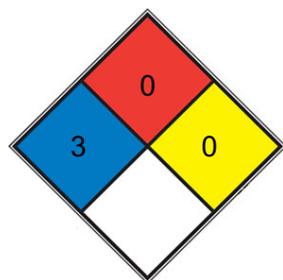
### Specific extinguishing methods

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

### Special protective equipment for fire-fighters

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

### 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 0** Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium,[N2](#))

**SPEC.**

**HAZ.**

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8.

### **Environmental precautions**

Do not let product enter drains.

### **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 dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

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## **SECTION 7: Handling and storage**

### **Handling**

#### **Advice on safe handling**

Work under hood. Do not inhale substance/mixture.

#### **Avoidance of contact**

glass

### **Storage**

#### **Further information on storage conditions**

Tightly closed. Dry.

#### **Storage class**

8A, Combustible, corrosive hazardous materials

#### **Recommended storage temperature**

Recommended storage temperature see product label.

#### **Further information on storage stability**

Moisture sensitive. Do not store in glass

#### **Packaging material**

Suitable material: LDPE Bottle/Jar

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## **SECTION 8: Exposure controls/personal protection**

### **Ingredients with workplace control parameters**

Biological occupational exposure limits

### **Engineering measures**

No data available

### **Personal protective equipment**

#### **Respiratory protection**

required when dusts 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.

#### **Recommended Filter type**

Filter type P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

#### **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 and body protection**

protective clothing

#### **Hand protection**

##### **Material**

Nitrile rubber

##### **Break through time**

480 min

##### **Glove thickness**

0.11 mm

##### **Protective index**

Full contact

##### **Manufacturer**

KCL 741 L

##### **Material**

Nitrile rubber

##### **Break through time**

480 min

##### **Glove thickness**

0.11 mm

##### **Protective index**

Splash contact

##### **Manufacturer**

KCL 741 L

##### **Remarks**

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](http://www.kcl.de)).

##### **Hygiene measures**

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

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

powder

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**Color**

white

**Odor**

No data available

**Odor Threshold**

No data available

**pH**

No data available

**Melting point/ range**

No data available

**Boiling point/boiling range**

284°C

**Flash point**

Not applicable

**Evaporation rate**

No data available

**Flammability (solid, gas)**

No data available

**Flammability (liquids)**

No data available

**Burning rate**

No data available

**Upper explosion limit / Upper flammability limit**

No data available

**Lower explosion limit / Lower flammability limit**

No data available

**Vapor pressure**

No data available

**Relative vapor density**

No data available

**Relative density**

2.798 g/mL at 25 °C (lit.)

**Density**

2.798 g/cm<sup>3</sup> (25 °C)

Method: lit.

**Water solubility**

Insoluble in water.

**Partition coefficient: n-octanol/water**

No data available

**Autoignition temperature**

No data available

**Decomposition temperature**

No data available

**Viscosity, dynamic**

No data available

**Viscosity, kinematic**

No data available

**Flow time**

No data available

**Explosive properties**

No data available

**Oxidizing properties**

none

**Molecular weight**

123.86 g/mol

**Particle characteristics Particle size**

No data available

**Solubility**

reacts with H<sub>2</sub>O; soluble in ethanol, pyridine

**Physical state**

Powder and/or Chunks

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SECTION 10: Stability and reactivity

## **Reactivity**

No data available

## **Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

## **Possibility of hazardous reactions**

No data available

## **Conditions to avoid**

Reacts dangerously with glass. no information available

## **Incompatible materials**

glass

## **Hazardous decomposition products**

In the event of fire: see section 5

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# SECTION 11: Toxicological information

## **11.1 Information on toxicological effects**

### **Acute toxicity**

Oral: No data available

LC50 Inhalation - 4 h - 1.5 mg/l - dust/mist

LD50 Dermal - 1,100 mg/kg

### **Skin corrosion/irritation**

Remarks: No data available

### **Serious eye damage/eye irritation**

Remarks: No data available

### **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**

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

### **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

Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia.

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache,

Nausea

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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## SECTION 12: Ecological information

### Ecotoxicity

#### Components:

##### Titanium tetrafluoride:

#### Toxicity to fish

Remarks: No data available

### Persistence and degradability

#### Components:

##### Titanium tetrafluoride:

#### Biodegradability

Remarks: No data available

### Bioaccumulative potential

#### Components:

##### Titanium tetrafluoride:

#### Bioaccumulation

Remarks: No data available

### Mobility in soil

#### Components:

##### Titanium tetrafluoride:

#### Stability in soil

Remarks: No data available

### Other adverse effects

## Components:

### Titanium tetrafluoride:

#### Additional ecological information

No data available

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## SECTION 13: Disposal considerations

### Disposal methods

#### Waste from residues

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

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## SECTION 14: Transport information

### International Regulations

#### IATA-DGR

UN/ID No. : UN 3260

Proper shipping name : Corrosive solid, acidic, inorganic, n.o.s.

(Titanium tetrafluoride)

Class : 8

Packing group : II

Labels : Class 8 - Corrosive substances

Packing instruction (cargo aircraft) : 863

Packing instruction (passenger aircraft) : 859

#### IMDG-Code

UN number : UN 3260

Proper shipping name : CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.

