



**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

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**Product Name:** BD Vacutainer® Tubes containing Sodium Fluoride

### 1 Identification of substance:

- **Product Details:**

MSDS Number: VS60301-02

Issue Date: April 28, 2004

Supersedes: VS60301-01

ECO No.: ECO13856

- **Product Name:** BD Vacutainer® Tubes containing Sodium Fluoride

- **Catalog Numbers:** 367012, 367729 Discontinued: 367003

- **Manufacturer/Supplier:**

BD Diagnostics, Preanalytical Systems

1 Becton Drive

Franklin Lakes, NJ, 07417-1885

- **Information Department:**

BD Diagnostics, Preanalytical Systems Technical Service, (800) 631-0174

- **Emergency Information:**

In case of a chemical emergency, spill, fire, exposure, or accident contact BD Diagnostics, Preanalytical Systems, at (308) 423-0300, or ChemTrec at (800) 424-9300

### 2 Composition/Data on components:

- **Description:**

**Chemical name:** Sodium fluoride

**Synonyms:** Sodium fluoride – Disodium difluoride; Natrium fluoride; Fluoridine; Florocide

- **CAS No.:**

Sodium fluoride: 7681-49-4

- **Quantity:**

Sodium fluoride: 34.5 -115.0 mg

- **Exposure limits:** NIOSH REL\*: TWA 2.5 mg/m<sup>3</sup>

OSHA PEL\*: TWA 2.5 mg/m<sup>3</sup>

### 3 Hazards identification:

- **Hazard description:**

Contact causes eye and skin irritation and may cause burns. May cause severe irritation of the respiratory tract with possible burns. Aspiration may lead to pulmonary edema. Prolonged exposure to dusts or vapors may result in perforation of the nasal septum. Ingestion is harmful and may be fatal. Symptoms may include salivation, nausea, vomiting, abdominal pain, fever and labored breathing. May cause respiratory paralysis and cardiac arrest. May cause systemic effects on heart, liver and kidneys. Repeated exposure may result in depleted calcium levels in the body leading to hypocalcemia and death. Repeated exposure can also lead to fluoride poisoning (fluorosis) characterized by weight loss, weakness, anemia, brittle bones, and stiff joints. Skeletal effects may include increased bone density, calcium deposits in ligaments, and mottled tooth enamel. May cause developmental and fetal effects, which may be delayed. Animal studies have reported development of tumors. Avoid contact with skin and eyes. Do not inhale or swallow.

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Primary Route of entry: Dermal, eyes, inhalation, and ingestion.

● **Health effects:**

**Acute Exposure Effects:**

**Skin:** Causes severe irritation. May cause rash and cold, clammy skin with bluish or pale color (milder cases.) May cause burns, especially if skin is wet or moist.

**Eyes:** Causes severe irritation and may cause burns. May cause chemical conjunctivitis and eye damage.

**Inhalation:** May cause severe irritation of the respiratory tract and may cause burns.

**Ingestion:** Harmful if swallowed and may be fatal. Symptoms may include salivation, nausea, vomiting, abdominal pain, fever and labored breathing. May cause respiratory paralysis and cardiac arrest.

**Repeated Exposure Effects:**

Repeated ingestion may cause systemic effects on heart, liver and kidneys. Repeated ingestion may also result in depleted calcium levels in the body leading to hypocalcemia and death. Chronic inhalation and ingestion can also lead to fluoride poisoning (fluorosis) characterized by weight loss, weakness, anemia, brittle bones, and stiff joints. Skeletal effects may include increased bone density, calcium deposits in ligaments, and mottled tooth enamel. May cause developmental and fetal effects, which may be delayed. Animal studies have reported development of tumors.

**Medical conditions which might be aggravated:**

Pre-existing diabetes insipidus or renal impairment.

