

SAFETY DATA SHEET

Product Trade Name:
BE-6™ Bactericide

Revision Date:
01-Feb-2021

Revision Number:
8

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

Product Identifier

Product Trade Name:

BE-6™ Bactericide

Synonyms

None

Chemical Family

Not applicable

Internal ID Code

HB000124

Recommended use and restrictions on use

Application

Microbiocide

Uses advised against

No information available

Manufacturer's Name and Contact Details

Manufacturer/Supplier

Halliburton Energy Services

14th Floor, CitiBank Tower, Al-Qutayat Street

Dubai, UAE

Telephone Number : +971 43036666

Additional Information

Prepared By

Chemical Stewardship

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Emergency Telephone Number

1-760-476-3959

Global Incident Response Access Code: 334305

Contract Number: 14012

2. HAZARDS IDENTIFICATION

Classification System

This SDS was prepared in accordance with United Nations "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" and its revisions.

Classification

Acute Oral Toxicity	Category 4 - H302
Acute Toxicity - Dermal	Category 4 - H312
Acute Inhalation Toxicity - Dusts and Mists	Category 4 - H332
Skin Corrosion / Irritation	Category 1 - H314
Serious Eye Damage / Eye Irritation	Category 1 - H318

Specific Target Organ Toxicity - (Single Exposure)	Category 3 - H335
Acute Aquatic Toxicity	Category 1 - H400
Chronic Aquatic Toxicity	Category 2 - H411
Flammable solids	Category 2 - H228

Hazard Pictograms**Signal Word**

Danger

Hazard Statements

H228 - Flammable solid
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H400 - Very toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements**Prevention**

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
P261 - Avoid breathing 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
P271 - Use only outdoors or in a well-ventilated area
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P312 - Call a POISON CENTER and doctor/physician if you feel unwell.
P362 + P364 - Take off contaminated clothing and wash before reuse
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/physician
P370 + P378 - In case of fire: Use CO2, dry chemical, or foam
P391 - Collect spillage

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

Disposal

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**Contains
Substances**

2-Bromo-2-nitro-1,3-propanediol

CAS Number

52-51-7

Additional Information

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	GHS Classification
2-Bromo-2-nitro-1,3-propanediol	52-51-7	60 - 100%	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1 (H314) Eye Corr. 1 (H318) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 2 (H411) Flam. Sol. 2 (H228)

4. FIRST AID MEASURES

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

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.

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.

Most important symptoms and effects, both acute and delayed

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.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically.

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.

Specific hazards arising from the chemical

Decomposition in fire may produce harmful gases.

Special protective actions for fire-fighters

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.

Environmental Precautions

Prevent from entering sewers, waterways, or low areas.

Methods and material for containment and cleaning up

Scoop up and remove. Flush area with water.

Additional Information

See Section 8 and 13 for additional information.

7. HANDLING AND STORAGE**Precautions for safe handling**

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

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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Exposure Limits**

Substances	CAS Number	United Arab Emirates	Bahrain	Kuwait	Gulf Cooperation Council
2-Bromo-2-nitro-1,3-propanediol	52-51-7	Not applicable	Not applicable	Not applicable	Not applicable

Appropriate engineering controls

Use in a well ventilated area.

Individual protection measures, such as 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:

Solid Powder

Color

White

Odor:

Characteristic

Odor Threshold:

No information available

pH:

5 - 7

Specific Gravity

1.1

Freezing Point/Range (°C):

130

Pour Point/Range (C):

No information available

Boiling Point/Range (C):

> 130

Flash Point/Range (°C):

> 93 °C

Flash Point Method:

SFCC

Flammability Limits in Air - Lower (%):

No information available

Flammability Limits in Air - Upper (%):

No information available

Autoignition Temperature (°C):

No information available

Evaporation Rate (Butyl Acetate=1):

> 1

Vapor Pressure

0.0005 @ 20 C (mmHg)

Vapor Density (Air=1):

> 1

Water Solubility

Soluble in water

Decomposition Temperature (C):

No information available

Viscosity, Dynamic:

No data available

Viscosity, Kinematic:

No information available

Partition Coefficient/n-Octanol/Water:

0.18

Molecular Weight (g/mole):

No information available

10. STABILITY AND REACTIVITY

Reactivity

Not expected to be reactive.

Chemical Stability

Stable

Possibility of hazardous reactions

Will Not Occur

Conditions to Avoid

Keep away from heat, sparks and flame.

Incompatible materials

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**Information on Toxicological Effects****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.

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-propane diol	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-propane diol	52-51-7	May cause respiratory irritation.

Substances	CAS Number	STOT - repeated exposure
2-Bromo-2-nitro-1,3-propane diol	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-propane diol	52-51-7	Not applicable

12. ECOLOGICAL INFORMATION

Toxicity

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

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	EC50 (72h) 0.25 mg/L (Skeletonema costatum) EC50 (72h) 0.37 mg/L (Pseudokirchnerella subcapitata) EC50 (72h) 0.89 mg/L (Chlorella vulgaris)	LC50 (96h) 58 mg/l (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)	EC20 (150m) 2 mg/L (Activated Sludge, Respiration Inhibition) EC50 (150m) 43 mg/L (Activated sludge)	EC50 (48h) 1.4 mg/L (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)

Persistence and degradability

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

Bioaccumulation potential

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

Mobility in soil

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

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

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.

Other Information

No information available

14. TRANSPORT INFORMATION**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

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**Regulatory Information:**

This SDS was prepared in accordance with United Nations "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)" and its revisions.

NFPA Ratings:

Health 3, Flammability 1, Reactivity 2

16. OTHER INFORMATION**Key literature references and sources for data**

www.ChemADVISOR.com/

NZ CCID

OSHA

Revision Date:

01-Feb-2021

Revision Note

Update to Format

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End of Safety Data Sheet