

Sodium Fluorosilicate

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Material Safety Data Sheet

Chemical: Sodium Fluorosilicate

NFPA: H=3 F=0 I= 0 S=None

HMIS: H=3 F=0 R=0 PPE= Supplied by user;
dependent on conditions

MSDS Number: NaSiF6-1103

Effective Date: 11 October 2003

Issued by: Solvay Chemicals, Inc. Regulatory Affairs Department

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1. Company and Product Identification

1.1 Product Name: Sodium Fluorosilicate

Chemical Name: Sodium Silicofluoride

Synonyms: Sodium Fluosilicate, Sodium Fluorosilicate, Sodium Silica Fluoride, Disodium Hexafluoro- Silicate(2-)

Chemical Formula: Na₂SiF₆

Molecular Weight: 188.1

CAS Number: 16893-85-9

EINECS Number: 240-934-8

Grade/Trade Names: N/A

1.2 Recommended Uses: Fluoride source for water

1.3 Supplier: Solvay Fluorides, LLC
PO BOX 27328 Houston, TX 77227-7328
3333 Richmond Ave. Houston, Texas 77098

1.4 Emergency Telephone Numbers

General: 1-877-765-8292 (Solvay Fluorides, LLC)

Emergencies (USA): 1-800-424-9300 (CHEMTREC®)

Transportation Emergencies (INTERNATIONAL/MARITIME): 1-703-527-3887 (CHEMTREC®)

Transportation Emergencies (CANADA): 1-613-996-6666 (CANUTEC)

Transportation Emergencies (MEXICO-SETIQ): 91-800-00-214-00 (MEX. REPUBLIC)
-0-11-525-559-1588 (elsewhere)



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2. Composition/Information on Ingredients

INGREDIENTS	FORMULA	WT. PERCENT	CAS #
Sodium Silicofluoride	Na ₂ SiF ₆	≥ 98.0%	16893-85-9
Water	H ₂ O	≤ 0.5%	7732-18-5
Insoluble Matter		≤ 0.5%	

3. Hazards Identification

Emergency Overview:

- Hazardous product for the human health and the aquatic environment.
- Presents hazards from its ionizing fluorine.
- In case of decomposition, releases hydrogen fluoride.

3.1 Route of Entry: Inhalation: Yes Skin: Yes Ingestion: Yes

3.2 Potential Effects of exposure:

- Irritating to mucous membranes, eyes and skin.
- Risk of cardiac and nervous disorders.
- Chronic exposure to the product can cause bone fluorosis.

Inhalation:

- Nose and throat irritation.
- Spasmodic cough and difficulty in breathing.
- At high concentrations, risk of hypocalcemia (possible life-threatening lowering of serum calcium) with nervous problems (tetany) and cardiac arrhythmia (heart irregularity).
- In case of repeated or prolonged exposure; risk of sore throat, nose bleeds, chronic bronchitis.

Eyes: Severe eye irritation, watering, and redness.

Skin contact:

- Irritation, redness and swelling of the skin.
- In case of prolonged contact: risk of burns.

Ingestion:

- Severe irritations, burns, perforation of the gastrointestinal tract accompanied by shock.
- Nausea, vomiting (bloody), abdominal cramps and diarrhea (bloody).
- Risk of hypocalcemia (possible life-threatening lowering of serum calcium) with nervous problems (tetany) and cardiac rhythm disorders.
- Risk of convulsions, loss of consciousness, deep coma and cardiopulmonary arrest.
- Risk of general symptoms having a severe prognosis.

Carcinogenicity: See section 11.3

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4. First-Aid Measures

4.1 General Recommendations: Strict hygiene during and at the end of working shifts

Inhalation:

- Remove the subject from dusty environment.
- Oxygen or cardiopulmonary resuscitation if necessary.
- Consult with a physician in case of respiratory symptoms

Eyes:

- Consult with an ophthalmologist immediately in all cases.
- Take to hospital immediately.
- Flush eyes with running water for 15 minutes, while keeping the eyelids wide open.

Skin:

- Remove contaminated shoes, socks and clothing; while washing the affected skin with soap and water for 15 minutes. Double bag all contaminated clothing for disposal.
- Cover with an anti-bacterial cream.
- Provide clean clothing.
- Consult with a physician in cases of persistent pain or redness.