● **NFPA ratings (scale 0-4):**



Health = 3  
Fire = 0  
Reactivity = 1  
Specific Hazard = 0

● **HMIS ratings (scale 0-4):**



Health = 3  
Flammability = 0  
Reactivity = 1  
Special = 0

#### 4 First aid measures:

● **General information:**

**After skin contact:** Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing. Wash clothing and thoroughly clean shoes before reuse. Get immediate medical attention.

**After eye contact:** Immediately flush with plenty of water for at least 15 minutes while holding eyelids apart. Get immediate medical attention.

**After inhalation:** Immediately move the exposed person to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get immediate medical attention.

**After Swallowing:** Do NOT induce vomiting. Wash out victim's mouth with water. Give victim one glass of milk or milk of magnesia to prevent absorption. Never give anything by mouth to an unconscious person.

Get immediate medical attention.

**Information for doctor:** Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Show this label.

**Product Name:** BD Vacutainer® Tubes containing Sodium Fluoride**5 Fire fighting measures:**

- **Suitable extinguishing agents:** Use extinguishing media appropriate for surrounding fire.
- **Protective equipment:** Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

**6 Accidental release measures:**

- **Person-related safety precautions:** Avoid overexposure. Wear suitable protective clothing.
- **Measures for environmental protection:** Spill should be contained with sand or other inert material and gathered into a suitable retaining area. Use water spray to reduce dust.
- **Measures for cleaning/collecting:** Vacuum or sweep up material and place into suitable disposal container. Provide adequate ventilation. Avoid generating dust. Wash site thoroughly with water. Do not allow to enter sewer.
- **Additional information:** See Section 7 for information on safe handling  
See Section 8 for information on personal protection equipment  
See Section 13 for information on disposal

**7 Handling and storage:**

- **Handling:**  
**Information for safe handling:** Follow routine safe handling procedures.  
**Information about protection against explosions and fires:** Avoid contact with incompatible material, minimize dust generation and accumulation. Material must be handled with adequate ventilation..
- **Storage:**  
**Requirements to be met by storerooms and receptacles:** Keep container closed when not in use. Store in a cool, dry, well-ventilated area. Store away from incompatible substances.  
**Information about storage in one common storage facility:** Keep container closed when not in use. Do not store in glass. Store in a cool, dry, well-ventilated area. Store protected from moisture. Store away from incompatible substances, such as strong acids and alkalies.  
**Further information about storage conditions:** Not applicable

**8 Exposure controls and personal protection:**

- **Additional information about design of technical systems:** Use general or local exhaust ventilation to reduce exposure.
- **Components with limit values that require monitoring at the workplace:** This product does not contain any relevant quantities of material with critical values that require monitoring in the workplace.
- **Additional information:** N/A



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● **Personal Protective Equipment:**

**General protective and hygienic measures:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Use with adequate ventilation. Provide eye bath and safety shower.

**Breathing equipment:** None where adequate ventilation conditions exist. For conditions where dust is apparent and engineering controls are not feasible, a NIOSH/MSHA approved respirator is recommended. If concentration exceeds capacity of respirator, a self-contained breathing apparatus is recommended.

**Protection of hands:** Wear appropriate protective gloves to prevent skin exposure.

**Eye protection:** Use chemical safety goggles

**Body protection:** Wear appropriate protective clothing to prevent skin exposure.

**09 Physical and chemical properties:**

● **General Information:**

**Form:** Crystalline powder

**Color:** White

**Odor:** Odorless

● **Change in condition:**

**Melting point/Melting range:** 993 °C

**Boiling point/Boiling range:** 1704 °C

● **Flash point:** Not Applicable

● **Flammability (solid, gaseous):** Not Applicable

● **Danger of explosion:** Product does not present an explosion hazard

● **Vapor pressure:** 1 mmHg @ 1077°C

● **Vapor Density:** 1.45 (air=1)

● **Density: (Specific Gravity)** 2.78 (water=1)

● **Solubility in/Miscibility w/H<sub>2</sub>O:** Soluble

● **pH-value:** 7.4 (solution)

**Organic solvents:** Not Available

● **Solids content:** Not available

**10 Stability and reactivity:**

● **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

● **Materials to be avoided:** Moisture, acids, alkalies, oxidizing agents, and glass.

