

## SAFETY DATA SHEET

Revision Date 26-March-2024

Revision Number 3

### 1. Identification

**Product Name** Silver hydrogen fluoride

**Cat No. :** 40129

**CAS-No** 12249-52-4  
**Synonyms** Silver(I) bifluoride

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

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

##### Company

##### **Importer/Distributor**

Fisher Scientific  
112 Colonnade Road,  
Ottawa, ON K2E 7L6,  
Canada  
Tel: 1-800-234-7437

##### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

### 2. Hazard(s) identification

#### Classification

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

|  |              |
|--|--------------|
| <b>Skin Corrosion/Irritation</b>                 | Category 1 B |
| <b>Serious Eye Damage/Eye Irritation</b>         | Category 1   |
| <b>Physical Hazards Not Otherwise Classified</b> | Category 1   |
| Reacts violently with water                      |              |
| <b>Health Hazards Not Otherwise Classified</b>   | Category 1   |
| Contact with acids liberates very toxic gas (HF) |              |

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Causes severe skin burns and eye damage

Reacts violently with water  
Contact with acids liberates very toxic gas (HF)

**Precautionary Statements****Prevention**

Do not allow contact with water  
Keep container tightly closed  
Take any precaution to avoid mixing with acids  
Do not breathe dust/fumes/gas/mist/vapours/spray  
Wear respiratory protection  
Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection

**Response**

IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Immediately call a POISON CENTER/doctor  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
Wash contaminated clothing before reuse

**Storage**

Store locked up

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other Hazards**

Light sensitive

### 3. Composition/Information on Ingredients

| Component                              | CAS-No     | Weight % |
|--|------------|----------|
| Silver fluoride (Ag(HF <sub>2</sub> )) | 12249-52-4 | 100      |

### 4. First-aid measures

|  |   |
|--|---|
| <b>Eye Contact</b>                     | Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.   |
| <b>Skin Contact</b>                    | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.  |
| <b>Inhalation</b>                      | Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required.  |
| <b>Ingestion</b>                       | Do NOT induce vomiting. Call a physician immediately.   |
| <b>Most important symptoms/effects</b> | Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |

## Notes to Physician

Treat symptomatically

**5. Fire-fighting measures****Suitable Extinguishing Media** Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.**Unsuitable Extinguishing Media** No information available**Flash Point** No information available  
**Method -** No information available**Autoignition Temperature** No information available**Explosion Limits****Upper** No data available**Lower** No data available**Sensitivity to Mechanical Impact** No information available**Sensitivity to Static Discharge** No information available**Specific Hazards Arising from the Chemical**

Contact with water liberates toxic gas. Water reactive. Produce flammable gases on contact with water.

**Hazardous Combustion Products**

Gaseous hydrogen fluoride (HF).

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA****Health**  
4**Flammability**  
0**Instability**  
0**Physical hazards**  
W**6. Accidental release measures****Personal Precautions** Ensure adequate ventilation. Use personal protective equipment as required.**Environmental Precautions** See Section 12 for additional Ecological Information.**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Do not expose spill to water. Do not let this chemical enter the environment.**7. Handling and storage****Handling** Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation. Do not allow contact with water. Keep under nitrogen.**Storage.** Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from acids. Protect from moisture. Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Acids. Strong oxidizing agents.**8. Exposure controls / personal protection****Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.**Engineering Measures**Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.  
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control

hazardous materials at source

**Personal protective equipment****Eye Protection**  
**Hand Protection**Goggles  
Protective gloves

| Glove material | Breakthrough time | Glove thickness | Glove comments         |
|----------------|-------------------|-----------------|------------------------|
| Natural rubber | See manufacturers | -               | Splash protection only |
| Nitrile rubber | recommendations   |                 |                        |
| Neoprene       |                   |                 |                        |
| PVC            |                   |                 |                        |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Recommended Filter type:** Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls**

