

According to Regulation (EC) No 1907/2006

# Stannous Fluoride

Version number: 2.0  
Issued: 2023-10-02



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

### 1.1. Product identifier

**Trade name**

Stannous Fluoride

**Name of the chemical**

Tin (II) Chloride

**CAS number**

7783-47-3

**EC number**

231-999-3

**Synonyms**

Tin difluoride, Difluorostannylene.

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Relevant identified uses**

Research and development.

**Not suitable for use in**

Not suitable for human consumption or veterinary purposes.

### 1.3. Details of the supplier of the safety data sheet

**Supplier**

Molekula Group

Street address

Molekula Ltd, Lingfield Way, Darlington,  
DL1 4XX Darlington  
United Kingdom

Telephone

+44 (0) 3302 000 333

Email

info@molekula.com

Web site

www.molekula.com

**Contact person**

Kevin Banks

**Email address**

+44 (0) 7769276927

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## 1.4. Emergency telephone number

### Poison center/Additional emergency number

0344 892 0111 - National Poisons Information Service (Newcastle Centre)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

#### Classification

Corrosive to metals, hazard category 1

Acute toxicity, oral, hazard category 3

Skin corrosion, hazard category 1B

Hazardous to the aquatic environment — Chronic hazard category 2

#### Hazard statements

H290, H301, H314, H411

### 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

#### Hazard pictograms



#### Signal word

Danger

#### Hazard statements

H290 May be corrosive to metals.

H301 Toxic if swallowed.

H314 Causes severe skin burns and eye damage.

H411 Toxic to aquatic life with long lasting effects.

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## Precautionary statements

P260 Do not breathe Powder, dust.  
P264 Wash skin thoroughly after handling.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P310 Immediately call a POISON CENTER/doctor.  
P330 Rinse mouth.  
P363 Wash contaminated clothing before reuse.  
P391 Collect spillage.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P405 Store locked up.

## 2.3. Other hazards

No data available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrases M factor acute M factor chronic	Note
Tin (II) fluoride	7783-47-3 231-999-3 - -	100%	Met. Corr. 1, Acute Tox. 3 - oral, Skin Corr. 1B, Aquatic Chronic 2	H290, H301, H314, H411 - -	-

## Molecular weight

156.71

## Substance additional information

For the complete text of H- / EUH-statements mentioned in this section, see section 16.

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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

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 Safety Data Sheet (SDS) to medical personnel.

First aiders/ medical personnel need to protect themselves.

#### **Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. For breathing difficulties oxygen may be necessary.

#### **Skin contact**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Immediately call a POISON CENTER/doctor.

#### **Eye contact**

Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

#### **Ingestion**

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 if the persons are fully conscious and awake). Administer activated charcoal (20 - 40g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralise.

#### **Information for doctors**

No data available.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure. Causes burns by all exposure routes.

See section 11 for more detailed information on health effects and symptoms.

#### **Inhalation**

Single exposure may cause the following adverse effects: Causes severe burns. Difficulty in breathing. Unconsciousness, possibly death.

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## **Skin contact**

Single exposure may cause the following adverse effects: Causes severe burns. Unconsciousness, death.

## **Eye contact**

Single exposure may cause the following adverse effects: Causes serious eye damage. Unconsciousness, possibly death.

## **Ingestion**

Single exposure may cause the following adverse effects: Severe abdominal pain. May cause severe internal injury. Unconsciousness, possibly death.

## **4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically. Immediately call a POISON CENTER/doctor.

## **SECTION 5: Firefighting measures**

### **5.1. Extinguishing media**

#### **Suitable extinguishing media**

Use fire-extinguishing media appropriate for surrounding materials.

#### **Unsuitable extinguishing media**

No specific fire fighting procedure given.

### **5.2. Special hazards arising from the substance or mixture**

Specific hazards: Corrosive.

Not combustible.

Tin Oxides.

Hydrogen fluoride (HF).

### **5.3. Advice for firefighters**

#### **Special protective equipment for fire-fighters**

Evacuate area. Avoid breathing gas, fume, vapours or spray. Prevent skin contact by maintaining a safe distance and by wearing suitable protective equipment/ clothing. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

## **SECTION 6: Accidental release measures**

### **6.1. Personal precautions, protective equipment and emergency procedures**

Do not breathe vapour/spray. Avoid contact with skin and eyes. For personal protection, see section 8.

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.

### **6.2. Environmental precautions**

Avoid discharge into drains, water courses or onto the ground.

### **6.3. Methods and material for containment and cleaning up**

Collect with absorbent, non-combustible material into suitable containers.

