SAFETY DATA SHEET

ULTRAFLOC 5100

SDS 022/R8
2021-06-20

Reg. No. 2003/017152/07

Safety Data Sheet (SDS) According to ISO/SANS 11014:2009/2010; UN Transport of Dangerous Goods; UN Globally Harmonised System of Classification & Labelling; SA HCA Regulations and EC Directive 1272/2008

ULTRAFLOC 5100 has been approved by NSF/ ANSI /CAN 60 Standard for treatment of potable water up to the maximum dosage specified by the NSF.

SECTION 1. Identification – Chemical Product and Company

Trade Name	:	ULTRAFLOC 5100, U5100
Chemical Name / Proper Shipping Name	:	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
UN Number	:	2735
CAS Number	:	42751-79-1
GHS product identifier	:	1,2-Ethanediamine, polymer with (chloromethyl)oxirane and N- methylmethanamine
Chemical Family	:	Polyamine – Cationic Poly Quaternary Amine
Other means of identification	:	yellow to amber liquid
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. Allandale Road and Chloor Road Chloorkop, Gauteng, South Africa:
Telephone No.	:	**+27 (0) 11 976 2115**
24hour Emergency phone number	:	**+27 (0) 11 921 3333**

SECTION 2. Hazards Identification

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

Hazard classes/Hazard categories **Transport – Class 8** Corrosive substance	GHS Hazard Statement
Skin Irritation Category 2	H315 Causes skin irritation
Eye Irritation Category 2	H319 Causes serious eye irritation
STOT SE 3	H335 May cause respiratory irritation
Aquatic Acute 1	H400 Very toxic to Aquatic life
Aquatic Chronic 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:

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. Very toxic to aquatic life.

Precautionary statements:
P264 Wash hands thoroughly after handling
P270 do not eat, drink or smoke when using this product,
P273 Avoid release to the environment,
P302 +352 If on skin wash with plenty of water,
P332 + P313 if skin irritation occurs or persists get medical attention,
P280 wear gloves, protective clothing, eye and face protection,
P305 + P351 + P338 if in eyes rinse cautiously with water for several minutes, remove contact lenses if safe and easy to do,
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.

Response:
Refer Sections 5, 6 and 8
Storage:
Refer Section 7

SECTION 3. Composition/information on ingredients

Chemical identity	:	Substance
Other means of identity	:	Pale yellow, viscous liquid with slight amine odour
Common name, synonyms, etc	:	Polyamine; Polydimethylamine
CAS number	:	42751-79-1
EC number	:	610-057-9
IUPAC names	:	1,2-Ethanediamine, polymer with (chloromethyl)oxirane and N- methylmethanamine
Impurities and stabilizing additives	:	none

Substance name	UN Number	CAS number	%	Classification EC1272/2008
1,2-Ethanediamine, polymer with(chloromethyl)oxirane and N - methylmethanamine Polyamine	2735	42751-79-1	10%	610-057-9

SECTION 4. First-aid measures

Most important symptoms/ effects, and necessary measures Irritating to eyes, skin and respiratory system.

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. Completely decontaminate clothing, shoes and leather goods before re-use, or discard.

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 rapidly losing consciousness, or unconscious or convulsing – if so oobtain medical assistance immediately.

Product inhaled – may cause irritation of the respiratory tract.

Do not give mouth to mouth respiration, give artificial respiration where necessary 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, ERG no 153 and SANS 10232 - 3

Small fires – not flammable but if involved in a fire, 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 breathing apparatus for large fires as it could produce hazardous fumes.
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 are 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 and gloves to scoop up as much as possible and then wash and scrub away with plenty of water to remove any residue. Spill may be neutralized with soda ash to pH between 6 and 9; Caution as this will liberate carbon dioxide gas.

Large Spills: stop source of leaks if possible, and prevent entry into waterways, sewers or basements. Seal off area and contain by diking with soil or other inert material. Recover as much as possible and then apply an inert material such as sawdust or commercial absorbent 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 a cool place out of direct sun and avoid sources of potential contamination. Keep away from strong oxidising agents to avoid contamination and any violent reactions.

Handling precautions

Keep drums tightly closed when not in use. Avoid contact with skin, eyes or clothing. 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 wash hands before eating, drinking or smoking to remove any chemicals that could be ingested or inhaled.
Remove contaminated clothing and protective equipment before entering eating areas

Conditions for Safe Storage - refer 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 for packaging, pipelines and valves:
PVC – Poly Vinyl Chloride, HDPE – High Density Polyethylene, PP – Polypropylene, SS – Stainless Steel, PTFE - Polytetrafluoroethylene, most rubbers.

Unsuitable materials
Mild steel, iron, copper, aluminum and alloys

SECTION 8. Exposure controls/personal protection

Occupational exposure standards

ACGIH	TLV (TWA) No data available
	TLV (STEL) No data available

Engineering control measures: Local ventilation should be available if mists are produced.

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

Personal protection – hand: listed skin irritant thus avoid contact with this chemical. Wear rubber gloves.

Personal protection – eye: listed eye irritant thus wear safety glasses with side shields at all times. Contact lenses should not be worn.

Personal protection – skin: listed skin irritant thus wear overalls, safety shoes/boots and apron. Impermeable clothing and footwear if mists are encountered.

