

Product #: 805002 From: BRENNTAG MID-SOUTH INC. To: Friday, July 24, 2015

SAFETY DATA SHEET
North American Version

SODIUM FLUORIDE

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Identification of the substance or mixture

Product name : SODIUM FLUORIDE
Product grade(s) : Coarse Blends
Granular
Powder
USP
Coarse
Crystal
Chemical Name : Sodium fluoride
Molecular formula : NaF
Molecular Weight : 42 g/mol

1.2. Use of the Substance/Mixture

Recommended use : - Welding and soldering agents
- Metallurgy
- Glass industry
- Dental application
Recommended use : - Water treatment

1.3. Company/Undertaking Identification

Address : SOLVAY FLUORIDES, LLC
3333 RICHMOND AVENUE
HOUSTON TX 77098-3099
United States

1.4. Emergency and contact telephone numbers

Emergency telephone number : 1 (800) 424-9300 CHEMTREC® (USA & Canada)
01-800-00-214-00 (MEX. REPUBLIC)
Contact telephone number (product information) : US: +1-800-765-8292 (Product information)
US: +1-713-525-6500 (Product information)

2. HAZARDS IDENTIFICATION

2.1. Emergency Overview:

NFPA : H= 3 F= 0 I= 0 S= None
HMIS : H= 3 F= 0 R= 0 PPE = Supplied by User; dependent on local conditions

General Information

Appearance : crystalline, powder
Colour : white



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Odour : odourless

Main effects

- Toxic if swallowed.
- Irritating to eyes and skin.
- Contact with acids liberates very toxic gas.
- Hazardous decomposition products formed under fire conditions.

2.2. Potential Health Effects:

Inhalation

- Irritating to mucous membranes
- At high concentrations, risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia.
- Repeated or prolonged exposure: Risk of sore throat, nose bleeds, Nose bleeding, chronic bronchitis.

Eye contact

- Severe eye irritation
- Redness
- Lachrymation
- Risk of temporary eye lesions.

Skin contact

- Irritation
- Repeated or prolonged exposure: Causes burns..

Ingestion

- Severe irritation
- Salivation
- risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia
- Risk of convulsions, loss of consciousness, deep coma and cardiopulmonary arrest.
- Symptoms: Nausea, Vomiting, Abdominal pain, Diarrhoea.

Other toxicity effects

- See section 11: Toxicological Information

2.3. Environmental Effects:

- See section 12: Ecological Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Sodium fluoride

CAS-No. : 7681-49-4
Concentration : $\geq 97.0\%$

4. FIRST AID MEASURES

4.1. Inhalation

- Remove the subject from dusty environment and let him blow his nose.
- Oxygen or artificial respiration if needed.
- If symptoms persist, call a physician.

4.2. Eye contact

- Rinse the eyes with a calcium gluconate 1% solution in physiological serum (10 ml of calcium gluconate 10% in 90 ml of physiological serum)
- Immediate medical attention is required.

4.3. Skin contact

- Take off contaminated clothing and wash before reuse.

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- Wash off with plenty of water.
- Immediately apply calcium gluconate gel 2.5% and massage into the affected area using rubber gloves; continue to massage while repeatedly applying gel until 15 minutes after pain is relieved.
- If fingers/finger nails are touched, even if there is no pain, dip them in a bath of 5% calcium gluconate for 15 to 20 minutes.
- If symptoms persist, call a physician.

4.4. Ingestion

- Immediate medical attention is required.
- Take victim immediately to hospital.

If victim is conscious:

- If swallowed, rinse mouth with water (only if the person is conscious).
- Give to drink a 1% aqueous calcium gluconate solution.
- Do NOT induce vomiting.

If victim is unconscious but breathing:

- Artificial respiration and/or oxygen may be necessary.

5. FIREFIGHTING MEASURES

5.1. Suitable extinguishing media

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

5.2. Extinguishing media which shall not be used for safety reasons

- none

5.3. Special exposure hazards in a fire

- The product is not flammable.
- Not combustible.
- Heating can release hazardous gases.

5.4. Hazardous decomposition products

- Hydrogen fluoride
- The release of other hazardous decomposition products is possible.

5.5. Special protective equipment for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Fire fighters must wear fire resistant personnel protective equipment.
- Wear chemical resistant oversuit

5.6. Other information

- Control the use of water due to environmental risk (see section 6).

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. Advice for non-emergency personnel

- Avoid dust formation.

6.1.2. Advice for emergency responders

- Sweep up to prevent slipping hazard.

6.2. Environmental precautions

- If the product contaminates rivers and lakes or drains inform respective authorities.
- Do not flush into surface water or sanitary sewer system.

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6.3. Methods and materials for containment and cleaning up

- Sweep up and shovel into suitable containers for disposal.
- Avoid dust formation.
- Keep in properly labelled containers.
- Keep in suitable, closed containers for disposal.
- Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

7. HANDLING AND STORAGE

7.1. Handling

- Used in closed system
- Handle small quantities under a lab hood.
- Use only in well-ventilated areas.
- Use only equipment and materials which are compatible with the product.
- Keep away from heat.

