

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Kemira PAX-18**
Synonyms: Poly(aluminumhydroxy)chloride
Product Description: Polyaluminum Chloride Solution
Chemical Family: Polynuclear inorganic salt
Molecular Formula: $Al_2(OH)_xCl_{6-x}$ $0 < x < 6$
Intended/Recommended Use: Water treating chemical

KEMIRA WATER SOLUTIONS, INC., 808 EAST MAIN STREET, LAKELAND, FLORIDA 33801, USA
For Product Information call 1-800/879-6353. Outside the USA and Canada call 1-785/842-7424.
EMERGENCY PHONE: For emergency involving spill, leak, fire, exposure or accident call CHEMTREC: 1-800/424-9300.
Outside the USA and Canada call 1-703/527-3887.

2. COMPOSITION/INFORMATION ON INGREDIENTS

OSHA REGULATED COMPONENTS

Component / CAS No.	%	(w/w)	OSHA (PEL):	ACGIH (TLV)	Carcinogen
Poly(aluminum hydroxy chloride) 1327-41-9	8 - 24		Not established	2 mg/m ³ as Al (TWA)	-

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR:

Color: clear colorless to amber
Appearance: liquid
Odor: pungent slight chlorine

STATEMENTS OF HAZARD:

WARNING! CAUSES EYE AND SKIN IRRITATION

POTENTIAL HEALTH EFFECTS

EFFECTS OF EXPOSURE:

The acute oral (rat) LD50 is estimated to be >2000 mg/kg. Direct contact with this material may cause severe eye and moderate skin irritation. Refer to Section 11 for toxicology information on the regulated components of this product.

4. FIRST AID MEASURES

Ingestion:

If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Skin Contact:

Remove contaminated clothing and shoes without delay. Wash immediately with plenty of water. Do not reuse contaminated clothing without laundering. Get medical attention if pain or irritation persists after washing or if signs and symptoms of overexposure appear.

Eye Contact:

Rinse immediately with plenty of water for at least 15 minutes. Obtain medical advice if there are persistent symptoms.

Inhalation:

Remove to fresh air. Obtain medical attention immediately if necessary.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:

The substance is not combustible. Use extinguishing media appropriate to the surrounding fire.

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

Protective Equipment:

Firefighters, and others exposed, wear self-contained breathing apparatus. Wear full firefighting protective clothing. See MSDS Section 8 (Exposure Controls/Personal Protection).

Special Hazards:

Keep containers cool by spraying with water if exposed to fire. During a fire, irritating/toxic and corrosive fumes may evolve. Decomposition releases may include hydrogen chlorides, aluminum oxides, and oxides of sulfur.

Mechanical/Static Sensitivity Statements:

None

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

'Restrict access until clean-up operations are complete. Wear appropriate Personal Protective Equipment per Section 8. Ensure trained personnel conduct clean up and wear Personal Protective Equipment per Section 8.

'Stop leak if possible. Avoid personal risk.

Methods For Cleaning Up:

'Small Spills - Absorb spill with clay or dry material or neutralize with lime, limestone or soda ash and collect in appropriate container for disposal. Neutralization with soda ash can generate carbon dioxide so additional ventilation may be necessary.

'Large Spills - Prevent entry into sewers and confined areas. Dike, if possible. Keep unnecessary people away, isolate area and deny entry. Pump liquid material into appropriate vessels as possible or absorb spill with clay absorbents or non-reactive dry materials and collect in appropriate container for disposal.

Neutralize spill residuals carefully with lime, limestone, or soda ash and collect in suitable container for disposal. Flush area with water. This could generate carbon dioxide so additional ventilation may be necessary.

'Notify Authorities if release exceeds reportable quantity per Section 15

7. HANDLING AND STORAGE

HANDLING

Precautionary Measures: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Special Handling Statements: Review the label, this MSDS and any other applicable information before use. Keep separated from incompatible substances. Use appropriate Personal Protective Equipment per Section 8. Handle only with equipment, materials and supplies specified by their manufacturer as being compatible and appropriate for use with this product.

STORAGE

Prevent material from coming in contact with common metals. Material may be stored in tightly closed shipping containers, preferably the suppliers containers. Containers of this material may be hazardous when empty, since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product. Do not use metal containers. Product should be used within one (1) year

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures:

Where this material is not used in a closed system, good enclosure and local exhaust ventilation should be provided to control exposure.

Respiratory Protection:

Where exposures are below the established exposure limit, no respiratory protection is required. Where exposures exceed the established exposure limit, use respiratory protection recommended for the material and level of exposure.

Eye Protection:

Wear eye/face protection such as chemical splash proof goggles or face shield. Eyewash equipment and safety shower should be provided in areas of potential exposure.

Skin Protection:

Avoid skin contact. Wear impermeable gloves and suitable protective clothing.

Additional Advice:

Food, beverages, and tobacco products should not be carried, stored, or consumed where this material is in use. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	clear colorless to amber
Appearance:	liquid
Odor:	pungent slight chlorine
Boiling Point:	100 - 110 °C
Melting Point:	-20 - -5 °C 14 °F
Vapor Pressure:	18mm Hg @ 20 °C Not applicable
Specific Gravity/Density:	1.15 - 1.40
Vapor Density:	1.3
Percent Volatile (% by wt.):	~Not available
pH:	0.5 - 4.4
Saturation In Air (% By Vol.):	Not applicable
Evaporation Rate:	Not applicable
Solubility In Water:	Complete
Volatile Organic Content:	None
Flash Point:	Not applicable
Flammable Limits (% By Vol):	Not applicable
Autoignition Temperature:	Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

Decomposition Temperature:	Not available
Partition coefficient (n-octanol/water):	Not available
Odor Threshold:	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable
Conditions To Avoid:	Avoid contact with mineral acids, excessive heat and bases/alkalis.
Polymerization:	Will not occur
Conditions To Avoid:	None known
Materials To Avoid:	Metals such as iron or steel which are subject to corrosion. Carbon steel, aluminum, carbon, brasses, and nylon.
Hazardous Decomposition Products:	Thermal decomposition: after completely dry and heated to decomposition will produce sulfur oxides and aluminum oxides as well as HCL gas.

