SAFETY DATA SHEET

Preparation Date: 11/02/2015           Revision date: 4/9/2019           Revision Number: G2

1. IDENTIFICATION

Product identifier

Product code: Z1048
Product name: ZINC BROMIDE, ANHYDROUS, REAGENT

Other means of identification

Synonyms: No information available
CAS #: 7699-45-8
RTECS #: ZH1150000
Cl#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against: No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA  90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number: Chemtrec 1-800-424-9300
Contact Person: Tom Tyner (USA - West Coast)
Contact Person: Ibad Tirmiz (USA - East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral                          Category 4
Skin corrosion/irritation                Category 1  Sub-category C
Serious eye damage/eye irritation         Category 1

Label elements

Danger

Hazard statements
Harmful if swallowed
Causes severe skin burns and eye damage
Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Bromide, Anhydrous</td>
<td>7699-45-8</td>
<td>100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or Poison Control Centre immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Immediate medical attention is required.

Most important symptoms and effects, both acute and delayed

Symptoms
Severe skin and eye irritation or burns
Causes serious eye damage
Causes conjunctivitis
May cause swelling of the eyelids (blepharitis)
Central nervous system effects
May cause loss of appetite
Vomiting
May cause irritation of respiratory tract

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media
Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous combustion products No information available.

Specific hazards A mixture of potassium and zinc bromide produces strong explosion on impact. A mixture of sodium and zinc bromide produces strong explosion on impact.

Special Protective Actions for Firefighters
Specific Methods: No information available

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent)

Product code: Z1048  Product name: ZINC BROMIDE, ANHYDROUS, REAGENT
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities


Incompatible Materials:
Sodium
Potassium
Oxidizing agents
Strong acids
Strong bases

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
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<tr>
<th>Component</th>
<th>CAS No</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
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<td>None</td>
<td>None</td>
<td>None</td>
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</tbody>
</table>

Canada
Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles

Skin and body protection: Chemical resistant apron
Gloves
Long sleeved clothing

Respiratory protection: Effective dust mask. Or. Wear respirator with dust filter. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds), inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid
Appearance: Powder.
Color: White.
Odor: Odorless.
Formula: ZnBr2

Molecular/Formula weight (g/mole): 225.21
Flashability (solid, gas) no data available

Flash Point Tested according to: Not available
Autoignition Temperature (°C/°F): No information available
Lower Explosion Limit (%): No information available

Upper Explosion Limit (%): No information available
Melting point/range(°C/°F): 394°C/741.2°F
Decomposition temperature(°C/°F): No information available

Boiling point/range(°C/°F): 697°C/1286.6°F
Bulk density: No information available
Density (g/cm3): 4.3

Product code: Z1048 Product name: ZINC BROMIDE, ANHYDROUS, REAGENT
10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents
A mixture of potassium and zinc chloride produces a strong explosion on impact
A mixture of sodium and zinc bromide produces strong explosion on impact
Reacts with strong bases
Reactive with strong acids

Chemical stability
Stability:
Hygroscopic. Stable under recommended storage conditions.

Possibility of Hazardous Reactions:
Hazardous polymerization does not occur

Conditions to avoid:

Incompatible Materials:
Sodium
Potassium
Oxidizing agents
Strong acids
Strong bases

Hazardous decomposition products:
No information available.

Other Information
Corrosivity:
No information available

Special Remarks on Corrosivity:
No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Principal Routes of Exposure:
Ingestion. Inhalation. Skin. Eyes.

Acute Toxicity

Product code: Z1048
Product name: ZINC BROMIDE, ANHYDROUS, REAGENT

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Component Information

**Zinc Bromide, Anhydrous**

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<thead>
<tr>
<th>CAS No</th>
<th>7699-45-8</th>
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<tr>
<td>Other LD50 or LC50 information</td>
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Product Information

| LD50/oral/rat  | Value - Acute Tox = 1447 mg/kg |
| LD50/oral/mouse | Value - Acute Tox Oral = No information available |
| LD50/dermal/rabbit | Value - Acute Tox = > 2000 mg/kg |
| LD50/dermal/rat  | VALUE - Acute Tox Dermal = No information available |
| LC50/inhalation/rat | VALUE-Vapor = No information available |
| VALUE-Gas = No information available |
| VALUE-Dust/Mist = No information available |
| LC50/Inhalation/mouse | VALUE-Vapor = No information available |
| VALUE-Gas = No information available |
| VALUE - Dust/Mist = No information available |

Symptoms

**Skin Contact:** Causes severe irritation and burns.

**Eye Contact:** Causes severe eye irritation and possible burns. May cause conjunctivitis. May cause blepharitis (inflammation of the eyelids).

**Inhalation** May cause irritation of respiratory tract.

**Ingestion** Harmful if swallowed. May cause vomiting. May affect behavior/central nervous system (ataxia). May affect behavior/central nervous system (headache, drowsiness). May affect behavior central nervous system (irritability, hallucinations, coma). May affect behavior/central nervous system (confusion).

**Aspiration hazard** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** Prolonged or repeated inhalation may cause bronchitis with coughing, phlegm, and/or shortness of breath. Skin rash may occur with repeated exposure. Chronic
exposure may cause central nervous system effects. Prolonged or repeated ingestion may cause loss of appetite.

