



Safety Data Sheet ZINC BROMIDE / CALCIUM BROMIDE BRINE

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name ZINC BROMIDE / CALCIUM BROMIDE BRINE
Product code PID1751
Country Limitations This SDS is not for use in EU/EEA.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Completion brine.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier

M-I Drilling Fluids UK Limited
Westhill Business Park
Westhill AB32 6JL Aberdeenshire
Scotland United Kingdom

+47 51577424

SDS@slb.com

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600

2. Hazards Identification

2.1 Classification of the substance or mixture

GHS Classification

Health hazards

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Subcategory 1B
Serious eye damage/eye irritation	Category 1
Skin sensitisation	Category 1

Environmental hazards

Chronic aquatic toxicity	Category 2
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Physical Hazards

Not classified

2.2 Label elements



Signal word
DANGER

Hazard Statements

H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
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

Supplementary precautionary statements

P260 - Do not breathe dust/fume/gas/mist/vapours/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P272 - Contaminated work clothing should not be allowed out of the workplace
P273 - Avoid release to the environment
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302 + P350 - IF ON SKIN: Gently wash with plenty of soap and water
P330 - Rinse mouth
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P362 + P364 - Take off contaminated clothing and wash it before reuse
P391 - Collect spillage
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Contains

Zinc bromide

Calcium bromide (CaBr₂)

2.3 Other hazards

Not classified as PBT/vPvB by current EU criteria
Thermal decomposition can lead to release of toxic and corrosive gases/vapours

3. Composition/information on Ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical Name	EC No	CAS No	Weight-%
Zinc bromide	231-718-4	7699-45-8	30-60
Calcium bromide (CaBr ₂)	232-164-6	7789-41-5	10-30

Comments

The product contains other ingredients which do not contribute to the overall classification.

4. First Aid Measures

4.1 First aid measures

Inhalation	Move the exposed person to fresh air at once. If breathing is difficult, (trained personnel should) give oxygen. If not breathing, give artificial respiration. Seek medical attention at once.
Ingestion	Do NOT induce vomiting. Get immediate medical attention. Rinse mouth. Risk of product entering the lungs on vomiting after ingestion. Never give anything by mouth to an unconscious person.
Skin contact	Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above. Burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Chemical burns must be treated by a physician.
Eye Contact	Remove contact lenses, if worn. Immediately flush eyes with water for 15 minutes while holding eyelids open. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

General advice Seek medical attention for all burns, regardless how minor they may seem. The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.

Symptoms

Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

5. Firefighting Measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing media appropriate for surrounding material.

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture

Unusual fire and explosion hazards

None known.

Hazardous combustion products

Fire or high temperatures create: Bromine, bromine oxides and hydrogen bromide.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

6. Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not get in eyes, on skin, or on clothing. Do not breathe vapours or spray mist. See also section 8. Use personal protection equipment.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls

Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up

Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see Section 13).

6.4 Reference to other sections

See section 13 for more information.

7. Handling and Storage

7.1 Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Do not get in eyes, on skin or on clothing. Avoid spills and splashing during use. Do not breathe vapors or spray mist. Persons susceptible to allergic reactions should not handle this product.

Hygiene Measures

Use good work and personal hygiene practices to avoid exposure When using do not eat, drink, smoke, sniff Wash hands and face before breaks and immediately after handling the product Remove contaminated clothing

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place Avoid contact with:
Oxidizing agents

Storage class Corrosive storage.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Exposure Limits Contains no substances with occupational exposure limit values

Component Information

Chemical Name	Arabic	Australia	Egypt
Zinc bromide	Not determined	Not determined	Not determined
Calcium bromide (CaBr2)	Not determined	Not determined	Not determined
Chemical Name	India	Indonesian	Japan
Zinc bromide	Not determined	Not determined	Not determined
Calcium bromide (CaBr2)	Not determined	Not determined	Not determined
Chemical Name	Kazakhstan	Kuwait	New Zealand
Zinc bromide	Not determined	Not determined	Not determined
Calcium bromide (CaBr2)	Not determined	Not determined	Not determined
Chemical Name	Malaysia	Philippines	Russia
Zinc bromide	Not determined	Not determined	Not determined
Calcium bromide (CaBr2)	Not determined	Not determined	Not determined
Chemical Name	Thailand	Vietnam	Turkey
Zinc bromide	Not determined	Not determined	Not determined
Calcium bromide (CaBr2)	Not determined	Not determined	Not determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard

present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering Controls

Ensure adequate ventilation

Personal protective equipment

Eye protection

Use eye protection according to EN 166, designed to protect against liquid splashes
 Chemical splash goggles and face shield

Hand protection

Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training Impervious gloves made of: Neoprene Nitrile PVC
 Break through time >480 minutes
 Glove thickness >=0.4 mm

Respiratory protection

Be aware that liquid may penetrate the gloves. Frequent change is advisable.
 In case of insufficient ventilation wear suitable respiratory equipment Respirator with a vapor filter (EN 141) Chemical respirator with inorganic vapour cartridge (Grey B). At work in confined or poorly ventilated spaces, respiratory protection with air supply must be used.

Skin and body protection

Wear suitable protective clothing Eye wash and emergency shower must be available at the work place.

