Safety Data Sheet

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

1.1 Product Identifier: **ClearFlo C200 (Mixture contains Polyaluminium chloride hydroxy sulfate, CAS Number 39290-78-3).**

Trade name: **ClearFlo C200.**
EC No: **Mixture, Contains 254-400-7.**
REACH Registration Number: **Mixture. Contains 01-2119531540-51-XXXX.**
CAS No: **Mixture, Contains 39290-78-3.**

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

Identified Uses: Treatment of wastewater.

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
United Kingdom

Telephone Number: 01634 326920
Fax: 01634 570469

Email: sales@gpcclearsolutions.co.uk

1.4 Emergency Telephone Number (Office hours only): 01634 326920

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation (EC) No1272/2008: Maybe corrosive to metals, H290. Causes serious eye damage, H318.

2.1.2 Classification according to Directive 67/548/EEC: Corrosive, C, R34.

2.1.3 Additional Information:

2.2 Label Elements: (Labelling according to Regulation (EC) No 1272/2008:

Hazard Pictograms:

Signal Word: Danger

Hazard Statements:
H290 Maybe corrosive to metals.
H318 Causes serious eye damage.

Precautionary Statements:
P361 Take off immediately all contaminated clothing.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P406 Store in corrosive resistant container with resistant inner liner.

2.3 Other Hazards:

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS no	REACH Registration Number	EC No	Classification EC 1272/2008	Weight %
Polyaluminium chloride hydroxy sulfate	39290-78-3	01-2119531540-51-XXXX	254-400-7	Maybe corrosive to metals,H290 Serious eye damage, Cat 1, H318	Approx 10-50%
Poly(diallydimethylammonium chloride)		Polymer, not applicable	Polymer	Aquatic chronic; H412	< 25%

4. FIRST AID MEASURES

4.1 Description of first aid measures:

4.2 Inhalation: Following inhalation move the person to fresh air. Keep the person warm and at rest. Obtain medical attention immediately.

4.3 Skin contact: Following skin contact remove contaminated clothing. Wash with soap and water. In case of persistent skin irritation, consult a physician.

4.4 Eye contact: Following eye contact rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention immediately.

4.5 Ingestion: If swallowed rinse mouth with water. Do not induce vomiting. Seek medical attention immediately.

4.6 Most important symptoms and effects, both acute and delayed: None known.

4.7 Indication of any immediate medical attention and special treatment needed: None known.

5. FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media: The product is not flammable. Use media appropriate for surrounding material.
Unsuitable extinguishing media: Use media appropriate for the surrounding material.

5.2 Special hazards arising from the substance or mixture: Hazardous combustion products include corrosive gases/vapours/fumes of hydrogen chloride (HCl) and sulphurous gases (SOx).

5.3 Advice for fire firefighters: Water spray should be used to cool containers. Avoid breathing fire vapours. Wear acid resistant protective clothing.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

See section 8.

6.2 Environmental precautions:

Avoid discharge into watercourses or onto the ground. Contain spillages with sand, earth or any suitable absorbent material.

6.3 Methods and material for containment and cleaning up:

Stop leak if possible without risk. Dam and absorb spillages with sand, earth or other non-combustible materials. Collect and place in suitable storage containers. Flush the area with water.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:
Avoid spilling, skin and eye contact. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash facilities and emergency shower should be provided when handling this product.

7.2 Conditions for safe storage, including any imcompatables:
Store in corrosion resistant plastic containers or plastic lined steel drums.
Storage class "Corrosive Storage".

7.3 Specific end use(s):
Treatment of wastewater.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

Occupational Exposure limit values:	WEL (8 hour reference period)		STEL (15 minute reference period)	
	ppm	mgm^3	ppm	mgm^3
Aluminium salts, soluble:	-	2	-	-

8.2 Exposure controls:

8.3 Engineering measures: Provide adequate ventilation. Observe occupational exposure limit values and minimise inhalation of vapours.

