SAFETY DATA SHEET

1. Identification

Product identifier: SODIUM FLUORIDE

Other means of identification
Product No.: 7636, 3688, 3689, 5325

Recommended use and restriction on use
Recommended use: Not available.
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer
Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034
Telephone: Customer Service: 855-282-6867
Fax:
Contact Person: Environmental Health & Safety
E-mail: info@avantormaterials.com

Emergency telephone number:
24 Hour Emergency: 908-859-2151
Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Health hazards
Acute toxicity (Oral) Category 2
Skin corrosion/irritation Category 2
Serious eye damage/eye irritation Category 2A

Environmental hazards
Acute hazards to the aquatic environment Category 3

Label elements

Hazard symbol:

Signal word: Danger

Hazard statement: Fatal if swallowed.
Causes skin irritation.
Causes serious eye irritation.
Harmful to aquatic life.
Precautionary statement

Prevention: Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Specific treatment (see this label). Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Collect spillage.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>Content in percent (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM FLUORIDE</td>
<td>7681-49-4</td>
<td>98 - 100%</td>
<td></td>
</tr>
</tbody>
</table>

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Call a physician or poison control center immediately. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation: Move to fresh air. Get medical attention if symptoms occur.

Skin contact: Wash skin thoroughly with soap and water. Get medical attention if symptoms occur.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention immediately.

Most important symptoms/effects, acute and delayed

Symptoms: Fatal if swallowed. May cause irritation to skin, eyes, and respiratory tract.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: In case of fire and/or explosion do not breathe fumes.
Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:**
Use fire-extinguishing media appropriate for surrounding materials.

**Unsuitable extinguishing media:**
None known.

**Specific hazards arising from the chemical:**
During fire, gases hazardous to health may be formed.

### Special protective equipment and precautions for firefighters

**Special fire fighting procedures:**
Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters:**
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:**
Keep unauthorized personnel away. Keep upwind. Avoid inhalation of dust. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Methods and material for containment and cleaning up:**
Sweep up and place in a clearly labeled container for chemical waste. Avoid dust formation. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

**Notification Procedures:**
Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

**Environmental precautions:**
Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

### 7. Handling and storage

**Precautions for safe handling:**
Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

**Conditions for safe storage, including any incompatibilities:**
Keep in a cool, well-ventilated place. Store in a dry place.
8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Type</th>
<th>Exposure Limit values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM FLUORIDE - as F</td>
<td>TWA</td>
<td>2.5 mg/m³</td>
<td>US. ACGIH Threshold Limit Values (2011)</td>
</tr>
<tr>
<td></td>
<td>REL</td>
<td>2.5 mg/m³</td>
<td>US. NIOSH: Pocket Guide to Chemical Hazards (2010)</td>
</tr>
<tr>
<td></td>
<td>PEL</td>
<td>2.5 mg/m³</td>
<td>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)</td>
</tr>
<tr>
<td>SODIUM FLUORIDE - Dust.</td>
<td>TWA</td>
<td>2.5 mg/m³</td>
<td>US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)</td>
</tr>
</tbody>
</table>

Biological limit values

<table>
<thead>
<tr>
<th>Chemical identity</th>
<th>Exposure Limit values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>SODIUM FLUORIDE</td>
<td>2 mg/l (Urine)</td>
<td>ACGIH BEL (02 2012)</td>
</tr>
<tr>
<td>(fluorides: Sampling time: Prior to shift.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SODIUM FLUORIDE</td>
<td>3 mg/l (Urine)</td>
<td>ACGIH BEL (02 2012)</td>
</tr>
<tr>
<td>(fluorides: Sampling time: End of shift.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Appropriate engineering controls

No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection: Wear safety glasses with side shields (or goggles) and a face shield.

Skin protection

Hand protection: Chemical resistant gloves

Other: Wear suitable protective clothing.

Respiratory protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

9. Physical and chemical properties

Appearance

Physical state: Solid
Form: Powder or crystals
Color: White or colorless
Odor: Odorless
Odor threshold: No data available.

pH: 7.4
Melting point/freezing point: 993 °C
Initial boiling point and boiling range: 1,704 °C
Flash Point: No data available.
Evaporation rate: No data available.
Flammability (solid, gas): Noncombustible Solid

Upper/lower limit on flammability or explosive limits
- Flammability limit - upper (%): No data available.
- Flammability limit - lower (%): No data available.
- Explosive limit - upper (%): No data available.
- Explosive limit - lower (%): No data available.

Vapor pressure: 0.10 kPa (25 °C)
Vapor density: No data available.
Relative density: 2.78 (20 °C)

Solubility(ies)
- Solubility in water: 40 g/l
- Solubility (other): No data available.
Partition coefficient (n-octanol/water): No data available.
Auto-ignition temperature: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.

Other information
- Molecular weight: 42 g/mol (FNa)

10. Stability and reactivity

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Contact with acid liberates poisonous gas.

