



## MATERIAL SAFETY DATA SHEET

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#### Section I. PRODUCT IDENTIFICATION

<b>Product Name:</b> Solution, Fluoride Standard, 0.1 M as F, 1,000 ppm as F, 750 ppm as F, 250 ppm as F, 75 ppm as F, or 25 ppm as F	<b>Catalog No.</b> SD0FL1-xx, SD0FL2-xx, SD2020-xx, SD2019-xx, SD2050-xx, SD2049-xx, SD2048-xx, or SD2047-xx	<b>Effective Date:</b> 07 May, 2008
<b>Hazardous Shipment Labeling:</b> DOT: None	<b>IATA:</b> None	
<b>Prepared by:</b> George C. Barone III, Ph.D.	<b>Title:</b> Senior Research Chemist	
<b>Approved by:</b> George C. Barone III, Ph.D.	<b>Title:</b> Director Regulatory Compliance	

**WARNING: POISON! DANGER! MAY BE FATAL IF SWALLOWED OR INHALED. SEE HEALTH HAZARD DATA!**

#### Section II. HAZARDOUS INGREDIENTS/Identity Information

Hazardous Components* Specific Chemical Identity; Common Name(s)	CAS No.	%	OSHA PEL	ACGIH TLV	LD <sub>50</sub> mg/Kg
Sodium Fluoride (NaF) – Limits are as Fluorine	7681-49-4	<1	2.5 mg/m <sup>3</sup> (as F)	2.5 mg/m <sup>3</sup> (as F)	52 (ORL-RAT)
Deionized Water (H <sub>2</sub> O)**	7732-18-5	>99	None Listed	None Listed	NA

#### Section III. PHYSICAL/CHEMICAL DATA AND CHARACTERISTICS

<b>Boiling Point at 760 mmHg</b>	NA	<b>Freezing Point</b>	NA
<b>Specific Gravity (H<sub>2</sub>O = 1)</b>	NA	<b>Vapor Pressure at 25°C</b>	NA
<b>pH at 25°C</b>	NA	<b>Solubility in water, % by wt</b>	Miscible
<b>Volatiles, % by wt</b>	NA	<b>Evaporation Rate (B A = 1)</b>	0.76
<b>Vapor Density (AIR = 1)</b>	NA		
<b>Appearance and Odor:</b>	Clear, colorless, odorless liquid		

#### Section IV. FIRE AND EXPLOSION HAZARD DATA

<b>Flash Point (Method Used):</b> NA	<b>Auto-ignition Temperature:</b> NA	<b>Flammable Limits</b> In air, % by volume:	<b>Lower</b> NA	<b>Upper</b> NA
<b>Extinguishing Media:</b> Dry chemical, water, foam, or CO <sub>2</sub> Use media appropriate to surrounding fire conditions				
<b>Special Fire Fighting Procedures</b> NONE, this solution is non-flammable. As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.				
<b>Unusual Fire and Explosion Hazards:</b> NONE. This product will not burn or explode.				

#### Section V. REACTIVITY DATA

<b>Stability:</b> Unstable    Stable X	<b>Conditions to Avoid:</b> Lithium, bromine trifluoride, water incompatibles, or extreme Temperatures
<b>Incompatibility (Materials to Avoid):</b> Bromine Trifluoride, Magnesium, sodium metals, or strong mineral acids and bases. Reacts with acids to form hydrogen fluoride.	
<b>Hazardous Decomposition or Byproducts:</b> Thermal decomposition can produce halogenated compounds, sodium oxides, and Hydrogen fluoride.	
<b>Hazardous Polymerization:</b> May Occur    Will Not Occur X <b>Conditions to Avoid:</b> Extreme temperatures	

\*Chemicals that are not classified as hazardous by U.S. OSHA guidelines (29 CFR Parts 1915.2 or 1916.2) will not necessarily be listed herein even though one or more may be in this product.

