



# SAFETY DATA SHEET

Issuing Date 29-Oct-2012

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Revision No. 0

## Section 1. Identification of the Substance/Mixture and of the Company /Undertaking

### 1.1. Product Identifier

Product Name: **Zinc Bromide - Calcium Bromide Solution**  
Chemical Family: Metal Bromide

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

Recommended Use: Additive brine  
Uses Advised Against: No information available

### 1.3. Details of the supplier of the safety data sheet

#### Importer

No information available

#### Company

TETRA Technologies, Inc.  
24955 Interstate 45 North  
The Woodlands, TX 77380  
(281) 367-1983  
[www.tetratec.com](http://www.tetratec.com)

### 1.4. Emergency telephone number

**Emergency Number** U.S. Toll Free (800) 424-0300  
International +1 703-527-3887

**Poison Control** (800) 222-1222

## Section 2. Hazards Identification

### 2.1 Classification of the substance or mixture

Classification according to EU Directives 67/548/EEC or 1999/45/EC  
For the full text of R-phrases mentioned in this Section, see Section 16

Classification: C Corrosive  
N Dangerous For The Environment

Risk Phrases: R22 Harmful if swallowed.  
R34 Causes burns.  
R43 May cause sensitization by skin contact.  
R51 Toxic to aquatic organisms.

### Label Elements



### 2.3 Other hazards

May cause eye, skin, and respiratory burns. May cause allergic skin reaction. May be harmful if swallowed. May cause birth defects.

## Section 3. Composition / Information on Ingredients

### 3.1 Substance(s)

Chemical Name	EC Number	CAS	Weight %
Calcium bromide	232-164-6	7789-41-5	18 – 21
Zinc bromide	231-718-4	7699-45-8	53 – 56

## Section 4. First Aid Measures

### 4.1 Description of first-aid measures

<b>Inhalation:</b>	Remove from exposure area to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Obtain medical attention.
<b>Skin contact:</b>	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 wash before reuse.
<b>Eye contact:</b>	Immediately flush eyes thoroughly with large amounts of water for 15-20 minutes. Hold eyelids open during flushing. Get medical attention immediately.
<b>Ingestion:</b>	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. Obtain medical advice if necessary.

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

**Most Important Symptoms/Effects** May cause eye and skin burns.

### 4.3 Indication of immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## Section 5. Fire-Fighting Measures

### 5.1 Extinguishing media

#### **Suitable Extinguishing Media**

All standard fire-fighting media. Water fog, carbon dioxide, foam, dry chemical

#### **Extinguishing media which must not be used for safety reasons**

None known

### 5.2 Special hazards arising from the substance or mixture

Decomposition in fire may produce toxic gases.

### 5.3 Advice for firefighters

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

## Section 6. Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Keep unnecessary people away. Do not touch spilled material. Wear appropriate protective equipment.

### 6.2 Environmental precautions

Prevent entry into waterways, sewers, basements, low areas or confined areas.

### 6.3 Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

#### **6.4 Reference to other sections**

For more information on exposure controls/personal protection or disposal considerations, please see section 8 and 13.

### **Section 7. Handling and Storage**

#### **7.1 Precautions for safe handling**

Avoid skin and eye contact. Avoid contact with clothing. Avoid breathing vapors. Wash thoroughly after handling. Launder contaminated clothing before reuse.

#### **Advice on general occupational hygiene measures**

Good personal and housekeeping practices to be used. No drinking, eating or smoking in the workplace.

#### **7.2 Conditions for safe storage, including any incompatibilities**

Observe all federal, state, and local regulations when storing this product. Store away from acid and oxidizers. Store in a cool, dry location. Keep container closed when not in use.

### **Section 8. Exposure Controls/Personal Protection**

#### **8.1 Control parameters**

**Occupational Exposure Limit Values**      10 mg/m3 (UK)

#### **8.2 Exposure controls**

<b>Engineering Measures:</b>	Use in a well-ventilated area.
<b>Eye Protection:</b>	Chemical goggles; also wear a face shield if splashing hazard exists.
<b>Skin Protection:</b>	Normal work coveralls.
<b>Hand Protection:</b>	Impervious rubber gloves.
<b>Respiratory Protection</b>	In the case of high dust/mist levels wear suitable respiratory protective equipment, e.g. dust mask or respirator.

