MARINFLOC a clean sea

SAFETY DATA SHEET

SAFETY DATA SHEET according to Regulation (EC) No. 1907/2006

Ref. 1.4/REG_EU/EN

Revision Date: 15.04.2025 Previous date: 15.02.2023

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Commercial Product Name
MARINFLOC FLOCCULANT

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture

Cosmetic additive, Water treatment chemical

Recommended restrictions on use

1.3 Details of the supplier of the safety data sheet

Marinfloc AB
Industrivägen 10
472 95 VAREKIL, SWEDEN
Telephone +46304606300
E-mail: marinfloc@marinfloc.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)
The product is not classified as dangerous according to Regulation (EC) No. 1272/2008.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard statements	:	Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008. Safety data sheet available on request.

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.
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.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical nature : Dialuminium Chloride Pentahydroxide

Chemical name	CAS-No. EINECS-No. / ELINCS No.	Concentration [%]
Dialuminium Chloride Pentahydroxide	12042-91-0 234-933-1	>= 35 - <= 45
Nickel dichloride	7718-54-9 231-743-0	<= 0,005

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

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

Inhalation
Move to fresh air. Keep warm. If symptoms persist, seek medical advice.

Skin contact
Rinse with water. If symptoms persist, seek medical advice.

Eye contact
Rinse thoroughly with plenty of water, also under the eyelids. If possible use lukewarm water. If symptoms persist, call a physician.

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

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : May dry out skin and cause irritation.

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.
Cool containers/tanks with water spray.

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. Heating above the decomposition temperature can cause formation of hydrogen chloride.

5.3 Advice for firefighters

Exposure to decomposition products may be a hazard to health. Wear self-contained breathing apparatus and protective suit.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8.

6.2 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.

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 remaining material. Must be disposed of in accordance with local and national regulations. After cleaning, flush away traces with water.

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. After cleaning, flush away traces with water.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

7.2 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, epoxy-coated concrete, titanium, resistant stainless or rubber-coated steel.
Unsuitable material: Avoid contact with unalloyed steel or galvanized surfaces., materials not resistant to acid, Copper, Aluminium, Iron

Materials to avoid:

Metals, Bases, Oxidizing agents, hypochlorites, sulphites

7.3 Specific end use(s)

No further information available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Limit values in other countries

Finland:

Dialuminium Chloride Pentahydroxide
FI OEL, 1998-06-01, TWA = 2 mg/m³, Calculated as Al

Sweden:

Dialuminium Chloride Pentahydroxide
SE AFS, 1996-08-01, NGV = 1 mg/m³, Total dust, Calculated as Al

Belgium:

Dialuminium Chloride Pentahydroxide
BE OEL, 2002-10-25, TWA = 2 mg/m³, Calculated as Al

Switzerland:

Dialuminium Chloride Pentahydroxide

CH SUVA, 2001-01-01, TWA = 2 mg/m³, inhalable dust

Denmark:
Dialuminium Chloride Pentahydroxide
DK OEL, 2005-04-01, TWA = 1 mg/m³, Calculated as Al

Estonia:
Dialuminium Chloride Pentahydroxide
EE OEL, 2001-09-18, TWA = 2 mg/m³

Spain:
Dialuminium Chloride Pentahydroxide
ES VLA, 2001-07-01, VLA-ED = 2 mg/m³, Calculated as Al

France:
Dialuminium Chloride Pentahydroxide
FR VLE, 1996-12-01, VME = 2 mg/m³, : indicative exposure limits

Great Britain:
Dialuminium Chloride Pentahydroxide
UK EH40, 1997-01-01, TWA = 2 mg/m³

Greece:
Dialuminium Chloride Pentahydroxide
GR OEL, 1999-05-01, TWA = 2 mg/m³, Calculated as Al

Ireland:
Dialuminium Chloride Pentahydroxide
IE OEL, 2002-01-01, TWA = 2 mg/m³

Lithuania:
Dialuminium Chloride Pentahydroxide
LT OEL, 2001-12-12, TWA = 1 mg/m³

Norway:
Dialuminium Chloride Pentahydroxide
NO OEL, 1996-02-01, TWA = 2 mg/m³, Calculated as Al

Portugal:
Dialuminium Chloride Pentahydroxide
PT OEL, 2003-10-01, TWA = 2 mg/m³, Calculated as Al

DNEL

Dialuminium Chloride Pentahydroxide	:	End Use: Workers Exposure routes: dermal Potential health effects: Long-term, systemic effects Value: 1,94 mg/kg/day
		End Use: Workers

Exposure routes: Inhalation
Potential health effects: Long-term, systemic effects
Value: 6,8 mg/m³

8.2 Exposure controls

8.2.1 **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. Ensure adequate ventilation.

8.2.2 Individual protection measures, such as personal protective equipment

Hand protection

Glove material: Rubber or plastic 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.
Protective gloves complying with EN 374.

Eye protection

Tightly fitting safety goggles.
Eye wash bottle with pure water
(EN 166)

Skin and body protection

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 dust filter P2.

8.2.3 Environmental exposure controls

Do not allow uncontrolled discharge of product into the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

General Information (appearance, odour)

Physical state	liquid,
Colour	colourless, Yellowish
Odour	odourless
Odour Threshold	not determined

Important health safety and environmental information

pH	4,0 - 4,6 (30 g/l)
Freezing point	-5 °C
Boiling point/boiling range	100 - 116 °C
Flash point	Not applicable, inorganic compound In accordance with column 2 of REACH Annex VII, the study does not need to be conducted.
Evaporation rate	No data available
Flammability (solid, gas) :	Not applicable
Explosive properties:	
Lower explosion limit	Not explosive
Upper explosion limit	Not explosive
Vapour pressure	0,032 (25 °C)
	similar to water
Relative vapour density	similar to water
Density	1,32 - 1,360 g/cm³ (20 °C)
Solubility(ies):	
Water solubility	(20 °C)
	completely miscible
Partition coefficient: n-octanol/water	Not applicable, inorganic compound
Auto-ignition temperature	
Thermal decomposition	> 100 °C
Viscosity:	
Viscosity, dynamic	20 - 30 mPa.s (20 °C)
Oxidizing	Not oxidizing
Volatile organic content (VOC)	Not applicable

9.2 Other information

Surface tension	not determined
Corrosion	6,25 mm/a
	not corrosive

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid	:	Avoid high temperatures.

