

ALUMINUM CHLORIDE

ACL

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Anhydrous aluminum chloride	Solid crystals or powder Yellow-orange to grayish-white Irritating odor
Sinks in water. Poisonous gas is produced on contact with water.	
<p>Keep people away. Evacuate area in case of large discharge. Avoid contact with solid or dust. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Isolate and remove discharged material. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	Not flammable. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Do not use water on adjacent fires. Extinguish adjacent fires with dry chemical or foam.
Exposure	CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. Harmful if inhaled. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. SOLID Will burn skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. DO NOT INDUCE VOMITING.
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
Do not add water to undissolved material

2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: Not listed
- 2.2 Formula: AlCl₃
- 2.3 IMO/UN Designation: 8.0/1726
- 2.4 DOT ID No.: 1726
- 2.5 CAS Registry No.: 7446-70-0
- 2.6 NAERG Guide No.: 137
- 2.7 Standard Industrial Trade Classification: 52329

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** All personnel in the area should wear safety clothing, including fully closed goggles, rubber or plastic-coated gloves, rubber shoes, and coveralls of acid-resistant material. An acid-vapor canister mask should be carried in case of emergency. In certain applications, it may be advisable to wear this equipment on a routine basis.
- 3.2 **Symptoms Following Exposure:** Contact with the skin or eyes in the presence of moisture causes thermal and acid burns.
- 3.3 **Treatment of Exposure:** INGESTION: if victim is conscious have him drink water or milk. Do NOT induce vomiting. SKIN: flush immediately with plenty of water. For eye contact, flush with water for at least 15 mins. and get medical attention immediately.
- 3.4 TLV-TWA: Not listed.
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 **Toxicity by Ingestion:** No systemic effects, but severe burns of mouth.
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** None recognized
- 3.10 **Vapor (Gas) Irritant Characteristics:** Vapor (of hydrogen chloride) is moderately irritating such that personnel will not usually tolerate moderate or high vapor concentrations.
- 3.11 **Liquid or Solid Characteristics:** Fairly severe skin irritant; may cause pain and second-degree burns after a few minutes' contact.
- 3.12 **Odor Threshold:** 1-5 ppm (hydrogen chloride)
- 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:** Do not use water on adjacent fires
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Reacts violently with water used in extinguishing adjacent fires
- 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:** Reacts violently with water, liberating hydrogen chloride gas and heat.
- 5.2 **Reactivity with Common Materials:** None if dry. If wet it attacks metals because of hydrochloric acid formed; flammable hydrogen is formed.
- 5.3 **Stability During Transport:** Stable if kept dry and protected from atmospheric moisture.
- 5.4 **Neutralizing Agents for Acids and Caustics:** Hydrochloric acid formed by reaction with water can be flushed away with water. Rinse with sodium bicarbonate or lime solution.
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** Not pertinent
- 6.2 **Waterfowl Toxicity:** Not pertinent
- 6.3 **Biological Oxygen Demand (BOD):** Not pertinent
- 6.4 **Food Chain Concentration Potential:** Not pertinent
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Pure: 99.7%; technical: 98.5%
- 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:** D
- 7.6 **Ship Type:** 3
- 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Corrosive material
- 8.2 **49 CFR Class:** 8
- 8.3 **49 CFR Package Group:** II
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	3
Flammability (Red).....	0
Instability (Yellow).....	2
Special (White).....	WF
- 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:** 133.34
- 9.3 **Boiling Point at 1 atm:** Not pertinent
- 9.4 **Freezing Point:** 381°F = 193.9°C = 467.1°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 2.44 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:** 63.6 cal/g
- 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
	NOT PERTINENT		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

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
	R E A C T S		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT