## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

**Trade name/designation** BlueFloc

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

**Use of the substance/mixture**
Process aid for industrial application.
Water treatment product

### 1.3 Details of the supplier of the safety data sheet

**Supplier**
HAMANN AG
Bei der Lehmkuhle 4
D-21279 Hollenstedt
Telephone +49 (0)4165 2211 0
E-mail info@hamannag.com
Website www.hamannag.com

Department responsible for information:
Telephone +49 (0)4165 2211 0

E-mail (competent person):
info@hamannag.com

### 1.4 Emergency telephone number

- +49 (0)4165 2211 0
  Only available during office hours.

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Remark**
This mixture is not classified as hazardous according to Regulation (EC) 1272/2008 [CLP/GHS].

### 2.2 Label elements

**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

**Precautionary statements**
P262 Do not get in eyes, on skin, or on clothing.

### 2.3 Other hazards

**Results of PBT and vPvB assessment**
The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

## SECTION 3: Composition / information on ingredients

### 3.2 Mixtures

**Hazardous ingredients**

| CAS No. | EC No. | Substance name | Concentration | Classification according to Regulation (EC) No 1272/2008 [CLP] | SCL/ M/ ATE |
|---|---|---|---|---|---|
| 12042-91-0 | 234-933-1 | Dialuminium chloride pentahydroxide | 40 - 50 weight-% | | ATE(oral): 9187 mg/kg bw/day<br>ATE(dermal): > 2000 mg/kg |
| 42751-79-1 | Polymer | Polymer of epichlorohydrin and dimethylamine with ethylenediamine | 0 < 10 weight-% | Aquatic Chronic 3; H412 | ATE(oral): > 2000 mg/kg<br>ATE(dermal): > 2000 mg/kg |

| REACH No. | Substance name |
|---|---|
| 01-2119533142-53-XXXX | Dialuminium chloride pentahydroxide |

**Additional information**
Polyaluminum hydroxide chloride solution with a cationic polymer.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

**General information**
Remove contaminated, saturated clothing immediately.
In case of occurring and / or persistent complaints consult a doctor.

**Following inhalation**
Provide fresh air.

**Following skin contact**
Wash immediately with:
Water
Consult a doctor if skin irritation occurs and/or persists.

**After eye contact**
After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.
In case of irritation consult an ophthalmologist.
Remove contact lenses.

**Following ingestion**
In the event of symptoms seek medical treatment.
Do NOT induce vomiting.
Rinse mouth immediately and drink plenty of water.

### 4.2 Most important symptoms and effects, both acute and delayed

No data available

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media**
Make sure that the extinguishing measures are adapted to the surrounding fire.
alcohol resistant foam
Dry extinguishing powder
Carbon dioxide ($CO_2$)
Water spray jet

**Unsuitable extinguishing media**
Full water jet

### 5.2 Special hazards arising from the substance or mixture

**Hazardous combustion products**
The product itself does not burn.
Toxic substances may be released during thermal decomposition of the product.
Nitrogen oxides (NOx)
Carbon monoxide
Carbon dioxide ($CO_2$)
Hydrogen chloride (HCl)
Hydrogen cyanide (hydrocyanic acid)

### 5.3 Advice for firefighters

**Special protective equipment for firefighters**
In case of fire: Wear self-contained breathing apparatus.
Wear full chemical protective clothing.

**Additional information**
Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Down fumes resulting from fire with water spray.
Extinguishing water is acidic.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel**
Provide adequate ventilation.
Use personal protection equipment.
Keep unprotected people away.
Avoid skin and eye contact.

### 6.2 Environmental precautions

If the product contaminates soil, waterways or drains inform the corresponding authorities.
Do not allow to enter into surface water or drains.