Personal protection – ingestion: Restrict access to unauthorized persons. Wash hands after contact.

Other protection - A safety shower and eye wash facility should be nearby and ready for use.

SECTION 9. Physical and chemical properties

Appearance	Pale yellow, viscous liquid.
Odour	Slight amine
pH	2.5 – 3.5
Boiling point/range	Not available
Melting point/range	-18°C
Flash point	>93°C
Flammability	Not Flammable
Explosive properties	Not applicable
Oxidising properties	None
Vapour pressure	Not volatile under STP – Standard Temperature and Pressure
Specific gravity	1.14-1.16 g/cm^3 @ 25°C
Viscosity;	500 - 1000 cps
% Volatile by volume	~50
Evaporation rate	Similar to that of water

Reg. No. 2003/017152/07

Solubility - water Complete

SECTION 10. Stability and reactivity

Stability: Stable under normal conditions of storage and handling

Conditions to avoid: Do not mix with other chemicals.

Corrosive to: This product is corrosive to iron, copper and aluminium

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products: Thermal decomposition or combustion may produce carbon monoxide, carbon dioxide, ammonia, oxides of nitrogen.

Polymerization: Hazardous polymerization will not occur.

SECTION 11. Toxicological information

Acute toxicity	Result	Species	Dose/ Exposure	Caution
Oral	No available data			Ingestion may cause nausea and vomiting
Dermal	No available data			
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
Carcinogenicity: Not Classified
Germ Cell Mutagenicity: Not Classified
Reproductive Toxicity: Not Classified
STOT – Specific Target Organ Toxicity Single Exposure SE lungs: H335 May cause respiratory irritation,
Aspiration Hazard: Not Classified but inhalation of mist may irritate the respiratory tract.

SECTION 12. Ecological information

GHS – EU Group Classification, and C & L Inventory:
Hazardous to the Aquatic Environment
Acute (short term) Category 1 – Hazard Statement H400 Very toxic to aquatic life
Chronic (long term) Category 3 – Hazard Statement H412 Harmful to aquatic life with long lasting effects

Hazardous to the Ozone layer: Biodegradability Bio-accumulation Mobility	No evidence - not Classified, No data available No data available No data available

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

	UN TDG Road & Rail	IMDG	ICAO / IATA
UN Number	UN 2735	UN 2735	UN 2735
UN proper shipping name – PSN	POLYAMINES, LIQUID, CORROSIVE, N.O.S.	POLYAMINES, LIQUID, CORROSIVE, N.O.S.	POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Transport Class 8 Corrosive			
Packing group - III	Use UN certified packaging	Use UN Certified packaging	Use UN certified packaging
Environmental hazards	Aquatic Pollutant	IMDG Supplement EmS : F-A & S-B	Refer ICAO & IATA Regulations
Additional Information			
Emergency Response Guide - ERG 2020	153 Amines, liquid, corrosive, N.O.S.	Refer IMDG Supplement & MARPOL	ICAO Technical Regulations & IATA

SECTION 15. Regulatory information

Ultrafloc 5100 has been approved by NSF/ AINSI Standard 60 for treatment of potable water.

OHS Act - Occupational Health and Safety Act 85 of 1993 and the HCA Regulations of 2021 requires: GHS Classification, GHS Compliant Safety Data Sheets and product labels as well as site Risk Assessment to inform Health and Biological Monitoring to protect workers.
GHS Compliant SDS to be made available to all who handle, store, use and transport this product.

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.
Pressure Equipment Regulations - OHS Act: encompasses containers and service equipment
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%
NEM:WA - National Environmental Waste Act 59 of 2008: Extended Producer Responsibility revised 2021, and 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 Regulation EC 1272/2008 (EU GHS /CLP) – Safety Data Sheets and Labelling
ECHA – European Chemical Agency Website, Chemical information, C&L Inventory, Chemicals of High Concern (SVHCs) and Chemicals for Community Rolling Action Plan (CoRAP)
ERG 2020 Transport Canada and US Dept. of Transport PHMSA - Pipeline and Hazardous Materials Safety Administration

SECTION 16. Other information, including references used for revision of this 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 "Orange Books"** – latest revision 22nd of 2021**, *follow Chapter 1.3 and 1.4 Training requirements***

SAFETY DATA SHEET

Reg. No. 2003/017152/07

UN Globally Harmonized System of Classification and Labelling of Chemicals – GHS commonly known as **the "Purple Book**" 9th revision**,** 2021.
IMDG – International Maritime Dangerous Goods Code, 2020 edition, Amendment 40-20 IATA Technical Regulations 62nd edition, January 2021

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.

Date of original MSDS	:	2003-08-04	Compiled by DD Liebenberg
Date of issue previous MSDS	:	2013-06-10	Compiled by HH Maringa
Date of issue R7 SDS	:	2016-08-12	Compiled by E Anderson
Date of this Revision	:	2021-06-20	Compiled by E Anderson

Approved as per Management of Change No.: 18-8-2021-226

EXCLUSION OF LIABILITY

All information and instructions provided in this Safety Data Sheet (SDS) 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 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 in 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 in respect of the provision of the necessary SDS, and/or to comply with any other applicable legislation.