Hygiene Measures

Wash hands before eating, drinking or smoking Remove and wash contaminated clothing before re-use



8.2.3 Environmental exposure controls

Environmental exposure

Use appropriate containment to avoid environmental contamination See section 6 for more information

9. Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available
Odour	Odourless
Colour	Colourless - Amber
Odour threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	No information available	
pH @ dilution	No information available	
Melting / freezing point	-7 °C / 19.4 °F	
Boiling point/range	136 °C / 276.8 °F	
Flash point	Not applicable	
Evaporation rate	No information available	
Flammability (solid, gas)	Not applicable	

Flammability Limit in Air	
Upper flammability limit	Not applicable
Lower flammability limit	Not applicable
Vapour pressure	No information available
Vapour density	No information available
Specific gravity	2.30 - 2.33
Bulk density	No information available
Relative density	No information available
Water solubility	Soluble in water
Solubility in other solvents	Ethanol Methanol
Autoignition temperature	Not applicable
Decomposition temperature	690°C / 1274°F (ZnBr ₂ 100%)
Kinematic viscosity	No information available
Dynamic viscosity	No information available
log Pow	No information available

Explosive properties	Not applicable
Oxidising properties	None known

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	None
Density	No information available

Comments

The data listed above are typical physical and chemical properties and should not be construed as product specification.

10. Stability and Reactivity

10.1 Reactivity

Corrosive.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerisation

Hazardous polymerisation does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous decomposition products

See Section 5.2.

11. Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	Vapours are corrosive. After 24-36 hours, injured persons may develop serious shortness of breath and lung oedema. Vapours irritate the respiratory system, and may cause coughing and difficulties in breathing.
Eye contact	Causes burns. May cause irreversible damage to eyes.
Skin contact	Causes severe skin burns. May cause an allergic skin reaction.
Ingestion	Causes burns. Can burn mouth, throat, and stomach. Harmful if swallowed.
Unknown acute toxicity	Not applicable.

Toxicology data for the components

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Zinc bromide	No data available	No data available	No data available
Calcium bromide (CaBr ₂)	= 4100 mg/kg (Rat)	No data available	No data available

Sensitisation	May cause sensitisation by skin contact.
Mutagenic effects	This product does not contain any known or suspected mutagens.
Carcinogenicity	This product does not contain any known or suspected carcinogens.
Reproductive toxicity	This product does not contain any known or suspected reproductive hazards.
Routes of exposure	Inhalation. Ingestion. Eye contact. Skin contact.
Routes of entry	Inhalation. Ingestion. Skin contact. Eye contact.
Specific target organ toxicity - Single exposure	Not classified
Specific target organ toxicity - Repeated exposure	Not classified.
Aspiration hazard	Not applicable.
Other information	Key literature references and sources for data. See Section 16 for more information.

12. Ecological Information

12.1 Toxicity

Toxic to aquatic life with long lasting effects

Toxicity to algae

Toxic to aquatic life with long lasting effects.

Toxicity to fish

Toxic to aquatic life with long lasting effects.

Toxicity to daphnia and other aquatic invertebrates

Toxic to aquatic life with long lasting effects.

Toxicology data for the components

Chemical Name	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Zinc bromide	No information available	No information available	No information available
Calcium bromide (CaBr ₂)	No information available	No information available	No information available

12.2 Persistence and degradability

Not Applicable - Inorganic chemical.

12.3 Bioaccumulative potential

Not Applicable - Inorganic chemical.

12.4 Mobility

Mobility

The product is water soluble, and may spread in water systems.

Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects.

None known.

12.7 Other information

Key literature references and sources for data. See Section 16 for more information.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues/unused products

Dispose of in accordance with local regulations.

Contaminated packaging

Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal.

14. Transport information

14.1. UN number

UN/ID No. (ADR/RID/ADN/ADG)	UN1760
UN No. (IMDG)	UN1760
UN No. (ICAO/ANAC)	UN1760

14.2. UN proper shipping name

CORROSIVE LIQUID, N.O.S. (contains Zinc bromide)

14.3. Hazard class(es)

ADR/RID/ADN/ADG Hazard class	8
IMDG Hazard class	8
ICAO Hazard class/division	8

14.4 Packing group

ADR/RID/ADN/ADG Packing Group	II
IMDG Packing group	II
ICAO Packing group	II



14.5 Environmental hazard

Yes

14.6 Special precautions

Hazard ID	80
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EmS (IMDG) F-A, S-B
Emergency Action Code (EAC) 2X
Tunnel restriction code (E)

14.7 Transport in bulk according to Annex I/II of MARPOL 73/78 and the IBC Code

Please contact SDS@slb.com for info regarding transport in Bulk.

15. Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

The Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Australian Standard for the Uniform Scheduling of Drugs and Poisons

Zinc bromide
Schedule 4
Calcium bromide (CaBr₂)
Schedule 4

International inventories

USA, Toxic Substances Control Act inventory (TSCA)	Complies
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Inventory - Japan - Existing and New Chemicals list	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korea (KECL)	Complies
Inventory - New Zealand - Inventory of Chemicals (NZIoC)	Complies

This SDS is not for use in EU/EEA.

16. Other Information

Prepared by	Global Regulatory Compliance - Chemicals (GRC - Chemicals) , Anne Karin (Anka) Fosse
Supersedes Date:	08/Jun/2011
Revision date	28/Nov/2018
Version	4

This SDS has been revised in the following section(s) This SDS have been made in a new database and therefore a new layout. There have been changes with regard to classification.

Key literature references and sources for data
www.ChemADVISOR.com
Supplier

National Chemical Inventories
National regulatory information
National occupational exposure limits

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