



MATERIAL SAFETY DATA SHEET

SECTION 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

COMPANY IDENTIFICATION

Manufacturer

HENAN XUNYU CHEMICAL CO.,LTD

NO.18,SHANGWU NEIHUAN RD, ZHENGDONG NEW DIS,ZHENGZHOU, HENAN,CHINA

Emergency Number: 86-371-63681121

Information Number: 86-371-63681125

SECTION 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 |

SECTION 3 - HAZARD 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 (American Conference of Governmental Industrial Hygienists) 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).

SECTION 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 chlorohydrate. Treatment of overexposure should be directed at the control of symptoms and the clinical condition

SECTION 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 available |

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”

SECTION 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.

SECTION 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.

SECTION 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)

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | |
|------------------------------|---|
| Alternate Name | Aluminium Chloride Hydroxide |
| Chemical Name | Polyaluminium Chloride |
| Chemical Family | Inorganic salt |
| Molecular Formula | [Al ₂ (OH) _n Cl _{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 |

SECTION 10 - STABILITY AND REACTIVITY

Hazardous Decomposition Products: Thermal decomposition: hydrochloric acid, aluminium 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 aluminium, stainless and mild steel, nickel, copper, and brass.



Hazardous Polymerization: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA:

Polyaluminum chloride: No data available

Aluminum chloride hydroxide: (base unit of polymer- monomer)

Irritation data: 150mg/m³ day(s)-intermittent skin-human mild

Toxicity data: 25mg/m³/6 hour(s)-2 year(s) intermittent inhalation-rat TCLo;

25g/m³/6 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

SECTION 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

SECTION 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.

SECTION 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

SECTION 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

SECTION 16 - OTHER INFORMATION

This information is given without any warranty or representation. It is believed to be correct but does not claim to be all inclusive and shall be used only as a guide. HENAN XUNYU CHEMICAL CO.,LTD shall not be held liable for any damage resulting from handling or for contact with the above product. It is offered solely for your consideration, investigation and verification.

National Fire Protection Association (NFPA) Rating

Hazardous Materials Identification System (HMIS) Rating

| | NFPA | HMIS |
|------------|------|------|
| HEALTH | 1 | 1 |
| FIRE | 0 | 0 |
| REACTIVITY | 0 | 0 |

4 = Extreme/Severe
 3 = High/Serious
 2 = Moderate
 1 = Slight
 0 = Minimum

REFERENCES:

1. American Water Works Association, ANSI/AWWA B408-93, "Liquid Polyaluminum Chloride", Colorado, Dec. 1993
2. RTECS-Registry of Toxic Effects of Chemical Substances, On-line search, Canadian Centre for Occupational Health and Safety RTECS database, Doris V. Sweet, Ed., National Institute for Occupational Safety and Health, U.S. Dept. of Health and Human Services, Cincinnati, Updated Nov 1998.
3. NIOSH POCKET GUIDE TO CHEMICAL HAZARDS, U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, June 1997
4. Sax, N.I., "Dangerous Properties of Industrial Materials", 7th Edition, 1989
5. "1999 Threshold Limit Values and Biological Exposure Indices", American Conference of Government Industrial Hygienists, 1999.
6. Merck, 11th Edition, 1989
7. Supplier's Material Safety Data Sheets.

Legend:

CAS # - Chemical Abstracts Service Registry Number



CERCLA- Comprehensive Environmental Response, Compensation, and Liability Act

CFR - Code of Federal Regulations

DOT- Department of Transportation

EPA - Environmental Protection Agency

LC₅₀- The concentration of material in air expected to kill 50% of a group of test animals

LD₅₀- Lethal Dose expected to kill 50% of a group of test animals

MSHA - Mine Safety and Health Administration

NIOSH - National Institute for Occupational Safety and Health

PEL - Permissible Exposure Limit

PVC - Polyvinyl chloride

RCRA - Resource Conservation and Recovery Act

SARA - Superfund Amendments and Reauthorization Act of the U.S. EPA

STEL - Short Term Exposure Limit

TDG- Transportation of Dangerous Goods Act/Regulations

TLV - Threshold Limit Value

TSCA - Toxic Substances Control Act

TWA - Time-Weighted Average