SAFETY DATA SHEET

ULTRAFLOC 3600

SDS 031 / R6
2022-03-28

Reg. No. 2003/017152/07

Safety Data Sheet (SDS) According to the South Africa Regulations for Hazardous Chemical Agents 2021, the UN Transport of Dangerous Goods Model regulations, UN Globally Harmonised System of Classification & Labelling and EC Directive 1272/2008.

Ultrafloc 3600 has been approved by NSF/ANSI/CAN 60 for treatment of potable water.

SECTION 1. Identification – Chemical Product and Company

Trade Name	:	ULTRAFLOC 3600, U3600
Proper Shipping Name	:	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
UN Number	:	3264
CAS Number	:	12042-91-0(ACH) & 42751-79-1
Chemical name	:	Dialuminium chloride pentahydroxide (ACH) + 1,2-Ethanediamine, polymer with (chloromethyl)oxirane and N-methylmethanamine
Chemical Family	:	Mixture ACH & Cationic Polymer
Other means of identification	:	Clear blue liquid with mild odour
Recommended use of the chemical	:	Clarification of raw water and effluent Use only as directed and recommended dosage.
Restrictions on use	:	Not for retail or domestic use, nor use by untrained persons
Supplier's details	:	NCP Chlorchem (Pty) Ltd
Address	:	Cnr. Norwalk Rd and Ossewa Str. Chloorkop, Gauteng. South Africa
Telephone No.	:	+27 (0) 11 921 3111
24hour Emergency phone number	:	+27 (0) 11 976 2115

SECTION 2. Hazards Identification

GHS classification of the substance: corrosive liquid, irritating to skin and eyes

Transport – Class 8 Corrosive GHS C & L Notified Hazard Classes and Categories		**GHS Hazard Statement**
Corrosive to metals	Category 1	H290 May be corrosive to metals
Skin Irritation	Category 2	H315 Causes skin irritation
Eye Irritation	Category 2	H319 Causes serious eye irritation
STOT SE	Category 3	H335 May cause respiratory irritation
Aquatic Chronic	Category 3	H412 Harmful to aquatic life with long lasting effects

The most important adverse effects to know in emergency are –
Corrosive – may cause skin irritation and serious eye irritation, may cause respiratory irritation, severe aquatic pollutant, and corrosive to metals – mild steel, copper, iron, aluminium and alloys

GHS label elements, including Precautionary Statements:

GHS 07 Skin & eye irritation health hazard - exclamation mark GHS 05 Corrosive – metals

Signal word: Warning

Hazard Statements - Skin and eye irritant – may cause serious eye irritation, tear formation & blurred vision. May cause respiratory irritation, nausea and vomiting. Harmful to aquatic life

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Precautionary statements:

P280 Wear protective gloves
P264 Wash hands thoroughly after handling
P302 +352 If on skin wash with plenty of water
P332 + P313 if skin irritation occurs or persists get medical attention
P280 wear eye / face protection
P305 + P351 + P338 if in eyes rinse cautious
P261 + P271 avoid breathing mist, wear eye & face protection and use in well ventilated area
P304 & P340 if mist inhaled and breathing difficulty – remove person to fresh air and get medical attention
P301 if swallowed and feel unwell, get medical attention
P362 + P364 remove contaminated clothing and wash before reuse
P406 Store in corrosion resistant containers

Response: Refer Sections 5, 6 and 8

Storage: Refer Section 7

SECTION 3. Composition/information on ingredients

Chemical identity	:	Mixture
Other means of identity	:	Clear blue liquid with mild odour
Common name, synonyms, etc	:	Mixture ACH & Cationic Polymer
IUPAC Name	:	Diallyldimethylammonium chloride polymer
CAS number	:	26062-79-3 & 12042-91-0
EC number	:	607-855-4 & 234-933-1
Impurities and stabilizing additives	:	none

Ingredient name	UN Number	CAS number	%	Classification EC1272/2008
Dialuminium chloride pentahydroxide	3264	12042-91-0	60-70	234-933-1
1,2-Ethanediamine, polymer with (chloromethyl)oxirane and N-Methylmethanamine	2735	42751-79-1	18-28	610-057-9
Blue Dye			0.005	

SECTION 4. First Aid Measures

Most important symptoms/ effects, and necessary measures
Irritating to eyes, skin and respiratory system. corrosive to metals and harmful to aquatic life with long lasting effects

Product in eyes - can cause serious eye irritation
Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for at least 20 minutes, by the clock, holding the eyelid(s) open. Remove contact lenses if easy and safe to do. Take care not to rinse contaminated water into the non-affected eye. If irritation persists, obtain medical attention immediately.