7.2. Storage

- Keep in a dry place.
- Store in original container.
- Keep container closed.
- Keep away from incompatible products.

7.3. Packaging material

- no data available

7.4. Other information

- Avoid dust formation.
- Refer to protective measures listed in sections 7 and 8.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure Limit Values

Sodium fluoride

- US. ACGIH Threshold Limit Values 12 2010
time weighted average = 2.5 mg/m3
Remarks: as F
- US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
time weighted average = 2.5 mg/m3
Remarks: as F
- US. OSHA Table Z-2 (29 CFR 1910.1000) 02 2006
time weighted average = 2.5 mg/m3
- US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006
Permissible exposure limit = 2.5 mg/m3
Remarks: as F
- US. Tennessee. OELs. Occupational Exposure Limits. Table Z1A 06 2008
time weighted average = 2.5 mg/m3
Remarks: as F

ACGIH® and TLV® are registered trademarks of the American Conference of Governmental Industrial Hygienists.

SAEL = Solvay Acceptable Exposure Limit. Time Weighted Average for 8 hour workdays. No Specific TLV STEL (Short Term Exposure Level) has been set. Excursions in exposure level may exceed 3 times the TLV TWA for no more than a total of 30 minutes during a workday and under no circumstances should they exceed 5 times the TLV TWA.

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8.2. Engineering controls

- Ensure adequate ventilation.
- Provide appropriate exhaust ventilation at places where dust is formed.
- Refer to protective measures listed in sections 7 and 8.
- Apply technical measures to comply with the occupational exposure limits.

8.3. Personal protective equipment

8.3.1. Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
- 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 NIOSH approved respiratory protection.

8.3.2. Hand protection

- Protective gloves - impervious chemical resistant:
- Suitable material: PVC, Neoprene, Natural Rubber

8.3.3. Eye protection

- Chemical resistant goggles must be worn.
- Dust proof goggles obligatory.

8.3.4. Skin and body protection

- Long sleeved clothing
- Apron/boots in case of dusts.
- Neoprene
- Natural Rubber

8.3.5. Hygiene measures

- Eye wash bottles or eye wash stations in compliance with applicable standards.
- Use only in an area equipped with a safety shower.
- When using do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information

Appearance : crystalline, powder
Colour : white
Odour : odourless

9.2. Important health safety and environmental information

pH : 7.4
Remarks: saturated aqueous solution
Temperature: 20 °C (68 °F)

Boiling point/boiling range : ca. 1,700 °C (3,092 °F)

Flash point : *Remarks: not applicable*

Flammability : *Remarks: not applicable*

Explosive properties : *Explosion danger.*
Remarks: Not explosive

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Oxidizing properties : *Remarks: Non oxidizer*
Vapour pressure : 1.33 hPa
Temperature: 1,077 °C (1,971 °F)
Bulk density : from 1,000 - 1,400 kg/m³
Solubility(ies) : Water
42 g/l
Temperature: 20 °C (68 °F)
**Partition coefficient:
n-octanol/water** : *Remarks: not applicable*
Vapour density : *Remarks: not applicable*
Evaporation rate : *Remarks: not applicable*

9.3. Other data

Melting point/range : ca. 992 °C (1,818 °F)
Auto-flammability : *Remarks: not applicable*
Granulometry : 90 % > 0.1 mm

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under recommended storage conditions.

10.2. Conditions to avoid

- Exposure to moisture.
- To avoid thermal decomposition, do not overheat.

10.3. Materials to avoid

- Strong acids, glass

10.4. Hazardous decomposition products

- Hydrogen fluoride
- The release of other hazardous decomposition products is possible.

11. TOXICOLOGICAL INFORMATION

Toxicological data

Acute oral toxicity

- LD50, rat, 52 - 250 mg/kg

Acute dermal irritation/corrosion

- LD 10, mouse, ca. 300 mg/kg

Skin irritation

- rat, Skin irritation

Eye irritation

- rabbit, Eye irritation

Sensitisation

- Did not cause sensitization.

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Carcinogenicity

- Limited evidence of a carcinogenic effect.