Sensitization: No information available.

Mutagenic Effects: Mutations in microorganisms
Experiments with bacteria and/or yeast have shown mutagenic effects

Carcinogenic effects: May cause cancer based on animal test data.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>IARC</th>
<th>ACGIH - Carcinogens</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
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</tbody>
</table>

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity: No data is available

Reproductive Effects:
May cause adverse reproductive effects based on animal data

Developmental Effects:
May cause adverse developmental effects based on animal data

Teratogenic Effects:
May cause birth defects (teratogenic effects) based on animal test data

Specific Target Organ Toxicity:

STOT - single exposure: No information available.

STOT - repeated exposure: No information available.

Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility in soil: No information available.

Other adverse effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods:
Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Product code: Z1048
Product name: ZINC BROMIDE, ANHYDROUS, REAGENT
Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

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<td>None</td>
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</tbody>
</table>

14. TRANSPORT INFORMATION

**DOT**
- UN-No: UN3260
- Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (Zinc Bromide)
- Hazard Class: 8
- Subsidiary Class: No information available
- Packing group: III
- Emergency Response Guide Number: 154
- Marine Pollutant: Marine Pollutant
- DOT RQ (lbs): 1000 lbs./454 kg
- Special Provisions: IB8, IP3, T1, TP33
- Symbol(s): [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.
- Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

**TDG (Canada)**
- UN-No: UN3260
- Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (Zinc Bromide)
- Hazard Class: 8
- Subsidiary Risk: No information available
- Packing Group: III
- Marine Pollutant: No Information available
- Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

**ADR**
- UN Number: UN3260
- Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (Zinc Bromide)
- Transport hazard class(es): 8
- Packing group: III
- Subsidiary Risk: No information available
- Special Provisions: 274
- Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

**IMDG**
- UN-No: UN3260
- Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (Zinc Bromide)
- Hazard Class: 8
- Subsidiary Risk: No information available
- Packing Group: III
- Marine Pollutant: Marine Pollutant
- EMS: F-A
- Special Provisions: 223, 274
- Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (ZINC BROMIDE, ANHYDROUS), 8, III

**RID**
- UN Number: UN3260

Product code: Z1048 Product name: ZINC BROMIDE, ANHYDROUS, REAGENT
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (Zinc Bromide)
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group III
Special Provisions 274
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

ICAQ (air)
UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (Zinc Bromide)
Hazard Class 8
Subsidiary Risk: No information available
Packing Group: III
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III
Special Provisions A3

IATA
UN Number UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s. (Zinc Bromide)
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group III
Precautionary Statements - Response 8L
Special Provisions No information available
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

15. REGULATORY INFORMATION

International Inventories

<table>
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<tr>
<th>Component</th>
<th>CAS No</th>
<th>U.S. TSCA</th>
<th>KOREA KECL</th>
<th>Philippines (PICCS)</th>
<th>Japan ENCS (1)-118</th>
<th>China IECSC</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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</table>

U.S. Regulations

Zinc Bromide, Anhydrous
Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 2027
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Environmental hazard
Pennsylvania RTK - Environmental Hazard List: Present
New York Release Reporting - List of Hazardous Substances:
5000 lb RQ
100 lb RQ
Louisiana Reportable Quantity List for Pollutants: 1000lbfinal RQ
454kgfinal RQ
California Directors List of Hazardous Substances: Present


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Carcinogen</th>
<th>Developmental Toxicity Male Reproductive</th>
<th>Female Reproductive</th>
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Product code: Z1048  Product name: ZINC BROMIDE, ANHYDROUS, REAGENT
### CERCLA/SARA

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
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<td>Zinc Bromide, Anhydrous</td>
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<td>1000 lb final RQ 454 kg final RQ</td>
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### U.S. TSCA

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<tr>
<th>Component</th>
<th>CAS No</th>
<th>TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)</th>
<th>TSCA 8(d) - Health and Safety Reporting</th>
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<tbody>
<tr>
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<td>7699-45-8</td>
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### Canada

**WHIMIS 2015 - GHS Classifications**

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

**Canada Hazardous Products Regulation**

This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR.

### DSL/NDSL

<table>
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<th>CAS No</th>
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### EU Classification

**EU GHS - SV - CLP 1272/2008**

<table>
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<th>Component</th>
<th>CAS No</th>
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<td>EU GHS - SV - CLP (1272/2008)</td>
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</table>

### EU - CLP (1272/2008)

**R-phrase(s)**

R22 - Harmful if swallowed  
R34 - Causes burns  
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**S-phrase(s)**

Product code: Z1048  
Product name: ZINC BROMIDE, ANHYDROUS, REAGENT
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 (show the label where possible)
S60 - This material and its container must be disposed of as hazardous waste
S61 - Avoid release to the environment. Refer to special instructions/safety data sheets.
S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection

<table>
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<tr>
<th>Component</th>
<th>CAS No</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
C - Corrosive
Xn - Harmful
N - Dangerous for the environment

16. OTHER INFORMATION

Preparation Date: 11/02/2015
Revision date 4/9/2019
Prepared by: Sonia Owen

Disclaimer:
All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet