

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS No.</u>	<u>EC No.</u>	<u>% by Wt.</u>
a. Aluminum Fluoride	7784-18-1	232-051-1	1 to 5 %
b. Calcium Fluoride	7789-75-5	232-188-7	1 to 5 %
c. Sodium Aluminum Fluoride	15096-52-3	239-148-8	5 to 15 %
d. Sodium Fluoride	7681-49-4	231-667-8	3 to 10 %
e. Sodium Fluorosilicate	16893-85-9	240-934-8	10 to 20%
f. Non-hazardous salts			Balance

Section 4: FIRST AID MEASURES

Probable Routes of Exposure: Inhalation / Skin / Eyes

Skin Contact: Wash with soap and water. If pain or irritation persists, refer to physician.

Eye Contact: Flush with running water for at least 15 minutes. Refer to physician.

Ingestion: Call Poison Control Center. Never give anything by mouth to someone who is unconscious or convulsing. Induce vomiting only on the advice of a medical professional.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing difficult, give oxygen. Refer to physician.

Signs/Symptoms/Effects of Overexposure: Irritation of eyes, skin, nausea.

Section 5: FIRE FIGHTING MEASURES

Flammable properties: Product is non-flammable, but contains a small amount of oxidizer. Avoid mixing material with reducing agents or flammable liquids.

Extinguishing Media: Media used to extinguish surrounding area fire.

Unsuitable Extinguishing Media: N/A

Special Fire Fighting Procedure: Remove containers from fire area if safe to do so. Cool containers exposed to fire with water. Heat from surrounding fire may release toxic chlorine or fluorine gas or acids from product.

Special Protective Equipment for Fire Fighters: Firefighters should wear approved self-contained breathing apparatus (SCBA) and full firefighting turnout gear. Use caution around sealed drums of any kind since pressure buildup from the surrounding fire may cause them to rupture.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental Precautions: This product is a water pollutant. Keep out of drains, sewers, ditches and waterways. Do not leave product exposed outdoors. Minimize the use of water in cleaning up spills to minimize water pollution.

Methods for Containment: This product is a granular solid. Protect from exposure to water, high winds or vehicular traffic that could disperse it. Clean up spills promptly. Avoid mixing product with reducing agents or flammable materials.

Methods for Cleaning: Ventilate area of leak or spill. Shovel or sweep up material and place in a suitable container for reclamation or disposal, using a method that does not generate excessive dust.

Section 7: HANDLING AND STORAGE

Handling: Avoid breathing dust from this material. Wear safety glasses with side shields or chemical goggles to prevent eye injury. Provide adequate ventilation. In areas where the permissible exposure limit may be exceeded, wear appropriate respiratory protection. Wear PVC, Neoprene or similar polymeric gloves when handling the material. Avoid prolonged contact with the skin. Wash hands and face thoroughly before eating, drinking or smoking.

Storage: Store in dry place below 150° F. Keep container closed when not in use. Observe shelf life for storage. Avoid storing near flammable materials or reducing agents.

Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Exposure Guidelines:

Component	OSHA (PEL)		ACGIH (TLV)		Units
	TWA	STEL	TWA	STEL	
Inorganic Salts (1)	15 (T)	N.E. (2)	10 (T)	N.E.	mg/m ³
	5 (R)	N.E.	3 (R)	N.E.	mg/m ³
Aluminum Fluoride	2.5 (as F-)	N.E.	2.5 (as F-)	N.E.	mg/m ³
Calcium Fluoride	2.5 (as F-)	N.E.	2.5 (as F-)	N.E.	mg/m ³
Sodium Aluminum Fluoride	2.5 (as F-)	N.E.	2.5 (as F-)	N.E.	mg/m ³
Sodium Fluoride	2.5 (as F-)	N.E.	2.5 (as F-)	N.E.	mg/m ³
Sodium Fluorosilicate	2.5 (as F-)	N.E.	2.5 (as F-)	N.E.	mg/m ³

- (1) No specific limits have been established for this component. As a guideline, OSHA has established limits for inert or nuisance dusts. Particulates not Otherwise Regulated (PNOR) have a total (T) dust TWA (8 hour) of 15 mg/m³ and a respirable (R) dust TWA (8 hour) of 5 mg/m³. ACGIH has also established a TLV for inert, insoluble particulates total (T) dust TWA (8 hour) of 10mg/m³ and a respirable (R) dust TWA (8 hour) of 3 mg/m³.
- (2) N.E. = Not Established

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below the recommended exposure limits.

Personal Protective Equipment (PPE): During normal use and operation, wear chemical goggles and impermeable gloves to minimize exposure. If airborne levels are at or above the recommended exposure limit or in the event the product is spilled, wear NIOSH-approved respiratory protection. Additional PPE may be necessary, depending on user operations to avoid prolonged contact of the product with skin.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Crystalline particles
Odor: Odorless
pH: N/A
Boiling Point: N/A
Melting Point: N/A
Flashpoint: N/A
Explosive Properties: N/A
Vapor Pressure: N/A
Relative Density: S.G./Apparent Density: 1.8 to 2.0 (Water = 1.0)
 Vapor Density (Air=1): N/A
Solubility: High in Water

Flash Point: N/A

Flammable Limits: LEL: N/A UEL: N/A

Hazardous Polymerization: No

Corrosive: No

Stable: Yes **Unstable:** No

Incompatibility: Strong Acids, Strong Oxidizers, Reducing Agents.

