

SAFETY DATA SHEET according
to GB/T 16483 and GB/T 17519Version 8.2
Revision Date 15.06.2023
Print Date 26.06.2023
Date of first issue 23.11.2021SDS No. Aldrich - 334626
Product Number Aldrich - 334626

Tin(II) fluoride

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : Tin(II) fluoride

Product Number : 334626
Brand : Aldrich
CAS-No. : 7783-47-3**1.2 Details of the supplier of the safety data sheet**Company : Sigma-Aldrich (Shanghai) Trading Co.Ltd.
509 Renqing Road
Zhangjiang High Tech East Park, Pudong
SHANGHAI
201201 SHANGHAI
CHINA西格玛奥德里奇（上海）贸易有限公司
上海市浦东新区仁庆路 509 号 10 幢
邮政编码：201201Merck KGaA
64271 Darmstadt
Germany
Phone:+49 6151 72-0Telephone : +86 21 6141-5566
Fax : +86 21 6141-5567**1.3 Emergency telephone**

Emergency Phone # : +86 532 83889090

1.4 Relevant identified uses of the substance or mixture and uses advised againstIdentified uses : For R&D use only. Not for pharmaceutical, household or other
uses.

SECTION 2: Hazards identification

Summary of emergency

powder white May be corrosive to metals., Toxic if swallowed., Causes skin irritation., Causes serious eye damage., Harmful to aquatic life., Toxic to aquatic life with long lasting effects. 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. Show this material safety data sheet to the doctor in attendance. After inhalation: fresh air. First treatment with calcium gluconate paste. In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. After eye contact: rinse out with plenty of water., Immediately call in ophthalmologist., Remove contact lenses. If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Not combustible. Ambient fire may liberate hazardous vapours.

2.1 GHS Classification

Corrosive to Metals (Category 1), H290
Acute toxicity, Oral (Category 3), H301
Skin corrosion/irritation (Category 2), H315
Serious eye damage/eye irritation (Category 1), H318
Short-term (acute) aquatic hazard (Category 3), H402
Long-term (chronic) aquatic hazard (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statement(s)

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention

P234 Keep only in original container.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P390 Absorb spillage to prevent material damage.
P391 Collect spillage.

Storage

P405 Store locked up.
P406 Store in corrosive resistant container with a resistant inner liner.

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

Reduced Labeling (<= 125 ml)

Pictogram



Signal Word

Danger

Hazard statement(s)

H290 May be corrosive to metals.
H301 Toxic if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H402 Harmful to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

none

2.3 Physical and chemical hazards

H290 May be corrosive to metals.

2.4 Health hazards

H301 Toxic if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.

2.5 Environmental hazards

H402 Harmful to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

2.6 Other hazards

Strong hydrogen fluoride-releaser

SECTION 3: Composition/information on ingredients

Substance / Mixture : Substance

3.1 Substances

Synonyms : Stannous fluoride

Formula : F₂Sn

Molecular weight : 156.71 g/mol

CAS-No. : 7783-47-3

EC-No. : 231-999-3

Hazardous ingredients

Component	Classification	Concentration
Tin difluoride		
	Corrosive to Metals Category 1; Acute toxicity Category 3; Skin corrosion/irritation Category 2; Serious eye damage/eye irritation Category 1; Short-term (acute) aquatic hazard Category 3; Long-term (chronic) aquatic hazard Category 2; H290, H301, H315, H318, H402, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of 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. Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air.

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.

In case of eye contact

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

If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

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 2.2) 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**

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.

5.2 Special hazards arising from the substance or mixture

Hydrogen fluoride

Tin/tin oxides

Not combustible.

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.

SECTION 6: Accidental release measures**6.1 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.

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 carefully. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

No metal containers.