\*\* Non-hazardous component

NA = Not available/Not applicable



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## Section VI. HEALTH HAZARD DATA

<b>Route(s) of Entry:</b> Inhalation? YES	<b>Skin?</b> YES	<b>Ingestion?</b> YES
<b>Health Hazards (Acute and Chronic):</b> If inhaled or ingested this material can cause fluoride poisoning, severe illness, or death. Early symptoms include nausea, vomiting, diarrhea, and weakness. Later symptoms include central nervous system effects, cardiovascular effects, and death. Contact causes skin, eye, respiratory tract, or mucosal membrane irritation.		
<b>Carcinogenicity:</b> NTP? IARC Monographs? OSHA Regulated? Not found on these lists.		
<b>Signs and Symptoms of Exposure:</b> Causes severe irritation of the respiratory tract including symptoms of coughing, sore throat, nausea, vomiting, and difficulty breathing which may not appear immediately. Causes skin irritation with redness and pain, symptoms may be delayed. Eye irritant! Causes eye irritation and serious eye damage, symptoms may be delayed. Toxic! Ingestion causes irritation of the GI tract with symptoms of abdominal pain, nausea, vomiting, diarrhea, breathing difficulty, weakness, shallow respiration, cardopedal spasm, tremors, convulsions, and coma. Prolonged exposure may be fatal. Chronic low-level exposure may lead to mottled teeth, brittle bones, and anemia.		
<b>Medical Conditions Generally Aggravated by Exposure:</b> Diabetes insipidus, renal impairment, osteoporosis, kidney disease, and other conditions of the target organs. Chronic exposure may cause mottling of teeth, bone damage (osteosclerosis), and fluorosis (symptoms include brittle bones, weight loss, anemia, calcified ligaments, general ill health, and joint stiffness).		
<b>Emergency and First Aid Procedures:</b> <b>Eye Contact:</b> Remove contact lenses if present. Immediately flush eyes with copious amounts of water, separate eyelid from eye. CALL A PHYSICIAN IMMEDIATELY. <b>Skin Contact:</b> Wash effected area with soap and copious amounts of water. CALL A PHYSICIAN IMMEDIATELY. <b>Ingestion:</b> Contact poison control center immediately for procedures. Wash out mouth if person is conscious. Do not induce vomiting. Give 1 to 2 glasses of milk or calcium tablets. CALL A PHYSICIAN IMMEDIATELY. <b>Inhalation:</b> Remove to fresh air, if not breathing give artificial respiration, if breathing is difficult give oxygen. CALL A PHYSICIAN IMMEDIATELY.		

## Section VII. PRECAUTIONS FOR SAFE HANDLING AND USE

<b>Steps to Be Taken in Case Material is Released or Spilled:</b> Clean up then dispose of properly according to local laws. Observe all Federal, State and Local laws when disposing of this product.
<b>Waste Disposal Method:</b> Observe all Federal, State and Local laws when disposing of this product.
<b>Precautions to Be taken in Handling and Storing:</b> Avoid contact with eyes. Wash hands thoroughly after use. NFPA Rating: Scale (0-4): Health – 3, Fire – 0, Reactivity – 1, Specific – None.
<b>Other Precautions:</b> Found on TSCA list and SARA 311/312 listed as: Acute; Yes, Chronic: Yes, Fire: no, Pressure: no, Reactivity: no.

## Section VIII. CONTROL MEASURES

<b>Respiratory Protection (Specify Type) Wear appropriate respirator if ventilation is inadequate</b>		
<b>Ventilation</b>	<b>Local Exhaust:</b> NONE	<b>Special:</b> NONE
<b>Ventilation</b>	<b>Mechanical (General):</b> NONE	<b>Other:</b> NONE
<b>Protective Gloves:</b> Disposable latex gloves or similar	<b>Eye Protection:</b> Safety Glasses with top and side shields	
<b>Other Protective Clothing or Equipment:</b> Eye wash station should be available. Wear protective garments if sensitive skin.		
<b>Work/Hygienic Practices:</b> No eating or drinking in work area. Wash hands after working with this product.		

*Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of this product or any materials designated. Safe use of the materials is the responsibility of the user.*