Product on skin – can cause skin irritation
Avoid direct contact with this chemical. Remove contaminated clothing, shoes, and leather goods (e.g. watchbands, belts) and wash with lukewarm, gently running water for at least 20 minutes. If irritation persists, obtain medical attention immediately.

Product ingested – May cause nausea and vomiting
Do not induce vomiting. Drink water or milk if conscious, never give anything by mouth if victim is losing consciousness, is unconscious or convulsing, obtain medical assistance immediately/

Product inhaled – may cause irritation of the respiratory tract. Do not give mouth to mouth respiration, where necessary give artificial respiration using a one-way valve or similar respiratory device. Remove to fresh air and get medical attention

SECTION 5. Fire Fighting Measures – product is not flammable.

Suitable extinguishing media if involved in a fire
Use water spray, carbon dioxide or dry chemical to extinguish fires.

ERG - Emergency Response Guide 2020 and SANS 10232 - 153 & 154

Small fires – immediate response action should quickly put out the fire.

Large fires – evacuate area, move containers out and away from fire if can be done safely without increasing risk. Isolate and contain fire as much as possible, and dike or use inert material for berm to contain run-off water for later disposal. NB need to prevent run-off containing product from contaminating any water source as very toxic to aquatic life.

Special hazards - Use water to keep containers cool to prevent pressure build up and possible explosion. Caution – thermal decomposition may produce carbon monoxide, carbon dioxide, ammonia, and/or oxides of nitrogen. Avoid use of metal containers as corrosive to iron, copper and aluminium, use PVC, HDPE, Polypropylene or rubber equipment and buckets.

Protective clothing - Wear full protective clothing and self-contained, positive flow breathing apparatus for large fires.

NB: Prompt actions can stop small fires but large fires involving chemicals require professional Emergency Response teams.

SECTION 6. Accidental Release Measures

Personal precautions - Spills of this product can be very slippery. Wear personal protection.

Environmental precautions - Do not dispose large volumes of any chemical into watercourses or sewers.

Clean-up methods
Small spills: wear protective clothing, neutralize with soda ash to ph between 6 and 9, then scoop up as much as possible. Wash and scrub area with plenty of water to remove any residue.

Large spills: stop / isolate source of leaks and prevent entry to waterways, sewers and buildings where possible. Seal off area and contain material by diking with soil or other inert material. Recover as much as possible and then apply an inert material such as sawdust to absorb the remainder. Collect in suitable containers and then wash and scrub away the residue.

GHS Disposal Precautionary Statement - P501 dispose of product and containers in accordance with SA National and / or regional Regulations refer National Environmental Management Waste Act - NEM: WA, it's Regulations and local by-laws. This informs permitted Waste Facilities and Service providers see the South African Waste Information Centre sawic.environment.gov.za

SECTION 7. Handling and Storage

Storage requirements

Store in cool place out of direct sun and avoid sources of potential contamination. Keep away from strong oxidizing agents to prevent any violent reactions.

Handling precautions:

Keep drums tightly closed when not in use. Avoid contact with skin, eyes or clothing, and metals as corrosion may occur. Avoid breathing mist. Handle as a corrosive liquid, wear rubber gloves if likely to come into skin contact.
Eating, drinking and smoking shall be prohibited in areas where chemicals are handled, stored or processed**.** Workers must remove contaminated clothing before entering eating areas wash hands before eating, drinking or smoking to remove any chemicals that could be ingested or inhaled.

Conditions for Safe Storage - refer to: SANS 10263: The Warehousing of dangerous goods, and

10263 - Part 8 The storage and handling of corrosive substances, for more specific information and relevant regulations and recognised practices for storage, warehousing and handling.

GHS Precautionary Statement P 406 store in corrosion resistant

containers **Suitable materials**

PVC – Poly Vinyl Chloride, HDPE – High Density Polyethylene, PP – Polypropylene, SS – Stainless Steel, PTFE - Polytetrafluoroethylene, and most rubbers.