8.4 Personnel protection: Wear gloves such as Nitrile or PVC conforming to BS EN374 or BS EN 388.
Wear eye protection and face shield to BS EN166.
Wear appropriate clothing such as chemical resistant apron or chemical suit depending on level of handling/potential exposure.
Wear rubber chemical resistant footwear.

8.5 Emergency: Provide eyewash facilities and quick drench shower.

8.6 Hygiene measures: Employ good industrial hygiene procedures including no eating/drinking or smoking whilst handling the material. Wash hands before eating, smoking or using the toilet. Remove and clean/replace any contaminated clothing/PPE before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1	**Appearance:**	Liquid.
9.2	**Odour:**	Almost odourless.
9.3	**Odour threshold:**	Not applicable.
9.4	**pH:**	1.5 – 2.5
9.5	**Melting point/Freezing point:**	No data available.
9.6	**Initial boiling point and boiling range:**	100 – 120 °C.
9.7	**Flash point:**	Not applicable.
9.8	**Evaporation rate:**	No data available.
9.9	**Flammability (solid, gas):**	Not flammable.
9.10	**Upper/lower flammability or explosive limits:**	Not flammable.
9.11	**Vapour pressure:**	No data available.
9.12	**Vapour density:**	No data available.
9.13	**Relative density:**	1.10 – 1.18 g/cm^3.
9.14	**Solubility:**	Miscible with water. Dilute solutions > pH 5 hydrolyse to form Aluminium hydroxide.
9.15	**Partition coefficient: n-octanol/water:**	No data available.
9.16	**Auto ignition temperature:**	No data available.
9.17	**Decomposition temperature:**	200 °C.
9.18	**Viscosity:**	<100 cps (25 °C).
9.19	**Explosive properties:**	No data available.
9.20	**Oxidising properties:**	No data available.

10. STABILITY AND REACTIVITY

10.1	**Reactivity:**	In contact with metals liberates hydrogen gas, which combined with air/oxygen can form explosive mixtures.
10.2	**Chemical stability:**	The product is stable under normal storage conditions.
10.3	**Possibility of hazardous reactions:**	Reactions with incompatible materials involving formation of heat and toxic gas. (See 10.5).
10.4	**Conditions to avoid:**	Avoid exposure to heat for prolonged periods of time.
10.5	**Incompatible materials:**	Avoid contact with chlorites, hypochlorites and sulphites. Other aluminium salts and salts or iron. Take care when mixing with other products in order to prevent gel formation or precipitation.
10.6	**Hazardous decomposition products:**	The product may decompose to form Hydrogen Chloride (HCl) when exposed to fire or high temperatures.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on the product as supplied:

Acute oral toxicity:	LD50/oral/rat > 2000 mg/kg.
Acute inhalation toxicity:	Product is not expected to be toxic by inhalation.
Acute dermal toxicity:	LD50/dermal/rat > 2000 mg/kg.
Skin corrosion/irritation:	Non irritating to skin.
Serious eye damage/irritation:	Risk of serious eye damage.
Respiratory/skin sensitisation:	Not sensitising to skin. No respiratory sensitisation has been observed in the workplace.
Germ cell mutagenicity:	Not mutagenic.
Carcinogenicity:	Not carcinogenic.
Reproductive toxicity:	Not toxic for reproduction.
STOT – Single exposure:	No known effects.
STOT – Repeated exposure:	No known effects.
Aspiration hazard:	No hazards resulting from the material as supplied.

Relevant Information on the hazardous components:

Poly aluminium chloride hydroxy sulfate:

Acute oral toxicity:	LD50/oral/rat > 2000 mg/kg.
Acute inhalation toxicity:	Product is not expected to be toxic by inhalation.
Acute dermal toxicity:	LD50/dermal/rat > 2000 mg/kg.
Skin corrosion/irritation:	Not irritating.
Serious eye damage/irritation:	Not irritating.
Respiratory/skin sensitisation:	This product is not expected to be sensitising.
Germ cell mutagenicity:	By analogy with similar products, this product is not expected to be mutagenic.
Carcinogenicity:	By analogy with similar products, this product is not expected to be carcinogenic.
Reproductive toxicity:	By analogy with similar products, this product is not expected to be toxic for reproduction.
STOT – Single exposure:	No known effects.
STOT – Repeated exposure:	No known effects.
Aspiration hazard:	No known effects.

