

SAFETY DATA SHEET

BE-6™ Bactericide

Revision Date: 16-Mar-2022

Revision Number: 10

1. Identification

Product Name

Product Trade Name: BE-6™ Bactericide

Other Names

Synonyms

None

Hazardous Material Number: HB000124

Recommended Use

Recommended Use Microbiocide

Uses advised against No information available

Company Name, Address and Contact Details

Manufacturer/Supplier Halliburton New Zealand
136-140 Connett Road East, Block
New Plymouth
New Zealand
Telephone: +64 6-755 2405
Company Registration No.: 824207

E-mail Address fdunexchem@halliburton.com

Emergency Telephone Number +64 800 451719
Global Incident Response Access Code: 334305
Contract Number: 14012

New Zealand National Poisons Centre 0800 764 766 (24 hours)

2. Hazards Identification

Statement of Hazardous Nature

Classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulation 2001;
Classified as dangerous good according to NZS 5433:2012, UN, IMDG or IATA

Classification

4.1.1B Flammable Solids
6.1C (Oral) Substances that are acutely toxic - Toxic
6.1D (Dermal) Substances that are acutely toxic - Harmful
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
9.3B Ecotoxic to terrestrial invertebrates

Hazard and Precautionary Statements

Hazard Pictograms



Signal Word

Danger

Hazard Statements

H228 - Flammable solid
 H301 - Toxic if swallowed
 H312 - Harmful in contact with skin
 H315 - Causes skin irritation
 H318 - Causes serious eye damage
 H333 - May be harmful if inhaled
 H373 - May cause damage to organs through prolonged or repeated exposure
 H400 - Very toxic to aquatic life
 H432 - Toxic to the terrestrial vertebrates.

Precautionary Statements

Prevention

P101 - If medical advice is needed, have product container or label at hand
 P102 - Keep out of reach of children
 P103 - Read label before use
 P104 - Read Safety Data Sheet before use.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P240 - Ground and bond container and receiving equipment.
 P241 - Use explosion-proof electrical/ventilating/lighting/equipment
 P260 - Do not breathe dust/fume/gas/mist/vapors/spray
 P264 - Wash face, hands and any exposed skin thoroughly after handling
 P270 - Do not eat, drink or smoke when using this product
 P280 - Wear protective gloves/eye protection/face protection

Response

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 P330 - Rinse mouth
 P331 - Do NOT induce vomiting
 P302 + P352 - IF ON SKIN: Wash with plenty of water.
 P332 + P313 - If skin irritation occurs: Get medical advice/attention
 P312 - Call a POISON CENTER and doctor/physician if you feel unwell.
 P304 + P312 - IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell
 P362 + P364 - 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
 P370 + P378 - In case of fire: Use water spray for extinction
 P405 - Store locked up
 P501 - Dispose of contents/container to an approved incineration plant

**Storage
 Disposal**

Contains

Substances	CAS Number	Substance HSNO Classification
2-Bromo-2-nitro-1,3-propanediol	52-51-7	4.1.1B 6.1C (Oral) 6.1D (Dermal) 6.1D (Inhalation) 6.3A 6.9B 8.3A 9.1A 9.3B

2.3. Other Hazards

None known

3. Composition/Information on Ingredients

Substances	CAS Number	PERCENT (w/w)
2-Bromo-2-nitro-1,3-propanediol	52-51-7	60 - 100%

4. First Aid Measures**Requirements for First Aid or Medical Care**

Inhalation	If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
Eyes	Immediately flush eyes with large amounts of water for at least 30 minutes. Seek prompt medical attention.
Skin	In case of contact, immediately flush skin with plenty of soap and water for at least 30 minutes and remove contaminated clothing, shoes and leather goods immediately. Get medical attention immediately.
Ingestion	Do NOT induce vomiting. Give nothing by mouth. Obtain immediate medical attention.

Workplace Facilities Required

None

Relation to Health Effect**Most Important Symptoms/Effects**

Causes severe eye irritation which may damage tissue. Causes severe skin irritation with tissue destruction. May cause respiratory irritation. Harmful if swallowed. Harmful in contact with skin.

