

SAFETY DATA SHEET

1. Identification

Product Name Aluminium chloride

Cat No. : AC217460000; AC217460025; AC217460050; AC217461000; AC217465000

CAS No 7446-70-0

Synonyms Aluminium trichloride

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/Irritation Category 1 B Serious Eye Damage/Eye Irritation Category 1 Specific target organ toxicity (single exposure) Category 3 Target Organs - Respiratory system.

Label Elements

Signal Word

Danger

Hazard Statements

Causes severe skin burns and eye damage

May cause respiratory irritation



Precautionary Statements

Prevention

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

Use only outdoors or in a well-ventilated area

Response

Immediately call a POISON CENTER or doctor/physician

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing **Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing**Ingestion**

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Reacts violently with water

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Aluminum	7446-70-0	>95

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask Equipped with a one-way valve or other proper respiratory medical device.

Ingestion Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water.

Never give anything by mouth to an unconscious person.

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric

Most important symptoms and

effects lavage or emesis is contraindicated. Possible perforation of severe swelling, severe damage to the delicate tissue and danger of stomach or esophagus should be investigated: Ingestion causes perforation

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media CO₂, dry chemical, dry sand, alcohol-resistant foam. **Unsuitable**

Extinguishing Media DO NOT USE WATER

Flash Point No information available

Method - No information available

Autoignition Temperature No information available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Reacts violently with water.

Hazardous Combustion Products

Hydrogen chloride. Hydrogen chloride gas.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability		Instability	Physical hazards
3	0	2	W	

6. Accidental release measures

Personal Precautions Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Sweep up and shovel into suitable containers for disposal. Avoid dust formation. Do not

Methods for Containment and Clean

Up expose spill to water.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Do not allow contact with water. Handle under an inert atmosphere.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosive area. Keep away from water or moist air. Do not store in metal containers. Store under an inert atmosphere. Protect from moisture. Incompatible Materials. Water. Strong oxidizing agents. Alkali metals. Strong bases. Metals.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Aluminum chloride		(Vacated) TWA: 2 mg/m ³	TWA: 2 mg/m ³	

Legend

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State Solid

Appearance Yellow

Odor pungent

Odor Threshold No information available **pH** 2.4 100 g/L aq.sol

Melting Point/Range 194 °C / 381.2 °F **Boiling Point/Range** No information available **Flash Point** No

information available **Evaporation Rate** Not applicable

Flammability (solid,gas) No information available **Flammability or explosive limits**

Upper No data available

Lower No data available

Vapor Pressure No information available **Vapor Density** Not applicable

Specific Gravity 2.440

Solubility Water reactive

Partition coefficient; n-octanol/water No data available **Autoignition Temperature** No information available

Decomposition Temperature No information available **Viscosity** Not applicable

Molecular Formula Al Cl₃

Molecular Weight 133.34

10. Stability and reactivity

Reactive Hazard Yes

Stability Stable under normal conditions.

Conditions to Avoid Excess heat. Incompatible products. Exposure to moist air or water. Exposure to moisture. **Incompatible**

Materials Water, Strong oxidizing agents, Alkali metals, Strong bases, Metals **Hazardous Decomposition Products** Hydrogen chloride, Hydrogen chloride gas

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing. Reacts violently with water.

11. Toxicological information

Acute Toxicity

Product Information Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Aluminum chloride	LD50 = 3470 mg/kg (Rat)	Not listed	Not listed

No information available

Toxicologically Synergistic Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure Irritation Causes burns by all exposure routes

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NT	ACGIH	OSHA	Mexico
Aluminum chloride	7446-70-0	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

Symptoms / effects, both acute and delayed

Possible perforation of stomach or esophagus should be

investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Contains a substance which is: Toxic/aquatic organisms. Reacts with water so no ecotoxicity data for the substance is available.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Aluminum chloride	Not listed	Gambusia affinis: LC50=27.1 mg/L 97h	Not listed	EC50: 3.9 mg/L 48h EC50: 27.3 mg/L 48h

Persistence and Degradability Persistence is unlikely based on information available. **Bioaccumulation/ Accumulation** No information available.

Mobility Is not likely mobile in the environment.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1726

Proper Shipping Name ALUMINUM CHLORIDE, ANHYDROUS Hazard Class 8

Packing Group II

TDG

UN-No UN1726

Proper Shipping Name ALUMINUM CHLORIDE, ANHYDROUS Hazard Class 8

Packing Group II

IATA

UN-No UN1726

Proper Shipping Name ALUMINIUM CHLORIDE, ANHYDROUS Hazard Class 8

Packing Group II

IMDG/IMO

UN-No UN1726

Proper Shipping Name ALUMINIUM CHLORIDE, ANHYDROUS Hazard Class 8

Packing Group II

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Aluminum chloride	7446-70-0	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea(KECL).

Component	CAS No		DSL	NDSL	EINECS	P	E	AIC	IECSCKE
Aluminum chloride	7446-70-0		X	231-208-					XKE-0104 5

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

SARA 313 Not applicable

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

Not applicable

OSHA - Occupational Safety and Health Administration

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Aluminum chloride		X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

This product contains the following DHS chemicals:

U.S. Department of Homeland Security

placarded amount

Legend - STQs = Screening Threshold Quantities, APA = A

Component	DHS Chemical Facility Anti-Terrorism Standard
Aluminum chlor	APA

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV -Substances Subject to Authorization	REACH (1907/2006) - Annex XVII -Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Aluminum chloride	-	Use restricted. See item 75. (see link for restriction details)	-

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Aluminum chloride	7446-70-0	Listed	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Aluminum chloride	7446-70-0	Not applicable	Not applicable	Not applicable	Not applicable