SAFETY DATA SHEET

FennoFloc A 19

Ref. /US/EN

Revision Date: 02/09/2017 Previous date: 02/09/2017 Print Date:04/20/2017

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product information

Product name
FennoFloc A 19

Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture

Recommended restrictions on use
There are no uses advised against.

Supplier's details

Kemira Chemicals, Inc.
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30339 Atlanta USA
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HEAD OFFICE
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P.O. Box 330
00101 HELSINKI
FINLAND
Telephone +358108611 Telefax +358108621124

Emergency telephone number

CHEMTREC: 1-800-424-9300
CANUTEC: 1-613-996-6666

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Corrosive to metals; Category 1; May be corrosive to metals.;
Serious eye damage; Category 1; Causes serious eye damage.;

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.
P264	Wash face, hands and any exposed skin thoroughly after handling.
P280	Wear protective gloves/ eye protection/ face protection.

Response:

P390	Absorb spillage to prevent material damage.
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.

Disposal:

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

Hazardous components which must be listed on the label:

- 1327-41-9 Aluminium chloride, basic / Polyaluminium chloride

Other hazards which do not result in classification

Advice; None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances /Mixtures

Chemical nature Aqueous solution

Hazardous components

Chemical Name	CAS-No.	Concentration[%]
Aluminium chloride, basic / Polyaluminium chloride	1327-41-9	45 - 50 %

Further information

For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance.

Inhalation

Move to fresh air.

Skin contact

Rinse with plenty of water. If symptoms persist, 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

Rinse mouth with plenty of water. Drink 1 or 2 glasses of water. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Not combustible.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

No special requirements.

Special hazards arising from the substance or mixture

Small amounts of hydrogen chloride may be released at temperatures above the boiling point. Heating above the decomposition temperature can cause formation of hydrogen chloride.

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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For personal protection see SDS section 8.

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.

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

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

7. HANDLING AND STORAGE

Precautions for safe handling

The work place and work methods shall be organized in such a way that direct contact with the product is prevented or minimized. For personal protection see SDS section 8.
Small amounts of hydrogen chloride may be released at temperatures above the boiling point.

Conditions for safe storage, including any incompatibilities

Avoid extreme temperatures.
For quality reasons:
Keep at temperatures below 30 °C.
Keep at temperatures above 0 °C. Handling operations become difficult due to increased viscosity.

Materials for packaging

Suitable material: plastic (PE, PP, PVC), polyester with fibreglass reinforcement, rubber-coated steel, titanium

Materials to avoid:

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

Storage stability:

Storage period 12 Months

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Form of exposure	Control parameters	Update	Basis

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice.

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

Individual protection measures, such as personal protective equipment

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 dust filter P2.

Hand protection

Glove material: PVC and neoprene gloves
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.
Break through time: > 480 min

Skin and body protection

Eye protection

Eye wash bottle with pure water Tightly fitting safety goggles.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid,
Colour	colourless, clear
Odour	not significant
pH	ca. 5.53
Melting point/range	Crystallisation point/range -10 °C
Initial boiling point and boiling range	Boiling point/boiling range 100 - 120 °C
Flash point	Not applicable, inorganic compound
Flammability (solid, gas)	The product is not flammable.
Explosive properties:	
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Density	1.3 - 1.4 g/cm³
Solubility(ies):	
Water solubility	(20 °C) completely soluble
Partition coefficient: n-octanol/water	Not applicable, inorganic compound
Decomposition temperature	> 200 °C
Oxidizing potential	Not oxidizing

Surface tension	not determined

10. STABILITY AND REACTIVITY

Reactivity

May be corrosive to metals.

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

Hazardous reactions: Bases cause exothermic reactions.

Conditions to avoid

Conditions to avoid: Avoid freezing.

Do not expose to temperatures above .?.

200 °C

Incompatible materials

Materials to avoid:
chlorites
hypochlorites
sulphites
galvanized surfaces
Iron
Strong bases

Hazardous decomposition products

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

Thermal decomposition: >200 °C

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute oral toxicity Conclusion: Low order of acute toxicity.

