ConnectingChemistry

BRENNTAG

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

POLYALUMINIUM CHLORIDE HYDROXIDE SULPHATE (PAC)

Version 9.0 Print Date 2019/04/24

Revision date / valid from 2019/04/24 **MSDS code: MPAC100**

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

1.1. Product identifier

Trade name : POLYALUMINIUM CHLORIDE HYDROXIDE SULPHATE (PAC)

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

Use of the Substance/Mixture : Water treatment chemical

Uses advised against : At this moment we have not identified any uses advised against

1.3. Details of the supplier of the safety data sheet

Company : Brenntag UK Limited
Alpha House, Lawnswood Business Park
GB LS16 6QY Leeds

Telephone : +44 (0) 113 3879 200

Telefax : +44 (0) 113 3879 280

E-mail address : msds@brenntag.co.uk

1.4. Emergency telephone number

Emergency telephone number : Emergency only telephone number (open 24 hours): +44 (0) 1865 407333 (N.C.E.C. Culham)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

REGULATION (EC) No 1272/2008			
Hazard class	**Hazard category**	**Target Organs**	**Hazard statements**
Serious eye damage	Category 1	---	H318
Corrosive to metals	Category 1	---	H290

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

Most important adverse effects

Human Health	:	See section 11 for toxicological information.
Physical and chemical hazards	:	Small amounts of hydrogen chloride may be release at temperatures above the boiling point., May lower the pH of the water and thus be harmful to aquatic organisms.
Potential environmental effects	:	See section 12 for environmental information.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard symbols :

Signal word	:	Danger	
Hazard statements	:	H290	May be corrosive to metals.
		H318	Causes serious eye damage.
Precautionary statements			
Prevention	:	P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
		P261	Avoid breathing spray.
		P234	Keep only in original packaging.
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 a corrosion resistant container with a resistant inner liner.
Disposal	:	P501	Dispose of contents/ container in accordance with the local/regional/international regulations.

Hazardous components which must be listed on the label:

- Aluminum chloride hydroxide sulfate

2.3. Other hazards

For Results of PBT and vPvB assessment see section 12.5.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
Aluminum chloride hydroxide sulfate			
CAS-No. : 39290-78-3 EC-No. : 254-400-7 EU REACH-Reg. No. : 01-2119531540-51-xxxx	>= 15 - <= 25	Eye Dam.1 Met. Corr.1	H318 H290

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

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice : Show this safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air. If symptoms persist, call a physician. If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Wash off with plenty of water. If skin irritation persists, call a physician.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.

If swallowed : Rinse mouth with water. Do NOT induce vomiting. If a person vomits when lying on his back, place him in the recovery position. If symptoms persist, call a physician.

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

Symptoms : corrosive effects, Serious eye damage, See Section 11 for more detailed information on health effects and symptoms.

Effects : See Section 11 for more detailed information on health effects

and symptoms.

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

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Not combustible.
Unsuitable extinguishing media	:	High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Heating or fire can release toxic gas.
Hazardous combustion products	:	Hydrogen chloride, Sulphur oxides, Carbon oxides

5.3. Advice for firefighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus and full protective suit when necessary.
Further advice	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Avoid contact with skin, eyes and clothing. Provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Further information	:	Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	:	Keep container tightly closed. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.
Hygiene measures	:	Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Small amounts of hydrogen chloride may be release at temperatures above the boiling point.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep containers tightly closed.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Further information on storage conditions	:	Keep tightly closed in a dry and cool place. Keep in a well-ventilated place. Protect from frost, heat and sunlight.
Advice on common storage	:	Keep away from food, drink and animal feedingstuffs. Materials to avoid: Chlorite Sulphite Iron Galvanised surfaces Hypochlorites Metals
Storage temperature	:	> 0 - < 30 °C

7.3. Specific end use(s)

Specific use(s)	:	No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Component:	Aluminum chloride hydroxide sulfate	CAS-No. 39290-78-3
Other Occupational Exposure Limit Values		

UK. EH40 Workplace Exposure Limits (WELs), Time Weighted Average (TWA):
2 mg/m3

ELV (IE), Time Weighted Average (TWA):
2 mg/m3

8.2. Exposure controls

Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

Provide sufficient air exchange and/or exhaust in work rooms.
Personal protective equipment

Respiratory protection

Advice	:	Breathing apparatus needed only when aerosol or mist is formed. In case of intensive or longer exposure use self-contained breathing apparatus. In case of brief exposure or low pollution use breathing filter apparatus. Combination filter: A-P2

Hand protection

Advice	:	Protective gloves should be replaced at first signs of wear.
Material	:	PVC
Break through time	:	> 480 min
Guideline	:	DIN EN 374
Material	:	Neoprene
Break through time	:	> 480 min
Guideline	:	DIN EN 374

Eye protection

Advice	:	Tightly fitting safety goggles Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection

Advice	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear appropriate chemical resistant clothing and boots.

