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by:  
FLUORIDE CHEMICALS (YUNNAN) CO.,LTD

# MSDS

## MATERIAL SAFETY DATA SHEET

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## Sodium Fluoride

NFPA Ratings (Scale0-4)

Health=3; Fire=0; Reactivity=0

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# Section I

## PRODUCT NAME AND DESCRIPTION

DOT Chemical Name: Sodium Fluoride  
Synonyms: SF  
Chemical Family: Inorganic Fluoride      Formula: NaF  
CAS Number: 7681-49-4      NIOSH Number: WB 0350000

**Note: N/A indicates Not Applicable where shown.**

# Section II

## INGREDIENTS

Composition	Percentage
NaF	97.70

# Section III

## PHYSICAL DATA

Boiling Point: 1704° C	Melting Point 992° C
Specific Gravity (H <sub>2</sub> O)=1): 2.56	Vapor Pressure (mm Hg): N/A
Percent Volatile by Volume: N/A	Vapor Density (Air=1) N/A
Solubility in Water: 4g/100g H <sub>2</sub> O	Evaporation Rate: N/A
Physical State: Solid, granular	Molecular Weight: 42.00
Bulk Density: 1.44g/cm <sup>3</sup> (90 lb./ft <sup>3</sup> )	PH (1% solution): Close to 7

**Appearance and Odor:** White, crystalline powder, no odor.

# Section IV

## REACTIVITY

**Stability:** Stable.

**Hazardous Polymerization:** Will not occur.

**Conditions and Materials to Avoid:** Contact with strong acids will product hydrogen fluoride. Avoid extreme temperatures, such as fires, they will cause decomposition and formation of hydrofluoric acid and fluorine.

**Hazardous Decomposition Products:** Extreme temperatures, such as fires, will

cause decomposition and formation of hydrofluoric acid and fluorine.

## Section V

### PERSONAL PROTECTION INFORMATION

**Respiratory Protection:** A NIOSH approved single-use dust respirator. Self-contained breathing apparatus may be required when dealing with spills or when heated to decomposition.

**Eye and Face Protection:** Splash-proof goggles should be worn when there is danger of splash from solution containing chemical. Protection against splash or mist from solution containing chemical with 8-inch minimum face shield is recommended. Eye protection should be worn in presence of dry chemical, or solution containing chemical, at all times.

**Hand, Arm and Body Protection:** Impervious gloves should be worn. Protective, impervious clothing should be worn in presence to prevent contact with skin (coveralls, boots, etc.)

**Other Protective Clothing and Equipment:** Protect open wounds. Heating to decomposition requires full protective clothing and self-contained breathing apparatus.

**Engineering Controls:** Adequate ventilation to maintain fluoride concentrations below applicable standards.

## Section VI

### HEALTH INFORMATION

**OSHA Permissible Exposure Limit (PEL):** 2.5mg/m<sup>3</sup>(as F)

**ACGIH Threshold Limit Value (TLV):** 2.5mg/m<sup>3</sup>(as F)

**OSHA Health Hazard Classification:** Toxic.

**Primary Route(s) of Entry:** Inhalation, eye and skin contact, ingestion.

#### **Symptoms of Exposure:**

**Acute:** Inhalation of dust or mist may cause severe mucous membrane irritation and burns. Effects may not be immediately apparent, especially with diluted solutions. First aid procedures should be followed even in cases of suspected contact.

**Chronic:** Causes severe skin irritation and burns. Ingestion or inhalation may be harmful and possibly fatal depending on severity and length of over-exposure. Chronic over-exposure may cause Fluorosis. Product may be absorbed through the skin and produce signs of Fluorosis such as weight loss, brittleness of bones, anemia, weakness and stiffness of joints. Internal bleeding may develop.

**Aggravated Medical Condition:** Any skin, respiratory or mucous membrane conditions.

**Toxic Data:** 180 mg/kg (Oral - Rat)

## Section VII

### EMERGENCY AND FIRST AID PROCEDURES

**Inhalation:** If a person breathes in chemical dust or mist, remove exposed person promptly to fresh air. If breathing has stopped, perform artificial respiration. Keep the affected person warm and at rest. Get medical attention as soon as possible.