● **Dangerous reactions:** Stable; none known

● **Dangerous products of decomposition:** Hydrogen fluoride, sodium oxide



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### 11 Toxicological information:

- **Acute toxicity:**  
*Eye: Severely irritating to the eyes.*  
*Skin: Severely irritating to the skin.*  
*Inhalation: Harmful if inhaled and may be fatal.*  
*Ingestion: Toxic if swallowed. May be fatal.*
- **Primary irritant effect:**  
*On the skin: Severely irritating to the skin.*  
*On the eye: Severely irritating to the eyes.*
- **Sensitization:** Not established
- **Additional toxicological information:**  
**Chronic:** Repeated ingestion may cause systemic effects on heart, liver and kidneys. Repeated ingestion may also result in depleted calcium levels in the body leading to hypocalcemia and death. Chronic inhalation and ingestion can also lead to fluoride poisoning (fluorosis) characterized by weight loss, weakness, anemia, brittle bones, and stiff joints. Skeletal effects may include increased bone density, calcium deposits in ligaments, and mottled tooth enamel. May cause developmental and fetal effects, which may be delayed. Animal studies have reported development of tumors.

### 12 Ecological information:

- **Ecotoxicological effects:** Unspecified. No data is available on the adverse effects of this material on the environment.
- **Other information:** The ecological effects have not been thoroughly investigated, but currently none have been identified.
- **General notes:** Dangerous to aquatic life in high concentrations. Soil can bind fluorides tightly if pH is greater than 6.5. Fluorides can be damaging to plants when present in acid soils.

### 13 Disposal considerations:

- **Product:**  
**Recommendation**  
*Disposal should be done in accordance with local, state and federal regulations.*  
*Disposal must be made according to the regulations found in 40 CFR 261.*  
*This product is not a RCRA hazardous waste.*
- **Uncleaned packagings:**  
**Recommendation**  
*Disposal should be done in accordance with local, state and federal regulations.*  
*Disposal must be made according to the regulations found in 40 CFR 261.*  
*This product is not a RCRA hazardous waste.*  
**Recommended cleansing agent**  
*Water, if necessary with cleansing agents*
- **General notes:**



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#### **14 Transport information:**

- **DOT regulations:** Not regulated
- **Land transport ADR/RID (cross-border):** Not regulated
- **Maritime transport IMDG:** Not regulated
- **Air transport ICAO-TI and IATA-DGR:** Not regulated

#### **15 Regulations:**

- **SARA Section 355 (extremely hazardous substances):** Substance not listed
- **SARA Section 302 (extremely hazardous substances):** Sodium fluoride
- **SARA Section 304 (Reportable Quantity (RQ) under CERCLA):** 1,000 lbs (100% Sodium fluoride)
- **Section 313 (specific toxic chemical listings):** Substance not listed
- **TSCA (Toxic Substances Control Act) Inventory:** Substance listed
- **California Proposition 65 – Chemicals Known to Cause Cancer:** Substance not listed
- **California Proposition 65 – Chemicals Known to Cause Reproductive Toxicity:** Substance not listed
- **Carcinogenicity categories**
  - IARC (International Agency for Research on Cancer):** Substance not listed
  - NTP (National Toxicology Program):** Substance not listed
  - TLV (Threshold Limit Value established by ACGIH):** Substance not listed
  - MAK (German Maximum Workplace Concentration):** Not Available
- **Product related hazard information:** The product is not subject to OSHA classification according to internal calculation methods for preparations. When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
- **National regulations:** N/A
- **Water hazard class:** N/A

#### **16 Other information:**

To the best of our knowledge, the information contained herein is accurate. However, neither BD or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

- **Department issuing MSDS:** Regulatory Affairs