Material Safety Data Sheet
Sodium fluoride

ACC# 21230

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium fluoride
Catalog Numbers: AC191270000, AC191270010, AC191270250, AC191275000, AC201290000, AC201290250, AC201295000, AC424320000, AC424320050, AC424325000, S299-100, S299-3, S299-500
Synonyms: None.
Company Identification:
Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410
For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7681-49-4	Sodium fluoride	>97	231-667-8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white to off-white crystalline powder.
Danger! Causes irritation and possible burns by all routes of exposure. May be fatal if swallowed. Contact with acids liberates toxic gas. May cause lung damage. Moisture sensitive.
Target Organs: Kidneys, heart, gastrointestinal system, skeletal structures, teeth, nerves, bone.

Potential Health Effects
Eye: Causes eye irritation and possible burns. May cause chemical conjunctivitis and corneal damage.
Skin: Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.
Ingestion: May be fatal if swallowed. Ingestion of large amounts of fluoride may cause salivation, nausea, vomiting, abdominal pain, fever, labored breathing. Exposure to fluoride compounds can result in systemic toxic effects on the heart, liver, and kidneys. It may also deplete calcium levels in the body leading to hypocalcemia and death. May cause irritation of the digestive tract and possible burns. May cause respiratory paralysis and cardiac arrest.
Inhalation: May cause severe irritation of the respiratory tract with possible burns. Aspiration may lead to pulmonary edema. Prolonged exposure to dusts, vapors, or mists may result in the perforation of the nasal septum. May cause systemic effects.
Chronic: Chronic inhalation and ingestion may cause chronic fluoride poisoning (fluorosis) characterized by weight loss, weakness, anemia, brittle bones, and stiff joints. Effects may be delayed. Chronic exposure may cause lung damage. Laboratory experiments have resulted in mutagenic effects. Chronic exposure to fluoride compounds may cause systemic toxicity. Skeletal effects may include bone brittleness, joint stiffness, teeth discoloration, tendon calcification, and osteroscliensis. Animal studies have reported the development of tumors.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).
Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.
Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has stopped, perform artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.
Notes to Physician: Individuals who suffer from diabetes insipidus or some form of renal impairment may be at increased risk from the effects of fluoride. Due to delayed and persistent symptoms, observe patient closely for 48 hours. Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Material will not burn. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire. Do NOT get water inside containers. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: Not available.
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Do not flush into a sewer. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Do not allow contact with water. Discard contaminated shoes. Keep from contact with moist air and steam.
Storage: Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Store protected from moisture. Store away from alkalies.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium fluoride	2.5 mg/m3 TWA (as F) (listed under Fluorides).	2.5 mg/m3 TWA (as F) 250 mg/m3 IDLH (as F)	2.5 mg/m3 TWA (as dust) (listed under Fluorides);2.5 mg/m3 TWA (as F) (listed under Fluorides);

OSHA Vacated PELs: Sodium fluoride: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystalline powder
Appearance: white to off-white
Odor: odorless
pH: 7.4 (solution)
Vapor Pressure: 1 mm Hg @ 1077 deg C
Vapor Density: 1.45 (air=1)
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 1704 deg C
Freezing/Melting Point:993 deg C
Decomposition Temperature: Not available.
Solubility: Soluble.
Specific Gravity/Density:2.78 (water=1)
Molecular Formula: NaF
Molecular Weight:41.9882

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Moisture sensitive.
Conditions to Avoid: Incompatible materials, dust generation, moisture, excess heat.
Incompatibilities with Other Materials: Moisture, acids, alkalies, glass, oxidizing agents.
Hazardous Decomposition Products: Irritating and toxic fumes and gases, hydrogen fluoride gas, sodium oxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 7681-49-4: WB0350000
LD50/LC50:
CAS# 7681-49-4:
Draize test, rabbit, eye: 20 mg/24H Moderate;
Oral, mouse: LD50 = 44 mg/kg;
Oral, rabbit: LD50 = 200 mg/kg;
Oral, rat: LD50 = 31 mg/kg;
-
Carcinogenicity:
CAS# 7681-49-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Oral, rat: TDLo = 617 mg/kg/2Y-C (Tumorigenic - equivocal tumorigenic agent by RTECS criteria - Endocrine - thyroid tumorsand Musculoskeletal - tumors.; Oral, mouse: TDLo = 14 mg/kg/43W-C (Tumorigenic - equivocal tumorigenic agent by RTECS criteria - Skin and Appendages - tumors.
Teratogenicity: Oral, rat: TDLo = 240 mg/kg (female 11-14 day(s) after conception) Specific Developmental Abnormalities - musculoskeletal system.; Oral, rat: TDLo = 255 mg/kg (female 85 day(s) pre-mating) Specific Developmental Abnormalities - Central Nervous System.; Intraperitoneal, rat: TDLo = 9 mg/kg (female 10-18 day(s) after conception) Effects on Embryo or Fetus - extra-embryonic structures (e.g., placenta, umbilical cord) and Effects on Embryo or Fetus - fetal death.
Reproductive Effects: Oral, rat: TDLo = 150 mg/kg (male 30 day(s) pre-mating) Reproductive - Paternal Effects - spermatogenesis (incl. genetic material, sperm morphology, motility, and count) and Paternal Effects - testes, epididymis, sperm duct and Fertility - male fertility index (e.g. # males impregnating females per # males exposed to fertile nonpregnant females).; Oral, rat: TDLo = 221 mg/kg (female 1-20 day(s) after conception) Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).
Mutagenicity: DNA Inhibition: Human, Fibroblast = 100 mg/L.; Cytogenetic Analysis: Human, Fibroblast = 20 mg/L.; Cytogenetic Analysis: Human, Lymphocyte = 20 mg/L.; Mutation in Mammalian Somatic Cells: Human, Lymphocyte = 440 mg/L.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Mosquito Fish: TLm = 419 ppm; 96 Hr; Fresh waterWater flea Daphnia: LC50 = 340 mg/L; 48 Hr; Unspecified No data available.
Environmental: Toxic to aquatic and plant life. Soil can bind fluorides tightly if the pH is greater than 6.5. Fluorides can be damaging to plants when present in acid soils.
Physical: No information available.
Other: Dangerous to aquatic life in high concentrations.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	SODIUM FLUORIDE, SOLID	SODIUM FLUORIDE
Hazard Class:	6.1	6.1
UN Number:	UN1690	UN1690
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 7681-49-4 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 7681-49-4: 1000 lb final RQ; 454 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 7681-49-4: immediate, delayed.
Section 313 No chemicals are reportable under Section 313.
Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
CAS# 7681-49-4 is listed as a Hazardous Substance under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.
STATE
CAS# 7681-49-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, (listed as Fluorides, inorganic), Minnesota, (listed as Fluorides), Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labelling in Accordance with EC Directives
Hazard Symbols:
T
Risk Phrases:
R 25 Toxic if swallowed.
R 32 Contact with acids liberates very toxic gas.
R 36/38 Irritating to eyes and skin.

Safety Phrases:
S 22 Do not breathe dust.
S 36 Wear suitable protective clothing.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)
CAS# 7681-49-4: 1
Canada - DSL/NDSL
CAS# 7681-49-4 is listed on Canada's DSL List.
Canada - WHMIS
not available.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
Canadian Ingredient Disclosure List
CAS# 7681-49-4 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 7/07/1999
Revision #6 Date: 2/15/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.