SAFETY DATA SHEET

KEMIRA PAX-14

Ref. /US/EN

Revision Date: 08/10/2021 Previous date: 11/22/2019 Print Date:04/03/2023

1. IDENTIFICATION

Product information

Product name
KEMIRA PAX-14

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture

Recommended restrictions on use
Do not use for other purposes than the identified uses.

Supplier's details

Kemira Chemicals, Inc.
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FINLAND
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Emergency telephone number

CHEMTREC (24 Hours): 1-800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification

Corrosive to metals, Category 1,
Serious eye damage, Category 1,

GHS-Labelling

Hazard pictograms :

Signal word: Danger

Hazard statements :

Hazard statements:

H290	May be corrosive to metals.
H318	Causes serious eye damage.

Precautionary statements :

Prevention:

P234	Keep only in original container.
P280	Wear eye protection/ face protection.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/ doctor.
P390	Absorb spillage to prevent material damage.

Storage:

P406	Store in corrosive resistant container with a resistant inner liner.

Disposal:

P501	Dispose of contents/container as special waste in compliance with local and national regulations.

Hazard(s) not otherwise classified (HNOC) or not covered/classified by GHS

Advice; Heating above the decomposition temperature will release toxic gases.
Potential environmental effects; May lower the pH of water and thus be harmful to aquatic organisms.
Remarks; This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances /Mixtures

Mixture

Chemical nature : Polyaluminium chloride solution

Hazardous components

Chemical name	CAS-No.	Concentration[%]
Aluminium chloride, basic / Polyaluminium chloride	1327-41-9	25 - 40 %

Further information

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

4. FIRST AID MEASURES

Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance. First aider needs to protect himself.

Inhalation

If breathed in, move person into fresh air. If symptoms persist, seek medical advice.

Skin contact

Rinse with plenty of water. If symptoms persist, seek medical advice.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Prevent rinsing water from flowing into the other eye. Continue rinsing eyes during transport to hospital.

Ingestion

Rinse mouth with water. Do NOT induce vomiting. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

Symptoms : The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.

Indication of immediate medical attention and special treatment needed, if necessary

Treatment : All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Foam, Dry powder, Water spray, Carbon dioxide (CO2)

Unsuitable extinguishing media

None known.

Special hazards arising from the substance or mixture

Heating above the decomposition temperature can cause formation of hydrogen chloride. Exposure to decomposition products may be a hazard to health.

Do not allow run-off from fire fighting to enter drains or water courses.

Special protective actions for fire-fighters

Exposure to decomposition products may be a hazard to health.

In the event of fire, wear self-contained breathing apparatus.

Further information

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Wear respiratory protection. Ensure adequate ventilation.

Environmental precautions

Prevent product from entering the environment. Restrict the spread of the spillage by using inert absorbent material (sand, gravel). Cover the drains. Must be disposed of in accordance with local and national regulations. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up

Clean-up methods - small spillage

Dilute residues with water and then neutralize with lime or limestone powder to a solid consistency. Shovel or sweep up. Must be disposed of in accordance with local and national regulations.

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Clean-up methods - large spillage

Remove spill using a vacuum truck. Dilute residues with water and then neutralize with lime or limestone powder to a solid consistency. Shovel or sweep up remaining material. Must be disposed of in accordance with local and national regulations.

Additional advice

For personal protection see section 8.

7. HANDLING AND STORAGE

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice. For personal protection see section 8. The work place and work methods shall be organized in such a way that direct contact with the product is prevented or minimized. Keep away from incompatible materials. Contact with certain metals,

e.g. aluminium and zinc, may form hydrogen gas, which in turn may form explosive mixtures of gases with air.

Conditions for safe storage, including any incompatibilities

Keep away from incompatible materials.
For quality reasons: Keep at temperatures above 0 °C. Keep at temperatures below 30 °C.