### 6.3 Methods and material for containment and cleaning up

**For containment**
Send in suitable containers for recovery or disposal.
Suitable material for taking up:
Sand
Sawdust
Universal binder

### 6.4 Reference to other sections

Safe handling: see section 7
Disposal: see section 13
Personal protection equipment: see section 8
Emergency telephone number: see section 1

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

**Protective measures**
If local exhaust ventilation is not possible or not sufficient, the entire working area should be ventilated by technical means.
Take the usual precautions when handling with chemicals.
Avoid skin and eye contact.
The product is not:
Combustible
Keep the packing dry and well sealed to prevent contamination and absorbtion of humidity.
Keep in a cool, well-ventilated place.
Avoid:
Eye contact
Skin contact

**Advices on general occupational hygiene**
Thorough skin-cleansing after handling the product.
Apply skin care products after work.
When using do not eat, drink, smoke, sniff.
Remove contaminated, saturated clothing immediately.
Keep away from food and drink.
Use protective skin cream before handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

**Requirements for storage rooms and vessels**
Keep/Store only in original container.
Keep container tightly closed.
Suitable floor material:
Acid-resistant

**Storage class**
12 non-combustible liquids that cannot be assigned to any of the above storage classes

**Materials to avoid**
Do not store together with:
alkali
Food and feedingstuffs
Oxidising agent

**Further information on storage conditions**
Store and transport separate of food.
Store at temperatures between 5 and 35 °C.
Protect from direct solar radiation.

### 7.3 Specific end use(s)
No data available

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**DNEL worker**

| CAS No. | Substance name | DNEL value | DNEL type | Remark |
|---|---|---|---|---|
| 12042-91-0 | Dialuminium chloride pentahydroxide | 6.8 mg/m³ | long-term inhalative (systemic) | |
| 12042-91-0 | Dialuminium chloride pentahydroxide | 1.94 mg/kg bw/day | long-term dermal (systemic) | |

**DNEL Consumer**

| CAS No. | Substance name | DNEL value | DNEL type | Remark |
|---|---|---|---|---|
| 12042-91-0 | Dialuminium chloride pentahydroxide | 1.7 mg/m³ | long-term inhalative (systemic) | |
| 12042-91-0 | Dialuminium chloride pentahydroxide | 0.97 mg/kg bw/day | long-term dermal (systemic) | |
| 12042-91-0 | Dialuminium chloride pentahydroxide | 1.2 mg/kg bw/day | Long-term – oral, systemic effects | |

### 8.2 Exposure controls

**Appropriate engineering controls**

**Technical measures to prevent exposure**
Ensure good ventilation, where necessary use fume hood.

**Personal protection equipment**

**Eye/face protection**
safety goggles

**Hand protection**
The selection of the suitable gloves does not only depend on different material, but also on further marks of quality and varies from manufacturer to manufacturer.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.
Glove material specification [make/type, thickness, permeation time/life, wetting resistance]: fluorine rubber (Viton), 0,7 mm, 240 min, 0,65. e.g. "Vitoject" (KCL GmbH, Email: Vertrieb@kcl.de)

**Body protection:**
Light protective clothing.

**Respiratory protection**
Not necessary if the ventilation is sufficient.
Respiratory protection necessary at:
aerosol or mist formation
Multi-purpose filter ABEK/P2

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**Physical state**
liquid

**Colour**
colorless to yellowish

**Odour**
uncharacteristic

**Safety relevant basis data**

| | Value | Method | Source, Remark |
|---|---|---|---|
| Odour threshold: | not determined | | |
| Melting point/freezing point | Melting point approx. -7 °C | | |
| Boiling point or initial boiling point and boiling range | approx. 110 °C | | |
| flammability | not determined | | |
| Lower and upper explosion limit | not determined | | |
| Flash point | | | not applicable |
| Auto-ignition temperature | | | Product is not self igniting. |
| Decomposition temperature | > 150 °C | | |
| Decomposition temperature | | | No decomposition below 200°C. |
| pH | in delivery state approx.2.5- 4.4 (20°C) | | |
| Viscosity | dynamic approx.10- 20 mPa*s (20°C) | | |
| Solubility(ies) | Water solubility | | soluble |
| Solubility(ies) | polar solvents | | soluble in polar solvents |
| Partition coefficient n-octanol/water (log value) | not determined | | |
| Vapour pressure | not determined | | |
| Density and/or relative density | 1.15- 1.31 g/mL (20°C) | | |
| Relative vapour density | not determined | | |
| particle characteristics | not determined | | |

### 9.2 Other information

**Other safety characteristics**

| | Value | Method | Source, Remark |
|---|---|---|---|
| Explosive properties | | | The product is not explosive. |

**Other information**
see technical data sheet

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under normal conditions of use.
Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Reactions with metals, with evolution of hydrogen.
Reactions with alkalies.

