



MATERIAL SAFETY DATA SHEET

Sodium fluoride

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium fluoride

Catalog Numbers: BP/5260/70, BP/S255, S/3880/50, S/3880/53, S/3920/50, S/3920/53, S/3920/60, S/3920/68, S/3920/70, S/3920/71, SP/0179

Synonyms: None.

Company Identification: Fisher Scientific UK
Bishop Meadow Road, Loughborough
Leics. LE11 5RG

For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name:	%	EINECS#
7681-49-4	Sodium fluoride	>97	231-667-8

Hazard Symbols: T**Risk Phrases:** 25 32 36/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic if swallowed. Contact with acids liberates very toxic gas. Irritating to eyes and skin. Moisture sensitive.

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:** 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. May cause reproductive and fetal effects. 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 osteosclerosis. 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 ceased apply 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.

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

CAS# 7681-49-4:

United Kingdom, WEL - TWA: (fluorides, inorganic): 2.5 mg/m³ TWA (as F) United Kingdom, WEL - STEL: (fluorides, inorganic): 6.25 mg/m³ STEL (as F)
United States OSHA: 2.5 mg/m³ TWA (as F) (Fluorides).2.5 mg/m³ TWA (as F) (Fluorides).

Belgium - TWA: (fluorides, inorganic): 2.5 mg/m³ VLE (as F)
France - VME: 2 mg/m³ VME (as F)
Germany: (fluorides): 2.5 mg/m³ VME (as F)
Malaysia: (fluorides): 2.5 mg/m³ TWA (as F)
Netherlands: (fluorides): 3.5 mg/m³ STEL (as F)
Russia: 1 mg/m³ TWA Russia: 0.2 mg/m³ STEL
Spain: (fluorides, inorganic): 2.5 mg/m³ VLA-ED (except uranium hexafluoride, as F)

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
Color: white to off-white
Odor: odorless
pH: 7.4 (solution)
Vapor Pressure: 1 mm Hg @ 1077 deg C
Viscosity: Not available
Boiling Point: 1704 deg C (3,099.20°F)
Freezing/Melting Point: 993 deg C (1,819.40°F)
Autoignition Temperature: Not available.
Flash Point: Not available
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
Decomposition Temperature: Not available
Solubility in water: 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 Oxidizing agents, acids, glass, alkalis, moisture.

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: RTECS:
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: Sodium fluoride - IARC: Group 3 (not classifiable) (Fluorides, inorganic).

Other: Standard Draize Test: Administration into the eye (rabbit) = 20 mg/24H (Moderate).

Section 12 - Ecological Information

Ecotoxicity: Fish: Mosquito Fish: TLm = 419 ppm; 96 Hr; Fresh water
Water flea Daphnia: LC50 = 340 mg/L; 48 Hr; Unspecified

Other: Dangerous to aquatic life in high concentrations.

Section 13 - Disposal Considerations

Products considered hazardous for supply are classified as Special Waste and the disposal of such chemicals is covered by regulations which may vary according to location. Contact a specialist disposal company or the local authority or advice. Empty containers must be decontaminated before returning for recycling.

Section 14 - Transport Information

	IATA	IMO	RID/ADR
Shipping Name:	SODIUM FLUORIDE	SODIUM FLUORIDE, SOLID	SODIUM FLUORIDE
Hazard Class:	6.1	6.1	6.1
UN Number:	1690	1690	1690
Packing Group:	III	III	III

USA RQ: CAS# 7681-49-4: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling 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

CAS# 7681-49-4 is listed on Canada's DSL List

US Federal

TSCA

CAS# 7681-49-4 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 7/07/1999

Revision #4 Date 9/21/2004

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 the company 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 the company has been advised of the possibility of such damages.