Ingestion:

- Contact a physician for immediately in all cases.
- Take to hospital.

If the subject is completely conscious:

- Rinse mouth with fresh water.
- Give to drink 3-4 glasses of milk or a 1% aqueous calcium gluconate solution.
- If the subject presents nervous, respiratory or cardiovascular disorders: administer oxygen.

If the subject is unconscious:

- NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON
- Classical resuscitation measures.

4.2 Medical Treatment/Notes to Physician: Exposed person should be observed for 48-72 hours for delayed onset of edema.

Inhalation: Pre-existing respiratory diseases may be aggravated including asthma and emphysema.

5. Fire-Fighting Measures

5.1 Flash point: Non flammable

5.2 Auto-ignition Temperature: Not applicable

5.3 Flammability Limits: Not applicable

5.4 Unusual Fire and Explosion Hazards: Formation of dangerous gas/vapors in case of decomposition (see section 10)

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5.5 Extinguishing Methods

Common:

- In case of fire in close proximity, all means of extinguishing are acceptable.
- Use extinguishing media appropriate for surrounding fire.

Inappropriate extinguishing means: No restriction.

5.6 Fire Fighting Procedures:

Specific hazards: Non-combustible

Protective measures in case of intervention:

- Wear self contained breathing apparatus when in close proximity or in confined spaces.
- When intervening in close proximity wear acid resistant over-suit.
- After intervention, proceed to clean the equipment (take a shower, remove clothing carefully, clean and check).

Other precautions: Control the use of water due to environmental risk (see section 6).

6. Accidental Release Measures

6.1 Precautions:

- Follow the protective measures given in section 8.
- Avoid dispersing the dust into a cloud.

6.2 Cleanup methods:

- Collect the product with suitable means avoiding dust formation.
- Place everything into a closed, labeled container compatible with the product.
- For disposal methods, refer to section 13.

6.3 Precautions for protection of the environment:

- Immediately notify the appropriate authorities in case of significant discharge.
- Do not discharge into the environment (sewers, rivers, soils, ...).

7. Handling and Storage

7.1 Handling:

- Use only equipment and materials which are compatible with the product.
- Keep away from heat sources.
- Keep away from reactive products (see section 10)

7.2 Storage:

- Keep in original packaging, and tightly closed.
- Keep away from reactive products (see section 10).

7.3 Specific Uses: See Section 1.2

7.4 Other precautions:

- Warn people about the hazards of the Sodium Silicofluoride.
- Avoid dust and formation of dust clouds.
- Follow the protective measures given in section 8.

7.5 Packaging: Paper lined with PE.

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8. Exposure Controls/Personal Protection

8.1 Exposure Limit Values: Sodium Fluorosilicate

Authorized limit Values	TLV® ACGIH®-USA (2002)	OSHA PEL	NIOSH REL (1994)
Fluorides	2.5 mg/m ³ (as F)	2.5 mg/m ³ (as F)	None

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8.2 Exposure Controls:

- Follow the protective measures given in section 7.
- Maintain employee exposures to levels below the applicable exposure limits.

8.2.1 Occupational Exposure Controls:

8.2.1.1 Ventilation: Provide local ventilation suitable for the dust risk.

8.2.1.2 Respiratory protection:

- Self/contained breathing apparatus in medium confinement/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/national standards.
- Use only NIOSH approved respirators.
- Comply with OSHA respiratory protection requirements.

8.2.1.3 Hand protection:

- Protective gloves - chemical resistant:
- Recommended materials: PVC, neoprene, and rubber.

8.2.1.4 Eye protection: Dust proof goggles.

8.2.1.5 Skin protection:

- Overalls.
- Apron/boots of PVC, neoprene, rubber in case of dusts.

8.3 Other precautions:

- Do not smoke, eat and drink in the working area.
- Take off contaminated clothing immediately after work.
- Shower and eye wash stations.
- Consult the industrial hygienist or the safety manager for the selection of personal protective equipment suitable for the working conditions.