Materials for packaging

Suitable material: plastic (PE, PP, PVC), fiberglass-reinforced polyester, rubber-coated steel
Unsuitable material: Avoid contact with unalloyed steel or galvanized surfaces., stainless steel (AISI 304), materials not resistant to acid, Copper, Aluminium, Iron, Zinc, brass, titanium

Materials to avoid:

chlorites, hypochlorites, sulphites, galvanized surfaces, Iron, Strong bases

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Components	CAS-No.	Value	Form of exposure	Control parameters	Update	Basis
Polyaluminium chloride	1327-41-9			2 mg/m³		

Appropriate engineering controls

Ensure adequate ventilation. Eye wash bottle or emergency eye-wash fountain must be found in the work place.

Individual protection measures, such as personal protective equipment
Industrial Hygiene

Handle in accordance with good industrial hygiene and safety practice.

Ensure that eyewash stations and safety showers are close to the workstation location.

Respiratory protection

Respiratory protection is not required under normal handling conditions. In case of insufficient ventilation wear suitable respiratory equipment.

Hand protection

Chemical resistant gloves.

Skin and body protection

Wear protective clothing if necessary. Use rubber boots.

Eye protection

Wear eye protection/ face protection. Tightly fitting safety goggles or face-shield.

Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid
Colour	light yellow, clear
Odour	slightly acidic
Odour Threshold	No data available
pH	ca. 1.0 Concentration: 100 %
Freezing point/Melting point :	-4 °F
Initial boiling point and boiling range	Boiling point/boiling range 212 - 248 °F
Flash point	Not applicable, inorganic compound
Evaporation rate	No data available
Flammability (solid, gas)	
Explosive properties:	
Lower explosion limit	Not explosive
Upper explosion limit	Not explosive
Oxidizing properties	Not oxidizing
Vapour pressure	similar to water
Relative vapour density	similar to water
Density	ca. 1.31 g/cm³ (68 °F)
Relative density	
Solubility(ies):	
Water solubility	(68 °F) completely soluble
Partition coefficient: n-octanol/water	Not applicable, inorganic compound
Auto-ignition temperature	not auto-flammable

Decomposition temperature	
Viscosity:	
Viscosity, dynamic	10 - 30 mPa.s (73.4 °F)
Viscosity, kinematic	No data available
Oxidizing potential	Not oxidizing
Volatile organic content (VOC)	Not applicable
Surface tension	not determined

10. STABILITY AND REACTIVITY

Reactivity

Corrosive to metals.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Bases cause exothermic reactions.

Contact with certain metals (e.g. aluminium, zinc) may form explosive gas mixtures with air.

Conditions to avoid

Avoid freezing.

Do not expose to temperatures above:

392 °F

Incompatible materials

chlorites
hypochlorites
sulphites
galvanized surfaces
Iron
Strong bases

Hazardous decomposition products

Small amounts of hydrogen chloride may be released at temperatures above the boiling point.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute oral toxicity	Conclusion: Based on available data, the classification criteria are not met.
Acute oral toxicity	**Aluminium chloride, basic / Polyaluminium chloride:** LD50/Rat/>/2,000 mg/kg/OECD Test Guideline 401/GLP: yes
Acute inhalation toxicity	**Aluminium chloride, basic / Polyaluminium chloride:** LC50/Rat/4 h/aerosol: />/5.0 mg/l/OECD Test Guideline 403 /Read-across (Analogy)
Acute dermal toxicity	**Aluminium chloride, basic / Polyaluminium chloride:** LD50/Rat/>/2,000 mg/kg/OECD Test Guideline 402 Remarks: Read-across (Analogy), CAS-No., 39290-78-3
Skin corrosion/irritation	Conclusion: Repeated or prolonged skin contact may cause:, Skin irritation, dry skin, .
Skin corrosion/irritation	**Aluminium chloride, basic / Polyaluminium chloride:**Rabbit Result: No skin irritation /OECD Test Guideline 404Remarks: (45% solution)
Serious eye damage/eye irritation	Conclusion: Causes serious eye damage.
Serious eye damage/eye irritation	**Aluminium chloride, basic / Polyaluminium chloride:** Rabbit Result: Causes serious eye damage./OECD Test Guideline 405 Remarks: (45% solution)

Respiratory or skin sensitisation

Respiratory sensitization	Conclusion: Inhalation of mist may cause irritation of the respiratory system.
Mucous membranes	Conclusion: Ingestion may cause nausea, vomiting, sore throat and stomach-ache.
Skin sensitisation	Remarks: The data is based on the toxicological properties of individual components of the product. Conclusion: Not sensitizing.
Skin sensitisation	**Aluminium chloride, basic / Polyaluminium chloride:** Magnusson & Kligman test/Guinea pig Not sensitizing./OECD Test Guideline 406 Remarks: Read-across (Analogy), CAS-No., 12042-91-0

Germ cell mutagenicity

Genotoxicity in vitro

Remarks: Based on available data, the classification criteria are not met.

