



HARDMAN AUSTRALIA PTY. LTD.  
 11 BODEN ROAD, SEVEN HILLS, NSW 2147  
 PO BOX 122, SEVEN HILLS, NSW 1730  
 TEL +612 9624 1333 FAX +612 9624 5851  
 EMAIL: info@hardman.com.au  
 A.B.N. 19 001 834 420

### MATERIAL SAFETY DATA SHEET

Revision No: 0

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#### **PRODUCT NAME: MULTIFLOC 3201/02**

CHEMICAL NAME: Coagulant enhancer

Multifloc 3201/02 is a proprietary product. Consequently this MSDS has been written to comply with Section 8, clauses 8.30 – 8.54 of Worksafe Australia's 'National Code Of Practice For The Preparation Of Material Safety Data Sheets' – NOHSC:2011(1994), with respect to the disclosure of commercially confidential information.

**Not classified as Hazardous according to the criteria of Worksafe Australia.**

UN No.: None                      HAZCHEM: None                      DG CLASS: None Allocated  
 Poison Schedule: None              Packaging Group: None              EPG: None

Product Uses: used as very effective and efficient coagulant enhancing agent as part of a treatment system for waste waters.

#### **Ingredients:**

Name:	CAS Number:	Proportion:
Alkaline Salt		0 - 60%
Metal Oxide		10 -< 30%
Carbon Compound		< 10%
Crystalline Silica	14808-60-7	0 - 1%
Ingredients determined not to be hazardous		to 100%

### **PHYSICAL DATA**

Appearance & odour: Fine silvery-grey odourless powder  
 Molecular weight: Not applicable. Mixture.  
 Boiling point (°C): Not applicable  
 Melting point (°C): Decomposes at above 450°C  
 Density (kg/m<sup>3</sup>): 2.48 – 2.52 at 25°C  
 pH (7 = neutral): 12.5 at 25°C of a 1% w/w aqueous solution  
 Vapour pressure (kPa): Not applicable  
 Relative vapour density (air = 1): Not applicable  
 Volatile by weight (%): Not applicable  
 Solubility in water: Partially soluble

Evaporation rate: Not applicable  
(n-butyl acetate = 100)

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### FIRE AND EXPLOSION HAZARD DATA

Flash point (°C): Material is non-flammable. Product may combust.  
Auto ignition point (°C): >350°C  
Explosion Limits In Air (% by volume)  
    Lower: Not applicable.  
    Upper: Not applicable.  
Extinguishing media: Compatible with water and foam.  
Special Procedures: Keep well away from ignition sources and naked flames.  
Unusual hazards: Product has the potential to selectively remove oxygen from the atmosphere especially in high moisture environments. Therefore, it may pose a particular hazard if left exposed in confined spaces.  
Conditions to avoid: High moisture environment. Extremely high temperatures. Will exothermically react with strong oxidants and acids. Reaction with polychlorinated phenols and potassium nitrate may form extremely toxic products.  
Materials to avoid: Violently reacts with maleic anhydride, interhalogens, halogens, oxidants, oxosalts and phosphorus. May spontaneously combust when mixed with hydrocarbons. Not recommended for continuous long term contact with aluminium as a solution.  
Decomposition products: Severe overheating will cause decomposition into metal oxides and water vapour. This occurs at calcination temperatures.  
Hazardous polymerisation: Will not occur.  
**Label safety and risk phrases:** None. Not classified as Hazardous according to the criteria of Worksafe Australia.

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### HEALTH HAZARD DATA

Threshold limit value: TWA 2 mg/m<sup>3</sup> as inspirable dust.  
TWA 5 mg/m<sup>3</sup> as respirable dust.  
TWA 5 mg/m<sup>3</sup> as fume.  
Crystalline Silica - TWA 0.1 mg/m<sup>3</sup> as respirable dust.  
TWA: the Time-Weighted Average airborne concentrations over an eight-hour, for a five-day working week over an entire working life.

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## EFFECTS OF EXPOSURE

### ACUTE EFFECTS:

Eyes (Contact) :	Mildly irritating and may result in redness from burning and abrasive effects.
Skin (Contact & absorption):	Mildly corrosive. May cause mild alkali burns in the presence of moisture.
Inhalation (breathing):	<p>Irritating to upper respiratory tract and lungs. Some discomfort may result. Dust may cause mild alkali burns to mucous membranes.</p> <p>At decomposition temperatures, inhalation of toxic metal oxide fumes may result in metal fume fever. Symptoms of which include chills, fever, headache, muscular pain, nausea and vomiting. Symptoms usually occur up to 12hr after exposure and last for about 24hr without any apparent permanent effects.</p>
Ingestion (swallowing):	Discomforting to the gastro-intestinal tract. Diarrhea may occur. May cause mild alkali burns to mouth and irritation to the oesophagus and stomach.

