Appendix 8

Material Safety Data Sheet (MSDS) for Flocculent HydraBond® HB-4118

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HYDROFLUX UTILITIES

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SECTION 1 - IDENTIFICATION: PRODUCT IDENTIFIER AND COMPANY INFORMATION

Product name	HydraBond® HB-4118
Product code	HB-4118
Product use	Water treatment flocculant
Company name	Hydroflux Utilities Pty Ltd Level 26, 44 Market Street, Sydney, NSW 2000 www.hydrofluxutilities.com.au e: info@hydrofluxutilities.com.au t: 61 2 9089 8833 f: 61 2 9089 8830
Emergency Number	13 11 26 (Poison Information Hotline)

SECTION 2 - HAZARD IDENTIFICATION

HAZARDS nil

LABEL ELEMENTS

Pictogram	nil
Signal word	nil

HAZARD STATEMENTS

nil

PRECAUTIONARY STATEMENTS

Prevention	nil
Response	nil
Storage	nil
Disposal	nil

SECTION 3 - COMPOSITION AND INFORMATION ON INGREDIENTS

DESCRIPTION Anionic acrylamide based copolymer blended with an inert carrier agent

INGREDIENTS

Chemical name	CAS No.	Proportion, %
ingredients not deemed to be hazardous	-	to 100

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SECTION 4 - FIRST-AID MEASURES

SWALLOWED

- If swallowed do NOT induce vomiting.
- If conscious, washout mouth and give water to drink.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- If reflexive vomiting occurs, rinse mouth and repeat administration of water.
- Seek medical advice.

EYE

- Wipe or blot away excess material with clean cloth or paper towel.
- Wash out affected eye 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.

SKIN

- Wipe or blot away excess material with clean cloth or paper towel.
- Flush affected area with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- Remove to fresh air, treat symptomatically.
- If symptoms develop, seek medical advice.

NOTES TO PHYSICIAN

- Ingestion of product may form a jelly-like mass which may result in an intestinal obstruction.

SECTION 5 - FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

- Water, foam, carbon dioxide, dry powder.
- Use extinguishing media suitable for surrounding area.

HAZARDS FROM COMBUSTIBLE PRODUCTS

- May produce toxic fumes of carbon monoxide under fire conditions.
- May produce oxides of carbon and nitrogen under fire conditions.

PRECAUTIONS FOR FIRE-FIGHTERS AND SPECIAL PROTECTIVE EQUIPMENT

- Water in contact with the product will cause slippery floor conditions.
- In case of fire, wear a full face positive-pressure self-contained breathing apparatus and protective suit.

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SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

- Restrict access to area until clean-up operations are complete.
- Use personal protective equipment recommended in Section 8.
- Ventilate spill area if possible.
- Spill may be slippery when wet.

MINOR SPILLS

- Do not wash with water.
- Slippery when wet.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Sweep and shovel into labelled containers suitable for disposal.

MAJOR SPILLS

- Do not wash with water.
- Slippery when wet.
- Alert Fire Brigade and tell them the location and nature of hazard.
- Prevent spillage from entering drains or water ways. Spilled product may pose a risk to the aquatic ecosystem if released. If contamination of drains or waterways occurs, advise emergency services.
- Sweep and shovel into labelled containers suitable for disposal.

SECTION 7 - HANDLING AND STORAGE

HANDLING

- Eliminate personal contact.
- Avoid generating dust.
- Keep the containers closed when not in use.
- Have emergency equipment (for fires, spills, etc.) readily available.
- Ensure all containers are labelled.

STORAGE CONDITIONS

- Store in suitable labelled containers.
- Store the containers tightly closed.
- Store separately from oxidizers.
- Store in a cool, dry, well-ventilated area.

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SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS

- None assigned.

ENGINEERING MEASURES

- General ventilation is recommended.
- Keep an eye wash fountain available.
- Where practicable, have a safety shower available.

PERSONAL PROTECTION

We recommend as a minimum precaution the use of safety glasses with side-shields and work clothes protecting arms, legs and body, fully enclosed safety boots/gumboots and gloves.

Respiratory Protection

- Respiratory protection is not normally needed.

Hand Protection

- Nitrile gloves, Viton gloves, PVC gloves, cloth gloves, rubber gloves.

Skin Protection

- Wear standard protective clothing.

Eye Protection

- At a minimum wear safety glasses with side shields.

Hygiene Recommendations

- Use good work and personal hygiene practices to avoid exposure.
- If clothing is contaminated, remove clothing and discard or launder. Launder contaminated clothing separately and before reuse.
- Always wash and clean yourself thoroughly after handling chemicals.
- When handling this product never eat, drink or smoke.

ENVIRONMENTAL EXPOSURE CONTROL PRECAUTIONS

- Consider the provision of containment around storage vessels.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form	Solid
Appearance	Opaque to white
Odour	Nil
pH	6–7 (1% solution)
Melting point	no data available
Flash point	Not flammable
Upper explosive limit	Not flammable

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Lower explosive limit	Not flammable
Auto-ignition temp.	not applicable
Bulk density	1.1 g/cm^3
Solubility in water	Dispersible

SECTION 10 - STABILITY AND REACTIVITY

STABILITY

- Stable under normal conditions.