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## 6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Preventive handling precautions

For precautions see section 2.2.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in a dry place. Store in a closed container.

Store at ambient temperature.

Do not store in glass.

### 7.3. Specific end use(s)

No specific usage precautions noted.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### National occupational exposure limits

Ingredient	CAS No. EC No.	Exposure limit ppm / mg/m <sup>3</sup>	Short-term exposure limit ppm / mg/m <sup>3</sup>	Source	Remark	Year
Tin (II) fluoride	7783-47-3	-	-	-	UK EH40 WEL	-
	231-999-3	-	4			
Tin (II) fluoride	7783-47-3	-	-	-	UK EH40 WEL	-
	231-999-3	-	4			

#### DNEL/DMEL

Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
Tin (II) fluoride (7783-47-3/231-999-3)	DNEL	Acute (short term) Inhalation	16.5 mg/m <sup>3</sup>	Workers	Local
Tin (II) fluoride (7783-47-3/231-999-3)	DNEL	Acute (short term) Inhalation	16.5 mg/m <sup>3</sup>	Workers	Systemic
Tin (II) fluoride (7783-47-3/231-999-3)	DNEL	Chronic (long term) Inhalation	4.1 mg/m <sup>3</sup>	Workers	Local
Tin (II) fluoride (7783-47-3/231-999-3)	DNEL	Chronic (long term) Inhalation	4.1 mg/m <sup>3</sup>	Workers	Systemic
Tin (II) fluoride	DNEL	Acute (short term)	0.59 mg/kg bw/day	Workers	Systemic

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Product/Substance name (CAS No./EC No.)	Type	Exposure	Value	Population	Effects
(7783-47-3/231-999-3)		Dermal			
Tin (II) fluoride (7783-47-3/231-999-3)	DNEL	Chronic (long term) Dermal	0.59 mg/kg bw/day	Workers	Systemic

### PNEC/PEC

Product/Substance name (CAS No./EC No.)	Type	Environmental compartment	Value
Tin (II) fluoride (7783-47-3/231-999-3)	PNEC	Freshwater	0.89 mg/l
Tin (II) fluoride (7783-47-3/231-999-3)	PNEC	Sediment (freshwater)	349.2 mg/kg dwt
Tin (II) fluoride (7783-47-3/231-999-3)	PNEC	Intermittent releases (freshwater)	4.3 mg/l
Tin (II) fluoride (7783-47-3/231-999-3)	PNEC	Sewage Treatment Plant	7.1 mg/l
Tin (II) fluoride (7783-47-3/231-999-3)	PNEC	Soil	10.6 mg/kg dwt
Tin (II) fluoride (7783-47-3/231-999-3)	PNEC	Marine water	0.089 mg/l
Tin (II) fluoride (7783-47-3/231-999-3)	PNEC	Sediment (marine water)	34.92 mg/kg dwt
Tin (II) fluoride (7783-47-3/231-999-3)	PNEC	Intermittent releases (marine water)	0.105 mg/l

## 8.2. Exposure controls

### Personal Protective Equipment Symbols



### Eye / face protection

Wear eye protection.

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## **Hand protection**

Wear protective gloves. Recommended gloves: Nitrile.  
Glove Thickness: 0.11mm  
Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

## **Other skin protection**

Wash skin thoroughly after handling.

## **Respiratory protection**

Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

## **Environmental exposure controls**

Avoid discharge into drains.

## **SECTION 9: Physical and chemical properties**

### **9.1. Information on basic physical and chemical properties**

#### **Physical state**

Solid

#### **Colour**

White.

#### **Odour**

Pungent.

#### **Melting point / freezing point**

No data available

#### **Boiling point or initial boiling point and boiling range**

No data available

#### **Flammability**

No data available

#### **Lower and upper explosion limit**

No data available

#### **Flash point**

No data available

#### **Auto-ignition temperature**

No data available



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## Decomposition temperature

No data available

## pH

No data available

## Kinematic viscosity

No data available

## Solubility

No data available

## Water solubility

300 - 390 g/l

## Partition coefficient n-octanol/water

No data available

## Vapour pressure

No data available

## Density and/or relative density

4.57

### Method

(25°C)

## Relative vapour density

No data available

## Particle characteristics

No data available

## 9.2. Other information

No data available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

There are no known reactivity hazards associated with this product.

### 10.2. Chemical stability

Air and moisture sensitive. Store under inert gas.

### 10.3. Possibility of hazardous reactions

Reacts dangerously with glass.

### 10.4. Conditions to avoid

Moisture. Incompatible materials.

