

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier**

Commercial Product Name
KEMIRA PAX-MP3103M

1.2 Relevant identified uses of the substance or mixture and uses advised against
Use of the Substance/Mixture

Water treatment chemical

Recommended restrictions on use

There are no uses advised against.

1.3 Details of the supplier of the safety data sheet

Kemira Oyj
P.O. Box 33000101 HELSINKI FINLAND
Telephone+358108611, Telefax. +358108621124
ProductSafety.FI.Helsinki@kemira.com

1.4 Emergency telephone number

Carechem 24 International: +44 (0) 1235 239 670

SECTION 2: HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****Classification according to Regulation (EU) 1272/2008(CLP)**

Serious eye damage; Category 1; Causes serious eye damage.


Corrosive to metals; Category 1; May be corrosive to metals.

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Irritant; Risk of serious damage to eyes.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H318 Causes serious eye damage. H290 May be corrosive to metals.
Precautionary statements	:	P264 Wash hands thoroughly after handling. Prevention: P261 Avoid breathing spray. P280 Wear protective gloves/ 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 or doctor/ physician. Storage: P406 Store in corrosive resistant container with a resistant inner liner.

Hazardous components which must be listed on the label:
 1327-41-9 Polyaluminium chloride

2.3 Other hazards

Advice; Small amounts of hydrogen chloride may be released at temperatures above the boiling point.
Potential environmental effects; May lower the pH of water and thus be harmful to aquatic organisms.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

CAS/EU number/REACH	Chemical name of the substance	Concentration	Classification according to Regulation (EU)	Classification according to EU Directives
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Registration Number			1272/2008(CLP)	67/548/EEC or 1999/45/EC
1327-41-9 215-477-2 01-2119531563-43	Polyaluminium chloride	18 - 32 %	Met. Corr. Category 1,H290 Eye Dam. Category 1,H318	Xi ,R41
42751-79-1	Epichlorohydrin-dimethylamine copolymer	14 - 22 %	Aquatic Chronic Category 3,H412	R52/53

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance.

Inhalation

Move to fresh air. In case of feeling sick consult a physician.

Skin contact

Rinse with plenty of water. If skin irritation persists, call a physician.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes. If possible use lukewarm water. Consult a physician.

Ingestion

Do NOT induce vomiting. Rinse mouth with plenty of water. Drink 1 or 2 glasses of water. Obtain medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : corrosive effects, May cause irreversible eye damage.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Rinse with plenty of water.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Extinguishing media : Not combustible.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : No special requirements.

5.2 Special hazards arising from the substance or mixture

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

5.3 Advice for firefighters

Exposure to decomposition products may be a hazard to health. In the event of fire, wear self-contained breathing apparatus.

5.4 Specific methods

Cool containers / tanks with water spray.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

For personal protection see section 8.

6.2 Environmental precautions

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.

6.3 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.

6.4 Reference to other sections

Inform the rescue service in case of entry into waterways, soil or drains.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling**

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. Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin, eyes and clothing.

7.2 Conditions for safe storage, including any incompatibilities

For quality reasons:

Keep at temperatures above 0 °C. Handling operations become difficult due to increased viscosity.

Materials for packaging

Suitable material: plastic (PE, PP, PVC), fiberglass-reinforced polyester, epoxy-coated concrete, titanium, acidproof or rubber-coated steel.

Materials to avoid:

chlorites, hypochlorites, sulphites, galvanized surfaces, Iron

Storage stability:

Storage period 12 Months

7.3 Specific end use(s)

Water treatment chemical

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Limit values in other countries

Finland:

Polyaluminium chloride

TWA = 2 mg/m³, Calculated as Al

Sweden:

Polyaluminium chloride

NGV = 1 mg/m³, total fraction, Calculated as Al

Germany:

Polyaluminium chloride

MAK = 4 mg/m³, inhalable fraction, Calculated as Al

MAK = 1,5 mg/m³, respirable fraction, Calculated as Al

Biological occupational exposure limits = 0,2 mg/m³, Calculated as Al

Belgium:

