Safety Data Sheet according to WHS and ADG requirements

Issue Date: 24/8/2025
Print Date: 24/8/2025

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

Product Identifier

Product name	**BioFloc**
Chemical Name	**Mixture blended from discrete components – not applicable**
Synonyms	**FLOCCULANT**
Chemical Formula	**Mixture blended from discrete components – not applicable**
Other Means of Identification	**Not Available**
CAS Number	**Mixture blended from discrete components – not applicable**

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

Relevant Identified Uses	**COAGGULANT / FLOCULLANT FOR WATER TREATMENT**

Details of the supplier of the safety data sheet

Registered Company Name	**BioEnzymes Pty Ltd**
Address	**Unit 1C 424 BILSEN RD, GEEBUNG BRISBANE QLD 4034**
Telephone	**0410 797 713 07 3630 4683**
FAX	**NA**
Website	**www.bioenzymes.com.au**
Email	**james@bioenzymes.com.au**

Emergency telephone number

Organisation	**Chemical Consulting Services Pty Ltd**
Emergency Contact Number	**0417720832**
Other Emergency Numbers	**13 11 26 (Poisons Information Centre Hotline)**

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

HAZARD RATING

POISONS SCHEDULE	not scheduled
CLASSIFICATION	Skin Corrosion/Irritation Category 2 Eye Irritation Category 2A

Label elements

GHS LABEL ELEMENTS

SIGNAL WORD **WARNING**

Hazard statement(s)

H315 **Causes skin irritation.**
H319 **Causes serious eye irritation**

Precautionary statement(s) Prevention

P271 **Use only outdoors or in a well-ventilated area.**
P261 **Avoid breathing dust/fumes.**
P280 **Wear protective gloves/protective clothing/eye protection/face protection**

Precautionary statement(s) Response

P362 **Take off contaminated clothing and wash before reuse.**
P305+P351+P338 **IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**
P312 **Call a POISON CENTER or doctor/physician if you feel unwell.**
P337+P313 **If eye irritation persists: Get medical advice/attention.**
P302+P352 **IF ON SKIN: Wash with plenty of soap and water.**
P304+P340 **IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.**
P332+P313 **If skin irritation occurs: Get medical advice/attention**

Precautionary statement(s) Storage

P405 **Store locked up.**
P403+P233 **Store in a well-ventilated place. Keep container tightly closed.**

Precautionary statement(s) Disposal

P501 **Dispose of contents/container in accordance with local regulations.**

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS #	% w/w	NAME
12042-91-0	30 - 60	aluminium chlorohydrate
	To 100%	Other ingredients determined not to be hazardous

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact
If this product comes in contact with the eyes:
Wash out immediately with fresh running water.
Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
Seek medical attention without delay; if pain persists or recurs seek medical attention.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact
If skin contact occurs:
Immediately remove all contaminated clothing, including footwear.
Flush skin and hair with running water (and soap if available).
Seek medical attention in event of irritation.

Inhalation
If fumes, aerosols or combustion products are inhaled remove from contaminated area.
Other measures are usually unnecessary.

Ingestion
If swallowed do NOT induce vomiting.
If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
Observe the patient carefully.
Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
Seek medical advice.

Indication of any immediate medical attention and special treatment needed

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

There is no restriction on the type of extinguisher which may be used. Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility Avoid reaction with strong acids and strong alkalis

Advice for firefighters

Fire Fighting

Alert Fire Brigade and tell them location and nature of hazard.
Wear breathing apparatus plus protective gloves in the event of a fire.
Prevent, by any means available, spillage from entering drains or water courses.
Use fire fighting procedures suitable for surrounding area.
DO NOT approach containers suspected to be hot.
Cool fire exposed containers with water spray from a protected location.
If safe to do so, remove containers from path of fire.
Equipment should be thoroughly decontaminated after use.

Non combustible.
Not considered a significant fire risk, however containers may burn.
Combustion products may produce fumes of: hydrochloric acid

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Minor Spills

Clean up all spills immediately.
Avoid contact with skin and eyes.
Control personal contact with the substance, by using protective equipment.
Use dry clean up procedures and avoid generating dust.
Place in a suitable, labelled container for waste disposal.

Major Spills

CAUTION: Advise personnel in area.
Alert Emergency Services and tell them location and nature of hazard.
Control personal contact by wearing protective clothing.
Prevent, by any means available, spillage from entering drains or water courses.
Recover product wherever possible.
IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal.
IF WET: Vacuum/shovel up and place in labelled containers for disposal.
ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
If contamination of drains or waterways occurs, advise Emergency Services.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Avoid all personal contact, including inhalation.
Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.
DO NOT allow material to contact humans, exposed food or food utensils.
Avoid contact with incompatible materials.
When handling, **DO NOT** eat, drink or smoke.
Keep containers securely sealed when not in use.
Avoid physical damage to containers.
Always wash hands with soap and water after handling.
Work clothes should be laundered separately. Launder contaminated clothing before re-use.
Use good occupational work practice.
Observe manufacturer's storage and handling recommendations contained within this SDS.
Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Store in original containers.
Keep containers securely sealed.
Store in a cool, dry, well-ventilated area.
Store away from incompatible materials and foodstuff containers.
Protect containers against physical damage and check regularly for leaks.
Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container

Polyethylene or polypropylene container.
Packing as recommended by manufacturer.
Check all containers are clearly labelled and free from leaks.

