

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard 29 CFR 1910.1200 (GHS)

<b>Product name</b>	<b>Zinc Bromide and Calcium Bromide Solution</b>	
<b>Product id</b>	2072	
<b>Revision date</b>	01/02/2012	<b>Revision:</b> 9
<b>Supersedes</b>	11/09/2007	

## 1. Identification of the substance & the company

<b>Chemical name</b>	Zinc bromide and calcium bromide water solution
<b>Chemical formula</b>	ZnBr <sub>2</sub> / CaBr <sub>2</sub> in water
<b>Chemical family</b>	Inorganic bromide
<b>Molecular weight</b>	225.19 (ZnBr <sub>2</sub> ); 199.88 (CaBr <sub>2</sub> )
<b>Type of product and use</b>	For use in oil and gas well workover, completion and packer fluids.
<b>Supplier</b>	ICL-IP America Inc. 622 Emerson Road - Suite 500 St Louis, Missouri 63141, USA Tel:(314)983-7884 Fax:(314)983-7607 e-mail:msdsinfo@icl-group.com
<b>Emergency Telephone</b>	Chemtrec: (800) 424-9300 Medical: PROSAR 1-888-875-1685 (24HRS)

## 2. Hazards identification

<b>GHS classification</b>	Skin Corr. 1B: H314 Causes severe skin burns and eye damage Acute Tox. 4, H302 Harmful if swallowed Skin Sens. 1, H317 May cause an allergic skin reaction Eye Damage 1, H318 Causes serious eye damage Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects
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### Labels and other form of warning

#### Symbol(s)



#### Signal Word

DANGER

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**Hazard statements**  
H302 - Harmful if swallowed  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H411 - Toxic to aquatic life with long lasting effects

**Precautionary statements**  
P260 - Do not breathe fume/gas/mist/vapors/spray  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
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  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
P330 - Rinse mouth  
P362 + P364 - Take off all contaminated clothing and wash it before reuse  
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

## 3. Composition / information on ingredients

Components	CAS No.	Weight %
Calcium Bromide	7789-41-5	19-23
Zinc bromide	7699-45-8	54-58

## 4. First-aid measures

**Eye contact** Holding the eyelids apart, flush eyes promptly with copious flowing water for at least 20 minutes. Get medical attention immediately.

**Skin contact** Flood skin with water directing a stream of water under the clothing while it is being removed. Wash skin thoroughly with mild soap and plenty of water for at least 15 minutes. Get medical attention immediately. Wash clothing before reuse.

**Inhalation** In case of mist inhalation or breathing fumes released from heated material, remove person to fresh air. Keep him quiet and warm. Apply artificial respiration if necessary and get medical attention immediately.

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**Ingestion** If swallowed, wash mouth thoroughly with plenty of water. Get medical attention immediately.

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NOTE: Never give an unconscious person anything to drink  
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## Most important symptoms and effects, acute or delayed

- Ocular May cause severe irritation
- Dermal Irritant
- Inhalation May cause severe irritation to mucous membranes and upper respiratory tract
- Ingestion Harmful if swallowed
- Sensitization May cause skin sensitization

**Notes to the physician** In case of ingestion DO NOT induce vomiting.  
Treat symptomatically and supportively.  
No specific antidote.

## 5. Fire - fighting measures

**Suitable extinguishing media** Material is not combustible. Use extinguishing media appropriate to surrounding fire conditions.

**Unusual fire and explosion hazards** Will decompose above 690°C releasing poisonous and corrosive fumes of hydrogen bromide and bromine.

**Fire fighting procedure** Cool containers with water spray. In closed stores, provide fire-fighters with self-contained breathing apparatus in positive pressure mode.

## 6. Accidental release measures

**Personal precautions** Full protective clothing, including self-contained breathing apparatus, must be used.

**Methods for cleaning up** Absorb on sand or vermiculite and place in closed container for disposal. Ventilate area and wash spill site after material pickup is complete. Avoid access to streams, lakes or ponds.

**Environmental precautions** Avoid access to streams, lakes or ponds.

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## 7. Handling and storage

**Handling** Avoid bodily contact. Keep containers tightly closed.  
**Storage** Keep in a well-ventilated place away from incompatible materials (see "materials to avoid").

