

SAFETY DATA SHEET

ClearFlo C20

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

1.1. Product identifier

Product name	ClearFlo C20
Synonyms; trade names	PAC, PACL, Polyaluminium Chloride Hydroxide Sulfate, Aluminium chloride hydroxide sulfate, Aluminium hydroxychlorosulfate
REACH registration number	01-2119531540-51
CAS number	39290-78-3
EC number	254-400-7

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

Identified uses	Treatment of drinking water, has received approval by the European Committee for Standardisation. Treatment of waste water.
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1.3. Details of the supplier of the safety data sheet

Supplier	GPC Clear Solutions Limited, Unit 57, Riverside Estate, Sir Thomas Longley Road, Medway City Estate, Rochester, Kent ME2 4DP T: 01634 326920 F: 01634 570469 E: sales@gpcclearsolutions.co.uk
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1.4. Emergency telephone number 01634 326920 (Office hours only)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Met. Corr. 1 - H290
Health hazards	Eye Irrit. 2 - H319
Environmental hazards	Not Classified

Classification (67/548/EEC or 1999/45/EC) Xi;R36.

2.2. Label elements

EC number	254-400-7
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Pictogram



Signal word	Warning
Hazard statements	H290 May be corrosive to metals. H319 Causes serious eye irritation.
Precautionary statements	P264 Wash contaminated skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	ClearFlo C20
REACH registration number	01-2119531540-51
CAS number	39290-78-3
EC number	254-400-7
Composition comments	The product is formed by the action of hydrochloric and sulfuric acids on aluminium trihydroxide, to give a solution in water. Total aluminium content is 5.3% (10% as Al ₂ O ₃); total strength as PAC is about 25%.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove affected person from source of contamination. Keep affected person warm and at rest. Get medical attention immediately.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention immediately.
Skin contact	Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing.
Eye contact	Remove affected person from source of contamination. Remove any contact lenses and open eyelids wide apart. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

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

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Fire or high temperatures create: Thermal decomposition or combustion products may include the following substances: Corrosive gases or vapours. Hydrogen chloride (HCl). Sulphurous gases (SO _x).
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5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Avoid breathing fire gases or vapours. Wear acid-resistant protective clothing

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground. Contain spillage with sand, earth or other suitable non-combustible material.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Stop leak if possible without risk. Contain and absorb spillage with sand, earth or other non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Flush contaminated area with plenty of water.

6.4. Reference to other sections

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Avoid contact with skin and eyes. Wear suitable protective equipment for prolonged exposure and/or high concentrations of vapours, spray or mist. Eye wash facilities and emergency shower must be available when handling this product.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Use containers made of the following materials: Suitable plastic material. Polyethylene-lined mild steel.

7.3. Specific end use(s)

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Ingredient comments WEL = Workplace Exposure Limits

Biological limit values 2 mg/m³, 8-hour TWA (soluble Al salts), 2 mg/m³, 8-hour TWA (soluble Al salts), 2 mg/m³, 8-hour TWA (soluble Al salts) EH40/2005 Workplace exposure limits (UK Health and Safety Executive)

8.2. Exposure controls

Other skin and body protection Wear appropriate clothing to prevent any possibility of skin contact. Wear rubber footwear.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Colour Straw.

Odour Almost odourless.

pH pH (concentrated solution): 1.8 - 2.5

Melting point Below -25°C

Vapour pressure 30 mm Hg @ 0C @ °C

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Relative density	1.21 @ °C
Solubility(ies)	Miscible with water. Dilute solutions hydrolyse to precipitate Al(OH) ₃
Viscosity	4 cP at 20C @ °C

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity In contact with some metals can generate hydrogen gas, which can form explosive mixtures with air.

10.2. Chemical stability

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid

10.5. Incompatible materials

Materials to avoid Avoid contact with chlorites, hypochlorites, and sulfites Incompatible with other aluminium salts and iron salts. Special care must be taken regarding mixing with products previously used in order to avoid gel formation or precipitation.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Skin contact Irritating to skin.