Protective measures

Advice	:	Handle in accordance with good industrial hygiene and safety practice. Ensure that eye flushing systems and safety showers are located close to the working place.

Environmental exposure controls

General advice	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	:	liquid
Colour	:	clear yellowish
Odour	:	not significant
Odour Threshold	:	no data available
pH	:	1.5 - 2.5
Crystallization point	:	-11 °C
Boiling point/boiling range	:	100 - 120 °C
Flash point	:	Not applicable
Evaporation rate	:	no data available
Flammability (solid, gas)	:	The product is not flammable.
Upper explosion limit	:	Not applicable
Lower explosion limit	:	Not applicable
Vapour pressure	:	no data available
Relative vapour density	:	no data available
Density	:	1.19 - 1.23 g/cm3
Water solubility	:	(20 °C) completely soluble
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	no data available
Thermal decomposition	:	> 200 °C Do not allow evaporation to dryness.
Viscosity, dynamic	:	ca. 10 - 20 mPa.s (20 °C)
Explosivity	:	Not applicable
Oxidizing properties	:	not oxidising

9.2. Other information

Surface tension	:	not determined

SECTION 10: Stability and reactivity

10.1. Reactivity

Advice	:	No decomposition if stored and applied as directed. Is corrosive to metals.

10.2. Chemical stability

Advice	:	Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions	:	In contact with metals generates hydrogen gas, which together with air can form explosive mixtures. Strong bases cause violent reaction by neturalisation.

10.4. Conditions to avoid

Conditions to avoid	:	Extremes of temperature and direct sunlight.Keep from freezing.
Thermal decomposition	:	>200 °C Do not allow evaporation to dryness.

10.5. Incompatible materials

Materials to avoid	:	Galvanised metals, Metals, Bases, Aluminium, Copper, Iron, Leather

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Data for the product
Acute toxicity
Oral
Please find this information in the listing of the component/components below in this section.
Inhalation
no data available

Dermal

no data available

Irritation

Skin

Result : Prolonged or repeated contact may dry skin and cause irritation.

Eyes

Result : Causes serious eye damage.

Sensitisation

Result : not sensitizing

CMR effects

CMR Properties

Carcinogenicity	:	Contains no ingredient listed as a carcinogen
Mutagenicity	:	Contains no ingredient listed as a mutagen
Teratogenicity	:	It is not considered teratogenic.
Reproductive toxicity	:	Contains no ingredient listed as toxic to reproduction

Specific Target Organ Toxicity

Single exposure

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

Repeated exposure

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

Other toxic properties

Repeated dose toxicity

Repeated or prolongued skin contact may cause skin irritation and/or dry skin.

Aspiration hazard

No aspiration toxicity classification,

Component: Aluminum chloride hydroxide sulfate CAS-No. 39290-78-3

Acute toxicity

Oral

LD50	:	2360 mg/kg (Rat)

Inhalation

LC50	:	> 5 mg/l (Rat, male and female; 4 h; dust/mist) (OECD Test Guideline 403)

Dermal

LD50	:	> 2000 mg/kg (Rat, male and female) (OECD Test Guideline 402)

Irritation

Skin

Result	:	No skin irritation (Rabbit) (OECD Test Guideline 404)

Eyes

Result	:	No valid data available.

Sensitisation

Result	:	not sensitizing (Maximisation Test; Dermal; Guinea pig) (OECD Test Guideline 406)Read-across (Analogy)

CMR effects

CMR Properties

Carcinogenicity	:	No known significant effects or critical hazards.
Mutagenicity	:	In vitro tests did not show mutagenic effects Read-across (Analogy)
Teratogenicity	:	Did not show mutagenic or teratogenic effects in animal experiments.
Reproductive toxicity	:	Animal testing did not show any effects on fertility. Read-across (Analogy)

SECTION 12: Ecological information

12.1. Toxicity

Data for the product

Acute toxicity

Short-term (acute) aquatic hazard

Result	:	The product is not classified as dangerous for the environment.