HAZARDOUS POLYMERIZATION

- Hazardous polymerization will not occur.

CONDITIONS TO AVOID

- Extremes of temperature.
- Moisture and high humidity.

MATERIALS TO AVOID

- Addition of water results in gelling.
- Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapours.

HAZARDOUS DECOMPOSITION PRODUCTS

- Under fire conditions: Oxides of carbon and nitrogen.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA

- LD50 Oral rat >2,000 mg/kg
- LD50 Dermal rabbit >5,000 mg/kg

SENSITIZATION

- This product is not expected to be a sensitizer.

CARCINOGENICITY

- No information available.

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SECTION 12 - ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION

- The effects by similar products on aquatic organisms are due to external (non-systemic) mode of action, e.g. suffocation or immobilization.

The following results have been conducted on products similar in nature to this product.

Acute Toxicity - Fish

Species	Exposure	LC50
Rainbow trout	96 hour	>100 mg/L

Acute Toxicity - Invertebrate Species

Species	Exposure	EC50
Daphnia magna	48 hour	>100 mg/L

BIOACCUMULATION POTENTIAL

- The potential for bioaccumulation is low. The number of carbon molecules in the polymer structure is very large and thus not able to transport across the cellular membrane.

MOBILITY

- The product is eliminated from the aqueous phase (>90%) via adsorption on suspended material.
- The effects of this product on aquatic organisms are rapidly and significantly mitigated by the presence of suspended material in the aquatic environment.

PERSISTENCE/DEGRADABILITY

- This product is not readily biodegradable.

HYDROLYSIS

- Does not hydrolyse.

SECTION 13 - DISPOSAL CONSIDERATIONS

- Dispose of in accordance with local, state and federal regulations.
- Dispose of wastes in an approved waste treatment/disposal site in accordance with applicable regulations.
- Do not dispose of wastes in local sewer or with normal garbage.
- Can be placed in landfill, when in compliance with local regulations.
- Do not reuse empty container for any purpose except to store this chemical.

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SECTION 14 - TRANSPORT INFORMATION

Not classified as a dangerous good - Australian Code for the Transport of Dangerous Goods by Road & Rail.

UN Number	-
Shipping name	-
Dangerous Goods Class	-
Packing Group	-
Subsidiary Risk	-
HAZCHEM	-
EPG	-

SECTION 15 - REGULATORY INFORMATION

Safe Work Australia	» This product has been classified in accordance with the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) - see Section 2 of this Safety Data Sheet.
NICNAS	» All ingredients in this product comply as per The Australian National Industrial Chemicals Notification & Assessment Scheme (NICNAS).
AICS	» All ingredients in this product are listed or are exempt from listing in the Australian Inventory of Chemical Substances (AICS).
POISON Schedule	» Not scheduled as part of the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

SECTION 16 - OTHER RELEVANT INFORMATION

Preparation date	24 April 2015
Revision number	3.0 (updates to Section 11, 12, 15)
Information sources	» Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, Dec 2011 (Safe Work Australia). » Australian Code for the Transport of Dangerous Goods by Road & Rail, 7th Edition. Oct 2011. » Safety Data Sheets from our suppliers of raw material. » Poisons Standard 2015 - Australian Government *Therapeutic Goods Act 1989.* » Hazardous Substance Information System (Safe Work Australia). » GHS Hazardous Chemical Information List. Version 0.2. August 2014, Safe Work Australia. » Globally Harmonised System of Classification and Labelling of Chemicals (GHS) 5th Edition, United Nations 2013.

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Acronyms and abbreviations

AICS	Australian Inventory of Chemical Substances.
CAS No.	Chemical Abstracts Service registry number.
cP	Centipoise (dynamic viscosity).
EC50	Half maximal effective concentration. A statistically derived value giving the median concentration of material in an environmental expected to cause 50% of the test population to perish.
EPG	Emergency Procedure Guide - Transport: Australian Standards AS 1678 (series).
g/cm^3	Grams per cubic centimetre.
GHS	Global Harmonised System (of Classification and Labelling of Chemicals - United Nations).
HAZCHEM	British Fire Service code system to provide immediate action advice when attending an incident involving dangerous substances.
HSIS	Hazardous Substance Information System (Safe Work Australia).
LC50	Lethal concentration, 50%. The concentration of material (in air or water) that will cause 50% of the test population to perish.
LD50	Lethal dose, 50%. The quantity of material when administered all at once that will cause 50% of the test population to perish.
mg/kg	Milligrams per kilogram.
mg/L	Milligrams per litre.
NICNAS	National Industrial Chemicals Notification & Assessment Scheme (Australia).
pH	The negative logarithm of the hydrogen ion concentration (applicable to water-based solutions only).
PVC	Polyvinyl chloride.
SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons (Poisons Standard - Australia).
temp.	Temperature, degrees Celsius.
UN	United Nations (number). United Nations Committee of Experts on the Transport of Dangerous Goods.