Unsuitable materials

Mild steel, iron, copper, aluminium and alloys

SECTION 8. Exposure Controls/Personal Protection

Control parameters e.g. occupational exposure limit values or biological limit values

Ingredient name	%	Exposure limits – OHS Act South Africa HCA Regs 2021
Dialuminium chloride pentahydroxide	60-70	Not listed – no data available
1,2 Ethanediamine polymer with (chloromethyl) oxirane and n methylmethanamine	18 - 28	Not listed – no data available

ACGIH TLV (TWA) No data available

TLV (STEL) No data available

Engineering Control Measures: Local ventilation should be used if mists are produced.

Personal protection – respiratory: unlikely route of exposure, but if mists are encountered could be irritating to the respiratory tract, use a NIOSH approved respirator.

Personal protection – skin: skin irritant thus wear overalls, safety shoes/boots, gloves, and apron. Remove contaminated clothing promptly. Wash overalls before re-use.

Personal protection eyes – wear safety glasses with side shields at all times. Use of contact lenses should be avoided.

Personal protection – ingestion: Do not eat, drink or smoke in work areas and wash hands after contact

Other protection: A safety shower and eye wash facility should be near to work area, and ready for use.

SECTION 9. Physical and Chemical Properties

Appearance	Clear to slightly hazy blue liquid
Odour	Slightly acidic
pH	3.5 - 4.5
Boiling point/range	> 110°C
Melting point	No information available

Flash point	Not flammable
Flammability	Not flammable
Explosive properties	Not applicable
Oxidising properties	None
Vapour pressure	Not volatile under STP (Standard Temperature and Pressure)
Specific gravity	1.1 - 1.3
Viscosity	40 -100 cps
Evaporation rate	Similar to water
Solubility – water	Complete

SECTION 10. Stability and Reactivity

Stability Stable under normal conditions of storage and handling
Conditions to avoid: Do not mix with chemicals other than those recommended.
Incompatible materials: Strong oxidizing agents
Polymerization: Hazardous polymerization does not occur
Hazardous decomposition products: Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, ammonia, oxides of nitrogen and / or hydrogen chloride gas.

SECTION 11. Toxicological Information

Acute toxicity	Result	Species	Caution
Oral	Not classified		
Dermal	Not classified		
Inhalation	No available data		

GHS – EU Group Classification, and C & L Inventory

Skin Corrosion/Irritation: Category 2, H315 causes skin irritation
Eye Irritation: Category 2A, H319 Causes serious eye irritation,
Respiratory or skin Sensitization: Not Classified
Germ Cell Mutagenicity: No data available.
Carcinogenicity: Insufficient information available Not Classified
Reproductive Toxicity: Not Classified
STOT – Specific Target Organ Toxicity SE & RE: Not classified
Aspiration Hazard: Not Classified but inhalation of mist may irritate the respiratory tract.

SECTION 12. Ecological Information

Hazardous to the Aquatic Environment

Acute (short term): Not Classified
Chronic (long term): Category 3, H412 Harmful to Aquatic life with long lasting effects.
Biodegradability No data available
Bio-accumulation Low potential for bio-accumulation
Mobility No data available

Hazardous to the Ozone layer: No evidence - not Classified.

SECTION 13. Disposal Considerations

Disposal methods

Disposal must be made in accordance with the applicable National and Regional Government regulations at approved and permitted chemical disposal sites – refer to the SA National Environmental Management Waste Act - NEM: WA, it's Regulations and local by-laws. This informs permitted Waste Facilities and Service providers see the South African Waste Information Centre sawic.environment.gov.za

Disposal of packaging

Packagings and containers, even those that have been emptied, will retain product residue and vapours, handle empty containers as if they were full. Remove all possible traces of product, and wash prior to disposal of packaging and containers. Dispose in compliance with Regulations – see above and Industry Best Practice

Always observe and comply with hazard warnings.