Component:	Aluminum chloride hydroxide sulfate	CAS-No. 39290-78-3

Acute toxicity

Fish

EC50	:	>= 0.156 mg/l (Danio rerio (zebra fish); 96 h; Test substance: dissolved Al) (semi-static test; OECD Test Guideline 203)Read-across (Analogy)
NOEC		>= 1000 mg/l (Danio rerio (zebra fish); 96 h) (semi-static test; OECD Test Guideline 203)Read-across (Analogy)

Toxicity to daphnia and other aquatic invertebrates

EC50	:	98 mg/l (Daphnia magna (Water flea); 48 h) (semi-static test; OECD Test Guideline 202)Read-across (Analogy)

algae

NOEC	:	1 mg/l (Pseudokirchneriella subcapitata (green algae); 72 h) (static test; End point: Growth rate; OECD Test Guideline 201)Read-across (Analogy)
EC10		3.1 mg/l (Pseudokirchneriella subcapitata (green algae); 72 h) (static test; End point: Growth rate; OECD Test Guideline 201)Read-across (Analogy)
EC50		14 mg/l (Pseudokirchneriella subcapitata (green algae); 72 h) (static test; End point: Growth rate; OECD Test Guideline 201)Read-across (Analogy)

Bacteria

EC50	:	> 100 mg/l (activated sludge; 3 h) (static test; End point: Respiration inhibition; OECD Test Guideline 209)Read-across (Analogy)
EC50		> 4.4 mg/l (activated sludge; 3 h; Test substance: dissolved Al) (static test; End point: Respiration inhibition; OECD Test Guideline 209)Read-across (Analogy)

12.2. Persistence and degradability

Data for the product

Persistence and degradability

Biodegradability

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

Component:	Aluminum chloride hydroxide sulfate	CAS-No. 39290-78-3

Persistence and degradability

Persistence

Result	:	no data available

Biodegradability

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

12.3. Bioaccumulative potential

Data for the product

Bioaccumulation

Result	:	Bioaccumulation is unlikely.

Component:	Aluminum chloride hydroxide sulfate	CAS-No. 39290-78-3

Bioaccumulation

Result	:	Does not bioaccumulate.

12.4. Mobility in soil

Data for the product

Mobility

Result	:	The product is water soluble., Known distribution to environmental compartments

Surface tension

Result	:	not determined

Component:	Aluminum chloride hydroxide sulfate	CAS-No. 39290-78-3

Mobility

Water	:	The product is water soluble.

12.5. Results of PBT and vPvB assessment

Data for the product

Results of PBT and vPvB assessment		
Result	:	This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).

Component:	Aluminum chloride hydroxide sulfate	CAS-No. 39290-78-3

Results of PBT and vPvB assessment		
Result	:	The PBT or vPvB criteria of Annex XIII to the REACH Regulation does not apply to inorganic substances.

12.6. Other adverse effects

Data for the product		
Additional ecological information		
Result	:	Solutions with low pH-value must be neutralized before discharge. Ecological injuries are not known or expected under normal use.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	:	Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.
Contaminated packaging	:	Dispose of contaminated packaging in the same way as the product. In accordance with local and national regulations.
European Waste Catalogue Number	:	No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information

14.1. UN number

3264

14.2. UN proper shipping name

ADR	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum chloride hydroxide sulfate)
RID	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum chloride hydroxide sulfate)
IMDG	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Aluminum chloride hydroxide sulfate)

14.3. Transport hazard class(es)

ADR-Class	:	8
(Labels; Classification Code; Hazard identification No; Tunnel restriction code)		8; C1; 80; (E)
RID-Class	:	8
(Labels; Classification Code; Hazard identification No)		8; C1; 80
IMDG-Class	:	8
(Labels; EmS)		8; F-A, S-B

14.4. Packaging group

ADR	:	III
RID	:	III
IMDG	:	III

14.5. Environmental hazards

Environmentally hazardous according to ADR	:	no
Environmentally hazardous according to RID	:	no
Marine Pollutant according to IMDG-Code	:	no

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

IMDG : Not applicable.

SECTION 15: Regulatory information

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

15.2. Chemical safety assessment

There is no data available for this product.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

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

Abbreviations and Acronyms

BCF	bioconcentration factor
BOD	biochemical oxygen demand
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	carcinogenic, mutagenic or toxic to reproduction
COD	chemical oxygen demand
DNEL	derived no-effect level
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
PBT	persistent, bioaccumulative and toxic
REACH Auth. No.:	REACH Authorisation Number
REACH AuthAppC. No.	REACH Authorisation Application Consultation Number
PNEC	predicted no-effect concentration
STOT	specific target organ toxicity
SVHC	substance of very high concern
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
vPvB	very persistent and very bioaccumulative

Further information

Key literature references and sources for data	:	Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.
Methods used for product classification	:	The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.
Hints for trainings	:	The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.

Other information	:	The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

|| Indicates updated section.