

POLYALUMINIUM CHLORIDE

1. Chemical Product and Company Identification:

PRODUCT IDENTIFICATION

Product Name: Polyaluminium Chloride **CAS #:** 1327-41-9

Formula: $[Al_2(OH)nCl_{6-n}]_m$

Synonyms: Aluminum Chlorohydrate; Polyaluminium Hydroxychloride, Aluminium Chloride Hydroxide

Product Use: Water treatment chemical

Details of the supplier of the safety data sheet

ENTAJ FEED & RAW MATERIALS MANUFACTURING CO.
ADDRESS: AMMAN – BUILDING 2477, OFFICE 118210
LICENSE NO.: 202618787

2. Composition, Information On Ingredients

CHEMICAL NAME	CAS NUMBER	WEIGHT %	Hazardous
Polyaluminium Chloride	1327-41-9	29 – 32 (as Aluminium oxide) 40-90 (basicity)	No

3- Hazards Identification

Emergency Overview: CORROSIVE! Inhalation, ingestion or skin contact with material may cause injury. Causes eye and skin irritation. Mist and Vapor: Causes respiratory tract and mucous membrane irritation.

Potential Health Effects:

Inhalation: Irritation to mucous membranes

Skin Contact: Possible irritation

Eye Contact: May cause irritation with redness and swelling.

Ingestion: Irritation of the mouth and stomach.



Sub-chronic Effects: No data available

Chronic Effects: None known

Carcinogenicity: Polyaluminum chloride is not classified as a carcinogen by ACGIH or IARC (International Agency for Research on Cancer), not regulated as a carcinogen by OSHA (Occupational Safety and Health Administration) and not listed as a carcinogen by NTP (National Toxicology Program).

4. First aid measures

General: If you feel unwell, seek medical advice (show the label where possible).

Inhalation: If symptoms are experienced, move victim to fresh air. Give artificial respiration ONLY if breathing has stopped. Obtain medical attention.

Skin Contact: Remove contaminated clothing, jewelry and shoes. Immediately wash skin with soap or mild detergent and running water for at least 15 minutes, until no evidence of chemical remains. For minor skin contact, avoid spreading material on unaffected skin. Obtain medical attention if irritation persists.

Eye Contact: Immediately flush eyes with running water for at least 15 minutes, occasionally lifting upper and lower lids, until no evidence of chemical remains. Obtain medical attention if irritation persists.

Ingestion: If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Seek immediate medical attention.

NOTE TO PHYSICIAN: Antidote: There is no specific antidote for aluminum chloralhydrate. Treatment of overexposure should be directed at the control of symptoms and the clinical condition



5. Fire Fighting Measures

Flash point	Not applicable.
Flammable Limits (Lower)	Not applicable.
Flammable Limits (Upper)	Not applicable.
Auto Ignition Temperature	Not applicable.
Combustion and Thermal Decomposition Products	Hydrogen chloride, aluminum oxides
Rate of Burning	Does not burn
Explosive Power	Not applicable
Sensitivity to Static Discharge	Not applicable

Fire and Explosion Hazards: During a fire, irritating/toxic hydrogen chloride gas may be generated. Extinguishing Media: Water spray, fog or regular foam appropriate for surrounding material. Cool any exposed containers with water.

Special Information:

Fire fighters should wear protective equipment and self-contained breathing apparatus with full-face piece operated in positive pressure mode. Move exposed containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

NOTE: Also see "Section 10 – Stability and Reactivity"

6. Accidental release measures

IN CASE OF SPILL OR OTHER RELEASE:

Dike area to contain spill. Neutralize spilled material with alkali such as soda ash. When using carbonates for neutralization, adequate precautions should be taken to minimize hazards from carbon dioxide gas generation. Collect liquid and/or residue and dispose of in accordance with applicable regulations.

7. Handling and storage

Handling: Avoid contact with skin, eyes and clothing. Do not breathe product mists. Use with adequate ventilation. Handle as material of moderate oral toxicity. Do not smoke or eat while handling. Use good housekeeping and personal hygiene. Wash thoroughly after handling.



Storage Recommendations: Store at moderate temperatures in a dry, well-ventilated area. Protect from physical damage and from freezing. Keep containers tightly closed.

8. Exposure controls/personal protection

PREVENTIVE MEASURES

Recommendations listed in this section indicate the type of equipment, which will provide protection against over-exposure to this product. Conditions of use, adequacy of engineering or other control measures and actual exposures will dictate the need for specific protective devices at your workplace.

