SAFETY DATA SHEET

Product code: S1195
Product Name: SODIUM BROMIDE, GRANULAR, REAGENT, ACS

Other means of identification
Synonyms: Bromide Salt of Sodium
CAS #: 7647-15-6
RTECS #: VZ3150000
Ci#: 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: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification
This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements
Not classified

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
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<tbody>
<tr>
<td>Sodium Bromide</td>
<td>7647-15-6</td>
<td>100</td>
<td>*</td>
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</table>

4. FIRST AID MEASURES

First aid measures

General Advice: Poison information centers in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact: Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms: Health injuries are not known or expected under normal use.

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.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: No information available.

Specific hazards: No information available.

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) and full protective gear.
6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

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

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 vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials. Hygroscopic.


8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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<td>None</td>
<td>None</td>
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Canada

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<thead>
<tr>
<th>Components</th>
<th>Alberta</th>
<th>British Columbia</th>
<th>Ontario</th>
<th>Quebec</th>
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<td>None</td>
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Australia and Mexico

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<tr>
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<th>Australia</th>
<th>Mexico</th>
</tr>
</thead>
</table>

Product code: S1195  
Product name: SODIUM BROMIDE, GRANULAR, REAGENT, ACS
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: Safety glasses Safety glasses with side-shields
Skin and body protection: Chemical resistant apron. Gloves. Long sleeved clothing.
Respiratory protection: Effective dust mask Wear respirator with dust filter.
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

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>Appearance:</th>
<th>Color:</th>
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</table>

<table>
<thead>
<tr>
<th>Odor:</th>
<th>Taste</th>
<th>Molecular/Formula weight:</th>
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</thead>
<tbody>
<tr>
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<td>No information available</td>
<td>102.89</td>
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<table>
<thead>
<tr>
<th>Formula:</th>
<th>Flammability:</th>
<th>Flammable point (°C):</th>
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</thead>
<tbody>
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<td>NaBr</td>
<td>Non-flammable</td>
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<table>
<thead>
<tr>
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<th>Flash Point Tested according to:</th>
<th>Lower Explosion Limit (%):</th>
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Upper Explosion Limit (%): No information available
Autoignition Temperature (°C/°F): No information available

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<th>Melting point/range(°C/°F):</th>
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<th>Decomposition temperature(°C/°F):</th>
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<table>
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<th>Evaporation rate:</th>
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</thead>
<tbody>
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<table>
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<th>Odor threshold (ppm):</th>
<th>Miscibility:</th>
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<table>
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<table>
<thead>
<tr>
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<th>Flammable point:</th>
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<tbody>
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<td>Non-flammable</td>
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</table>

<table>
<thead>
<tr>
<th>Flashpoint:</th>
<th>Partition coefficient (n-octanol/water):</th>
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</thead>
<tbody>
<tr>
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<td>No information available</td>
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<table>
<thead>
<tr>
<th>Solubility:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easily soluble in cold water</td>
</tr>
<tr>
<td>Easily soluble in hot water</td>
</tr>
<tr>
<td>Soluble in Methanol</td>
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</tbody>
</table>

Product code: S1195

Product name: SODIUM BROMIDE, GRANULAR, REAGENT, ACS
10. STABILITY AND REACTIVITY

Reactivity
Reactive with acids
Reactive with oxidizing agents
Hygroscopic. It absorbs moisture from the air

Chemical stability
Stability: Hygroscopic.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Incompatible materials. Exposure to moisture.


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.

Acute Toxicity

Component Information

Sodium Bromide - 7647-15-6
LD50/oral/rat = 2500 mg/kg Oral LD50 Rat
LD50/oral/mouse = 2500 mg/kg Oral LD50 Mouse
LD50/dermal/rat = No information available
LD50/dermal/rabbit = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat = VALUE- Acute Tox Oral = 2500mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 2500mg/kg

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

Product code: S1195  Product name: SODIUM BROMIDE, GRANULAR, REAGENT, ACS
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: May cause skin irritation

Eye Contact: May cause eye irritation

Inhalation
Ingestion
May cause gastrointestinal tract irritation with nausea and vomiting, abdominal pain, constipation. Bromide poisoning following acute ingestion is more rare and may affect the central nervous system (CNS depression - somnolence, drowsiness, stupor, confusion, ataxia, coma and other symptoms similar to chronic ingestion), cardiovascular system (hypotension, tachycardia), kidneys (acute renal failure, urinary incontinence), and respiration (acute respiratory distress syndrome). It may also cause eye disturbances such as mydriasis and nystagmus, disturbances of apparent color of objects, blurring or indistinctness of vision, apparent movement or wiggling and change in apparent size of objects, large pupils, subnormal reaction to light, diplopia, and photophobia.

