1. Identification of the substance & the company

Chemical name: Sodium bromide water solution
Chemical formula: NaBr
Chemical family: Inorganic bromide
Molecular weight: 102.9
Type of product and use: Biocide for industrial water systems and waste water treatment

Supplier: Clearon Corp.
95 MacCorkle Ave. SW, South Charleston, WV 25303, USA
Tel: (304) 746-3000

Emergency Telephone: Chemtrec (800)424-9300

2. Hazards identification

Emergency overview: Colourless liquid, odourless
No adverse health effects in human are known under recommended use instructions

- Eye Contact: Mild irritant
- Skin contact: Not irritant to intact skin. Slightly irritant on prolonged contact to abraded skin.
- Inhalation: Irritant to upper respiratory tract.
- Ingestion: Abdominal pain, nausea and vomiting. May cause falling asleep, muscular incoordination and respiratory depression.

Chronic effects/Carcinogenicity: Repeated skin contact may cause dermatitis.

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Bromide</td>
<td>7647-15-6</td>
<td>38-42</td>
</tr>
</tbody>
</table>
4. First-aid measures

Eye contact
Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advise.

Skin contact
Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advise.

Inhalation
Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advise.

Ingestion
Call poison control center, or doctor immediately for treatment advise. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

5. Fire - fighting measures

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

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

Unusual fire and explosion hazards
Will decompose from ca. 800°C releasing poisonous and corrosive fumes of hydrogen bromide and sodium oxide.

6. Accidental release measures

Personal precautions
See section "Exposure controls/personal protection" 

Methods for cleaning up
Absorb on sand or vermiculite and place in closed container for disposal.
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:

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH-TLV Data</th>
<th>OSHA (PEL) Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Bromide</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
<tr>
<td>7647-15-6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Personal protective equipment:
- Respiratory protection: Not required; except in case of aerosol formation.
- Hand protection: Protective gloves
- Eye protection: Safety glasses
- Skin and body protection: Body covering clothes and boots

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

9. Physical and chemical properties

Appearance
Colourless liquid, odourless

Melting point/range
Not available

Flash point
None

Flammable/Explosion limits
Not flammable

Auto-ignition temperature
Not applicable

Vapour pressure
Not available

Vapor density
Not available

Evaporation rate (ether=1)
As of water

Solubility:
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Supersedes: 09/08/2006
Revision: 5

- Solubility in water: NaBr 100%: 94.6 gr/100ml at 25°C
- Solubility in other solvents: ethanol: 95%: 7 g/100g at 25°C, methanol: 14.8 g/100g at 25°C

10. Stability and reactivity

Stability: Stable under normal conditions
Materials to avoid: Acids, heavy metal salts and bromine trifluoride
Conditions to avoid: Heating above decomposition temperature
Hazardous decomposition products: Hydrogen bromide and sodium oxide
Hazardous polymerization: Will not occur

11. Toxicological information

Acute toxicity:
- Rat oral LD50: >5000 mg/kg
- Rabbit dermal LD50: >2000 mg/kg
Dermal sensitization: Not a sensitizer

Chronic toxicity: 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.

Mutagenicity: Does not induce DNA repair in cultured human epithelioid cells.
Not clastogenic in human lymphocytes metaphase analysis.
Not mutagenic by the Ames Test

Carcinogenicity: Not classified by IARC
Not included in NTP 11th Report on Carcinogens

Reproductive toxicity: Sodium bromide has been shown to cause embryo-fetal toxicity and malformations in rats at dose levels which also produce maternal toxicity. The No-Observed Effect Level (NOEL) is 100 mg/kg/day, and the Acceptable Daily Intake (ADI) for sodium bromide from food and drinking water in humans is 1 mg/kg/day. Comparable high doses of sodium chloride (table salt) similarly cause malformations, embryo-fetal toxicity, and maternal toxicity in mice.

Teratogenicity: In the oral gavage pre-natal developmental toxicity study in the Rabbit, there were no obvious effects of maternal treatment on the survival, growth or development of the offspring at any of the dosages investigated. The No Observed Effect Level (NOEL) for the developing conceptus was considered to be 250 mg/kg/day.
### 12. Ecological information

**Note:** The environmental toxicity data mentioned below are from studies conducted on the active ingredient.

**Aquatic toxicity:**
- **96 Hour-LC50, Fish**
  - >1000 mg/l (rainbow trout)
  - >1000 mg/l (bluegill sunfish)
- **48 Hour-EC50, Daphnia magna**
  - >1000 mg/l

**Avian toxicity:**
- **Oral LD50, Bobwhite quail**
  - >2250 mg/kg
- **Dietary LC50, Mallard duck**
  - >5633 ppm
- **Dietary LC50, Bobwhite quail**
  - >5633 ppm

**Persistence and degradability**
Activated sewage sludge respiration inhibition test: EC50 > 1000 mg/l (3 hours). NOEC was 1000 mg/l (3 hours).

**Bioaccumulative potential**
Bioaccumulation is not likely to occur since this material is highly soluble in water.

**Germany, water endangering classes (WGK)**
1

### 13. Disposal considerations

**Waste disposal**
Drain into sewer with ample water. Observe all federal, state and local environmental regulations when disposing of this material.

### 14. Transportation information

- **DOT**
  - Not regulated
- **IMO**
  - Not regulated
- **ICAO/IATA**
  - Not regulated

### 15. Regulatory information

- **USA**
  - Reported in the EPA TSCA Inventory.
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Canada
- WHMIS hazard class: D2A very toxic materials

EU
- EEC No.: 231-599-9

Japan
- ENCS no.: 1-113
- ISHL no.: 1-113

Australia
- Listed in AICS

China inventory
- Listed

Korea
- Listed in ECL (KE-31368)

Philippines
- Listed in PICCS

Switzerland
- Registration CHZN0244

16. Other information

This data sheet contains changes from the previous version in section(s)
1 (EU), 11, 12, 15

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In an event of discrepancy between the contents of this MSDS and the English version of it, the English version shall prevail.
MATERIAL SAFETY DATA SHEET

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South Charleston, WV 25303
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End of safety data sheet