Polyaluminium chloride

TWA = 2 mg/m³, Calculated as Al

Switzerland:

Polyaluminium chloride

TWA = 2 mg/m³

Denmark:

Polyaluminium chloride

TWA = 1 mg/m³, Calculated as Al

Estonia:

Polyaluminium chloride

TWA = 2 mg/m³

Spain:

Polyaluminium chloride

VLA-ED = 2 mg/m³, Calculated as AI

France:

Polyaluminium chloride

VME = 2 mg/m³, Calculated as AI

Great Britain:

Polyaluminium chloride

TWA = 2 mg/m³, Calculated as AI

Greece:

Polyaluminium chloride

TWA = 2 mg/m³, Calculated as AI

Ireland:

Polyaluminium chloride

TWA = 2 mg/m³, : Administrative

Lithuania:

Polyaluminium chloride

TWA = 1 mg/m³

Netherlands:

Polyaluminium chloride

TWA = 2 mg/m³

Norway:

Polyaluminium chloride

TWA = 2 mg/m³, Calculated as AI

Portugal:

Polyaluminium chloride

TWA = 2 mg/m³, Calculated as AI

DNEL

Polyaluminium chloride

: End Use: Workers
 Exposure routes: oral
 Potential health effects: Long-term exposure - systemic effects
 Value: 0,5 mg/kg bw/day
 Calculated as AI

End Use: Workers
 Exposure routes: Inhalation
 Potential health effects: Long-term exposure - systemic effects

Value: 1,8 mg/m³
Calculated as AI

End Use: Consumers
Exposure routes: oral
Potential health effects: Long-term exposure - systemic effects
Value: 0,3 mg/kg bw/day
Calculated as AI

End Use: Consumers
Exposure routes: Inhalation
Potential health effects: Long-term exposure - systemic effects
Value: 1,1 mg/m³
Calculated as AI

PNEC
Polyaluminium chloride

: Sewage treatment plant
The PNEC value would be highly depending on conditions as pH and organic matter, and therefore a true PNEC cannot and does not need to be derived.

Oral
Bioaccumulative potential, Secondary poisoning, not significant, Derivation of the PNEC, Not relevant

Soil
study scientifically unjustified

Water
Not relevant, The compound is considered to have no long term effects in aquatic systems due to the rapid formation of insoluble hydroxides.

, The PNEC value would be highly depending on conditions as pH and organic matter, and therefore a true PNEC cannot and does not need to be derived.

Fresh water sediment
The PNEC value would be highly depending on conditions as pH and organic matter, and therefore a true PNEC cannot and does not need to be derived.

Marine sediment

The PNEC value would be highly depending on conditions as pH and organic matter, and therefore a true PNEC cannot and does not need to be derived.

Air
Not relevant

8.2 Exposure controls

8.2.1 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with the skin and the eyes.

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

8.2.2 Individual protection measures, such as personal protective equipment

Hand protection

Glove material: PVC and neoprene gloves

Protective gloves complying with EN 374.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.

Eye protection

Tightly fitting safety goggles. Eye wash bottle with pure water

Skin and body protection

Long sleeved clothing Wear protective clothing if necessary. Use rubber boots.

Respiratory protection

Respiratory protection is not required under normal handling conditions. If aerosols or mist are formed, eg. when cleaning containers with a high pressure washer, use half mask with filter B2.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

General Information (appearance, odour)

Physical state	liquid,
Colour	light yellow, clear

Odour not significant

Important health safety and environmental information

pH	ca. 1,0
Crystallisation point/range	-10 °C
Boiling point/boiling range	105 - 115 °C
Flash point	> 100 °C
Explosive properties:	
Lower explosion limit	not applicable
Upper explosion limit	not applicable
Density	1,24 - 1,38 g/cm ³
Solubility(ies):	
Water solubility	(20 °C) completely soluble, Information refers to the main component.
Thermal decomposition	> 200 °C
Oxidising	Not oxidizing

9.2 Other data

Corrosion

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Corrosive to metals.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Bases cause exothermic reactions.