Genotoxicity in vitro

Aluminium chloride, basic / Polyaluminium chloride:
AMES test/Mutagenicity (Salmonella typhimurium - reverse mutation assay)/with and without
Result: negative
OECD Test Guideline 471
Aluminium chloride, basic / Polyaluminium chloride:
micronucleus test/In vitro mammalian cells/with and without
Result: negative
OECD Test Guideline 487
Aluminium chloride, basic / Polyaluminium chloride:
Lymphoma/In vitro gene mutation study in mammalian cells/with and without
Result: negative
OECD Test Guideline 476

Carcinogenicity

Carcinogenicity

Remarks: Based on available data, the classification criteria are not met.

Carcinogenicity

Aluminium chloride, basic / Polyaluminium chloride:
/Mouse/Oral/No observed adverse effect level/850/mg/kg bw/day
Not believed to be a carcinogen.

Reproductive toxicity

Toxicity for reproduction

Remarks: Based on available data, the classification criteria are not met.

Toxicity for reproduction

Aluminium chloride, basic / Polyaluminium chloride:
Screening test/Rat/male and female/Oral/1,000 mg/kg/OECD Test Guideline 422
Conclusion: No known effect.
Aluminium chloride, basic / Polyaluminium chloride:

Conclusion: Not believed to be toxic for reproduction.

Teratogenicity

Aluminium chloride, basic / Polyaluminium chloride:
Rat/female/Oral/93 mg/kg

Specific target organ toxicity - single exposure

Remarks:Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure

Remarks:Based on available data, the classification criteria are not met.

Aspiration hazard

Aspiration toxicity	No aspiration toxicity classification
Aspiration toxicity	**Aluminium chloride, basic / Polyaluminium chloride:** No aspiration toxicity classification

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Aquatic toxicity

This material is not classified as dangerous for the environment. At environmentally relevant pH 5,5 – 8, the solubility of aluminium is low. Aluminium salts dissociate with water resulting in rapid formation and precipitation of aluminium hydroxides. At pH <5.5, the free ion (Al3+) becomes the prevalent form, the increased availability at this pH is reflected in higher toxicity. At pH 6.0–7.5, solubility declines due to the presence of insoluble Al(OH)3. At higher pH (pH >8.0), the more soluble Al(OH)4 - species predominate, which again increases availability.
Aluminium salts must not be released to rivers and lakes in an uncontrolled way and pH variations around 5 - 5.5 should be avoided.

Aluminium chloride, basic / Polyaluminium chloride:
LC50/96 h/Danio rerio/OECD Test Guideline 203: > 1,000 mg/l
LC50: > 243 mg/l
Calculated as Al

NOEC/96 h/Danio rerio/semi-static test/OECD Test Guideline 203: > 1,000 mg/l
LC50: > 0.156 mg/l
Calculated as Al Maximum soluble concentration under the test conditions.

EC50/Daphnia magna (Water flea)/semi-static test/OECD Test Guideline 202: 98 mg/l
EC50: 24 mg/l
Calculated as Al
EC50/72 h/Pseudokirchneriella subcapitata (green algae)/static test/OECD Test Guideline 201: 14 mg/l
Remarks: Read-across (Analogy), CAS-No., 39290-78-3
EC50/72 h/Pseudokirchneriella subcapitata (green algae)/static test/OECD Test Guideline 201: 0.24 mg/l
Calculated as Al
NOEC/72 h/Pseudokirchneriella subcapitata (green algae)/static test/OECD Test Guideline 201: 1 mg/l
Remarks: Read-across (Analogy), CAS-No., 39290-78-3
NOEC/72 h/Pseudokirchneriella subcapitata (green algae)/static test/OECD Test Guideline 201: < 0.02 mg/l
Calculated as Al

Toxicity to other organisms

No data is available on the product itself.