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Do not store in glass

Storage class

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Tin difluoride	7783-47-3	PC-TWA	2 mg/m ³	Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
	7783-47-3	fluoride	42 Millimoles per mole creatinine	Urine	China. Biological Occupational Exposure Indices
	Remarks	After shift			
		fluoride	7mg/g creatinine	Urine	China. Biological Occupational Exposure Indices

		After shift			
		fluoride	24Millimoles per mole creatinine	Urine	China. Biological Occupational Exposure Indices
		Prior to shift			
		fluoride	4mg/g creatinine	Urine	China. Biological Occupational Exposure Indices
		Prior to shift			

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 EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber
 Minimum layer thickness: 0.11 mm
 Break through time: 480 min
 Material tested:KCL 741 Dermatril® L

Splash contact

Material: Nitrile rubber
 Minimum layer thickness: 0.11 mm
 Break through time: 480 min
 Material tested:KCL 741 Dermatril® L

Body Protection

protective clothing

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.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Physical state | powder |
| b) Color | white |
| c) Odor | No data available |
| d) Melting point/freezing point | Melting point/range: 215 °C |
| e) Initial boiling point and boiling range | 850 °C at 1,013 hPa |
| f) Flammability (solid, gas) | The product is not flammable. |
| g) Upper/lower flammability or explosive limits | No data available |
| h) Flash point | Not applicable |
| i) Autoignition temperature | No data available |
| j) Decomposition temperature | No data available |
| k) pH | No data available |
| l) Viscosity | Viscosity, kinematic: No data available
Viscosity, dynamic: No data available |
| m) Water solubility | No data available |
| n) Partition coefficient: n-octanol/water | Not applicable for inorganic substances |
| o) Vapor pressure | No data available |
| p) Density | 4.57 g/mL at 25 °C - lit. |
| Relative density | No data available |
| q) Relative vapor density | No data available |
| r) Particle characteristics | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | none |

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Chemical stability

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

10.2 Possibility of hazardous reactions

No data available

10.3 Conditions to avoid

Reacts dangerously with glass.
no information available

10.4 Incompatible materials

glass

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

LD50 Oral - Rat - female - 148.5 mg/kg

Remarks: (ECHA)

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - In vitro study
(OECD Test Guideline 439)

Serious eye damage/eye irritation

Eyes - Bovine cornea
Result: Irreversible effects on the eye
(OECD Test Guideline 437)

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Repeated dose toxicity - Rat - male and female - LOAEL (Lowest observed adverse effect level) - 150 mg/kg

RTECS: XQ3450000

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

Salivation, Nausea, Vomiting, Fever, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish flow-through test NOEC - Oncorhynchus mykiss (rainbow trout) - 0.3 mg/l - 28 d
(OECD Test Guideline 215)
Remarks: (referred to the cation)

LC50 - Oncorhynchus mykiss (rainbow trout) - 51 mg/l - 96 h
Remarks: (referred to the anion)

Toxicity to daphnia and other aquatic invertebrates NOEC - Daphnia - 3.7 mg/l - 21 d
Remarks: (referred to the anion)

NOEC - Daphnia - 4.8 mg/l - 21 d
Remarks: (referred to the cation)

Toxicity to algae ErC50 - Pseudokirchneriella subcapitata (green algae) - > 0.179 mg/l - 72 h
(OECD Test Guideline 201)

12.2 Persistence and degradability

Not applicable for 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

No data available

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: 2923

IMDG: 2923

IATA-DGR: 2923

14.2 UN proper shipping name

ADR/RID: CORROSIVE SOLID, TOXIC, N.O.S. (Tin difluoride)

IMDG: CORROSIVE SOLID, TOXIC, N.O.S. (Tin difluoride)

IATA-DGR: Corrosive solid, toxic, n.o.s. (Tin difluoride)

14.3 Transport hazard class(es)

ADR/RID: 8 (6.1)

IMDG: 8 (6.1)

IATA-DGR: 8 (6.1)

14.4 Packaging group

ADR/RID: III

IMDG: III

IATA-DGR: III

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

glass

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulatory information****Law on the Prevention and Control of Occupational Diseases****Regulations on Occupational Labor Protection in the at workplaces where Toxic Substances Are Used**

Catalogue of Highly Toxic Chemicals : Listed

Other regulations

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

SECTION 16: Other information**-Full text of H-Statements referred to under sections 2 and 3.**

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Copyright 2020 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact mlsbranding@sial.com.