## 8. Exposure controls / personal protection

Exposure Limits :

Components	ACGIH-TLV Data	OSHA (PEL) Data
Calcium Bromide 7789-41-5	Not determined	Not determined
Zinc bromide 7699-45-8	Not determined	Not determined

**Ventilation requirements** Provide adequate ventilation. Use local exhaust as necessary, especially under mist conditions.

**Personal protective equipment:**

- **Respiratory protection** Approved respirator
- **Hand protection** Protective gloves
- **Eye protection** Chemical safety goggles
- **Skin and body protection** Body covering clothes and boots

**Hygiene measures** Do not eat, smoke or drink where material is handled, processed or stored. Wash hands thoroughly after handling and before eating or smoking. Safety shower and eye bath should be provided.

## 9. Physical and chemical properties

**Appearance** Clear colorless to light amber liquid  
**Odor** Not available.  
**Odor threshold** Not available  
**pH** Not determined  
**Melting point/range** < -7°C  
**Boiling point/range** 136°C  
**Flash point** None  
**Evaporation rate (ether=1)** As of water  
**Flammability (solid, gas)** Not applicable  
**Flammable/Explosion limits** Not flammable  
**Vapor pressure** Not available  
**Vapor density** Not available  
**Density** Not determined  
**Solubility:**  
- **Solubility in water** Soluble  
- **Solubility in other solvents** Soluble in methanol and ethanol

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<b>Partition coefficient (n-octanol/water)</b>	Not determined
<b>Auto-ignition temperature</b>	Not applicable
<b>Decomposition temperature</b>	ca. 690 °C (ZnBr <sub>2</sub> 100%)
<b>Viscosity</b>	Not available
<b>Specific gravity</b>	2.30-2.33
<b>Explosive properties</b>	Not available
<b>Oxidising properties</b>	Not available

## 10. Stability and reactivity

<b>Reactivity</b>	Stable under normal conditions.
<b>Stability</b>	Stable under normal conditions
<b>Possibility of hazardous reactions</b>	Not expected to occur
<b>Conditions to avoid</b>	Heating above decomposition temperature.
<b>Materials to avoid</b>	Metallic sodium and potassium and strong oxidants.
<b>Hazardous decomposition products</b>	Hydrogen bromide and bromine

## 11. Toxicological information

<b>Acute toxicity:</b>	
- Rat oral LD <sub>50</sub>	ZnBr <sub>2</sub> 100%: 1047 mg/kg
- Eye irritation (rabbit)	Corrosive (ZnBr <sub>2</sub> )
- Dermal irritation (rabbit)	Corrosive (Transcutaneous Electrical Resistance assay using epidermal rat skin tissue)
<b>Dermal sensitization</b>	Skin sensitiser (ZnBr <sub>2</sub> )
<b>Specific Target Organ Toxicity (STOT) - Single exposure</b>	No data available
<b>Specific Target Organ Toxicity (STOT) - Repeat exposure</b>	Repeated oral intake of bromides (>9 mg/kg body weight/day) may affect the central nervous system. Warning symptoms include mental dullness, slurred speech, weakened memory, apathy, anorexia, constipation, drowsiness and loss of sensitivity to touch and pain.
<b>Chronic toxicity</b>	Repeated oral intake of bromides (>9 mg/kg body weight/day) may affect the central nervous system. Warning symptoms include mental dullness, slurred speech, weakened memory, apathy, anorexia, constipation, drowsiness and loss of sensitivity to touch and pain.
<b>Mutagenicity</b>	Not mutagenic by the Ames Test.
<b>Carcinogenicity</b>	Not classified by IARC Not included in NTP 13th Report on Carcinogens

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## 12. Ecological information

**Note:** The following data refer to ZnBr<sub>2</sub>

### Aquatic toxicity :

- 96 Hour-LC50, Fish	115.9 ml/ (Juvenile turbot)
- 72 hour - EC50, Marine algae	6.6 mg/l (Skeletonema costatum)
- 48 Hour-EC50, Marine Invertebrate	2.4 mg/l (Acartia tonsa)
- 48 Hour-EC50, Daphnia magna	8.8 mg/l

**Persistence and degradability** No data available

**Bioaccumulative potential** Bioconcentration factor values for zinc ions in freshwater fish and marine fish were reported as 1000 and 2000 respectively. After exposing rainbow trout to zinc for a period of 30 days in river water, it was concluded that zinc accumulates in the gills, liver, kidney and opercular bone, but not in the muscle. In the case of zinc, the BCF is not useful for relating uptake to adverse effects, because it does not consider physiological parameters (World Health Organization (WHO) Geneva, 2001 report).

