

MATERIAL SAFETY DATA SHEET

Product Trade Name: BE-6™ Bactericide

Revision Date: 02-Aug-2012

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Statement of Hazardous Nature Hazardous according to the criteria of NOHSC, Dangerous Goods according to the criteria of ADG.

Manufacturer/Supplier Halliburton Australia Pty. Ltd.
15 Marriott Road
Jandakot
WA 6164
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

Product Emergency Telephone

Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

Fire, Police & Ambulance - Emergency Telephone

Australia: 000
Papua New Guinea: 000
New Zealand: 111

Identification of Substances or Preparation

Product Trade Name: BE-6™ Bactericide
Synonyms: None
Chemical Family: Not applicable
UN Number: UN3241
Dangerous Goods Class: 4.1
Subsidiary Risk: None
Hazchem Code: 2XE
Poisons Schedule: None Allocated
Application: Microbiocide

Prepared By Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

2. HAZARDS IDENTIFICATION

Hazard Overview May cause eye burns. May cause skin and respiratory irritation. May be harmful if swallowed. May cause allergic skin reaction.

Classification Xn - Harmful.
N - Dangerous For The Environment.

Risk Phrases R41 Risk of serious damage to eyes.
R50 Very toxic to aquatic organisms.
R21/22 Harmful in contact with skin and if swallowed.
R37/38 Irritating to respiratory system and skin.

Safety Phrases S2 Keep out of reach of children.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

HSNO Classification 4.1.1B Flammable Solids
6.1C (Oral) Acutely Toxic Substances
6.1D (Dermal) Acutely Toxic Substances
6.1E (Inhalation) Acutely Toxic Substances
6.3A Irritating to the skin
6.9B Harmful to human target organs or systems
8.3A Corrosive to ocular tissue
9.1A Very ecotoxic in the aquatic environment
9.1D Slightly harmful in the aquatic environment
9.1B Ecotoxic in the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	Australia NOHSC	New Zealand WES	ACGIH TLV-TWA
2-Bromo-2-nitro-1,3-propa nediol	52-51-7	60 - 100%	Not applicable	Not applicable	Not applicable

Non-Hazardous Substance to Total of 100%

4. FIRST AID MEASURES

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

Eyes Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.

Ingestion Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Notes to Physician None known.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media
Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Special Exposure Hazards Decomposition in fire may produce toxic gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Scoop up and remove. Flush area with water.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Store in a cool, dry location. Store in a well ventilated area. Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Store at temperatures below 104 F (40 C) and 140 F (60 C) for short periods. Product has a shelf life of 48 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator with a dust/mist filter. (A2P2/P3)

Hand Protection Neoprene gloves. Nitrile gloves. Polyvinylchloride gloves.

Skin Protection Normal work coveralls.

Eye Protection Dust proof goggles.

Other Precautions Eyewash fountains and safety showers must be easily accessible. Rubber boots

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid Powder

Color: White

Odor: Characteristic

pH: 5 - 7

Specific Gravity @ 20 C (Water=1): 1.1

Density @ 20 C (kg/l): 1.1

Bulk Density @ 20 C (kg/M3): Not Determined

Boiling Point/Range (C): > 130

Freezing Point/Range (C):	130
Pour Point/Range (C):	Not Determined
Flash Point/Range (C):	>93
Flash Point Method:	SFCC ASTM D-3828
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (g/m ³):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (g/m ³):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined
Vapor Pressure @ 20 C (mmHg):	0.0005
Vapor Density (Air=1):	> 1
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	> 1
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (g/l):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	0.18
Molecular Weight (g/mole):	Not Determined
Decomposition Temperature (C):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers. Contact with alkalis. Contact with metals. Amines.
Hazardous Decomposition Products	Oxides of nitrogen. Bromine. Hydrogen bromide. Carbon monoxide and carbon dioxide. Formaldehyde.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
<u>Symptoms related to exposure</u>	
Acute Toxicity	
Inhalation	May cause respiratory irritation.
Eye Contact	May cause eye burns.
Skin Contact	May cause severe skin irritation. May cause skin defatting with prolonged exposure. May cause skin burns on prolonged contact.
Ingestion	Causes burns of the mouth, throat and stomach. May be fatal if swallowed.
Chronic Effects/Carcinogenicity	Twenty milligrams per kilogram of 1, 3-Propanediol, 2-bromo-2-nitro-, given orally daily for 90 days, to male and female rats, is well tolerated. Doses of 80 and 160 mg/kg produces gastrointestinal lesions, respiratory distress, and some deaths.
LD50 Oral:	180 - 400 mg/kg; (rat)
LD50 Dermal:	1600 mg/kg; (rat)
LC50 Inhalation:	800 mg/m ³ (rat)

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-Bromo-2-nitro-1,3-propanediol	52-51-7	No data available	1600 mg/kg (Rat)	800 mg/m ³ (Rat) 4 h

Test species: Rat

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity Product

Acute Fish Toxicity: TLM96: 41 ppm (Oncorhynchus mykiss)
TLM96: 36 ppm (Lepomis macrochirus)
LC50 (96): 58 ppm (Pimephales promelas)

Acute Crustaceans Toxicity: TLM48: 1.4 ppm (Daphnia magna)
TLM96: 5.9 ppm (Americamysis bahia)

Acute Algae Toxicity: Not determined

Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
2-Bromo-2-nitro-1,3-propanediol	52-51-7	No information available	LC50: 58 mg/l (Pimephales promelas)	No information available	TLM48: 1.4 ppm (Daphnia magna)

12.2 Persistence and degradability

THOD (100 ppm Conc.): 60 mg

12.3 Bioaccumulative potential

No information available

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available.

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.

Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Australia Dangerous Goods

UN Number: UN3241
UN Proper Shipping Name: 2-Bromo-2-Nitropropane-1,3-Diol
Transport Hazard Class(es): 4.1
Packing Group: III

IMDG/IMO

UN Number: UN3241
UN Proper Shipping Name: 2-Bromo-2-Nitropropane-1,3-Diol
Transport Hazard Class(es): 4.1

Packing Group: III
Environmental Hazards: Not applicable
EMS: EmS F-J, S-G

IATA/ICAO

UN Number: UN3241
UN Proper Shipping Name: 2-Bromo-2-Nitropropane-1,3-Diol
Transport Hazard Class(es): 4.1
Packing Group: III

Special Precautions for User None
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

15. REGULATORY INFORMATION

Chemical Inventories

Australian AICS Inventory All components listed on inventory or are exempt.
New Zealand Inventory of Chemicals All components listed on inventory or are exempt.
US TSCA Inventory All components listed on inventory or are exempt.
EINECS Inventory This product, and all its components, complies with EINECS

Classification
Xn - Harmful.
N - Dangerous For The Environment.

Risk Phrases
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Safety Phrases
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S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Section 7. Handling and Storage

Contact

Australian Poisons Information Centre
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

New Zealand National Poisons Centre
0800 764 766

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****