Reproductive toxicity

- rat, 10 - 14 mg/kg, NOAEL

Remarks

- no data available
- Chronic exposure may entail dental or skeletal fluorosis
- Carcinogenic effect not applicable to human

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Fishes, *Salmo gairdneri*, LC50, 96 h, 51 mg/l (Sodium fluoride)
Remarks: fresh water, static test
- Crustaceans, *Daphnia magna*, EC50, 96 h, 10.5 mg/l (Sodium fluoride)
Remarks: salt water
- Crustaceans, *Daphnia magna*, EC50, 48 h, 26 mg/l (Sodium fluoride)
Remarks: fresh water

Chronic toxicity

- Fishes, *Oncorhynchus mykiss*, NOEC, 21 Days, 4 mg/l (Sodium fluoride)
Remarks: fresh water, static test
- Crustaceans, *Daphnia magna*, NOEC, 21 Days, 8.9 mg/l (Sodium fluoride)
Remarks: static test, fresh water
- Algae, various species, EC50, 96 h, 43 mg/l (Sodium fluoride)
Remarks: fresh water
- Algae, various species, EC50, 81 mg/l (Sodium fluoride)
Remarks: Marine water
- Algae, various species, NOEC, 7 d, 50 mg/l (Sodium fluoride)
Remarks: fresh water, static test
- Algae, various species, NOEC, 7 d, 50 mg/l (Sodium fluoride)
Remarks: Marine water, static test

12.2. Mobility

- Air
Remarks: mobility as solid aerosols
- Water, Solubility(ies), Mobility
- Soil/sediments
Remarks: adsorption on mineral and organic soil constituents

12.3. Persistence and degradability

Abiotic degradation

- Water/soil
Result: complexation/precipitation of inorganic and organic materials

Biodegradation

- Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

12.4. Bioaccumulative potential

- Bioaccumulative potential: log Pow
Result: not applicable
- (Fluorides)
Result: accumulation into vegetable leaves

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12.5. Other adverse effects

- no data available

12.6. Remarks

- Harmful to aquatic organisms.
- Hazard for the environment is limited due to product properties:
- low chronic toxicity.
- Product fate is highly dependent on environmental conditions: pH, temperature, redox potential, mineral and organic content of the medium,...

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- In accordance with local and national regulations.
- Dilute with plenty of water.
- Can be eliminated from water by precipitation.
- Filtrate the product and send the cake to a landfill for industrial waste.
- Discharge liquid filtrate to a wastewater treatment system

13.2. Packaging treatment

- Empty containers.
- Dispose of as unused product.
- Must be incinerated in a suitable incineration plant holding a permit delivered by the competent authorities.
- Where possible recycling is preferred to disposal or incineration.
- In accordance with local and national regulations.

13.3. RCRA Hazardous Waste

- Listed RCRA Hazardous Waste (40 CFR 302) - No
- Unlisted RCRA Hazardous Waste (40 CFR 302) - No

14. TRANSPORT INFORMATION

IATA-DGR

UN number	UN 1690
Class	6.1
Packing group	III
ICAO-Labels	6.1 - Toxic
Proper shipping name: SODIUM FLUORIDE SOLID	

IMDG

UN number	UN 1690
Class	6.1
Packing group	III
IMDG-Labels	6.1 - Toxic
EmS	F-A S-A
Proper shipping name: SODIUM FLUORIDE SOLID	

U.S. Dept of Transportation

UN number	UN 1690
Class	6.1

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Packing group III
 Label 6.1 - Toxic
 EmS 154
 Reportable Quantity 454 kg
 Proper shipping name: SODIUM FLUORIDE SOLID

Canada (TDG)

UN number UN 1690
 Class 6.1
 Packing group III
 Label 6.1 - Toxic
 EmS 154
 Proper shipping name: SODIUM FLUORIDE SOLID

Mexico (NOM-002-SCT)

UN number UN 1690
 Class 6.1
 Packing group III
 Label 6.1 - Toxic
 Proper shipping name: SODIUM FLUORIDE SOLID

- DOT Packing Group: III

15. REGULATORY INFORMATION

15.1. Inventory Information

Australian Inventory of Chemical Substances (AICS)	: -	In compliance with inventory.
Canadian Domestic Substances List (DSL)	: -	In compliance with inventory.
Inventory of Existing Chemical Substances (China) (IECS)	: -	In compliance with inventory.
Japanese Existing and New Chemical Substances (MITI List) (ENCS)	: -	In compliance with inventory.
New Zealand Inventory of Chemicals (NZIOC)	: -	In compliance with inventory.
Toxic Substance Control Act list (TSCA)	: -	In compliance with inventory.
EU list of existing chemical substances (EINECS)	: -	In compliance with inventory.
Korean Existing Chemicals Inventory (KECI (KR))	: -	In compliance with inventory.
Philippine Inventory of Chemicals and Chemical Substances (PICCS)	: -	In compliance with inventory.

15.2. Other regulations

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US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

- not regulated.

SARA Hazard Designation (SARA 311/312)

- Acute Health Hazard: Yes.
- Chronic Health Hazard: Yes.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

- not regulated.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

- not regulated.

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

- yes.

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

- yes.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

- not regulated.

16. OTHER INFORMATION

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

Further information

- New (SDS)
- Distribute new edition to clients

Material Safety Data Sheets contain country specific regulatory information; therefore, the MSDS's provided are for use only by customers of the company mentioned in section 1 in North America. If you are located in a country other than Canada, Mexico or the United States, please contact the Solvay Group company in your country for MSDS information applicable to your location.

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 or 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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