(Titanium tetrafluoride)

Class : 8

Packing group : II

Labels : 8

EmS Code : F-A, S-B

Marine pollutant : no

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### National Regulations

#### JTT 617

UN number : UN 3260

Proper shipping name : CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.

(Titanium tetrafluoride)

Class : 8

Packing group : II

Labels : 8

Environmentally hazardous : no

### **Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## **SECTION 15: Regulatory information**

### **National regulatory information**

#### **Law on the Prevention and Control of Occupational Diseases**

#### **Regulations on Safety Management of Hazardous Chemicals**

#### **Catalogue of Hazardous Chemicals**

#### **Hazardous Chemicals for Priority Management**

Not applicable under SAWS

#### **Catalogue of Specially Controlled Hazardous**

Not listed Chemicals

#### **List of Explosive Precursors**

Not listed

#### **Regulations on Labour Protection in Workplaces where Toxic Substances are Used**

#### **Catalogue of Highly Toxic Chemicals**

Listed

#### **Regulation of Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals**

#### **China Severely Restricted Toxic Chemicals for Import and Export**

Not applicable

#### **Regulation on the Administration of Precursor Chemicals**

#### **Catalogue and Classification of Precursor Chemicals**

Not listed

## **Regulations on the Administration of Controlled Chemicals**

### **List of Controlled Chemicals**

Not listed

## **Regulations of Ozone Depleting Substances Management**

### **List of Controlled Ozone Depleting Substances**

Not listed

### **List of Controlled Ozone Depleting Substances Import and Export**

Not listed

## **Environmental Protection Law**

### **List of Priority Controlled Chemicals**

Not listed

### **List of Key Controlled New Pollutants**

Not listed

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## SECTION 16: Other information

### **Full text of other abbreviations**

#### **ACGIH**

USA. ACGIH Threshold Limit Values (TLV)

#### **ACGIH BEI**

ACGIH - Biological Exposure Indices (BEI)

#### **CN BEI**

China. Biological Occupational Exposure Indices

#### **GBZ 2.1-2007**

Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

#### **ACGIH / TWA**

8-hour, time-weighted average

**GBZ 2.1-2007 / PC-TWA AIC** - Australian Invent Transport by Land of Bra bw - Body weight; **CMR** Standard of the German List (Canada); **ECx** - Conc associated with x%respo Chemical Substances (Jap response; **ERG** - Emerge GLP - Good Laboratory P cer; **IATA** - International Construction and Equipm Half maximal inhibitory c tion; **IECSC** - Inventory o tional Maritime Dangerou Industrial Safety and H Standardisation; **KECI** - K tration to 50 % of a test (Median Lethal Dose); **MA** lution from Ships; **MERC** of Dangerous Goods; **n.o.** - No Observed (Adverse) fect Level; **NOELR** - No Norm; **NTP** - National Toxi icals; **OECD** - Organisatio fice of Chemical Safety a and Toxic substance; **PIC** stances; **(Q)SAR** - (Quant (EC) No 1907/2006 of th Registration, Evaluation, Accelerating Decompositi Chemical Substance Inve Thailand Existing Chemicala States); **UN** - United Nat Transport of Dangerous **WHMIS** - Workplace Hazar

Permissible concentration - time weighted average of Industrial Chemicals

ANNT - National Agency for il

ASTM - American Society for the Testing of Materials

- Carcinogen, Mutagen or Reproductive Toxicant

DIN nstitute for Standardisation

DSL - Domestic Substances ntration associated with x% response

ELx - Loading rate se

EmS - Emergency Schedule

ENCS - Existing and New n)

ErCx - Concentration associated with x% growth rate cy Response Guide

GHS - Globally Harmonised System

actice

IARC - International Agency for Research on Canir Transport Association

IBC - International Code for the nt of Ships carrying Dangerous Chemicals in Bulk

IC50 ncentration

ICAO - International Civil Aviation Organiza- Existing Chemical Substances in China

IMDG - Interna- Goods

IMO - International Maritime Organisation

ISHL alth Law (Japan)

ISO - International Organisation for rea Existing Chemicals Inventory

LC50 - Lethal Concenopulation

LD50 - Lethal Dose to 50% of a test population POL - International Convention for the Prevention of Pol- SUR - The Agreement for the Facilitation of the Transport . - Not Otherwise Specified

Nch - Chilean Norm

NO(A)EC ffect Concentration

NO(A)EL - No Observed (Adverse) Efbserveable Effect Loading Rate

NOM - Official Mexican ology Program

NZIoC - New Zealand Inventory of Chemfor Economic Co-operation and Development

OPPTS - Ofd Pollution Prevention

PBT - Persistent, Bioaccumulative S - Philippines Inventory of Chemicals and Chemical Subtative) Structure Activity Relationship

REACH - Regulation European Parliament and of the Council concerning the uthorisation and Restriction of Chemicals

SADT - Selfn Temperature

SDS - Safety Data Sheet

TCSI - Taiwan tory

TDG - Transportation of Dangerous Goods

TECI s Inventory

TSCA - Toxic Substances Control Act (United ons

UNRTDG - United Nations Recommendations on the oods

vPvB - Very Persistent and Very Bioaccumulative

ous Materials Information System

**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.