

MATERIAL SAFETY DATA SHEET**Product Trade Name:** **BE-3S BACTERICIDE****Revision Date:** 23-Jan-2008**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Product Trade Name: BE-3S BACTERICIDE
Synonyms: None
Chemical Family: Blend
Application: Biocide

Manufacturer/Supplier Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

Prepared By Chemical Compliance
Telephone: 1-580-251-4335
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2. COMPOSITION/INFORMATION ON INGREDIENTS

| SUBSTANCE | CAS Number | PERCENT | ACGIH TLV-TWA | OSHA PEL-TWA |
|-----------------------------------|-------------------|----------------|----------------------|---------------------|
| 2-Monobromo-3-nitrilopropionamide | 1113-55-9 | 1 - 5% | Not applicable | Not applicable |
| 2,2 Dibromo-3-nitrilopropionamide | 10222-01-2 | 60 - 100% | Not applicable | Not applicable |

3. HAZARDS IDENTIFICATION

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

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. 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 20 minutes. Seek prompt medical attention.

Ingestion If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person. Rinse mouth with water many times. Get immediate medical attention.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

| | |
|---|----------------|
| Flash Point/Range (F): | > 212 |
| Flash Point/Range (C): | > 100 |
| Flash Point Method: | CC |
| Autoignition Temperature (F): | Not Determined |
| Autoignition Temperature (C): | Not Determined |
| Flammability Limits in Air - Lower (%): | Not Determined |
| Flammability Limits in Air - Upper (%): | Not Determined |

Fire Extinguishing Media Carbon Dioxide, Dry Chemicals, Foam. Use water spray to cool fire exposed surfaces.

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.

NFPA Ratings: Health 3, Flammability 0, Reactivity 0
HMS Ratings: Health 3, Flammability 0, Physical Hazard 0

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.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wear appropriate respirator when opening containers. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Keep container closed when not in use. Store in a cool, dry location. Store in a well ventilated area. Store away from oxidizers. Store away from reducing agents. Store away from direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection Organic vapor respirator with a dust/mist filter.

Hand Protection Impervious rubber gloves. Polyvinylchloride gloves. Nitrile gloves. Neoprene gloves.

Skin Protection Rubber apron. Long-sleeve shirt, long pants, and shoes plus socks.

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: | Powder |
| Color: | White to yellow |
| Odor: | Slight Pungent |
| pH: | 4.7-4.9 |
| Specific Gravity @ 20 C (Water=1): | 2.204-2.216 |
| Density @ 20 C (lbs./gallon): | 19.73-19.83 |
| Bulk Density @ 20 C (lbs/ft³): | 10.5 |
| Boiling Point/Range (F): | Not Determined |
| Boiling Point/Range (C): | Not Determined |
| Freezing Point/Range (F): | Not Determined |
| Freezing Point/Range (C): | Not Determined |
| Vapor Pressure @ 20 C (mmHg): | Not Determined |
| Vapor Density (Air=1): | .934 |
| Percent Volatiles: | Not Determined |
| Evaporation Rate (Butyl Acetate=1): | Not Determined |
| Solubility in Water (g/100ml): | Partially soluble |
| Solubility in Solvents (g/100ml): | Not Determined |
| VOCs (lbs./gallon): | Not Determined |
| Viscosity, Dynamic @ 20 C (centipoise): | Not Determined |
| Viscosity, Kinematic @ 20 C (centistrokes): | Not Determined |
| Partition Coefficient/n-Octanol/Water: | Not Determined |
| Molecular Weight (g/mole): | 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. Reducing agents. |
| Hazardous Decomposition Products | Oxides of nitrogen. Bromine. Hydrogen bromide. Methyl and ethyl bromide. Cyanogen bromide. Carbon monoxide and carbon dioxide. |
| Additional Guidelines | Not Applicable |

