HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **Calcium bromide/Zinc Bromide brine with NO BLOK Z**

Revision Date: 06-Dec-2013

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: Calcium bromide/Zinc Bromide brine with NO BLOK Z
Synonyms: None
Chemical Family: Metal Bromide
Application: Additive

Manufacturer/Supplier
Baroid Fluid Services
Product Service Line of Halliburton
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

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

2. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	CAS Number	PERCENT (w/w)	ACGIH TLV-TWA	OSHA PEL-TWA
Zinc bromide	7699-45-8	30 - 60%	Not applicable	Not applicable
Calcium bromide	7789-41-5	10 - 30%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

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

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. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
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 All standard firefighting media.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

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

NFPA Ratings: Health 2, Flammability 0, Reactivity 0
HMIS Ratings: Health 2, Flammability 0, Reactivity 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 Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Store away from acids. Store in a cool, dry location. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Dust/mist respirator. (N95, P2/P3)

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear
Odor:	Mild
pH:	1 - 2
Specific Gravity @ 20 C (Water=1):	Not Determined
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	275
Boiling Point/Range (C):	135
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	17.5
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Miscible
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	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	None known.
Incompatibility (Materials to Avoid)	Strong acids. Strong oxidizers.
Hazardous Decomposition Products	Hydrogen bromide. Toxic fumes.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure Eye or skin contact, inhalation.

Sympotoms related to exposure

Acute Toxicity

Inhalation	Causes severe respiratory irritation.
Eye Contact	Causes severe eye irritation May cause eye burns.
Skin Contact	May cause skin irritation. May cause skin burns on prolonged contact. May cause an allergic skin reaction.
Ingestion	Causes burns of the mouth, throat and stomach. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.

Chronic Effects/Carcinogenicity May cause bromism characterized by disturbances of the central nervous system, skin and digestive tract.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Zinc bromide	7699-45-8	1470 mg/kg	No data available	No data available
Calcium bromide	7789-41-5	2447 mg/kg (Rat)	>2000 mg/kg (Rabbit)	No data available

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity Product

Acute Fish Toxicity: Not determined
Acute Crustaceans Toxicity: Not determined
Acute Algae Toxicity: Not determined

Ecotoxicity Substance

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Zinc bromide	7699-45-8	No information available	No information available	No information available	No information available
Calcium bromide	7789-41-5	No information available	No information available	No information available	EC50(48h): > 105 mg/L (Daphnia magna)

12.2 Persistence and degradability
The methods for determining biodegradability are not applicable to inorganic substances.

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

Land Transportation

DOT

UN3082, Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Zinc Bromide) , 9 , III , Marine Pollutant
RQ (Zinc Bromide - 454 kg.)
NAERG 171

Canadian TDG
Environmentally Hazardous Substance, Liquid, N.O.S. (Contains Zinc Bromide) , 9 , UN3082 , III , Marine Pollutant

ADR

UN3082, Environmentally Hazardous Substance, Liquid, N.O.S (Contains Zinc Bromide) , 9 , III , Marine Pollutant

Air Transportation

ICAO/IATA

UN3082, Environmentally Hazardous Substance, Liquid, N.O.S , 9 , III (Contains Zinc Bromide) , Marine Pollutant RQ (Zinc Bromide - 454 kg.)

Sea Transportation

IMDG

UN3082, Environmentally Hazardous Substance, Liquid, N.O.S (Contains Zinc Bromide) , 9 , III , Marine Pollutant RQ (Zinc Bromide - 454 kg.)
EmS F-A, S-F

Other Transportation Information

Labels: Miscellaneous - Class 9
Marine Pollutant

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory All components listed on inventory or are exempt.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Acute Health Hazard
Chronic Health Hazard

EPA SARA (313) Chemicals This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity EPA Reportable Spill Quantity is 188 Gallons based on Zinc bromide (CAS: 7699-45-8)

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:

Corrosivity D002

California Proposition 65 All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

WHMIS Hazard Class D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this SDS
Not applicable

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.

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