### 10.4 Conditions to avoid

Avoid heat and frost.
Temperatures > 50°C.

### 10.5 Incompatible materials

Alkali (lye)
metal

### 10.6 Hazardous decomposition products

Hydrogen
Concerning possible decomposition products see section 5.

### Additional information

As a general rule we recommend avoiding the contact with strong chemical reagents, such as acids, bases, reductors and oxidizers.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

**Acute toxicity**

**Animal data**

| | Effective dose | Method,Evaluation | Source, Remark |
|---|---|---|---|
| Acute oral toxicity | CAS No.42751-79-1<br>Polymer of epichlorohydrin and dimethylamine with ethylenediamine<br>LD50: > 2000 mg/kg<br>Species Rat | | |
| | CAS No.12042-91-0<br>Dialuminium chloride pentahydroxide<br>LD50: 9187 mg/kg bw/day Species Rat | OECD 401 äquivalent | |

| | Effective dose | Method,Evaluation | Source, Remark |
|---|---|---|---|
| Acute dermal toxicity | CAS No.42751-79-1<br>Polymer of epichlorohydrin and dimethylamine with ethylenediamine<br>LD50: > 2000 mg/kg<br>Species Rat | | |
| | CAS No.12042-91-0<br>Dialuminium chloride pentahydroxide<br>LD50: > 2000 mg/kg<br>Species Rat | OECD 402 äquivalent | |
| Acute inhalation toxicity | not determined | | |

**Skin corrosion/irritation**

**Animal data**

| Result / Evaluation | Method | Source, Remark |
|---|---|---|
| CAS No.12042-91-0 Dialuminium chloride pentahydroxide<br>not classifiedSpecies Rabbit<br>Exposure time 4 h | OECD 404 | CAS No.12042-91-0 Dialuminium chloride pentahydroxide |

No irritant effect known.

**Serious eye damage/irritation**

**Animal data**

| Result / Evaluation | Method | Source, Remark |
|---|---|---|
| CAS No.12042-91-0 Dialuminium chloride pentahydroxide<br>not classifiedSpecies Rabbit<br>Exposure time 24 h | OECD 405 | CAS No.12042-91-0 Dialuminium chloride pentahydroxide |

No irritant effect known.

**Sensitisation to the respiratory tract**

**Assessment/classification**
No sensitizing effects known.

**Skin sensitisation**

**Animal data**

| Result / Evaluation | Dose / Concentration | Method | Source, Remark |
|---|---|---|---|
| not classified | CAS No.12042-91-0<br>Dialuminium chloride pentahydroxide<br>Species Guinea pig | OECD 406 | |

No sensitizing effects known.

**Germ cell mutagenicity**

not determined

**Carcinogenicity**

not determined

**Reproductive toxicity**

not determined

**STOT-single exposure**

**STOT SE 1 and 2**

**Other information**

No effects known.

**STOT-repeated exposure**

**Other information**

No effects known.

**Aspiration hazard**

**Remark**

No classification in terms of aspiration.

### 11.2 Information on other hazards

**Symptoms related to the physical, chemical and toxicological characteristics**

| | Effective dose | Method,Evaluation | Source, Remark |
|---|---|---|---|
| Endocrine disrupting properties | | | Based on available data, the classification criteria are not met. |

**Other information**

The product should be handled with the care usual when dealing with chemicals.
Further hazardous properties can not be excluded.