### CHRONIC EFFECTS:

Eyes (Contact):	May cause gradual corneal damage.
Skin (Contact & absorption):	Prolonged or repeated contact may lead to dry skin and has been known to cause irritation contact dermatitis.
Inhalation (breathing):	<p>This product contains small amounts of crystalline silica (quartz). Overexposure may cause coughing, sneezing, irritation and damage to the lungs. Repeated inhalation may lead to bronchitis, silicosis and even lung cancer. These effects take many years to develop since the effects of repeated inhalation of these dusts are cumulative and progressive.</p> <p>People with respiratory disorders will have their condition aggravated by this product.</p> <p>Studies have shown that smoking increases the risk of bronchitis, silicosis and lung cancer in persons repeatedly exposed to crystalline silica.</p>
Ingestion (swallowing):	Gastric ulcers may occur.

## FIRST AID

Eyes (contact):	While keeping eyes open, irrigate with copious amounts of water for at least 15 minutes. If irritation and/or pain continues or recurs, immediately seek medical attention. Continue to irrigate eyes with clean water or saline solution while transporting to medical facility.
Skin (contact):	Remove contaminated clothing. Wipe as much contamination off with a clean cloth and wash thoroughly with soap and water. Apply

a skin moisturising cream. If irritation is persistent, seek medical attention.

Inhalation (breathing):	Move immediately to fresh air. Encourage patient to blow nose to ensure clear breathing passages. Rinse mouth with copious amounts of water. DO NOT swallow water. Seek medical attention if irritation persists.
Ingestion (swallowing):	DO NOT induce vomiting. Wash mouth and lips with copious quantities of water. Give fresh water (or milk) to drink. Immediately seek medical attention. Note: DO NOT give water to unconscious patient.
Advice To Doctor:	Treat as for alkali. Treat symptomatically. Contact a Poisons Information Centre.
Toxicity data:	(ex "Sax's, Dangerous Properties of Industrial Materials" Ed. 8) - eye-rbt 10 mg SEV cyt-rat/ast 1200 mg/kg ivn-rat LD50: 35mg/kg orl-rat LD50: 7340 mg/kg scu-rat TDLo: 167mg/kg (8D preg):REP itr-ham TDLo: 480mg/kg/30W-I:ETA orl-mus LD50: 7300 mg/kg ivn-mus LD50: 440 mg/kg ihl-hmn TDLo: 400mg/m3
Safety Profile:	Mildly toxic by ingestion. Moderately toxic by intravenous route. A mild skin, eye, mucous membrane and respiratory irritant.

For inhalation purposes only, crystalline silica has been classified by the ACGIH as A2: Suspected Human Carcinogen.

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### **SPILL OR LEAK PROCEDURE**

**Steps to be taken in case material is released or spilled:** Prevent spillage from entering drains, sewers or water courses. Vacuum or sweep/shovel up. Avoid generating dust while doing so. Wear appropriate personal protective equipment. Collect spilled material in clean, dry sealable and labeled containers for disposal. Hose final trace residues to drain with excess water.

**Waste disposal method:** Refer to local waste disposal authority.

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### **SAFE HANDLING INFORMATION**

#### **SPECIAL PROTECTION INFORMATION**

Respiratory protection: If dust is generated, wear at least a class P1 particulate respirator.  
Note: People with a history of respiratory illness or reduced pulmonary function should avoid areas with high dust levels.

Ventilation:	Adequate local exhaust recommended. If not available or where dust will be generated in an enclosed work environment, use local mechanical ventilation or extraction. Avoid working in confined spaces.
Protective gloves:	PVC or rubber gloves with barrier cream recommended.
Eye protection:	Safety glasses with side shields or chemical goggles.
Other protective equipment:	Overalls or full-length clothing to protect the skin from contact with dust, particularly wetted dust. Launder clothing regularly.

### **SPECIAL PRECAUTIONS**

Handling & storage:	Handling procedures should consider minimising dust creation. Store in cool and dry place. Ensure the minimisation of ingress of moisture by keeping containers securely sealed at all times. Protect containers against physical damage. [Refer 'Fire and Explosion Hazard Data' section for material compatibility when storing.]
Environmental impact:	
Environmental fate and distribution:	Not a persistent pollutant. Can cause precipitation of metals in solution as hydroxides by increasing the pH of the aqueous system. If solids are precipitated they can be expected to become a part of the natural soil profile if not collected. An initial increasing of local pH can be expected in a small waterways. This will be transient though.
Toxicity:	Very low level toxicity.
Effect on effluent treatment:	This product can be and is used as a coagulant enhancing agent in waste water treatment. It may cause finely divided solids to settle out depending on other factors such as pH, from aqueous streams. May influence pH control as this material has a basic pH aqueous solution. It also may add to solids loading in filter cakes and present as a compressible cake.

### **EMERGENCY CONTACTS:**

Telephone:	(02) 9624 1333 (all hours — message on after hours)
Facsimile:	(02) 9624 5851
e-mail:	info@hardman.com.au
Address:	11 Boden Road, Seven Hills, NSW, 2147 (P.O. Box 122, Seven Hills)

[This MSDS consists of 6 pages, please advise if your document does not contain the same number of pages as it will not be complete]

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This MSDS summarises our best knowledge of health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

Please contact the company if any further information is required.