Possibility of hazardous reactions: Hazardous polymerization does not occur.

Conditions to avoid: Avoid dust formation. Excessive heat.

Incompatible materials: Strong oxidizers

Hazardous decomposition products: Sodium oxides Hydrogen fluoride.

11. Toxicological information

Information on likely routes of exposure
- Ingestion: Fatal if swallowed.
- Inhalation: May cause irritation to the respiratory system.
- Skin contact: Causes skin irritation.
- Eye contact: Causes serious eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)
- Oral Product: LD 50 (Rat): 32.0 mg/kg
Dermal
Product: No data available.

Inhalation
Product: No data available.

Repeated dose toxicity
Product: No data available.

Skin corrosion/irritation
Product: Causes skin irritation.

Serious eye damage/eye irritation
Product: Causes serious eye irritation.

Respiratory or skin sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

No carcinogenic components identified

Germ cell mutagenicity
In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No components toxic to reproduction

Specific target organ toxicity - single exposure
Product: No data available.

Specific target organ toxicity - repeated exposure
Product: No data available.

Aspiration hazard
Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Specified substance(s):
SODIUM FLUORIDE LC 50 (Fathead minnow (Pimephales promelas), 96 h): 124 - 194 mg/l
Mortality
LC 50 (Rainbow trout, donaldson trout (Oncorhynchus mykiss), 96 h): 38 - 68 mg/l Mortality

Aquatic invertebrates
Product: No data available.

Specified substance(s):
SODIUM FLUORIDE
EC 50 (Water flea (Daphnia magna), 48 h): 98 mg/l Intoxication
LC 50 (Water flea (Daphnia magna), 48 h): 109 - 354 mg/l Mortality

Chronic hazards to the aquatic environment:
Fish
Product: No data available.

Aquatic invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and degradability
Biodegradation
Product: There are no data on the degradability of this product.

BOD/COD ratio
Product: No data available.

Bioaccumulative potential
Bioconcentration factor (BCF)
Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)
Product: No data available.

Mobility in soil:
The product is partly soluble in water. May spread in the aquatic environment.

Other adverse effects:
Harmful to aquatic organisms.

13. Disposal considerations

Disposal instructions:
Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging:
Since emptied containers retain product residue, follow label warnings even after container is emptied.
14. Transport information

DOT

<table>
<thead>
<tr>
<th>UN number:</th>
<th>UN 1690</th>
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<tbody>
<tr>
<td>UN proper shipping name:</td>
<td>Sodium fluoride, solid</td>
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<tr>
<td>Transport hazard class(es)</td>
<td>6.1</td>
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<td>Packing group:</td>
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<td>Marine Pollutant:</td>
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IMDG

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<th>UN 1690</th>
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<td>SODIUM FLUORIDE, SOLID</td>
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<td>Label(s):</td>
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<td>Packing group:</td>
<td>III</td>
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IATA

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15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
SODIUM FLUORIDE  Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

- [X] Acute (Immediate)
- [X] Chronic (Delayed)
- [ ] Fire
- [ ] Reactive
- [ ] Pressure Generating

SARA 302 Extremely hazardous substance
None present or none present in regulated quantities.

SARA 304 Emergency release notification

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<th>Chemical identity</th>
<th>RQ</th>
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<tr>
<td>SODIUM FLUORIDE</td>
<td>1000 lbs.</td>
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</table>
SARA 311/312 Hazardous chemical
Chemical identity	Threshold Planning Quantity
SODIUM FLUORIDE 500 lbs

SARA 313 (TRI reporting)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
SODIUM FLUORIDE Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
None present or none present in regulated quantities.

US state regulations

US. California Proposition 65
No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act
SODIUM FLUORIDE Listed

US. Massachusetts RTK - Substance List
SODIUM FLUORIDE Listed

US. Pennsylvania RTK - Hazardous Substances
SODIUM FLUORIDE Listed

US. Rhode Island RTK
SODIUM FLUORIDE Listed

Inventory Status:
- Australia AICS: On or in compliance with the inventory
- Canada DSL Inventory List: On or in compliance with the inventory
- EINECS, ELINCS or NLP: On or in compliance with the inventory
- Japan (ENCS) List: On or in compliance with the inventory
- China Inv. Existing Chemical Substances: Not in compliance with the inventory.
- Korea Existing Chemicals Inv. (KECI): On or in compliance with the inventory
- Canada NDSL Inventory: On or in compliance with the inventory
- Philippines PICCS: On or in compliance with the inventory
- US TSCA Inventory: On or in compliance with the inventory
- New Zealand Inventory of Chemicals: On or in compliance with the inventory
- Japan ISHL Listing: On or in compliance with the inventory
- Japan Pharmacopoeia Listing: Not in compliance with the inventory.

16. Other information, including date of preparation or last revision

NFPA Hazard ID

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date: 05-10-2014
SDS_US - SDS000000950
Revision date: No data available.
Version #: 1.0
Further information: No data available.

Disclaimer:

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