Aspiration hazard
No information available

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

Chronic Toxicity
Skin: Prolonged or repeated skin contact may cause skin rashes.
Eyes: Prolonged or repeated eye contact may cause blepharitis, and conjunctivitis. Prolonged or repeated ingestion may cause skin rashes (bromoderma, acne, pyoderma gangrenosum, erythema multiforme), affect the liver (hepatic enzymes increased), endocrine system (thyroid), metabolism (anorexia), blood (anemia), vision (visual disturbances, permanently decreased vision), and may produce a toxic syndrome called "bromism." "Bromism" may be characterized by behavior/central nervous symptoms such CNS depression, irritability, headache, confusion, slurred speech, memory loss, lethargy, ataxia, tremor, agitation, delusion, disoriented, paranoia, aggressiveness, hallucinations, mania, fatigue, seizure, neuropathy, muscle weakness, drowsiness, stupor, coma. Also, in individuals with chronic bromism, the tongue may have a coated or furred appearance. Hearing impairment, which may be permanent, is an uncommon effect of chronic or acute bromide intoxication. Chronic bromide ingestion can cause Hyperchloremia. Hyperchloremia can occur because chronic Bromide ingestion produces progressive renal reabsorption of bromide ions and decreased chloride reabsorption.

Sensitization: No information available

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic

Product code: S1195  Product name: SODIUM BROMIDE, GRANULAR, REAGENT, ACS
Reproductive toxicity: No data is available

Reproductive Effects: May cause adverse reproductive effects.
Developmental Effects: No information available
Teratogenic Effects: No information available

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.

Sodium Bromide - 7647-15-6
Freshwater Algae Data: 5800 - 24000 mg/L EC50 Scenedesmus pannonicus 96 h
Freshwater Fish Species Data: 0.054 - 0.081 mg/L LC50 Oncorhynchus mykiss 96 h flow-through 1
15614 - 17428 mg/L LC50 Pimephales promelas 96 h static 1
16000 - 24000 mg/L LC50 Poecilia reticulata 96 h flow-through 1
24000 - 96000 mg/L LC50 Oryzias latipes 96 h flow-through 1
16000 mg/L LC50 Poecilia reticulata 96 h semi-static 1
24000 mg/L LC50 Oryzias latipes 96 h semi-static 1
1000 mg/L LC50 Lepomis macrochirus 96 h static 1
1000 mg/L LC50 Oncorhynchus mykiss 96 h static 1

Water Flea Data: 5700 - 10800 mg/L EC50 Daphnia magna 48 h
5800 - 48000 mg/L EC50 Daphnia magna 48 h

Persistence and degradability: No information available
Bioaccumulative potential: No information available
Mobility: 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.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal
14. TRANSPORT INFORMATION

**DOT**
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: None
- ERG No: No information available
- Marine Pollutant: No data available
- DOT RQ (lbs): No information available

**TDG (Canada)**
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available

**ADR**
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Packing Group: No information available
- Subsidiary Risk: No information available
- Classification Code: No information available
- Description: No information available
- CEFIC Tremcard No: No information available

**IMO / IMDG**
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available
- IMDG Page: No information available
- Marine Pollutant: No information available
- MFAG: No information available
- Maximum Quantity: No information available

**RID**
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Classification Code: No information available
- Description: No information available
14. TRANSPORT INFORMATION

ICAO
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available

IATA
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>KOREA KECL (PICCS)</th>
<th>Philippines</th>
<th>Japan ENCS (1)-113</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
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</thead>
<tbody>
<tr>
<td>Sodium Bromide</td>
<td>Present</td>
<td>Present KE-31368</td>
<td>Present</td>
<td>Present (1)-113</td>
<td>Present</td>
<td>Present</td>
<td>Present 231-599-9</td>
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</tbody>
</table>

U.S. Regulations


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>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</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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<tr>
<td>Sodium Bromide</td>
<td>None</td>
<td>None</td>
<td>None</td>
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U.S. TSCA

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<thead>
<tr>
<th>Components</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>
<td>Sodium Bromide</td>
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</table>

Canada

Product code: S1195
Product name: SODIUM BROMIDE, GRANULAR, REAGENT, ACS
WHMIS hazard class:
D2A Very toxic materials

Sodium Bromide

D2A

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

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<tr>
<th>Components</th>
<th>WHMIS Ingredient Disclosure List -</th>
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Inventory

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<tbody>
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<tr>
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<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
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<tbody>
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<td>Not listed</td>
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EU Classification

R-phrase(s)
not determined (not applicable)

S -phrase(s)
none
S24/25 - Avoid contact with skin and eyes.

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
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</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
None.
16. OTHER INFORMATION

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