### **Section 9. Physical and Chemical Properties**

#### **9.1 Information on basic physical and chemical properties**

Appearance	Clear, light yellow to amber	
Odor	Odorless	
Odor threshold	No information available	
pH	< 2.5	
Melting point/freezing point	No information available	
Boiling point	313°F (156°C)	For 55% solution ZnBr <sub>2</sub> , 19% CaBr <sub>2</sub>
Flash point	No information available	
Evaporation rate	No information available	
Flammability	No information available	
Upper/lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Relative density	No information available	
Water solubility	Complete	
Partition coefficient	No information available	
Auto-ignition temperature	No information available	
Decomposition temperature	No information available	
Viscosity	No information available	

Explosive properties	No information available	
Oxidizing properties	No information available	
Specific gravity	2.3 @ 77°F (25°C)	For 55% solution ZnBr <sub>2</sub> , 19% CaBr <sub>2</sub>

## Section 10. Stability and Reactivity

### 10.1 Reactivity

Can evolve hydrogen bromide and/or bromine when heated.

### 10.2 Chemical stability

Stable under normal temperatures and pressures.

### 10.3 Possibility of hazardous reactions

None

### 10.4 Conditions to avoid

Contact with incompatible materials.

### 10.5 Incompatible materials

Strong acids. Strong oxidizers.

### 10.6 Hazardous decomposition products

May include acid smokes and fumes of zinc oxides and hydrogen bromide.

## Section 11. Toxicological Information

### 11.1. Information on toxicological effects

<b>Primary Routes of Exposure</b>	Skin contact. Eye contact. Inhalation.
<b>Inhalation</b>	Causes severe respiratory irritation.
<b>Skin Contact</b>	May cause skin irritation. May cause skin burns on prolonged contact. May cause an allergic reaction.
<b>Eye Contact</b>	Causes severe eye irritation. May cause eye burns.
<b>Ingestion</b>	Causes burns of the mouth, throat and stomach. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.
<b>Carcinogenicity</b>	May cause bromism characterized by disturbances of the central nervous system, skin and digestive tract.
<b>Reproductive Toxicity</b>	May cause birth defects.
<b>Toxicity Data</b>	Not available for zinc bromide – calcium bromide solution

## Section 12. Ecological Information

### 12.1. Toxicity

<b>Acute/short term toxicity to fish</b>	No information available
<b>Acute/short term toxicity to aquatic invertebrates</b>	No information available.

### 12.2. Persistence and degradability

No information available.

### 12.3. Bioaccumulative potential.

Not determined

### 12.4. Mobility in soil

Not determined

### **12.5. Results of PBT and vPvB assessment**

Not determined

### **12.6. Other adverse effects**

Solutions containing zinc bromide are considered Marine Pollutants and Environmentally Hazardous.

## **SECTION 13. Disposal Considerations**

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulation.

**Contaminated Packaging** Follow all applicable national or local regulations.

## **SECTION 14. Transport Information**

**UN Number** UN3082  
**UN Proper Shipping Name** UN3082, Environmentally Hazardous substance, Liquid, N.O.S. (contains Zinc Bromide), 9 , III, Marine Pollutant, RQ  
**Hazard Class** 9  
**Packing Group** III  
**Marine Pollutant** Yes  
**Reportable Quantity** 1000 lb. (454 kg)  
**Labels:** Class 9 and Marine Pollutant

## **Section 15. Regulatory Information**

**Classification:** C Corrosive  
N Dangerous For The Environment

**Risk Phrases:** R22 Harmful if swallowed.  
R34 Causes burns.  
R43 May cause sensitization by skin contact.  
R51 Toxic to aquatic organisms.

**Safety Phrases:** S2 Keep out of reach of children  
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S45 In case of accident or if you feel unwell, seek medical advice immediately.  
S61 Avoid release to the environment.  
S42/45 Avoid contact with skin and eyes.  
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

**EINECS** This product, and all its components, complies with EINECS.

## **Section 16. Other Information**

### **Abbreviations and Acronyms**

WEL : Workplace Exposure Limit  
ACGIH : American Conference of Industrial Hygiene  
TWA : Time Weighted Average  
DNEL : Derived No Effect Level  
NOEC : No Observed Effect Concentration  
PBT : Persistent, Bioaccumulative, Toxic  
vPvB : very Persistent, very Bioaccumulative  
PNEC : Predicted No Effect Concentration  
ADR : European Agreement Concerning the International Carriage of Dangerous Goods by Road  
RID : International Rule for Transport of Dangerous Substances by Rail

ADN : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterway  
IMO/IMDG : International Maritime Organization/International Maritime Dangerous Goods Code  
ICAO/IATA : International Civil Aviation Organization/International Air Transport Association  
OECD : Organization of Economic Co-operation and Development  
SIDS : Screening Information Data Set

**General Disclaimer**

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

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