Poly(diallydimethylammonium chloride):

Acute oral toxicity:	LD50/oral/rat > 5000 mg/kg.
Acute inhalation toxicity:	Product is not expected to be toxic by inhalation.
Acute dermal toxicity:	LD50/dermal/rat > 5000 mg/kg.
Skin corrosion/irritation:	Not irritating.
Serious eye damage/irritation:	Not irritating.
Respiratory/skin sensitisation:	This product is not expected to be sensitising.
Germ cell mutagenicity:	By analogy with similar products, this product is not expected to be mutagenic.
Carcinogenicity:	By analogy with similar products, this product is not expected to be carcinogenic..
Reproductive toxicity:	By analogy with similar products, this product is not expected to be toxic for reproduction.
STOT – Single exposure:	No known effects.
STOT – Repeated exposure:	No known effects.
Aspiration hazard:	No known effects.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Information on the product as supplied:

Acute toxicity to fish:	LC50/Danio rerio/96 hours > 100 mg/l.
Acute toxicity to invertebrates:	EC50/Daphnia magna/48 hours > 100 mg/l.
Acute toxicity to algae:	Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.
Chronic toxicity to fish:	No data available.
Chronic toxicity to invertebrates:	No data available.
Toxicity to microorganisms:	No data available.
Effect on terrestrial organisms:	No data available.
Sediment toxicity:	No data available.

Relevant information on the hazardous components:

Polyaluminium chloride hydroxy sulfate:

Acute toxicity to fish:	LC50/Danio rerio/96 hours > 1000 mg/l (OECD 203).
Acute toxicity to invertebrates:	EC50/Daphnia magna/48 hours = 98 mg/l (OECD 202).
Acute toxicity to algae:	NOEC/Pseudokirchneriella subcapitata/72 hours 1.1 mg/l (OECD 201).
Chronic toxicity to fish:	No data available.
Chronic toxicity to invertebrates:	No data available.
Toxicity to microorganisms:	No data available.
Effect on terrestrial organisms:	No data available.
Sediment toxicity:	No data available.

Poly(diallydimethylammonium chloride):

Acute toxicity to fish:	LC50/Danio rerio/96 hours = 10 – 100 mg/l.
Acute toxicity to invertebrates:	EC50 Daphnia magna/48 hours = 10 -100 mg/l.
Acute toxicity to algae:	Algal inhibition tests are not appropriate. The flocculation characteristics of the product interfere directly in the test medium preventing homogenous distribution which invalidates the test.
Chronic toxicity to fish:	No data available.
Chronic toxicity to invertebrates:	No data available.
Toxicity to microorganisms:	EC0/activated sludge/0.5h = 1000 mg/l (OECD 209).
Effect on terrestrial organisms:	No data available.
Sediment toxicity:	No data available.

12.2 Persistence and degradability:

Information on the product as supplied:

Degradation:	Not readily biodegradable.
Hydrolysis:	Will form precipitate of $Al(OH)_3$ above pH 5.
Photolysis:	No data available.

Relevant information on the hazardous components:

Aluminium chloride hydroxy sulfate:

Degradation:	Not relevant (inorganic).
Hydrolysis	Will form a precipertate above pH 5. to from $Al(OH)_3$.
Photolysis:	No data available.

Poly(diallydimethylammonium chloride):

Degradation:	Not readily biodegradable.
Hydrolysis:	Does not hydrolyse.
Photolysis:	No data available.

12.3 Bioaccumaltion potential:

Information on the product as supplied:

The product is not expected to bioaccumalate.

Partition co-efficient (Log Pow): < 0
Bioconcentration factor (BCF): No data available.

Relevant information on the hazardous components:

Aluminium chloride hydroxy sulphate:

Partition co-efficient (Log Pow): Not applicable.
Bioconcentration factor (BCF): No data available.