### 10.5. Incompatible materials

Glass. Metals. Strong oxidising agents.

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## 10.6. Hazardous decomposition products

Hydrogen fluoride (HF).

## SECTION 11: Toxicological information

### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Acute toxicity

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Test animals	Remarks
Tin (II) fluoride 7783-47-3 / 231-999-3	Acute Toxicity (Oral LD50):	148.5mg/kg	Rat	Acute toxicity estimate Oral
Tin (II) fluoride 7783-47-3 / 231-999-3	Acute Toxicity (Dermal LD50):	> 2,000mg/kg	Rat	-

#### Serious eye damage/irritation

Product / Substance name CAS / EC no.	Result	Species	Other
Tin (II) fluoride 7783-47-3 / 231-999-3	Corrosive.	Bovine cornea	Irreversible effects on the eye

#### Aspiration hazard

Based on available data, the classification criteria are not met.

### 11.2. Information on other hazards

No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

#### Acute fish toxicity

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Tin (II) fluoride 7783-47-3 / 231-999-3	LD50	51mg/l	96 hours	Onchorhynchus mykiss (Rainbow trout)
Tin (II) fluoride 7783-47-3 / 231-999-3	NOEC	0.3mg/l	28 days	Onchorhynchus mykiss (Rainbow trout)

#### Acute algae toxicity

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Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Tin (II) fluoride 7783-47-3 / 231-999-3	ErC50	> 0.179mg/l	72 days	Pseudokirchneriella sub-capitata

**Acute crustacean toxicity**

Product / Substance name CAS / EC no.	Measurement type	Value / Result	Duration of exposure	Species
Tin (II) fluoride 7783-47-3 / 231-999-3	NOEC	3.7mg/l	21 days	Daphnia magna
Tin (II) fluoride 7783-47-3 / 231-999-3	LD50	4.8mg/l	21 days	Daphnia magna

**12.2. Persistence and degradability****Persistence and degradability**

Product / Substance name CAS / EC no.	Type of test
Tin (II) fluoride 7783-47-3 / 231-999-3	Not Applicable - Inorganic chemical.

**12.3. Bioaccumulative potential**

No data available

**12.4. Mobility in soil**

No data available

**12.5. Results of PBT and vPvB assessment**

No data available

**12.6. Endocrine disrupting properties**

This substance/mixture contains components considered to have endocrine disrupting properties for environment, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

**12.7. Other adverse effects**

No data available

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## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Disposal considerations

Dispose of contents/container in accordance with local regulations.

## SECTION 14: Transport information

### 14.1. UN number

2923

### 14.2. UN proper shipping name

#### ADR / RID / ADN proper shipping name

CORROSIVE SOLID, TOXIC, N.O.S. (Stannous fluoride)

#### IMDG proper shipping name

CORROSIVE SOLID, TOXIC, N.O.S. (Stannous fluoride)

#### IATA proper shipping name

Corrosive solid, toxic, n.o.s. (Stannous fluoride)

### 14.3. Transport hazard class(es)

#### Label

ADR/RID/ADN



8



6.1



Environmental hazard

IMDG



8



6.1



Environmental hazard

IATA



8



6.1



Environmental hazard

#### ADR / RID Class

8

#### ADR / RID Classification code

CT2

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**ADR / RID hazard identification number**

86

**IMDG Class**

8 (6.1)

**IATA Class**

8 (6.1)

**ADN Class**

8

**ADN Class Code**

CT2

**14.4. Packing group**

ADR / RID / ADN: II

IMDG: II

IATA: II

**14.5. Environmental hazards**

**IMDG EmS**

F-A, S-B

**14.6. Special precautions for user**

Tunnel restriction code: E

Transport category: 2

**14.7. Maritime transport in bulk according to IMO instruments**

IBC Instruction: IBC08

## SECTION 15: Regulatory information

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

**EU regulations**

This SDS is not mandated under REACH Regulation (EC) No 1907/2006 and is provided for information only.

**National regulations**

No data available

**15.2. Chemical safety assessment**

No chemical safety assessment has been carried out.

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## SECTION 16: Other information

### Phrase meaning

Met. Corr. 1 - Corrosive to metals, hazard category 1

Acute Tox. 3 - oral - Acute toxicity, oral, hazard category 3

Skin Corr. 1B - Skin corrosion, hazard category 1B

Aquatic Chronic 2 - Hazardous to the aquatic environment — Chronic hazard category 2

H290 May be corrosive to metals.

H301 Toxic if swallowed.

H314 Causes severe skin burns and eye damage.

H411 Toxic to aquatic life with long lasting effects.