## SECTION 12: Ecological information

### 12.1 Toxicity

**Aquatic toxicity**

| | Effective dose | Method,Evaluation | Source, Remark |
|---|---|---|---|
| Acute (short-term) fish toxicity | CAS No.12042-91-0<br>Dialuminium chloride pentahydroxide<br>LC50: 186 mg/L Species Danio rerio<br>Test duration 96 h | OECD 203 | |
| Chronic (long-term) fish toxicity | CAS No.12042-91-0<br>Dialuminium chloride pentahydroxide<br>NOEC 56.48 mg/L Species Pimephales promelas (fathead minnow)<br>Test duration 7 d | EPA 821/R-02-014 | |
| Acute (short-term) toxicity to crustacea | CAS No.12042-91-0<br>Dialuminium chloride pentahydroxide<br>EC50 98 mg/L Species Daphnia magna (Big water flea)<br>Test duration 48 h | OECD 202 | |

| | Effective dose | Method,Evaluation | Source, Remark |
|---|---|---|---|
| Chronic (long-term) toxicity to aquatic invertebrate | not determined | | |
| Acute (short-term) toxicity to algae and cyanobacteria | CAS No.12042-91-0<br>Dialuminium chloride pentahydroxide<br>ErC50: 14 mg/L Species Pseudokirchneriella subcapitata<br>Test duration 72 h | OECD 201 | |
| Chronic (long-term) toxicity to aquatic algae and cyanobacteria | not determined | | |
| Toxicity to other aquatic plants/organisms | not determined | | |
| Toxicity to microorganisms | CAS No.12042-91-0<br>Dialuminium chloride pentahydroxide<br>EC50 1000 mg/L | Fermentation tube test | |

### 12.2 Persistence and degradability

| | Value | Method | Source, Remark |
|---|---|---|---|
| Biodegradation | | | Methods for the determination of biodegradability are not applicable to inorganic substances. |

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

### 12.6 Endocrine disrupting properties

| | Effective dose | Method,Evaluation | Source, Remark |
|---|---|---|---|
| Endocrine disrupting properties | | | Based on available data, the classification criteria are not met. |

### 12.7 Other adverse effects

**Additional ecotoxicological information**

**Additional information**

Do not allow undiluted product to reach sewage or drainage ditch.
Ecological data for the mixture are not available.

## * SECTION 13: Disposal considerations

### * 13.1 Waste treatment methods

**Appropriate disposal / Product**
Dispose of waste according to "Kreislaufwirtschaftsgesetz (KrWG)".
This means that a distinction must be made between "wastes for recycling" and "wastes for disposal". Particular aspects - in the main concerning delivery - are also governed by the German federal states.

**Appropriate disposal / Package**
Disposal in accordance with local regulations.

* **Remark**
The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

## * SECTION 14: Transport information

| | Land transport (ADR/RID) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|---|---|---|---|
| **14.1 UN number or ID number** | - | - | - |
| **14.2 UN proper shipping name** | - | - | - |
| **14.3 Transport hazard class(es)** | - | - | - |
| **14.4 Packing group** | - | - | - |
| **14.5 Environmental hazards** | No | No | No |

**14.6 Special precautions for user**
No data available

**14.7 Maritime transport in bulk according to IMO instruments**
No data available

* **All transport carriers**
No dangerous good in sense of these transport regulations.

## SECTION 15: Regulatory information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
No data available

**15.2 Chemical Safety Assessment**
Chemical safety assessments for substances in this mixture were not carried out.

## * SECTION 16: Other information

**Indication of changes**
* Data changed compared with the previous version

**Abbreviations and acronyms**

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging
ECHA: European Chemicals Agency
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
REACH: Registration, Evaluation and Authorization of Chemicals
SVHC: Substance of Very High Concern
PBT: persistent and bioaccumulative and toxic
vPvB: very persistent, very bioaccumulative
WGK: water hazard class
See overview table at www.euphrac.eu

* **Key literature references and sources for data**

Data sheets of the sub-supplier.

**Classification for mixtures and used evaluation method according to regulation (EC) No 1272/2008 [CLP]**

The classification of the mixture was carried out following the calculation method according to the CLP Regulation (1272/2008).

* **Training advice**

See technical data sheet.

**Additional information**

National and local regulations concerning chemicals shall be observed.
The national special regulations must be implemented by each user on his own responsibility!
The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.
Please observe the following disclaimer! Our safety data sheets have been compiled according to effective EU directives, WITHOUT taking into account the special national directives concerning the handling of hazardous substances.

**Relevant H- and EUH-phrases (Number and full text)**

H412 Harmful to aquatic life with long lasting effects.

**Indication of changes**

* Data changed compared with the previous version