Medical Attention and Special Treatment**Notes to Physician**

Treat symptomatically

5. Fire-fighting measures**Type of Hazard****Flammability Hazard**

Flammable Solid

5.1. Extinguishing media**Suitable Extinguishing Media**

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

HAZCHEM Code

Hazchem Code: 1Y

Special Protective Equipment and Precautions for Fire Fighters**Special protective equipment for firefighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

Special exposure hazards in a fire

Decomposition in fire may produce harmful gases.

6. Accidental Release Measures**6.1. Personal precautions, protective equipment and emergency procedures**

Use appropriate protective equipment.
See Section 8 for additional information.

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Scoop up and remove. Flush area with water.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

7. Handling and storage**7.1. Precautions for safe handling****Handling Precautions**

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

Handling Practices**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

Approved Handlers

This product does NOT require an approved handler.

7.2. Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Store in a cool, dry location. Store in a well ventilated area. Store locked up. 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.

Store Site Requirements

No special controls required

Packaging

No special packaging required

8. Exposure Controls/Personal Protection**Workplace Exposure Standards****Exposure Limits**

Substances	CAS Number	New Zealand WES	ACGIH TLV-TWA
2-Bromo-2-nitro-1,3-propanedi ol	52-51-7	Not applicable	Not applicable

Engineering Controls**Engineering Controls**

Use in a well ventilated area.

Personal Protective Equipment (PPE)**Personal Protective Equipment**

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection

If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Organic vapor respirator with a dust/mist filter. (A2P2/P3)

Hand Protection

Chemical-resistant protective gloves (EN 374) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Nitrile gloves. (>= 8 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced. Manufacturer's directions for use should be observed because of great diversity of types.

Skin Protection

Rubber apron. Rubber boots.

Eye Protection

Dust proof goggles.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties**9.1. Information on basic physical and chemical properties**

Physical State: Solid Powder	Color: White
Odor: Characteristic	Odor Threshold: No information available

<u>Property</u>	<u>Values</u>
Remarks/ - Method	
pH:	5 - 7
Freezing Point / Range	130 °C
Melting Point / Range	No data available
Pour Point / Range	No data available
Boiling Point / Range	> 130 °C / > 266 °F
Flash Point	> 93 °C / 199 °F (PMCC)
Evaporation rate	No data available
Vapor Pressure	0.0005 @ 20 C (mmHg)
Vapor Density	> 1 (air = 1)
Specific Gravity	1.1
Water Solubility	Soluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	0.18
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available
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10. Stability and Reactivity**10.2. Chemical stability**

Stable

10.4. Conditions to avoid

Keep away from heat, sparks and flame.

10.5. Incompatible materials

Strong oxidizers. Contact with alkalis. Contact with metals. Amines.

10.6. Hazardous decomposition products

Oxides of nitrogen. Bromine. Hydrogen bromide. Carbon monoxide and carbon dioxide. Formaldehyde.

Hazardous Reactions**Hazardous Polymerization:** Will Not Occur**11. Toxicological Information****Health Effect from Likely Routes of Exposure****Acute Toxicity**

Inhalation	Causes severe respiratory irritation.
Eye Contact	Causes severe eye irritation which may damage tissue.
Skin Contact	Harmful in contact with skin. Causes severe burns.
Ingestion	Harmful if swallowed. Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

Chronic Effects/Carcinogenicity

No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

Toxicity Data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-Bromo-2-nitro-1,3-propanediol	52-51-7	305 mg/kg (Rat) 307 mg/kg (Rat)	1600 mg/kg (Rat)	> 0.588 mg/L (Rat) 4h > 5 mg/L (Rat) 4h

Substances	CAS Number	Skin corrosion/irritation
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Causes severe skin irritation with tissue destruction. (Rabbit)

Substances	CAS Number	Serious eye damage/irritation
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Causes severe eye irritation which may damage tissue. (Rabbit)

Substances	CAS Number	Skin Sensitization
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Patch test on human volunteers did not demonstrate sensitization properties Did not cause sensitization on laboratory animals (guinea pig)

Substances	CAS Number	Respiratory Sensitization
2-Bromo-2-nitro-1,3-propanediol	52-51-7	No information available

Substances	CAS Number	Mutagenic Effects
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Some in vitro tests have shown mutagenic effects. In vivo tests did not show mutagenic effects.

