MSDS OF ALUMINUM CHLORIDE ANHYDROUS

1. Product Identification

Synonyms: Aluminum trichloride; trichloroaluminum
CAS No.: 7446-70-0
Molecular Weight: 133.34
Chemical Formula: Al Cl3
Product Codes:
J.T. Baker: 0504
Mallinckrodt: 3147

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Aluminum Chloride	7446-70-0	ca. 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. WATER REACTIVE.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 0 - None
Reactivity Rating: 3 - Severe (Water Reactive)
Contact Rating: 3 - Severe (Corrosive)
Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES
Storage Color Code: Yellow (Reactive)

Potential Health Effects

Inhalation:
Inhalation of dust may irritate the respiratory tract due to corrosive nature. Symptoms include sore throat, coughing, and shortness of breath. Symptoms of lung edema may be delayed and serious cases may be fatal.
Ingestion:
Corrosive. May cause burning pain in mouth and esophagus and burns to mucous membranes. May produce gastrointestinal distress with abdominal pain, nausea, vomiting and diarrhea.
Skin Contact:
Corrosive. May cause irritation or burns with redness and pain.
Eye Contact:
Corrosive. Eye contact may cause severe pain, blurred vision, and tissue damage.
Chronic Exposure:
No information found.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:
Do NOT induce vomiting. Give large amounts of water. Never give anything by mouth to an unconscious person. Call a physician.

Skin Contact:
In case of contact, wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician.
Eye Contact:
In case of contact, hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Call a physician.

5. Fire Fighting Measures

Fire:
Not combustible, but may react slowly in a fire.
Explosion:
Not explosive but violent reaction will result if streams of water contact large quantities.
Fire Extinguishing Media:
Extinguish fires in adjacent materials with dry chemical or foam. Do not use water.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Do not spray spills with water. Structural fire fighters clothing is not adequate protection for this material. After removing material, neutralize residue with soda ash, lime or limestone. Do not flush waste to sewers or open waterways. A delay in cleanup may allow absorption of moisture from the atmosphere and may increase the difficulty of cleaning up the spill area.
7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Storage in sprinklered buildings is not recommended. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
-ACGIH Threshold Limit Value (TLV):
2 mg/m3 (TWA) soluble salts as Al
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded and engineering controls are not feasible, a half-face respirator with an acid gas cartridge and particulate (NIOSH type N95 or better) filter may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an acid gas cartridge and particulate (NIOSH type N100) filter may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance : White to gray or yellow powder.
Odor : Strong hydrogen chloride odor.
Solubility : Reacts violently in water.
Density : 2.44 @ 25C
Ph : No information found.
% Volatiles by volume @ 21C (70F): 0
Boiling Point : 183C (361F)
Melting Point : 178C (352F) Sublimes.
Vapor Density (Air=1) : No information found.
Vapor Pressure (mm Hg): 1 @ 100C (212F)
Evaporation Rate (BuAc=1): No information found.

10. Stability and Reactivity

Stability:
Heat will contribute to instability. Reacts violently with water or moisture releasing toxic and corrosive hydrogen chloride fumes and heat. Old containers may explode on opening.
Hazardous Decomposition Products:
Oxides of the contained metal and halogen, possibly also free, or ionic halogen.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Water, moist air, heat, sodium oxide, ethylene oxide, nitromethane.
Conditions to Avoid:
Moisture and sunlight.

11. Toxicological Information

Oral rat LD50: 3450 mg/kg; oral mouse LD50: 1130 mg/kg; Skin rabbit LD50: > 2000 mg/kg. Investigated as a mutagen and reproductive effector.

12. Ecological Information

Environmental Fate:
Aluminum chloride hydrolyzes in water to aluminum hydroxide and hydrochloric acid.
13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information Domestic (Land, D.O.T.)

Proper Shipping Name: ALUMINUM CHLORIDE, ANHYDROUS
Hazard Class: 8 , **UN/NA:** UN1726 , Packing Group: II
Information reported for product/size: 100LB
15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------

Ingredient	TSCA	EC	Japan	Australia
Aluminum Chloride (7446-70-0)	Yes	Yes	Yes	Yes

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **3** Flammability: **0** Reactivity: **2** Other: **Water reactive**
Label Hazard Warning:
DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. WATER REACTIVE.
Label Precautions:
Do not get in eyes, on skin, or on clothing., Do not breathe dust.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.
Do not contact with water.
Loosen closure cautiously because of possible gas pressure.
Label First Aid:
In case of skin contact, wipe any excess material off skin and then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If swallowed, Do Not induce vomiting. Give victim a glass of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician.
Product Use:
Laboratory Reagent.

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