No information available.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

|   |                          |
|---|--------------------------|
| <b>Physical State</b>                         | Solid                    |
| <b>Appearance</b>                             | No information available |
| <b>Odor</b>                                   | No information available |
| <b>Odor Threshold</b>                         | No information available |
| <b>pH</b>                                     | No information available |
| <b>Melting Point/Range</b>                    | No data available        |
| <b>Boiling Point/Range</b>                    | No information available |
| <b>Flash Point</b>                            | No information available |
| <b>Evaporation Rate</b>                       | Not applicable           |
| <b>Flammability (solid,gas)</b>               | No information available |
| <b>Flammability or explosive limits</b>       |                          |
| Upper   | No data available        |
| Lower   | No data available        |
| <b>Vapor Pressure</b>                         | No information available |
| <b>Vapor Density</b>                          | Not applicable           |
| <b>Specific Gravity</b>                       | No information available |
| <b>Solubility</b>                             | No information available |
| <b>Partition coefficient; n-octanol/water</b> | No data available        |
| <b>Autoignition Temperature</b>               | No information available |
| <b>Decomposition Temperature</b>              | No information available |
| <b>Viscosity</b>                              | Not applicable           |
| <b>Molecular Formula</b>                      | H Ag F2                  |
| <b>Molecular Weight</b>                       | 146.87                   |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactive Hazard</b>                  | Yes   |
| <b>Stability</b>                        | Stable under normal conditions. Hygroscopic. Light sensitive.             |
| <b>Conditions to Avoid</b>              | Exposure to light. Incompatible products. Exposure to moist air or water. |
| <b>Incompatible Materials</b>           | Acids, Strong oxidizing agents  |
| <b>Hazardous Decomposition Products</b> | Gaseous hydrogen fluoride (HF)  |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.                                  |
| <b>Hazardous Reactions</b>              | None under normal processing.   |

## 11. Toxicological information

### Acute Toxicity

**Product Information** No acute toxicity information is available for this product

**Component Information**

**Toxicologically Synergistic** No information available

**Products**

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component                                 | CAS-No     | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|---|------------|------------|------------|------------|------------|------------|
| Silver fluoride<br>(Ag(HF <sub>2</sub> )) | 12249-52-4 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains.

**Persistence and Degradability** Soluble in water Persistence is unlikely based on information available.

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

**UN-No** UN1740  
**Hazard Class** 8  
**Packing Group** II

#### TDG

**UN-No** UN1740  
**Hazard Class** 8  
**Packing Group** II

#### IATA

**UN-No** UN1740  
**Proper Shipping Name** HYDROGENDIFLUORIDES, SOLID, N.O.S.  
**Hazard Class** 8  
**Packing Group** II

#### IMDG/IMO

**UN-No** UN1740  
**Proper Shipping Name** HYDROGENDIFLUORIDES, SOLID, N.O.S.  
**Hazard Class** 8  
**Packing Group** II

### 15. Regulatory information

#### International Inventories

| Component                              | CAS-No     | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS | ELINCS | NLP |
|--|------------|-----|------|------|---|--------|--------|-----|
| Silver fluoride (Ag(HF <sub>2</sub> )) | 12249-52-4 | -   | -    | -    | -   | -      | -      | -   |

| Component                              | CAS-No     | IECSC | KECL | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|--|------------|-------|------|------|------|------|------|-------|-------|
| Silver fluoride (Ag(HF <sub>2</sub> )) | 12249-52-4 | -     | -    | X    | X    | -    | -    | -     | -     |

#### Legend:

X - Listed '-' - Not Listed

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

#### Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

## Other International Regulations

Authorisation/Restrictions according to EU REACH Not applicable

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

| Component                              | CAS-No     | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|--|------------|----------------|------------------------------|---------------------------|--|
| Silver fluoride (Ag(HF <sub>2</sub> )) | 12249-52-4 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |

| Component                              | CAS-No     | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|--|------------|---|--|----------------------------|------------------------------------|
| Silver fluoride (Ag(HF <sub>2</sub> )) | 12249-52-4 | Not applicable  | Not applicable   | Not applicable             | Not applicable                     |

## 16. Other information

## Prepared By

Product Safety Department  
Email: chem.techinfo@thermofisher.com  
www.thermofisher.com

## Revision Date

26-March-2024

## Print Date

26-March-2024

## Revision Summary

New emergency telephone response service provider.

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**