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9. Physical and Chemical Properties

9.1 Appearance: Free-flowing crystals

Odor: White

Color: Odorless

9.2 Important Health, Safety and Environmental information:

pH: Not applicable

Change of state:

Melting point: Decomposes @ 500°C (932°F)

Boiling point: Not applicable

Decomposition Temperature: 500°C (932°F)

Flash Point: Not applicable

Flammability: Non Flammable
(solid, gas)

Explosive Properties: Not available

Oxidizing Properties: Not available

Vapor Pressure: Not available

Relative Density:

Specific gravity (H₂O=1): 1

Bulk Density: 10.8 grams/ml (90 lbs/ft³)

Solubility: 40 mg/l at 20°C (68°F) Remark: Atmospheric pressure

Partition coefficient: Not applicable

Viscosity: Not applicable

Vapor Density (air=1): Not available

Evaporation Rate: No data

9.3 Other Information: No data

Surface Tension: No data

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10. Stability and Reactivity

Stability: Stable under certain conditions (see below).

10.1 Conditions to avoid: Temperatures above decomposition temperature see section 9.

10.2 Materials and substances to avoid:

- Strong acids-reacts
- Strong alkalis-reacts
- Oxidizing agents-reacts
- Metals-reacts

10.3 Hazardous decomposition products:

- Hydrofluoric Acid
- Fluorine

10.4 Hazardous Polymerization: Not applicable

10.5 Other information: None

11. Toxicological Information

11.1 Acute toxicity:

Inhalation: No data available.

Oral: LD₅₀, rat, 125mg/kg (Sodium hexafluorosilicate)

Dermal: No data available.

Irritation: No data available.

Sensitization: No data available.

Comments: No data available.

11.2 Chronic toxicity: No data available.

11.3 Carcinogenic Designation: None

12. Ecological Information

12.1 Acute ecotoxicity: No data available.

12.2 Chronic ecotoxicity: No data available.

12.3 Mobility: No data available.

12.4 Degradation

Abiotic: No data available.

Biotic: No data available.

12.5 Potential for bioaccumulation: No data available.

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13. Disposal Considerations

13.1 Waste treatment: Consult current federal, state and local regulations regarding the proper disposal of this material.

13.2 Packaging treatment: Consult current federal, state and local regulations regarding the proper disposal of emptied containers.

13.3 RCRA Hazardous Waste: Not listed.

14. Transport Information

Mode	DOT	IMDG	IATA
UN Number	UN 2674	UN 2674	UN 2674
Class	6.1	6.1	6.1
Proper Shipping Name	Sodium Fluorosilicate	Sodium Fluorosilicate	Sodium Fluorosilicate
Hazard label	Toxic	Toxic	Toxic
Subsidiary	Not a marine pollutant	Not a marine pollutant	Not a marine pollutant
Placard	Toxic	Toxic	Toxic
Packing Group	III	III	III
MFAG			
Emergency Info	ERG: 154	EmS: 6.1-04	ERG Code: 6L

15. Regulatory Information

National Regulations (US)

TSCA Inventory 8(b): Yes

SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR355): No

SARA Title III Sec. 311/312 (40 CFR 370):
Hazard Category: None

SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372): No

CERCLA Hazardous Substance (40CFR Part 302):
Listed: No
Unlisted Substance: No

State Component Listing: No Data.

National Regulations (Canada) Canadian DSL Registration: DSL

WHMIS Classification: D2B - Material causing other toxic effect

This product has been classified in accordance with the hazard criteria of the **Controlled Products Regulations** and the MSDS contains all the information required by the **Controlled Products Regulations**.

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Labeling according to Directive 1999/45/EC.

<u>Category</u>	<u>ID</u>	<u>Phrase</u>
Symbols	T	Toxic
Phrases R	23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
Phrases S	1/2	Keep locked up and out of reach of children.
	26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
	45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

16. Other Information

16.1 Ratings:

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)

Health = 3 Flammability = 0 Instability = 0 Special = None

HMIS (HAZARDOUS MATERIAL INFORMATION SYSTEM)

Health = 3 Fire = 0 Reactivity = 0 PPE = Supplied by User; dependent on local conditions

16.2 Other Information:

The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations of mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product).

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16.3 Reason for revision:

Supersedes edition: Sodium Fluorides Inc. MSDS dated 3/4/97.

Purpose of revision: Change Company name and MSDS format