11. TOXICOLOGICAL INFORMATION

| | |
|--|--|
| Principle Route of Exposure | Eye or skin contact, inhalation. |
| Inhalation | Causes severe respiratory irritation. May be harmful if inhaled. |
| Skin Contact | Causes severe skin irritation. This product contains ingredients which may produce an allergic skin reaction. It should be treated as a skin sensitizer. |
| Eye Contact | Causes severe eye irritation May cause eye burns. May cause permanent eye damage. |
| Ingestion | May be fatal if swallowed. |
| Aggravated Medical Conditions | Skin disorders. Respiratory disorders. Eye ailments. |
| Chronic Effects/Carcinogenicity | No data available to indicate product or components present at greater than 1% are chronic health hazards. |

Other Information None known.

Toxicity Tests

Oral Toxicity: LD50: 235 mg/kg, 178 mg/kg (rat) LD50: 201 mg/kg (rat)
Dermal Toxicity: LD50: > 2000 mg/kg (Rabbit)
Inhalation Toxicity: LC50: 0.32 mg/l/4 hr. (Rat)
Primary Irritation Effect: Not determined
Carcinogenicity Not determined
Genotoxicity: Not determined
Reproductive / Developmental Toxicity: Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined

Persistence/Degradability Resistant

Bio-accumulation Not Determined

Ecotoxicological Information

Acute Fish Toxicity: May be toxic to aquatic life. TLM96: 2.3 mg/l (Oncorhynchus mykiss) TLM96: 3.4 mg/l (Cyprinodon variegatus) TLM96: 2.3 mg/l (Lepomis macrochirus)
Acute Crustaceans Toxicity: TLM: 0.72 ppm (Mysidopsis bahia) LC50: 0.37 ppm (Crassostrea virginica)
Acute Algae Toxicity: Not determined

Chemical Fate Information Not determined

Other Information Not applicable

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

Land Transportation

DOT

Toxic Solid, Organic, N.O.S., 6.1, UN2811, II
(2, 2-Dibromo-3-Nitrilopropionamide), Marine Pollutant
NAERG 154

Canadian TDG

Toxic Solid, Organic, N.O.S.(2, 2-Dibromo-3-Nitrilopropionamide), 6.1, UN2811, II, Marine Pollutant

ADR

UN2811, Toxic Solid, Organic, N.O.S. (2, 2-Dibromo-3-Nitrilopropionamide), 6.1, II, Marine Pollutant

Air Transportation

ICAO/IATA

UN2811, Toxic Solid, Organic, N.O.S., 6.1, II
(2, 2-Dibromo-3-Nitrilopropionamide), Marine Pollutant

Sea Transportation

IMDG

UN2811, Toxic Solid, Organic, N.O.S. (2, 2-Dibromo-3-Nitrilopropionamide), II
, Marine Pollutant
EmS F-A, S-A

Other Shipping Information

Labels: Toxic

15. REGULATORY INFORMATION

US Regulations

| | |
|--|--|
| US TSCA Inventory | Product contains one or more components not listed on inventory. |
| EPA SARA Title III Extremely Hazardous Substances | Not applicable |
| EPA SARA (311,312) Hazard Class | Acute Health Hazard |
| EPA SARA (313) Chemicals | 2,2-Dibromo-3-nitrilopropionamide//10222-01-2 |
| EPA CERCLA/Superfund Reportable Spill Quantity | Not applicable. |
| EPA RCRA Hazardous Waste Classification | If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA. |
| Federal Insecticide, Fungicide and Rodenticide Act: | Label in accordance with Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements. |
| California Proposition 65 | All components listed do not apply to the California Proposition 65 Regulation. |
| MA Right-to-Know Law | Does not apply. |
| NJ Right-to-Know Law | Does not apply. |
| PA Right-to-Know Law | Does not apply. |

Canadian Regulations

| | |
|-------------------------------|--|
| Canadian DSL Inventory | Product contains one or more components not listed on inventory. |
| WHMIS Hazard Class | D1A Very Toxic Materials D2B Toxic Materials D1B Toxic Materials |

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

Additional Information

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

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

Disclaimer Statement

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