Substances	CAS Number	Carcinogenic Effects
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Did not show carcinogenic effects in animal experiments

Substances	CAS Number	Reproductive toxicity
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments.

Substances	CAS Number	STOT - single exposure
2-Bromo-2-nitro-1,3-propanediol	52-51-7	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
2-Bromo-2-nitro-1,3-propanediol	52-51-7	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	Aspiration hazard
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Not applicable

12. Ecological Information**12.1. Toxicity****Ecotoxicity effects**

Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
2-Bromo-2-nitro-1,3-p	52-51-7	EC50 (72h) 0.25 mg/L	LC50 (96h) 58 mg/l	EC20 (150m) 2 mg/L	EC50 (48h) 1.4 mg/L

ropanediol	(Skeletonema costatum) EC50 (72h) 0.37 mg/L (Pseudokirchnerella subcapitata) EC50 (72h) 0.89 mg/L (Chlorella vulgaris)	(Pimephales promelas) LC50 (96h) 35.7 mg/L (Lepomis macrochirus) LC50 (96h) 41.2 mg/L (Oncorhynchus mykiss) LC50 (96h) 57.6 mg/L (Cyprinodon variegatus) NOEC (49d) 21.5 mg/L (Oncorhynchus mykiss) LC50 (49d) 39.1 mg/L (Oncorhynchus mykiss)	(Activated Sludge, Respiration Inhibition) EC50 (150m) 43 mg/L (Activated sludge)	(Daphnia magna) EC50 (48h) 3.5 mg/L (Acartia tonsa) NOEC (21d) 0.27 mg/L (Daphnia magna) EC50 (21d) 0.27-0.88 mg/L (Daphnia magna)
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12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Readily biodegradable (70% @ 28d)

12.3. Bioaccumulative potential

Substances	CAS Number	Bioaccumulation
2-Bromo-2-nitro-1,3-propanediol	52-51-7	0.22

12.4. Mobility in soil

Substances	CAS Number	Mobility
2-Bromo-2-nitro-1,3-propanediol	52-51-7	KOC = > 4

Ecotoxicity Hazard Statements

Very toxic to aquatic life

12.6. Other adverse effects

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

13. Disposal Considerations

13.1. Waste treatment methods

Disposal methods

Disposal should be made in accordance with federal, state, and local regulations. Incineration recommended in approved incinerator according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

14. Transport Information

NZ 5433.1999

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:	Marine Pollutant

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:	Marine Pollutant
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
Environmental Hazards:	Marine Pollutant

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Special Precautions for User

Not applicable

None

15. Regulatory Information

New Zealand Inventory of Chemicals	All components are listed on the NZIoC or are subject to a relevant exemption, permit, or assessment certificate.
HSNO Approval Number	HSR002523
Group Name	Class 4 Substances (Toxic 6.1 HSR002523)
HSNO Controls	Refer to the NZ EPA website for more information: http://www.epa.govt.nz
Approved Handlers	Not Applicable
Poisons Schedule:	None Allocated

16. Other information

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 Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms used in the safety data sheet

bw – body weight
CAS – Chemical Abstracts Service
EC50 – Effective Concentration 50%
LC50 – Lethal Concentration 50%
LD50 – Lethal Dose 50%
LL50 – Lethal Loading 50%
MARPOL – International Convention for the Prevention of Pollution from Ships
mg/kg – milligram/kilogram
mg/L – milligram/liter
NOEC – No Observed Effect Concentration
OEL – Occupational Exposure Limit
ppm – parts per million
TWA – Time-Weighted Average
VOC – Volatile Organic Carbon
C - Celsius
IATA/ICAO - International Air Transport Association / International Civil Aviation Organization
IMDG/IMO - International Maritime Dangerous Goods / International Maritime Organization
mg/m³ - milligram/cubic meter
mm - millimeter
mmHg - millimeter mercury
w/w - weight/weight
d - day

Key literature references and sources for data

www.ChemADVISOR.com/
NZ CCID
OSHA

Revision Date: 16-Mar-2022

Revision Note
Update to Format

Disclaimer Statement

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End of Safety Data Sheet