Poly(diallydimethylammonium chloride):

Partition co-efficient (Log Pow): < 0
Bioconcentration factor (BCF): ~ 0

12.4 Mobility in soil:

Information on the product as supplied:

Koc: No data available.

Relevant information on the hazardous components:

Aluminium chloride hydroxy sulphate:

Koc: No data available.

Poly(diallydimethylammonium chloride):

Koc: No data available.

12.5 Results of PBT and vPvB assessment:

PBT assessment: Does not fulfil the criteria according to annex XIII of REACH.

vPvB Assessment: Does not fulfil the criteria according to annex XIII of REACH.

12.6 Other adverse effects: None

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Waste from residues / unused products:

Rinse empty containers with water and use the rinse water to prepare the working solution. Dispose of accordance with local regulations including reuse/recycling where facilities are available.

Contaminated packaging:

If recycling/reuse is not practicable, dispose of in compliance with local regulations.

14. TRANSPORT INFORMATION

14.1	**UN number:**	3264	
14.2	**UN proper shipping name:**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S	
14.3	**Transport hazard class(es):**	ADR/RID/AND Class	Class 8: Corrosive Liquid
		ADR Label No	8
		IMDG Class	8
		ICAO Class/Division	8
		Transport Labels	

14.4	**Packing group:**	III
14.5	**Environmental hazards:**	None.
14.6	**Specific precautions for User:**	Emergency action code 2X. Hazard No (ADR) 80.
14.7	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:**	Category Z

15. REGULATORY INFORMATION

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

Workplace Exposure Limits EH40.
Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation, (EC) No 1907/2006.
Classification, Labelling and Packaging of Substances and Mixtures Regulation, (EC) No 1272/2008.

All components of this product have been registered or preregistered with the European Chemicals Agency or are exempt from registration.

15.2 Chemical Safety Assessment:
A safety assessment has not been conducted.

16. OTHER INFORMATION

Further information:

Contact: Tele: 01634 326920

This safety data sheet has been amended to reflect the change from regulation 67/548/EEC to (EC) No1272/2008. Therefore all sections have been amended.

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 guidance for safe handling, use, process, 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.

ANNEX(ES)

Exposure Scenario

Short Title:	Industrial and professional use as flocculants or coagulant in water and waste water treatment.
Sector(s) of Use:	SU6b Manufacture of pulp, paper and paper products SU10: Formulation (Mixing) of preparations and/or repacking (excluding alloys) SU23: Electricity, steam, gas water supply and sewage treatment
Process Category(ies):	PC20: Products such as pH regulators, flocculants, precipitants, neutralisation agents PC37: Water treatment chemicals.
Article Category(ies):	Not applicable.
Environmental release category(ies):	ERCC2: Formulation of preparations ERC4 Industrial use of processing aids in processes and products, not becoming part of articles ERC 6b: Industrial use of reactive processing aids ERC8a: Wide dispersive indoor use of reactive substances in open systems ERC8d: Wide dispersive outdoor use of processing aids in opens systems ERC8e Wide dispersive outdoor use of reactive substances in open systems.
Other information on use:	Industrial and professional uses only.
Processes, tasks, activities covered:	Use as flocculant or coagulant in water and waste water treatment.
Relevant effects:	Human health through occupational exposure and via the environment.

Product Characteristics:

See section 9 of the safety data sheet.

Operational Conditions:

General conditions:	Regularly monitor exposure levels, use conditions and implementations and effectiveness of risk management measures (RMMs). If concentrations exceed the limits, immediately review the RMMs and operating conditions in order to reduce exposure.
Duration and frequency of use:	<8 hours/day 5 days per week.
Other conditions effecting exposure:	None.

Risk Management Measures (RMM):

General Measures:	Limit release to the environment in uncontrolled manners.
Workers:	RMMs are described in detail in sections 7 & 8 of the safety data sheet.
Special advice / Instructions:	Immediately clean up spills.
Other:	None.
Environment:	RMMs are described in detail in sections 7, 8 & 13 of the safety data sheet.
Maximum releases to water:	As per local permit requirements.
Maximum releases to air:	Not relevant.
Other:	None.
Consumer:	Not applicable.