Storage incompatibility
Segregate from strong acids and alkalis.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	aluminium chlorohydrate	Aluminium, soluble salts (as Al)	2 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
PolyAluminium Chloride)		Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
aluminium chlorohydrate	Not Available	Not Available

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.

If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.
Such protection might consist of:

(a): particle dust respirators, if necessary, combined with an absorption cartridge;
(b): filter respirators with absorption cartridge or canister of the right type;
(c): fresh-air hoods or masks.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Personal protection

Safety glasses with side shields. Chemical goggles.
Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves should be replaced. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present. polychloroprene. nitrile rubber.butyl rubber. fluorocaoutchouc. polyvinyl chloride. Gloves should be examined for wear and/ or degradation constantly.

Other protection
Overalls.
P.V.C. apron.
Barrier cream.
Skin cleansing cream.
Eye wash unit.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Off white viscous liquid

Physical state	Liquid	Relative Density (Water = 1)	1.3
Odour	Bland	Partition co-efficient n-octanol / water	Not Available
Odour Threshold	Not Available	Autoignition Temperature	Not Available
pH (as supplied)	3.8 – 4.2 typical	Decomposition Temperature	Not Available
Melting Point / Freezing Point (°C)	Not Applicable	Viscosity	Not Determined
Initial Boiling point and boiling range (°C)	Not Applicable	Molecular Weight	Not Applicable
Flash Point (°C)	Not Applicable	Taste	Not Applicable
Evaporation Rate	Not Applicable	Explosive Properties	Not Applicable
Flammability	Not Flammable	Oxidizing Properties	Not Applicable
Upper Explosive Limit (UEL %)	Not Applicable	Surface Tension (mN/m)	Not Applicable
Lower Explosive Limit (LEL %)	Not Applicable	Volatile Component	Not Applicable
Vapour pressure (kPa)	Not Applicable	Gas Group	Not Applicable
Solubility in water (g/L)	Miscible	pH as a solution (1%)	4.5 - 5 @ 25°C
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Applicable

SECTION 10 STABILITY AND REACTIVITY

Reactivity See section 7

Chemical stability Unstable in the presence of incompatible materials.
Product is considered stable.
Hazardous polymerisation will not occur.

Possibility of hazardous reactions See section 7

Conditions to avoid See section 7

Incompatible materials See section 7

Hazardous decomposition products See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled **This is not anticipated to be an issue under normal conditions of use.**
The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.

Ingestion **This is not anticipated to be an issue under normal conditions of use.**

Ingestion may result in nausea, abdominal irritation The material is moderately discomforting to the gastro-intestinal tract and may be harmful if swallowed in large quantity Considered an unlikely route of entry in commercial/industrial environments

Skin Contact

The material may produce mild skin irritation in sensitive individuals
Open cuts, abraded or irritated skin should not be exposed to this material

Eye

Evidence exists, or practical experience predicts, that the material may cause mild eye irritation.

Chronic

Reference Data

Accute Toxicity Data

Aluminium Chlorohydrate	***TOXICITY***	***IRRITATION***
	dermal (rat) LD50: >2000 mg/kg[1]	***Skin (human): 150 mg/30 s - mild***
	Oral (rat) LD50: >2000 mg/kg[1]	

Legend: *1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*

SECTION 12 ECOLOGICAL INFORMATION

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
aluminium chlorohydrate	LC50	96	Fish	1mg/L	2
aluminium chlorohydrate	EC50	48	Crustacea	0.214-1.26mg/L	2
aluminium chlorohydrate	EC50	72	Algae or other aquatic plants	0.075mg/L	2
aluminium chlorohydrate	EC50	48	Algae or other aquatic plants	0.014mg/L	2
aluminium chlorohydrate	NOEC	1440	Fish	0.013mg/L	2

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

Reduction
Reuse
Recycling
Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning or process equipment to enter drains.
It may be necessary to collect all wash water for treatment before disposal.
In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
Where in doubt contact the responsible authority.
Recycle wherever possible.
Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).
Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant NO

HAZCHEM Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

ALUMINIUM CHLOROHYDRATE(12042-91-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS
Australia Exposure Standards
Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)

SECTION 16 OTHER INFORMATION

Other information

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations
PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index