Engineering Controls: A ventilation 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. Ensure that eyewash station and safety showers are proximal to the workstation location.

PERSONAL PROTECTIVE EQUIPMENT

Eye Protection: Wear splash resistant chemical goggles and/or a full-face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Recommended Protective Material: Neoprene or rubber

Respiratory Protection: Under conditions of frequent use or heavy exposure, respiratory protection may be needed.
For exposures under 20 mg/m³, a NIOSH/MSHA approved air-purifying respirator with high efficiency particulate cartridge(s) may be used. For unknown concentration, use any supplied air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode.

EXPOSURE GUIDELINES

Product: ACGIH: TLV – 2mg/m³ (as Al) (Aluminum salts, soluble)



9. Physical and chemical properties

Alternate Name	Aluminium Chloride Hydroxide
Chemical Name	Polyaluminium Chloride
Chemical Family	Inorganic salt
Molecular Formula	$[Al_2(OH)_nCl_{6-n}]_m$
Molecular Weight	133.5 -174.5
Appearance	Yellow to brown powder
Odor	Slight chlorine odor
pH (1% aqueous solution)	3.5-5.0
Melting Point	No Data
Solubility (Water)	100% Soluble
Solubility (Other)	Not available
Evaporation Rate	Not applicable
% Volatile Organic Compounds	Not applicable

10. Stability and reactivity

Hazardous Decomposition Products:	Thermal decomposition: hydrochloric acid, aluminum oxides.
Chemical Stability:	Stable at normal temperatures and pressure.
Conditions to Avoid:	None
Incompatibility with other Substances:	Bases (alkaline materials) such as ammonia and its solutions, carbonates, sodium hydroxide (caustic), and potassium hydroxide. Corrosive to common metals such as aluminum, stainless and mild steel, nickel, copper, and brass.
Hazardous Polymerization:	Will not occur.



11. Toxicological information

TOXICOLOGICAL DATA:

Polyaluminum chloride:	No data available
Aluminum chloride hydroxide:	(base unit of polymer- monomer)
Irritation data:	150mg/m ³ day(s)-intermittent skin-human mild
Toxicity data:	25mg/m ³ /6 hour(s)-2 year(s) intermittent inhalation-rat TCLo; 25g/m ³ /6 hour(s)-2 year(s) intermittent inhalation-guinea pig TCLo
Mutagenicity:	Not available
Reproductive Effects Data:	ND
Teratogenicity and Fetotoxicity:	Not available
Synergistic Materials:	Not available

12. Ecological information

Ecotoxicological Information: fish toxicity: 10000 µg/L 24-week(s) (Mortality) Coho salmon, silver salmon (Oncorhynchus kisutch)

Persistence and Degradation: No data available

13. Disposal considerations

Review federal, state and local government requirements prior to disposal. Whatever cannot be saved for recovery or recycling, including containers, should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options

RCRA: Hazardous if pH is less than 2. Test waste material for corrosivity, D002, prior to disposal.

14. Transport information

Shipping information:

Not regulated as a hazardous material by DOT, IMO, or IATA.

Shipping Containers:

- Tank Cars
- Tank Trucks
- Flexible Intermediate Bulk Containers
- Tote Bins
- Bags



15. Regulatory information

USA CLASSIFICATION:

OSHA Classification: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200)

SARA Regulations sections 313 and 40 CFR 372: N

SARA Hazard Categories, SARA SECTIONS 311/312 (40 CFR 370.21):

Acute: N

Chronic: N

Fire: N

Reactive: N

Sudden Release: N

OSHA Process Safety (29CFR1910.119): N

TSCA Inventory Status: Y

This product does not contain, nor is it manufactured with, ozone-depleting substances.

Other Regulations/Legislation which apply to this product:

California Proposition 65: N

CANADIAN CLASSIFICATION

This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and this MSDS (Material Safety Data Sheet) contains all information required by the CPR.

Controlled Products Regulation (WHMIS) Classification:

E: Corrosive

CEPA / Canadian Domestic Substances List (DSL): The substance in this product is on the Canadian Domestic Substances List (CEPA DSL).

EEC CLASSIFICATION

EINECS: 215-477-2

16. Other information

this Material Safety Data Sheet (MSDS) has been prepared in accordance with internationally recognized standards and is based on the best information available at the time of issue. It provides a summary of the health and safety hazards of the material and general guidance for its safe handling in the workplace. As the actual conditions of use are beyond our control, each user is responsible for assessing the risks associated with their specific application and implementing appropriate control measures.

END OF MSDS

