

ALUMINUM FLUORIDE

ALF

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Solid powder or granules	White	Odorless
	Sinks in water.		
Avoid contact with dust; avoid inhalation. Notify local health and pollution control agencies.			
Fire	Not flammable. POISONOUS GASES MAY BE PRODUCED WHEN HEATED. Wear goggles and self-contained breathing apparatus.		
Exposure	DUST If inhaled, irritating to nose and throat. Move to fresh air.		
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.		

1. CORRECTIVE RESPONSE ACTIONS Stop discharge Collection Systems: Dredge Do not burn	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed 2.2 Formula: AlF_3 ; $AlF_6 \cdot H_2O$ 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: 7784-18-1 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 52310
3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Goggles to protect against airborne particles and possibly respirator for intermittent heavy dust exposures. 3.2 Symptoms Following Exposure: ACUTE: respiratory irritation; possible nose bleeding or vomiting; CHRONIC: aggravates bronchitis/asthma; increased bone density. 3.3 Treatment of Exposure: For acute poisoning, oral administration of limewater, intravenous infusion of glucose, and intravenous injections of calcium gluconates. 3.4 TLV-TWA: 2.5 mg/m ³ (as F). 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: LD ₅₀ = 600 mg/kg (guinea pig) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Skeletal fluorosis (bone abnormalities) in humans, working in aluminum plant for 12 years. 3.10 Vapor (Gas) Irritant Characteristics: Not pertinent 3.11 Liquid or Solid Characteristics: No appreciable hazard. Practically harmless to the skin. 3.12 Odor Threshold: Not pertinent 3.13 IDLH Value: Not listed. 3.14 OSHA PEL-TWA: Not listed. 3.15 OSHA PEL-STEL: Not listed. 3.16 OSHA PEL-Ceiling: Not listed. 3.17 EPA AEGL: Not listed	

4. FIRE HAZARDS

- 4.1 **Flash Point:**
Not flammable
- 4.2 **Flammable Limits in Air:** Not flammable
- 4.3 **Fire Extinguishing Agents:** Not pertinent
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
- 4.5 **Special Hazards of Combustion Products:** When heated to sublimation condition, emits toxic fumes of fluoride
- 4.6 **Behavior in Fire:** Not pertinent
- 4.7 **Auto Ignition Temperature:** Not flammable
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not flammable
- 4.10 **Adiabatic Flame Temperature:** Not pertinent
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent
- 4.12 **Flame Temperature:** Not pertinent
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Currently not available
- 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction
- 5.2 **Reactivity with Common Materials:** No reaction
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**
60 ppm*/fish/lethal/fresh water
*Time period not specified.
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** Not pertinent
- 6.4 **Food Chain Concentration Potential:** None noted
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 90.7%
- 7.2 **Storage Temperature:** Currently not available
- 7.3 **Inert Atmosphere:** Currently not available
- 7.4 **Venting:** Currently not available
- 7.5 **IMO Pollution Category:** Currently not available
- 7.6 **Ship Type:** Currently not available
- 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Not listed
- 8.2 **49 CFR Class:** Not pertinent
- 8.3 **49 CFR Package Group:** Not listed.
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:** Not listed
- 8.6 **EPA Reportable Quantity:** Not listed
- 8.7 **EPA Pollution Category:** Not listed
- 8.8 **RCRA Waste Number:** Not listed
- 8.9 **EPA FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid
- 9.2 **Molecular Weight:** 83.98
- 9.3 **Boiling Point at 1 atm:** Not pertinent
- 9.4 **Freezing Point:** Not pertinent
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 2.88 at 25°C (solid)
- 9.8 **Liquid Surface Tension:** Not pertinent
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
- 9.12 **Latent Heat of Vaporization:** Not pertinent
- 9.13 **Heat of Combustion:** Not pertinent
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Not pertinent
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** Currently not available
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
	N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
78	0.500		N O T P E R T I N E N T		N O T P E R T I N E N T		N O T P E R T I N E N T