10.5 Incompatible materials

Materials to avoid	:	Metals Bases Oxidizing agents hypochlorites sulphites

10.6 Hazardous decomposition products

Hazardous decomposition products	:	hydrogen chloride (HCl)
	:	Hydrogen, by reaction with metals
Thermal decomposition	:	>100 °C

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

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

Dialuminium Chloride Pentahydroxide:
LD50/Oral/Rat: > 2 000 mg/kg
LD50/Dermal/Rat: > 2 000 mg/kg

Irritation and corrosion

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

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

Dialuminium Chloride Pentahydroxide:

Skin: Rabbit/OECD Test Guideline 404: No irritating effects.

Eyes: Rabbit/OECD Test Guideline 405: No eye irritation

Sensitisation

Rabbit: Not sensitizing.
Remarks: Information given is based on data obtained from similar substances.

Dialuminium Chloride Pentahydroxide:
Guinea pig/OECD Test Guideline 406 Not sensitizing.

Long term toxicity

Repeated dose toxicity

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

Carcinogenicity

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

Mutagenicity

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

Reproductive toxicity

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

Dialuminium Chloride Pentahydroxide:
Repeated dose toxicity:
Oral/Rat/OECD Test Guideline 422:
NOAEL: 1 000 mg/kg
Remarks: bw/day Systemic toxicity Read-across (Analogy) CAS-No. 1327-41-9

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

Oral/Rat/OECD Test Guideline 422:
NOAEL: 200 mg/kg
Remarks: bw/day Local effects Read-across (Analogy) CAS-No. 1327-41-9

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

Dermal:
Remarks: No data available

Inhalation:
Remarks: study scientifically unjustified

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
Remarks: Read-across (Analogy) 1327-41-9

In vitro gene mutation study in mammalian cells/Lymphoma/OECD Test Guideline 476:
Result: negative
Metabolic activation: with and without
Remarks: Read-across (Analogy) 1327-41-9

Reproductive toxicity

Oral/Rat/male and female/Screening test/OECD Test Guideline 422:
NOAEL: 1 000 mg/kg
NOAEL F1:
Remarks: Read-across (Analogy) 1327-41-9
No known effect.

Not believed to be toxic for reproduction.

Teratogenicity

Oral/Rat/OECD Test Guideline 452:
Mother: 3 225 mg/kg
Read-across (Analogy) Did not show mutagenic or teratogenic effects in animal experiments. CAS-

No. 31142-56-0

STOT - single exposure

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

Dialuminium Chloride Pentahydroxide

The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

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

Dialuminium Chloride Pentahydroxide

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration toxicity No aspiration toxicity classification

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

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.

Dialuminium Chloride Pentahydroxide:
/96 h/Danio rerio (zebra fish)/OECD Test Guideline 203: > 100 mg/l
EC50/48 h/Daphnia magna (Water flea)/OECD Test Guideline 202: 98 mg/l
Remarks: Read-across (Analogy), CAS-No., 1327-41-9
EC50/72 h/Pseudokirchneriella subcapitata (green algae)/static test/OECD Test Guideline 201: 14 mg/l
EC50: 0,24 mg/l
Calculated as Al

1,2-Ethanediamine, polymer with (chloromethyl)oxirane and N-methylmethanamine:
LC50/96 h/Branchydanio rerio (zebra fish)/OECD Test Guideline 203: 10 - 100 mg/l
EC50/48 h/Daphnia magna (Water flea)/OECD Test Guideline 202: 10 - 100 mg/l

Toxicity to other organisms

No data is available on the product itself.

12.2 Persistence and degradability

Biological degradability:

The methods for determining biodegradability are not applicable to inorganic substances. Hydrolyses in water.

Chemical degradation**:**

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

Biological degradability:
1,2-Ethanediamine, polymer with (chloromethyl)oxirane and N-methylmethanamine:
/OECD Test Guideline 301B/28 d: < 70 %

Not readily biodegradable.

Chemical degradation:
Dialuminium Chloride Pentahydroxide:

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

12.3 Bioaccumulative potential

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

Dialuminium Chloride Pentahydroxide:
Partition coefficient: n-octanol/water: log Pow: << 3

12.4.Mobility in soil

Mobility

Vapour pressure: 0,032 (25 °C)
Water solubility: completely miscible (20 °C)
Surface tension: not determined

Adsorbs on soil.

12.5. Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).

This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

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 Must be disposed of in accordance with local and national regulations.Do not dispose of waste into sewer.
Thoroughly cleaned packaging material may be recycled.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

Land transport

Not classified as dangerous in the meaning of transport regulations.

Sea transport

Not classified as dangerous in the meaning of transport regulations.

Air transport

Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

14.8 Special precautions for user

None known.

SECTION 15: REGULATORY INFORMATION

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

Notification status

TSCA : 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.
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).
AIIC	:	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).
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).
	:	This product's Taiwan Toxic Chemical Substances Control Act Inventory status has NOT been determined.

15.2 Chemical safety assessment

A Chemical Safety Assessment is not required for this mixture.

SECTION 16: OTHER INFORMATION

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.