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MATERIAL SAFETY DATA SHEET

Revision No: 1

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1. IDENTIFICATION OF MATERIAL AND SUPPLIER

PRODUCT NAME: MULTIFLOC A1400

OTHER NAMES: Anionic flocculating agent

Recommended uses: as a flocculant in the treatment of water and wastewater.

SUPPLIER: HARDMAN AUSTRALIA PTY. LTD.**EMERGENCY CONTACT INFORMATION:**

Telephone	61 2 9624 1333 (all hours — message on after hours) Emergency after-hours contact: Mr. John Bradley (0418 974 332)
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2. HAZARDS IDENTIFICATION

HAZARDOUS SUBSTANCE, NON-DANGEROUS GOODS.

(using criteria of Office of the Australian Safety and Compensation Council (previously NOHSC, the National Occupational Health and Safety Council))

Risk phrases: R36: Irritating to the eyes**Safety phrases:** S22: Do not breath dust. S24/25: Avoid contact with skin and eyes. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Reference in AICS: No

Multifloc A1400 is a proprietary product. Consequently this MSDS has been written to comply with Section 6.3.7 of the 'National Code Of Practice For The Preparation Of Material Safety Data Sheets' – NOHSC:2011(2003), with respect to the disclosure of commercially confidential information.

Name	CAS Number	Proportion
Alkaline salt	Not given	< 60%
Anionic flocculant	Not given	10 - < 30%

4. FIRST AID MEASURES

Eyes (contact):	If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
Skin (contact):	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
Inhalation (breathing):	Not expected to be harmful, remove victim to fresh air.
Ingestion (swallowing):	Do not induce vomiting, give large amounts of water to drink. Seek medical attention. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flash point (°C):	Not flammable or combustible.
Auto ignition point (°C):	Not applicable.
Explosion Limits In Air (% by volume)	
Lower:	Not applicable.
Upper:	Not applicable.
Extinguishing media:	Use extinguishing media based on materials in the immediate vicinity of the fire.
Special Procedures:	None.
Unusual hazards:	Dust may be explosive if mixed with air in critical proportions and in the presence of a source of ignition.
Conditions to avoid:	None
Materials to avoid:	None
Decomposition products:	None
Hazardous polymerisation:	Will not occur.
Other information:	Use self-contained breathing apparatus in the vicinity of the fire in order to avoid possible suffocation hazard.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Refer to Section 8 for appropriate protective equipment. Inhalation of dusts should be avoided.

Steps to be taken in case material is released or spilled: If possible, collect as much as possible while dry by sweeping into containers, ensuring personal protection as in Section 8. Clean up residual powder with dry-sweeping compound then flush remaining material with water. This material is very slippery when wet so clean spill area thoroughly to the point where it is no longer slippery. Prevent the material from entering sewers.

7. HANDLING & STORAGE

Handling: maintain good storage practices by minimising dust release and accumulation.

Storage: do not use iron, copper or aluminium containers or handling equipment as this can lead to product degradation. Maintain product integrity by storing below 30°C and preventing contact with moisture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

SPECIAL PROTECTION INFORMATION

Respiratory protection:	Required only in the event that dusts are generated.
Ventilation:	Local exhaust recommended.
Skin protection:	Avoid skin contact using gloves; nitrile rubber are recommended
Eye protection:	Eye & face protection is required.
Other protective equipment:	None required.
Additional advice:	Wash hands and face before eating or drinking.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance & odour:	White, odourless powder..
Boiling point (°C):	Not applicable
Melting point (°C):	Not applicable
Bulk density:	0.9 to 1.1 kg/L
pH of 2% solution:	10.5 to 11.5.
Vapour pressure (kPa):	Not applicable
Relative vapour density (air = 1):	Not available
Volatile by weight (%):	1-3% (water)
Volatile organic content (EU):	Not available
Flash point:	Not applicable
Flammable limits:	Not applicable
Auto-ignition temperature:	> 150°C
Decomposition temperature:	> 150°C
Solubility in water:	> 40g/L, limited by viscosity
Evaporation rate:	Not available (n-butyl acetate = 100)

10. STABILITY AND REACTIVITY

Stability:	This product is unlikely to react or decompose under normal conditions of storage.
Incompatibilities:	Violent reactions possible with aluminium, alkaline earth metal powders, alkali metals, fluorine, non-metallic oxides and concentrated acids including concentrated sulphuric acid.
Conditions to avoid:	None known.
Materials to avoid:	Strong oxidising agents

Decomposition products: hazardous products of decomposition at high temperatures may include carbon monoxide, carbon dioxide, ammonia and oxides of nitrogen.

Hazardous polymerisation: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Route	Organism	Dose	Duration
Oral	Rat	Acute LD ₅₀ > 3000 mg/kg	Not applic.
Dermal	Rabbit	Acute LD ₅₀ > 10,000 mg/kg	Not applic.
Inhalation	Rat	Acute LC ₅₀ : 3 mg/L	2 hours

Acute Toxicity Effects

Ingestion: May be harmful if swallowed, causing irritation of the mouth, pharynx, oesophagus and gastrointestinal tract.

Eye contact: Irritating

Skin contact: Slightly irritating

Inhalation: Irritating to the nose, throat and lungs.

12. ECOLOGICAL INFORMATION

This product is not classified as being dangerous for the environment. The following ecological information was conducted on a product that was structurally similar to the organic flocculant component of this product:

Results on Algae:

Test: growth inhibition (OECD Test 201) Duration: 72 hour

Species: Green Algae

IC50: > 100 mg/L

Results on Fish:

Test: Acute toxicity, freshwater (OECD Test 203) Duration: 96 hour

Species: Zebra fish (*Brachydanio rerio*)

LC50: > 100 mg/L

Results on Invertebrate:

Test: Acute Immobilisation (OECD Test 202) Duration: 48 hour

Species: Water flea (*Daphnia magna*)

EC50: > 100 mg/L

Degradation:

Test: CO₂ evolution, modified Sturm (OECD Test 301B) Duration: 28 day

Procedure: Ready biodegradability

< 70%

The organic component of this product is not readily biodegradable. The high molecular weight is incompatible with transport across biological membranes and diffusion. The