**Mobility in soil** Based on monitoring data, zinc compounds are expected to adsorb to suspended solids and sediment in water. Due to ionic nature of zinc salts, volatilization from water surfaces is not expected to be important fate process.

## 13. Disposal considerations

**Waste disposal** In suitable containers, cover waste with sodium carbonate or bicarbonate. Remove to approved incinerator or landfill. Observe all federal, state and local environmental regulations when disposing of this material.

**Disposal of Packaging** Empty containers should be disposed of in accordance with all applicable laws and regulations

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## 14. Transportation information

<b>UN No.</b>	1760
<b>DOT</b>	Proper shipping name: Corrosive Liquid, n.o.s. (contains zinc bromide) Class: 8 - Corrosives Packing Group: II Marking: Marine Pollutant Not regulated as a marine pollutant for surface and air transport in non-bulk packagings.
<b>IMDG</b>	Proper shipping name: Corrosive Liquid, n.o.s. (contains zinc bromide) Class: 8 - Corrosives Label: CORROSIVE (8) Packing Group: II Mark: MARINE POLLUTANT
<b>ICAO/IATA</b>	Proper shipping name: Corrosive Liquid, n.o.s. (contains zinc bromide) Class: 8 Hazard Label (s): Corrosive Packing group: II Marking: Environmentally hazardous substance

## 15. Regulatory information

<b>USA</b>	Reported in the EPA TSCA Inventory.
<b>- SARA 313</b>	ZnBr <sub>2</sub> (CAS #7699-45-8) is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.
<b>Canada</b>	Listed in DSL
<b>EU</b>	Reported in EINECS
<b>Japanese METI</b>	ENCS No.1-118, 1-1038
<b>Australia</b>	Listed in AICS
<b>New Zealand Inventory</b>	Listed in NZIoC
<b>China</b> <b>- China inventory</b>	Listed in IECSC
<b>Korea</b>	Listed in the Korea Existing Chemicals Inventory (KECI), number KE- 35532, 04485
<b>Philippines</b>	Listed in PICCS

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**Switzerland** Listed in Giftliste 1 (G-7324, 7923)

## 16. Other information

### Note:

All sections reformatted in accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (GHS)

### Health, Safety & Environment Policy

We will strive to ensure that our operations and products meet the needs of the present global community without compromising the ability of future generations to meet their needs. We accept that the success of our business is dependent on the supply of products and services that will benefit society whilst ensuring human safety and protection of the environment and natural resources. Within the framework of our commitment to the Responsible Care program, we will provide a healthy and safe work environment for employees and will responsibly manage our products at all stages of their life cycle in order to protect human health and the environment whilst maintaining high production standards of operation.

**TO MEET THIS COMMITMENT WE WILL:** Comply with or exceed applicable national and international regulatory requirements and other requirements to which we subscribe. Communicate openly and actively encourage dialogue with employees, customers and community concerning our products and operations. Implement documented management systems consistent with and for promotion of the Responsible Care ethics.

Develop and supply products that can be manufactured, transported, used and disposed of safely whilst best meeting the needs of our customers. Regularly assess, continually improve and responsibly manage health, safety and environmental risks associated with products and processes throughout their life-cycles. Share knowledge and expertise with others and seek to learn from and incorporate improved practices into our own operations.

Educate and train employees, contractors and customers to improve their HSE performance. Communicate up-to-date information to enable our workers, customers and other interested parties to handle our products in a safe and environmentally responsible manner. Endeavor to work with customers, suppliers, distributors and contractors to foster the safe use, transport and disposal of our chemicals. Support Product Stewardship programs in cooperation with customers, distributors and transporters.

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, ICL-IP America Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its safety and suitability for their purposes prior to use. In no event will ICL-IP America Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE, ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

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**End of safety data sheet**