1 Identification

Product identifier

Product name: Zinc bromide, anhydrous

Stock number: 44223
CAS Number: 7699-45-8
EC number: 231-718-4

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

GHS05

Signal word Danger

Hazard statements
H314 Causes severe skin burns and eye damage.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P303+P361+P353 If on skin (or hair). Take off immediately all contaminated clothing. Rinse skin with water/shower.
P335+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D2B - Toxic material causing other toxic effects
E - Corrosive material

Classification system

HMIS ratings (scale 0-4) (Hazardous Materials Identification System)

Health (acute effects) = 3
Flammability = 0
Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS® Description: 7699-45-8 Zinc bromide
Identification number(s):
EC number: 231-718-4

4 First-aid measures

Description of first aid measures

General information Immediately remove any clothing soiled by the product.

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

After skin contact
Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.
## 5 Fire-fighting measures

**Extinguishing media**
Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

**Suitable extinguishing agents**
- Hydrogen bromide (HBr)
- Metal oxide fume

**Special hazards arising from the substance or mixture**
- If this product is involved in a fire, the following can be released:
  - Hydrogen bromide (HBr)
  - Metal oxide fume

**Advice for firefighters**
- Wear self-contained respirator.
- Wear fully protective impervious suit.

## 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
- Wear protective equipment. Keep unprotected persons away.
- Ensure adequate ventilation.

**Environmental precautions**
- Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up**
- Use neutralizing agent.
- Dispose of contaminated material as waste according to section 13.
- Ensure adequate ventilation.

**Prevention of secondary hazards**
- No special measures required.

**Reference to other sections**
- See Section 7 for information on safe handling
- See Section 8 for information on personal protection equipment
- See Section 13 for disposal information.

## 7 Handling and storage

**Handling**
- Handle under dry protective gas.
- Keep container tightly sealed.
- Store in cool, dry place in tightly closed containers.
- Ensure good ventilation at the workplace.

**Information about protection against explosions and fires**
- The product is not flammable.

**Conditions for safe storage, including any incompatibilities**
- No special requirements.
- Store away from water/moisture.
- Store away from strong bases.
- Store away from oxidizing agents.
- Further information about storage conditions:
  - Store under dry inert gas.
  - This product is hygroscopic.
  - Keep container tightly sealed.
  - Store in cool, dry conditions in well sealed containers.
  - Protect from humidity and water.

**Specific end use(s)**
- No further relevant information available.

## 8 Exposure controls/personal protection

**Additional information about design of technical systems**
- Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Control parameters**
- Components with limit values that require monitoring at the workplace:
  - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information**
- No data.

**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**
- The usual precautionary measures for handling chemicals should be followed.
- Keep away from foodstuffs, beverages and feed.
- Remove all soiled and contaminated clothing immediately.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.
- Maintain an ergonomically appropriate working environment.

**Breathing equipment**
- Use suitable respirator when high concentrations are present.

**Protection of hands**
- Impervious gloves
- Check protective gloves prior to each use for their proper condition.

**Eye protection**
- Tightly sealed goggles
- Full face protection

**Body protection**
- Protective work clothing.
**9 Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Powder/crystalline/beads</td>
</tr>
<tr>
<td>Color</td>
<td>White to pale cream</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH-value</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td></td>
</tr>
<tr>
<td>Melting point/Melting range:</td>
<td>394 °C (741 °F)</td>
</tr>
<tr>
<td>Boiling point/Boiling range:</td>
<td>650 °C (1202 °F)</td>
</tr>
<tr>
<td><strong>Flammability (solid, gaseous)</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td>Ignition temperature:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

**10 Stability and reactivity**

**Reactivity**

No information known.

**Chemical stability**

Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided**

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions**

Reacts with strong oxidizing agents

**Conditions to avoid**

No further relevant information available.

**Incompatible materials**

- Water/moisture
- Bases
- Oxidizing agents

**Hazardous decomposition products**

- Hydrogen bromide
- Metal oxide fume

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity**

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**LD/LC50 values that are relevant for classification**

- No data

**Skin irritation or corrosion**

Causes severe skin burns.

**Eye irritation or corrosion**

Causes serious eye damage.

**Sensitization**

No sensitizing effects known.

**Germ cell mutagenicity**

The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

**Carcinogenicity**

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity**

No effects known.

**Specific target organ system toxicity - repeated exposure**

No effects known.

**Specific target organ system toxicity - single exposure**

No effects known.

**Aspiration hazard**

No effects known.

**Subacute to chronic toxicity**

No effects known.

**Additional toxicological information**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

**12 Ecological information**

**Toxicity**

**Aquatic toxicity**

No further relevant information available.

**Persistence and degradability**

No further relevant information available.

**Bioaccumulative potential**

No further relevant information available.

**Mobility in soil**

No further relevant information available.

**Ecotoxic effects**

**Remark**

Very toxic for aquatic organisms.

**Additional ecological information**

**General notes**

- Do not allow product to reach ground water, water course or sewage system.
- Do not allow material to be released to the environment without proper governmental permits.
- Danger to drinking water if even small quantities leak into the ground.
- Also poisonous for fish and plankton in water bodies.
- May cause long lasting harmful effects to aquatic life.
- Avoid transfer into the environment.

**Results of PBT and vPvB assessment**

- PBT: Not applicable.
- vPvB: Not applicable.

**Other adverse effects**

No further relevant information available.
13 Disposal considerations

Waste treatment methods
Recommendation: Consult state, local or national regulations to ensure proper disposal.
Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number
DOT, IMDG, IATA: UN3260

UN proper shipping name
DOT: Corrosive solid, acidic, inorganic, n.o.s. (Zinc bromide)
IMDG: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Zinc bromide)
IATA: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Zinc bromide)

Transport hazard class(es)
DOT

Class: 8
Label: Corrosive substances.

IMDG

Class: 8
Label: Corrosive substances.

IATA

Class: 8
Label: Corrosive substances.

Packing group
DOT, IMDG, IATA: II

Environmental hazards:
Marine pollutant (IMDG): Environmentally hazardous substance, solid; Marine Pollutant

Special precautions for user
EMS Number: F-A,S-B

Segregation groups
Acids

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

Transport/Additional information:
DOT
Marine Pollutant (DOT): No
Remarks: Special marking with the symbol (fish and tree).

UN "Model Regulation": UN3260, Corrosive solid, acidic, inorganic, n.o.s. (Zinc bromide), 8, II

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements: The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms

Signal word: Danger
Hazard statements:
H314 Causes severe skin burns and eye damage.

Precautionary statements:
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P303+P361+P353 If on skin (or hair). 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.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations:
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings):
7699-45-8 Zinc bromide

California Proposition 65:
Prop 65 - Chemicals known to cause cancer: Substance is not listed.
Prop 65 - Developmental toxicity, female: Substance is not listed.
Prop 65 - Developmental toxicity, male: Substance is not listed.

Information about limitation of use:
For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.
Product name: Zinc bromide, anhydrous

Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / -

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program (USA)
EPA: Environmental Protection Agency (USA)