: Contact with certain metals may form hydrogen gas, which in turn may form explosive mixtures of gases with air.

10.4 Conditions to avoid

Conditions to avoid : Avoid freezing.

High temperatures.

10.5 Incompatible materials

Materials to avoid : chlorites
 hypochlorites
 sulphites
 galvanized surfaces
 Iron

10.6 Hazardous decomposition products

Hazardous decomposition products : Small amounts of hydrogen chloride may be released at temperatures above the boiling point.

Thermal decomposition : >200 °C

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Polyaluminium chloride:

LD50/Oral/rat: > 2 000 mg/kg

LD50/Oral/: > 487 mg/kg

Calculated as Al

LC50/Inhalation/rat: > 5,6 mg/l

LC50/Inhalation/rat: > 1,4 mg/l

Calculated as Al

LD50/Dermal: > 2 000 mg/kg

Remarks: Read-across (Analogy), CAS-No., 39290-78-3

LD50/Dermal: > 550 mg/kg

Remarks: Calculated as Al

Epichlorohydrin-dimethylamine copolymer:

LD50/Oral/rat: 5 000 mg/kg

LC50/Inhalation/4 h/rat: > 20 mg/l

LD50/Dermal/rabbit: > 2 000 mg/kg

Irritation and corrosion

Skin:

Repeated or prolonged skin contact may cause: Skin irritation dry skin

Eyes:

May cause irreversible eye damage.

Respiratory system:

Inhalation of mist may cause irritation of the respiratory system.

Polyaluminium chloride:

Skin: rabbit/OECD Test Guideline 404: No skin irritation
Remarks: (45% solution)

Eyes: rabbit/OECD Test Guideline 405: Eye irritation
Remarks: (45% solution)

rabbit/OECD Test Guideline 405:
Causes severe irritation to eyes in animal experiments.

May cause irreversible eye damage.

Sensitisation

Polyaluminium chloride:
Not sensitizing.

Long term toxicity

Polyaluminium chloride:

Repeated dose toxicity:
Oral/rat:
NOAEL: 1 000 mg/kg
Remarks: Systemic toxicity bw/day

NOAEL: 90 mg/kg
Remarks: bw/day Calculated as AI

Oral/rat/OECD Test Guideline 422:
NOAEL: 200 mg/kg
Remarks: bw/day Local effects

NOAEL: 18 mg/kg
Remarks: bw/day Calculated as AI

Inhalation/rat:
NOAEL: = 0,0153 mg/l
Remarks: Read-across (Analogy) CAS-No. 12042-91-0

Inhalation:
NOAEL: = 0,0047 mg/l
Remarks: Calculated as AI

Carcinogenicity

Not believed to be a carcinogen.

Mutagenicity

Mutagenicity (Salmonella typhimurium - reverse mutation assay)/AMES test/OECD Test Guideline 471:

Result: negative

Metabolic activation: with and without

In vitro mammalian cells/micronucleus test/OECD Test Guideline 487:

Result: negative

Metabolic activation: with and without

In vitro gene mutation study in mammalian cells/Lymphoma/OECD Test Guideline 476:

Result: negative

Metabolic activation: with and without

Reproductive toxicity

Oral/rat/female/Reproductive effects/OECD Test Guideline 452:

NOAEL: 3 225 mg/kg

NOAEL F1:

Remarks: Read-across (Analogy) CAS-No. 31142-56-0

No known effect.

Oral/rat/male and female/Screening test/OECD Test Guideline 422:

NOAEL: 1 000 mg/kg

NOAEL F1:

No known effect.

Not believed to be toxic for reproduction.