SECTION 14. Transport information

	UNTDG & SANS 10228	IMDG Code	ICAO & IATA
UN Number	UN 3264	UN 3264	UN 3264
UN Proper Shipping Name – PSN	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	CORROSIVE LIQUID, ACIDIC INORGANIC, N.O.S.	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.
Transport Class 8 and hazard - Corrosive			
Packing group	III	III	III
Environmental hazards	Aquatic pollutant	IMDG Supplement Ems: F-A & S -B	N/A
Additional information			
Emergency Response Guide - ERG 2020	Refer Guide 154 for Corrosive liquid info	Refer IMDG 40-20 2020, Supplement & MARPOL	Refer ICAO Technical Regulations & IATA 63rd edition

SECTION 15. Regulatory information

NSF/ AINSI 60 Standard for Drinking Water Treatment Chemicals
OHS Act - Occupational Health and Safety Act 85 of 1993, its Regulations and Amendments:
HCA – Regulations for Hazardous Chemical Agents, 2021, which prescribe GHS Classification, GHS compliant SDS & Labels, packaging compliance + site Risk Assessment and monitoring to inform personnel Health / Biological Monitoring.
MHI – Major Hazards Installations Regulations - OHS Act: require site Risk Assessment to ascertain potential impacts outside of the site and potential impacts on the public or neighbours. Copy to be lodged with the Dept Labour, and local Emergency Services.
NEMA – National Environmental Management Act 107 of 1998: Duty of Care and Producer Responsibility for products and packaging on a Life Cycle basis. Environmental Impact Assessment Regulations for new installations or proposed increase in capacity over 25%

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NEM: WA – National Environmental Waste Act 59 of 2008: Extended Producer Responsibility, requirements and regulations for waste management, classification and disposal.
NEM: AQA – National Environmental Air Quality Act 39 of 2004: AQA Licenses and Emissions.
National Department of Health – Hazardous Substances Act
EU Directive EC 1272/2008 (EU GHS /CLP) – Safety Data Sheets and Labelling
ERG 2020 Transport Canada and US Dept Transportation PHMSA - Pipeline and Hazardous Materials Safety Administration

SECTION 16. Other information

Training - Persons handling and working with this product should be Trained in the hazards and safe handling as required in the Chapter 1.3 of the UN Model Regulations for Transport of Dangerous Goods before commencing work with chemicals.

ECHA – European Chemical Agency Website, Chemical information, C&L Inventory, Chemicals of Very High Concern (SVHCs) and Chemicals for Community Rolling Action Plan (CoRAP)

ERG 2020 Transport Canada and US Dept Transportation PHMSA - Pipeline and Hazardous Materials Safety Administration
Other relevant information including information on preparation and revision of the SDS –
ISO 11014:2009 Safety Data Sheets for Chemical Products – content and order of sections adopted as SANS 11014:2010
UN Recommendations for Transport of Dangerous Goods Model Regulations commonly known as the **TDG "Orange Books"** 22nd revision published June 2021
UN Globally Harmonized System of Classification and Labelling of Chemicals – GHS commonly known as **the GHS "Purple Book" 9th** revision published June 2021
IMDG – International Maritime Dangerous Goods Code, 2020 edition, amendment 40 - 20
IATA Technical Regulations 63rd edition, January 2022

Date of original MSDS	**: 2003-07-21**	**Compiled by DD Liebenberg**
Date of revision 5	**: 2016-08-12**	**Revised by E Anderson**
Date of revision 6	**: 2022-03-28**	**Revised by E Anderson**

Approved as per Management of Change No.: 24-05-2022-284

EXCLUSION OF LIABILITY

All information and instructions provided in this Safety Data Sheet in respect of the substance is given in terms of the provisions of the Occupational Health and Safety Act No 85 of 1993 and its Regulations. Information is based on best available scientific and technical knowledge as at the date of revision indicated on this SDS, and is presented in good faith, to be correct.

The information provided in this SDS apply only to the product in its present form and not to any formulation or mix. It should be used only as directed, and any formulations or other use is at the responsibility of the user of the product as formulated and/or mixed to investigate and establish any hazards or risks which may arise out of its use, wherever such user may be situated.

It is the legal responsibility of the person in receipt of this SDS, wherever such may be situated, to ensure that the information provided is communicated to, and understood by any person who may come into contact with the product in any place and in any manner whatsoever. If such recipient produces formulations or mixes using the product, then it is the recipient's sole responsibility to comply with the provisions of the Act, and/or to comply with any other applicable legislation.