Sodium Fluoride: sc-24988

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Sodium Fluoride
Product Number: sc-24988

Supplier: Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, CA 95060
800.457.3801 or 831.457.3800

Emergency: ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Target Organ Effect, Highly toxic by ingestion, Irritant

Target Organs

Kidney, Heart, Bone, Nerves, Gastrointestinal tract, Teeth, Damage to the lungs, Kidney, Heart, Bone, Nerves, Gastrointestinal tract, Teeth, Damage to the lungs.

GHS Classification

Acute toxicity, Oral (Category 2)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H300	Fatal if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H402	Harmful to aquatic life.

Precautionary statement(s)

P264	Wash hands thoroughly after handling.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Other hazards

Contact with acids liberates very toxic gas.

HMIS Classification

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	0
Physical hazards:	0

NFPA Rating

Health hazard:	3
Fire:	0
Reactivity Hazard:	0

Potential Health Effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be fatal if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : FNa

Molecular Weight : 41.99

CAS-No.	*EC-No.*	*Index-No.*	*Concentration*
Sodium fluoride			
7681-49-4	231-667-8	009-004-00-7	-

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area. 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.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

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

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Hydrogen fluoride, Sodium oxides

Further information

The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Never allow product to get in contact with water during storage. Do not store near acids. Moisture sensitive. Keep in a dry place. Store at room temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Sodium fluoride	7681-49-4	TWA	2.5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	2.5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	2.5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	2.5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z2
		TWA	2.5 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	2.5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Remarks	CAS number varies with compound			
		TWA	2.5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z2
	Z37.28-1969			
		TWA	2.5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	2.5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Bone damage Fluorosis Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen varies			

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	powder	pH	N/A
Melting point	993 °C	Freezing point	N/A
Boiling point	N/A	Flash point	N/A
Ignition temperature	N/A	Auto-ignition temperature	N/A
Lower explosion limit	N/A	Upper explosion limit	N/A
Vapor pressure	1.9 hPa	Density	2.780 g/cm3
Water solubility	N/A	Relative vapor density	N/A
Odor	N/A	Odor Threshold	N/A
Evaporation rate	N/A	Partition coefficient: n-octanol/water	N/A

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

Exposure to moisture.

Materials to avoid

Strong acids

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Hydrogen fluoride, Sodium oxides

Other decomposition products

no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50

LD50 Oral - rat - 31 mg/kg
LD50 Oral - mouse - 44 mg/kg
LD50 Oral - rabbit - 200 mg/kg

LD50 Oral - Domestic Animals - 100 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity). Nutritional and Gross Metabolic:Weight loss or decreased weight gain.
LD50 Oral - Bird (wild) - 110 mg/kg
TDLo Oral - Human - 0.214 mg/kg
Remarks: Behavioral:Headache. Gastrointestinal:Changes in structure or function of salivary glands.
TDLo Oral - Human - 3.57 mg/kg
Remarks: Gastrointestinal:Changes in structure or function of salivary glands. Gastrointestinal:Other changes.
TDLo Oral - Human - male - 1,662 mg/kg
TDLo Oral - Human - female - 7 mg/kg
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Ptosis. Cyanosis
TDLo Oral - mouse - 0.0084 mg/kg
Remarks: Gastrointestinal:Decreased motility or constipation.
TDLo Oral - mouse - 0.034 mg/kg
LDLO Oral - Human - 71 mg/kg
Remarks: Behavioral:Tremor. Musculoskeletal:Changes in teeth and supporting structures.Musculo skeletal: Other changes.
LDLO Oral - Human - 32 mg/kg
LDLO Oral - Human - 0.07 mg/kg
Remarks: Cardiac:Arrythmias (including changes it conduction). Peripheral Nerve and Sensation:Recording from peripheral motor nerve.
LDLO Oral - Human - female - 90 mg/kg
Remarks: Behavioral:Fluid intake. Behavioral:Muscle weakness.
LDLO Oral - Human - female - 360 mg/kg
Remarks: Cyanosis
Inhalation LC50
no data available
Dermal LD50
no data available
Other information on acute toxicity
TDLo Intradermal - Human - 0.014 mg/kg
Remarks: Peripheral Nerve and Sensation:Paresthesis.
TDLo Parenteral - rat - 9 mg/kg
Remarks: Endocrine:Hyperglycemia. Blood:Changes in serum composition (e.g., TP, bilirubin, cholesterol). Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Hepatic microsomal mixed oxidase (dealkylation, hydroxylation, etc.).
TDLo Parenteral - rat - 35 mg/kg
Remarks: Vascular:BP lowering not charactertized in autonomic section. Kidney, Ureter, Bladder:Urine volume increased.
LDLO Subcutaneous - rabbit - 100 mg/kg
LDLO Subcutaneous - guinea pig - 100 mg/kg
LDLO Intraperitoneal - dog - 50 mg/kg
LDLO Subcutaneous - dog - 155 mg/kg
LDLO Subcutaneous - cat - 14 mg/kg
LD50 Intraperitoneal - rat - 22 mg/kg
LD50 Intravenous - rat - 26 mg/kg
Remarks: Nutritional and Gross Metabolic:Weight loss or decreased weight gain.
LD50 Subcutaneous - rat - 175 mg/kg
LD50 Intraperitoneal - mouse - 38 mg/kg
Remarks: Gastrointestinal:Other changes. Liver:Other changes. Kidney, Ureter, Bladder:Other changes.
LD50 Intravenous - mouse - 50.83 mg/kg
Remarks: Liver:Other changes. Kidney, Ureter, Bladder:Other changes. Gastrointestinal:Other changes.
LD50 Subcutaneous - mouse - 0.115 mg/kg
LD50 Intravenous - Monkey - 26.6 mg/kg

Skin corrosion/irritation

Serious eye damage/eye irritation

Eyes - rabbit - Eye irritation - 24 h
Remarks: Moderate eye irritation

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Sodium fluoride)
3 - Group 3: Not classifiable as to its carcinogenicity to humans (Sodium fluoride)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Ingestion	May be fatal if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure

prolonged or repeated exposure can cause:, Damage to the lungs.

Synergistic effects

no data available

Additional Information

RTECS: WB0350000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 500 mg/l - 96 h LC50 - Oncorhynchus mykiss (rainbow trout) - 200 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 98 mg/l - 48 h

Persistence and degradability

Bioaccumulative potential

Bioaccumulation	Salmo trutta - 10 d Bioconcentration factor (BCF): 2.3

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1690 Class: 6.1 Packing group: III
Proper shipping name: Sodium fluoride, solid
Reportable Quantity (RQ): 1000 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN number: 1690 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: SODIUM FLUORIDE, SOLID
Marine pollutant: No

IATA

UN number: 1690 Class: 6.1 Packing group: III
Proper shipping name: Sodium fluoride, solid

15. REGULATORY INFORMATION

OSHA Hazards

Target Organ Effect, Highly toxic by ingestion, Irritant

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Sodium fluoride CAS-No. 7681-49-4

Pennsylvania Right To Know Components

Sodium fluoride CAS-No. 7681-49-4

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

03/13/2013