Persistence and degradability

Biological degradability:

Remarks: When reacting with water on pH range 6 - 9 precipitates of aluminium hydroxides are formed.
The methods for determining biodegradability are not applicable to inorganic substances.
Chemical degradation**:**
When reacting with water on pH range 6 - 9 precipitates of aluminium hydroxides are formed.

Biological degradability:
Aluminium chloride, basic / Polyaluminium chloride:
The methods for determining the biological degradability are not applicable to inorganic substances.

Chemical degradation:
Aluminium chloride, basic / Polyaluminium chloride:
When reacting with water on pH range 5,8 - 8 precipitates of aluminium hydroxides are formed.

Bioaccumulative potential

Remarks: No bioaccumulation is expected.
Partition coefficient: n-octanol/water: Not applicable, inorganic compound

Aluminium chloride, basic / Polyaluminium chloride:
Partition coefficient: n-octanol/water: Not applicable, inorganic compound

Mobility in soil

Water solubility: completely soluble (68 °F)
Surface tension: not determined

Other adverse effects

May lower the pH of water and thus be harmful to aquatic organisms.

13. DISPOSAL CONSIDERATIONS

Product	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of in compliance with local and national regulations.
Contaminated packaging	Must be disposed of in accordance with local and national regulations.

14. TRANSPORT INFORMATION

UN number 3264

Land transport
DOT:
Description of the goods: UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminium
Proper shipping name chloride, basic / Polyaluminium chloride)
Class: 8
Packaging group: III
DOT-Labels 8

Sea transport
IMDG:
Description of the goods:
UN proper shipping name UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (ALUMINIUM CHLORIDE, BASIC / POLYALUMINIUM CHLORIDE)
Class: 8
Packaging group: III
IMDG-Labels: 8
Environmentally Hazardous Not a Marine Pollutant

Air transport
ICAO/IATA:
Description of the goods:
UN proper shipping name UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Aluminium chloride, basic / Polyaluminium chloride)
Class: 8
Packaging group: III
ICAO-Labels: 8

Special precautions for user

The product is classified as dangerous goods, as it is slightly corrosive to metals.

15. REGULATORY INFORMATION

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

SARA Title III Section 311 Categories
Corrosive to metals, Category 1,
Serious eye damage, Category 1,

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

US. CERCLA - Comprehensive Environmental Response, Compensation and Liability Act List

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Notification status

	:	
USA	:	All components of this product are included in the United States TSCA Chemical Inventory with Active Status or are not required to be listed on the United States TSCA Chemical Inventory.
Canada	:	All components of this product are included in the Canada Domestic Substance List (DSL) or are not required to be listed on the Canada Domestic Substance List (DSL).
European Union	:	All components of this product are included in 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 Industrial Chemicals (AIIC) or are not required to be listed on the Australian Inventory of Industrial Chemicals (AIIC).
China	:	All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.
South Korea	:	All components of this product are included in the Korean (ECL) inventory or are not required to be listed on the Korean (ECL) inventory.
Japan	:	All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese (ENCS) inventory.
Philippines	:	All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine (PICCS) inventory.

New Zealand	:	All components of this product are included in the New Zealand inventory (NZIoC) or are not required to be listed on the New Zealand inventory(NZIoC).
	:	This product's Taiwan Toxic Chemical Substances Control Act Inventory status has NOT been determined.

16. OTHER INFORMATION

HMIS Rating

Health: 3
Flammability: 0
Reactivity: 0

NFPA Rating

Health: 3
Fire: 0
Reactivity: 0

Training advice

Read the safety data sheet before using the product.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
This Safety Data Sheet is prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200), an adoption of the UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Revision 3 by Kemira.

Sources of key data used to compile the Safety Data Sheet

Regulations, databases, literature, own tests.

Additions, Deletions, Revisions

Relevant changes have been marked with vertical lines.

Revision Date: 08/10/2021