Acute oral toxicity **Aluminium chloride, basic / Polyaluminium chloride:**
yes/OECD Test Guideline 401/>/Rat/2,000 mg/kg/LD50

	Aluminium chloride, basic / Polyaluminium chloride: Conclusion: Calculated as Al />/487 mg/kg/LD50
Acute inhalation toxicity	**Aluminium chloride, basic / Polyaluminium chloride:** LC50/Rat/>/5.6 mg/l/OECD Test Guideline 403
	Aluminium chloride, basic / Polyaluminium chloride: LC50/Rat/>/1.4 mg/l Conclusion: Calculated as Al
Acute dermal toxicity	**Aluminium chloride, basic / Polyaluminium chloride:** LD50/> /2,000 mg/kg/OECD Test Guideline 402 Remarks: Read-across (Analogy), CAS-No., 39290-78-3
	Aluminium chloride, basic / Polyaluminium chloride: LD50/> /550 mg/kg Remarks: Calculated as Al
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: May cause irreversible eye damage.
Serious eye damage/eye irritation	**Aluminium chloride, basic / Polyaluminium chloride:** Rabbit Result: Eye irritation /OECD Test Guideline 405 Remarks: (45% solution)
	Aluminium chloride, basic / Polyaluminium chloride: Rabbit /OECD Test Guideline 405 Conclusion: Causes severe irritation to eyes in animal experiments.
	Aluminium chloride, basic / Polyaluminium chloride:
	Conclusion: May cause irreversible eye damage.
Respiratory or skin sensitisation	
Skin sensitisation	
	Not sensitizing.

Skin sensitisation

Aluminium chloride, basic / Polyaluminium chloride:

Not sensitizing.

Germ cell mutagenicity

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

Aluminium chloride, basic / Polyaluminium chloride:

Not believed to be a carcinogen.

Reproductive toxicity

Toxicity for reproduction

Aluminium chloride, basic / Polyaluminium chloride:
Reproductive effects/Rat/female/Oral/3,225 mg/kg/OECD Test Guideline 452
Remarks: Read-across (Analogy), CAS-No., 31142-56-0
Conclusion: No known effect.
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/1,075 mg/kg/OECD Test Guideline 452
Conclusion: Read-across (Analogy), Did not show mutagenic or teratogenic effects in animal experiments., CAS-No., 31142-56-0

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.

LC50/96 h/Pimephales promelas (fathead minnow)/Acute aquatic toxicity/EPA-821-R-02-012 & ASTM E729-96: 1,189 mg/l
LC50/48 h/Ceriodaphnia dubia (Water flea)/Acute aquatic toxicity/EPA-821-R-02-012 & ASTM E729-96: 12.3 mg/l

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/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

Toxicity to other organisms

No data is available on the product itself.

Persistence and degradability

Biological degradability:

The methods for determining biodegradability are not applicable to inorganic substances.
Chemical degradation**:**
When reacting with water on pH range 5,8 - 8 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

The product is not expected to bioaccumulate.
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 (20 °C)
Surface tension: not determined

Other adverse effects

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

13. DISPOSAL CONSIDERATIONS

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	Classified as hazardous waste. 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 chloride, basic / Polyaluminium chloride)
Proper shipping name	
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

polyaluminium chloride = aluminium chloride, basic = aluminium hydroxy chloride, 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
Immediate (Acute) Health Effects: Yes;
Delayed (Chronic) Health Effects: No;
Fire Hazard: No;
Sudden Release Of Pressure Hazard: No;
Reactivity Hazard: No;

SARA 313 - Specific Toxic Chemical Listings

None Present ()

Aluminium chloride, basic / Polyaluminium chloride (1327-41-9)

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.

None Present ()

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

Notification status

:

TSCA	:	All components of this product are included in the United States TSCA Chemical Inventory or are not required to be listed on the United States TSCA Chemical Inventory.
DSL	:	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).
AICS	:	All components of this product are included in the Australian Inventory of Chemical Substances (AICS) or are not required to be listed on the Australian Inventory of Chemical Substances (AICS).
IECSC	:	All components of this product are included on the Chinese inventory or are not required to be listed on the Chinese inventory.
KECI	:	All components of this product are included in the Korean (ECL) inventory or are not required to be listed on the Korean (ECL) inventory.
PICCS	:	All components of this product are included on the Philippine (PICCS) inventory or are not required to be listed on the Philippine (PICCS) inventory.
ENCS	:	All components of this product are included on the Japanese (ENCS) inventory or are not required to be listed on the Japanese (ENCS) inventory.
EINECS	:	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.
NZIoC	:	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).

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.

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.