Thermal Decomposition Products: Hydrogen chloride, hydrogen fluoride, fluorine gas or chlorine gas.

Section 10: STABILITY AND REACTIVITY

Stability: Stable under ordinary conditions of use and storage.

Conditions to Avoid: Temperatures above 150 °F

Hazardous Polymerization: Will not occur.

Incompatibilities: Strong acids, Oxidizers, Reducing Agents.

Hazardous Decomposition Products: Hydrogen chloride and/or hydrogen fluoride in presence of heat and oxidizer. Chlorine and/or fluorine gas may be released in a fire.

Section 11: TOXICOLOGICAL INFORMATION

Acute Toxicity:	LD50: Aluminum Fluoride	1800 mg/kg	Species not identified
	LD50: Calcium Fluoride	4250 mg/kg	Oral Rat
	LD50: Sodium Aluminum Fluoride	>5000 mg/kg	Oral Rat
	LD50: Sodium Fluoride	52 mg/kg	Oral Rat
	LD50: Sodium Fluorosilicate	125 mg/kg	Oral Rat

Excessive Exposure May Affect Human Health as Follows:

Skin Contact: Irritation. Prolonged exposure may cause dermatitis.

Eye Contact: Mechanical Irritation

Inhalation: Irritation.

Reproductive Toxicity: No

Carcinogen: No

Other: Chronic exposure of fluorides well above the TLV or PEL may cause bone fluorosis.

Section 12: ECOLOGICAL INFORMATION

Environmental Fate: No information found.

Environmental Toxicity:

LC50: Sodium Aluminum Fluoride	ca. 1000 mg/l	Brachydanio rerio (Fish, fresh water)
LC50: Sodium Fluoride (96 hour)	925 mg/l	Gabusia affinia (Fish, fresh water)

Fluorides:

Fluorides can be highly toxic to aquatic and terrestrial flora and fauna. Care should be taken to prevent the product from entering the environment.

Section 13: DISPOSAL CONSIDERATIONS

Not an RCRA hazardous waste. Dispose of in accordance with local, state and Federal regulations.

Empty containers must be handled with care due to product residue. Do not heat or cut empty containers with electric or gas torch.

Section 14: TRANSPORT INFORMATION

Classification Data:

DOT Information:		Proper Shipping Name:	Not Regulated
Hazard Class:	N/A	UN Number:	N/A
Reportable Quantity (lbs):	N/A	Packing Group:	N/A
Placard Requirement:	N/A		

Section 15: REGULATORY INFORMATION

Global Inventory Status:

<u>Inventory</u>	<u>Status</u>
United States (TSCA)	All components are listed.
Canada (DSL)	All components are listed.
Canada (IDL)	Component (d), Section 3 listed.
Mexico	No components are listed.
European Union (EC)	All components are listed.
Japan (METI)	All components are listed or exempt from listing.
Philippines (PICCS)	All components are listed or exempt from listing.
South Korea (KECL)	All components are listed or exempt from listing.
Australia (AICS)	All components are listed or exempt from listing.
China	All components are listed or exempt from listing.

SARA TITLE III

Section 302 Extremely Hazardous Substances	Sodium Fluoride, RQ 1000 lb (454 kg)
Section 311/312 Hazard Categories	
Acute Health	Yes - Irritation
Chronic Health	Yes- Fluorosis
Fire	No
Reactive	No
Sudden Release of Pressure	No
Section 313 Toxic Chemicals	None

RCRA STATUS: If discarded in its purchased form, this product would not be hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

CANADIAN STATUS: All components of this material are listed on the Canadian Domestic Substances List.

EUROPEAN UNION: All components of this material are listed in the EC.

STATE REGULATORY INFORMATION:

(Letters in parenthesis refer to components listed in Section 3 of this MSDS.)

California Prop 65 – No components listed

Connecticut – No component subject to reporting in quantities less than 10,000 pounds.

Florida - No component subject to reporting in quantities less than 10,000 pounds.

New Jersey – Components (c) and (d) listed RTK Substance # 1701 and #1699.

New York - Component (d) listed in 6 NYCRR Part 597 – Hazardous Substances List

Pennsylvania - Component (d) listed.

Rhode Island – Component (d) listed.

Section 16: OTHER INFORMATION

Key/legend:

ACGIH	American Council of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
CFR	Code of Federal Regulations
DSL	Domestic Substances List - Canada
EC	Existing Chemical Registered with EU European.Unio n
EU	n
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration in water to 50% of aquatic test population
LD50	Lethal Dose to 50% of test population
N/A	Not applicable
NDSL	Non-Domestic Substances List -Canada
NTP	U.S. National Toxicology Program
OSHA	U.S. Occupational Safety & Health Administration
PEL	Permissible Exposure Limit
SG	Specific Gravity
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TSCA	U.S. Toxic Substances Control Act

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