**Eye Contact:** Flush eyes with large amounts of water, lifting the upper and lower lids at periodic intervals to insure contact of water with all accessible tissue of the eyes and lids. Medical attention should be given as soon as possible, preferably an eye specialist.

**Skin Contact:** Promptly wash the contaminated skin using soap or mild detergent and water. If chemical, or solution containing chemical, soaks through clothing, remove the clothing promptly and wash the skin using soap or mild detergent and water. Medical attention should be given as soon as possible for all burns, regardless of how minor they seem.

**Ingestion:** If conscious, give the exposed person large quantities of water immediately. Do NOT induce vomiting. Several glasses of milk may be given for its soothing effect. A physician should be contacted immediately.

**Note to Physician:** Exposed person should be observed for 48 - 72 hours for delayed onset of pulmonary edema.

## Section VIII

### STORAGE AND SPECIAL PRECAUTIONS

**Handling and Storing Precautions:** Store in a cool, dry place and away from acids. Use only with adequate ventilation, dust mask or self-contained breathing apparatus.

Protective clothing should always be worn. Avoid contact with eyes, skin, and clothing. Keep bag or container closed when not in use. Avoid breathing dust or mist.

**Ventilation:** Provide adequate general and/or local exhaust to maintain vapors below acceptable air level maximums.

**Other Precautions:** If chemical should become heated, as in a fire, it will decompose, releasing highly toxic hydrogen fluoride gas.

## Section IX

### EMERGENCY ACTION - SPILL OR LEAK

**Emergency Action:** Keep unnecessary people away. Stay upwind, keep out of low areas. Isolate hazard area and deny entry. Ventilate closed spaces before entering them. We recommend that the user establish a spill prevention, control and countermeasure plan. This plan should include procedures for proper storage as well as containment and clean-up of spills and leaks. The procedures should conform to safe practices and provide for proper recovery and disposal in accordance with local regulation.

**Small Spills:** Employees should be trained in safety procedures for storage and handling this product. Any personnel in area should wear a NIOSH approved breathing apparatus and protective clothing. Isolate product spill area. Carefully shovel material and place in clean, dry container and cover. Remove container from spill site and dispose of in accordance with local regulations.

**Large Spills:** Employees should be trained in safety procedures for the storage and handling of this product. Any personnel in area should wear a NIOSH approved breathing apparatus and protective clothing. Isolate product spill area. Carefully shovel material and place in clean, dry container and cover. Remove container from spill site and dispose of in accordance with local regulations.

## Section X

### FIRE AND EXPLOSION HAZARDS

**Flash Point and Method Used:** Not Combustible.

**Flammable Limits - % Volume in Air:** Lower N/A Upper N/A

**Extinguishing Media:** This chemical is not flammable, but for fires in area where

this chemical is stored, use foam, dry chemicals or CO<sub>2</sub>.

**Special Fire Fighting Procedures and Precautions:** Although this chemical is not flammable, when heated to temperatures such as fire, it will release hydrogen fluoride gas.

**Auto Ignition Temperature:** N/A

**Unusual Fire and Explosion Hazards:** Firefighters should avoid all bodily contact, wear full protective clothing and self-contained breathing apparatus.

## Section XI

### TRANSPORTATION REQUIREMENTS

DOT Proper Shipping Name:

Sodium Fluoride

Packing Group: III

DOT Hazard Class: 6.1 (Poison)

Subsidiary Hazard Class: N/A

Identification Number: UN 1690

Placarding Requirement: Toxic

EPA Hazardous Substance: Yes

IMDG Placarding

Requirement: Toxic.

Hazardous Waste Number: Not Listed

Reportable Quantity: 100 lbs.

**RCRA Status of Unused Material if Discarded:** Not listed

**Waste Disposal Method:** Disposer must comply with local disposal or discharge laws.

**Additional Comments:** For International transportation, Sodium Fluoride is regulated by the International Maritime Organization (IMO) and the International Air Transport Association (IATA) for vessel and air movement as a Class 6.1 toxic. Packaging, marking, labelling and shipping paper descriptions must precisely reflect the regulation for export movement.

### DISCLAIMER

The information presented herein is based on data considered to be accurate and that reflects the requirements of the OSHA Hazard Communication Standards in effect as of the date of preparation of this Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.