11. TOXICOLOGICAL INFORMATION

Toxicological information for the product is found under Section 3. HAZARDS IDENTIFICATION.
Toxicological information on the regulated components of this product is as follows:

Polyaluminum chloride (PAC) has an estimated acute oral (rat) LD50 of >13.0 g/kg. Aqueous solutions of PAC are very acidic. Direct contact may cause moderate to severe eye and skin irritation. The acute oral (mouse) LD50 for aluminum chloride is 770 mg/kg. The dermal (rabbit) LD50 is >2000 mg/kg. Direct skin contact with the soluble salts of aluminum results in moderate irritation.

12. ECOLOGICAL INFORMATION

FISH TEST RESULTS

Test: Acute toxicity, saltwater (EPA Method)

Duration: 48 hr. **Procedure:** Static.

Species: Fathead Minnow (*Pimephales promelas*)
0.0354 % LC50

Duration: 96 hr

Species: Zebra Fish (*Brachydanio rerio*)
>1000 mg/l LC50

Duration: 24hr

Species: Coho Salmon (*Oncorhynchus kisutch*)
10 mg/l LC50

INVERTEBRATE TEST RESULTS

Test: Acute Toxicity, saltwater (EPA method)

Duration: 48 hr **Procedure:** Static

Species: Water Flea (*Ceriodaphnia dubia*)
0.0083 % LC50

Duration: 48 hr

Species: Water Flea (*Daphnia magna*)
98 mg/l EC50

13. DISPOSAL CONSIDERATIONS

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The information on RCRA waste classification and disposal methodology provided below applies only to the product, as supplied. If the material has been altered or contaminated, or it has exceeded its recommended shelf life, the guidance may be inapplicable. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA `listed hazardous waste` or has any of the four RCRA `hazardous waste characteristics.` Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA `listed hazardous waste`; information contained in Section 15 of this MSDS is not intended to indicate if the product is a `listed hazardous waste.` RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: Ignitability, Corrosivity, Reactivity, and Toxicity. To determine Ignitability, see Section 9 of this MSDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed. The Company encourages the recycle, recovery and reuse of materials, where permitted, as an alternate to disposal as a waste. The Company recommends that organic materials classified as RCRA hazardous wastes be disposed of by thermal treatment or incineration at EPA approved facilities. The Company has provided the foregoing for information only; the person generating the waste is responsible for determining the waste classification and disposal method.

14. TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

US DOT

Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class: 8
Packing Group: III
UN/ID Number: UN3264
Transport Label Required: Corrosive
Technical Name (N.O.S.): Contains polyaluminum chloride
Hazardous Substances:
Not applicable

TRANSPORT CANADA

Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class: 8
Packing Group: III
UN Number: UN3264
Transport Label Required: Corrosive
Technical Name (N.O.S.): Contains polyaluminum chloride

ICAO / IATA

Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class: 8
Packing Group: III
UN Number: UN3264
Transport Label Required: Corrosive
Packing Instructions/Maximum Net Quantity Per Package:
Passenger Aircraft: See regulations
Cargo Aircraft: See regulations
Technical Name (N.O.S.): Contains polyaluminum chloride

IMO

Proper Shipping Name: Corrosive liquid, acidic, inorganic, n.o.s.
Hazard Class: 8
UN Number: UN3264

Packing Group: III
 Transport Label Required: Corrosive
 Technical Name (N.O.S.): Contains polyaluminum chloride

15. REGULATORY INFORMATION

INVENTORY INFORMATION

United States (USA): All components of this product are included on the TSCA Chemical Inventory or are not required to be listed on the TSCA Chemical Inventory.

Canada: All components of this product are included on the Domestic Substances List (DSL) or are not required to be listed on the DSL.

European Union (EU): All components of this product are included on the European Inventory of Existing Chemical Substances (EINECS) or are not required to be listed on EINECS.

Australia: All components of this product are included in the Australian Inventory of Chemical Substances (AICS).

China: All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.

Japan: All components of this product are NOT included on the Japanese (ENCS) inventory.

Korea: All components of this product are included on the Korean (ECL) inventory or are not required to be listed on the Korean inventory.

Philippines: All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine inventory.

OTHER ENVIRONMENTAL INFORMATION

The following components of this product may be subject to reporting requirements pursuant to Section 313 of CERCLA (40 CFR 372), Section 12(b) of TSCA, or may be subject to release reporting requirements (40 CFR 307, 40 CFR 311, etc.) See Section 13 for information on waste classification and waste disposal of this product.

Component / CAS No.	%	TPQ (lbs)	RQ(lbs)	S313	TSCA 12B
Poly(aluminum hydroxy) chloride 1327-41-9	8 - 24	None	0	No	No

This product does not contain any components regulated under these sections of the EPA

PRODUCT HAZARD CLASSIFICATION UNDER SECTION 311 OF SARA

- Acute

16. OTHER INFORMATION

NFPA Hazard Rating (National Fire Protection Association)

Health: 1 - Materials that, under emergency conditions, can cause significant irritation.

Fire: 0 - Materials that will not burn.

Reactivity: 0 - Materials that in themselves are normally stable, even under fire exposure conditions.

Reasons For Issue: New Format

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