Eye contact Irritating to eyes. Symptoms following overexposure may include the following: Redness. Pain.

SECTION 12: Ecological Information

12.1. Toxicity

12.2. Persistence and degradability

Stability (hydrolysis) Hydrolyses when diluted in water, forming Al(OH)₃.

12.3. Bioaccumulative potential

Bioaccumulative potential The product is not bioaccumulating.

12.4. Mobility in soil

12.5. Results of PBT and vPvB assessment

12.6. Other adverse effects

Other adverse effects Product is acidic, and will reduce the pH of water courses and drains, and cause damage to flora and fauna. It should not be allowed to enter controlled waters in large quantities - in such cases the National Rivers Authority should be contacted.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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Disposal methods Do not dispose directly into rivers or drains.
Small spills may be neutralised with sodium carbonate, lime, or calcium carbonate, and flushed to sewer.
Large amounts of aluminium salts should be contained, and then be neutralised with a weak alkali solution. The resulting suspension (mainly alumina) may be regarded as neutral waste and disposal should be in accordance with local or state or national legislation.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 3264

UN No. (IMDG) 3264

14.2. UN proper shipping name

Proper shipping name (ADR/RID) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Polyaluminium Chloride Solution)

Proper shipping name (IMDG) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Polyaluminium Chloride Solution)

Proper shipping name (ICAO) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Polyaluminium Chloride Solution)

Proper shipping name (ADN) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Polyaluminium Chloride Solution)

14.3. Transport hazard class(es)

ADR/RID class 8

ADR/RID label 8

IMDG class 8

Transport labels



14.4. Packing group

ADR/RID packing group III

IMDG packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Emergency Action Code 2X

Hazard Identification Number (ADR/RID) 80

Tunnel restriction code (E)

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

SECTION 15: Regulatory information

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

National regulations EH40/2005 Workplace exposure limits.

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EU legislation This product has been approved as a chemical used for the treatment of drinking water, under the appropriate BS EN Standard (see Sales Specification), and so it is also approved by the British Drinking Water Inspectorate.

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

SECTION 16: Other information

General information Notes on storage conditions and product stability

Polyaluminium chloride solutions are stable indefinitely when stored under benign conditions (sealed vessel, constant temperature). However, some users may experience product instability, which can arise from two potential problems:

1) The product is designed to break down on contact with water, to allow water treatment to occur. As a result, water vapour condensing on inside tank surfaces may lead to colourless crystals forming when the water drops back into the bulk liquid. These crystals can only be dissolved using hot water. Condensation should thus be minimised by tank design and location. If possible, avoid tanks that are dark in colour, in direct sunlight, and off the ground, as these factors will lead to large day/night temperature fluctuations.

2) Long-term storage in open/vented vessels may result in evaporation of water, leading to over concentration of the PAC, and formation of a very fine, cream-coloured deposit. This deposit is easily dissolved in cold water.

Industrial Chemicals Limited thus recommends that tanks be designed to minimise temperature effects, have a top hatch to allow routine quarterly inspection for any deposits, and have a bottom drain in case the need for washout occurs. In addition, when switching from the use of another water treatment chemical to PAC, the user is strongly recommended to wash out the tanks and dosing system to remove any incompatible materials before the PAC is unloaded. Some sedimentation can occur in this product. Even after filtering, slow sedimentation will occur. To avoid problems caused by this sedimentation, storage tanks should be cleaned every 1 to 2 years.

Revision comments Updated Section(s) 14,

Issued by GPC Clear Solutions Limited

Revision date 04/10/2017

Revision 5

Supersedes date 08/12/2014

Risk phrases in full R36 Irritating to eyes.

Hazard statements in full H290 May be corrosive to metals.
H319 Causes serious eye irritation.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.