Teratogenicity

Oral/rat/OECD Test Guideline 452:

NOAEL: 1 075 mg/kg

Read-across (Analogy) Did not show mutagenic or teratogenic effects in animal experiments. CAS-No. 31142-56-0

Human experience

Skin contact

Symptoms: Repeated or prolonged skin contact may cause:, dry skin, irritation

Eye contact

Symptoms: Contact with eyes causes a smarting pain and a flood of tears.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity

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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.

Polyaluminium chloride:

LC50/96 h/Danio rerio/OECD Test Guideline 203: > 1 000 mg/l

LC50: > 243 mg/l

Calculated as Al

NOEC/Danio rerio/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: 15,6 mg/l
EC50: 3,8 mg/l
Calculated as Al

NOEC/72 h/Pseudokirchneriella subcapitata (green algae)/static test/OECD Test Guideline 201: 1,1 mg/l
NOEC: 0,27 mg/l
Calculated as Al

Epichlorohydrin-dimethylamine copolymer:

LC50/96 h/Branchydanio rerio (zebra fish)/OECD Test Guideline 203: 10 - 100 mg/l

Remarks: Harmful to fish.

EC50/48 h/Daphnia magna (Water flea)/OECD Test Guideline 202: 10 - 100 mg/l

Remarks: Harmful to aquatic organisms.

Toxicity to other organisms

no data available

12.2 Persistence and degradability**Biological degradability:****Polyaluminium chloride:**

The methods for determining the biological degradability are not applicable to inorganic substances.

Epichlorohydrin-dimethylamine copolymer:

/OECD Test Guideline 301B/28 d: < 70 %

Not readily biodegradable.

Chemical degradation:**Polyaluminium chloride:**

When reacting with water on pH range 5,8 - 8 precipitates of aluminium hydroxides are formed.

12.3 Bioaccumulative potential

The product is not expected to bioaccumulate.

KEMIRA PAX-MP3103M

Ref. 2.3/REG_EU/EN

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Print Date:07.01.2016

Polyaluminium chloride:

Partition coefficient: n-octanol/water: not applicable, inorganic compound

Epichlorohydrin-dimethylamine copolymer:

The product is not expected to bioaccumulate.

12.4. Mobility in soil

Mobility

Water solubility: completely soluble (20 °C)

12.5. Results of PBT and vPvB assessment

No Chemical Safety Assessment has been carried out.

12.6 Other adverse effects

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

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Classified as hazardous waste. Must be disposed of in accordance with local and national regulations.

Thoroughly cleaned packaging material may be recycled.

Contaminated packaging

Packages that cannot be cleaned must be disposed of the same way as the unused product.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

1760

Land transport

ADR /RID:

Description of the goods:

14.2 UN proper shipping name

Corrosive liquid, n.o.s. (Polyaluminium chloride)

14.3 Transport hazard class(es)

8

14.4 Packing group:

III

Risk code

80

ADR/RID-Labels:

8

Sea transport

IMDG:

Description of the goods:

14.2 UN proper shipping name

UN1760, CORROSIVE LIQUID, N.O.S. (POLYALUMINIUM CHLORIDE)

15/17

14.3 Transport hazard class(es): 8
14.4 Packing group: III
IMDG-Labels: 8
14.5 Environmental hazards:

Air transport**ICAO/IATA:****Description of the goods**

14.2 UN proper shipping name UN1760, Corrosive liquid, n.o.s. (Polyaluminium chloride)

14.3 Transport hazard class(es): 8

14.4 Packing group: III

ICAO-Labels: 8

14.6 Special precautions for user

SECTION 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Other regulations : No restrictions identified other than those already covered in regulations.

15.2 Chemical Safety Assessment

Preparation

No Chemical Safety Assessment has been carried out.

SECTION 16: OTHER INFORMATION**Full text of H-Statements referred to under section 3.**

H290 May be corrosive to metals.
H318 Causes serious eye damage.
H412 Harmful to aquatic life with long lasting effects.

Text of R-phrases mentioned in Section 3

R41 Risk of serious damage to eyes.
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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.

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.