

MSDS

Material Safety Data Sheet

**Section 1: Chemical Product and Company Identification**

<b>Catalog Number:</b> 1195, B016100, SB016100	
<b>Product Identity:</b> BROMINE WATER, SATURATED	
<b>Manufacturer's Name:</b> RICCA CHEMICAL COMPANY LLC	<b>Emergency Contact(24 hr) -- CHEMTREC®</b> Domestic: 800-424-9300 International: 703-527-3887
<b>CAGE Code:</b> 4TCW6, 0V553, 4XZQ2	
<b>Address:</b> 448 West Fork Dr Arlington, TX 76012	<b>Telephone Number For Information:</b> 817-461-5601
<b>Date Prepared:</b> 10/31/00	<b>Revision: 4</b>  Last Revised: 01/16/2012 Date Printed: 11/21/2013 11:41:35 am

**Section 2. Composition/Information on Ingredients**

Component	CAS Registry #	Concentration	ACGIH TLV	OSHA PEL
Bromine	7726-95-6	2 - 4% (w/v)	0.1 ppm	0.1 ppm
			0.66 mg/m3	0.7 mg/m3
Water, Deionized	7732-18-5	Balance	Not Available	Not Available
			Not Available	Not Available

**Section 3: Hazard Identification**

**Emergency Overview:** WARNING! Hazardous fumes and liquid. Use with adequate ventilation. Avoid breathing vapor. Avoid contact with skin, eyes, or clothing. If ingested, do not induce vomiting. Dilute with large quantity of water and call a physician. Wash areas of contact with plenty of water. For eyes, get medical attention. The action of Bromine is essentially the same as that of Chlorine. Exercise care when opening the bottles since pressure may have developed, especially if the solution temperature has been raised. Keep ammonia water within reach when handling Bromine.

**Target Organs:** eyes, skin, mucous membranes, respiratory system.

**Eye Contact:** May cause irritation, redness and pain; can lead to permanent damage if allowed to remain in contact with the eyes.

**Inhalation:** May cause irritation of the respiratory passages and damaging to the lungs (pulmonary edema). Usually, however, the irritant qualities of the chemical force the worker to leave the exposure area before serious poisoning can result.

**Skin Contact:** May cause irritation, slow healing skin ulcers and acne.

**Ingestion:** May cause abdominal pain, nausea, diarrhea, headache. May be fatal.

**Chronic Effects/Carcinogenicity:** None

**IARC - No.**

**NTP - No.**

**OSHA - No.**

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**Reproductive Information:** Not Applicable.

**Teratology (Birth Defect) Information:** Not Applicable.

### Section 4: First Aid Measures - In all cases, seek qualified evaluation.

**Eye Contact:** Irrigate immediately with large quantity of water for at least 30 minutes.

**Inhalation:** Remove to fresh air. Give artificial respiration if necessary. If breathing is difficult, give oxygen. Observe 48 hours for lung effects.

**Skin Contact:** Wash areas of contact with soap and water for at least 15 minutes. Call a physician if irritation develops.

**Ingestion:** Dilute with water or milk. Vomiting may occur spontaneously but do not induce. Call a physician immediately.

### Section 5: Fire Fighting Measures

**Flash Point:** Not Available.

**Method Used:** Not Available.

**LFL:** Not Available.

**UFL:** Not Available.

**Extinguishing Media:** Use any means suitable for extinguishing surrounding fire.

**Fire & Explosion Hazards:** Not considered to be a fire or explosion hazard. Incompatible with a number of other chemicals. Violent and explosive reactions are possible.

**Fire Fighting Instructions:** Poisonous gases are produced in fire. Do not release runoff from fire-fighting measures to sewers or waterways.

**Fire Fighting Equipment:** Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

### Section 6: Accidental Release Measures

Contain spill. Do not flush to sewer. Absorb with suitable inert material (vermiculite, dry sand, etc) and place in a chemical waste container for proper disposal in an approved waste disposal facility. Ventilate area of spill. Dispose of in accordance with local regulations.

### Section 7. Handling and Storage

As with all chemicals, wash hands thoroughly after handling. Avoid contact with eyes and skin. Protect from freezing and physical damage. Keep container tightly capped when not in use. Refrigeration will help maintain the Bromine concentration by reducing the volatility of the Bromine.

**Safety Storage Code:** Health

### Section 8: Exposure Control/Personal Protection

**Engineering Controls:** Work in fume hood.

**Respiratory Protection:** If the TLV is exceeded, a full-face chemical cartridge respirator may be worn up to 50 times the TLV or the maximum use concentration specified by the respirator supplier, whichever is less.

**Skin Protection:** Chemical resistant gloves.

**Eye Protection:** Safety glasses or goggles.

### Section 9: Physical and Chemical Properties

**Appearance:** Clear, dark orange to reddish-brown liquid

**Odor:** pungent irritating odor

**Solubility in Water:** Infinite

**Specific Gravity:** Approximately 1

**pH:** Not Available.

**Boiling Point(°C):** Approximately 100

**Melting Point(°C):** Approximately 0

**Vapor Pressure:** Not Applicable.

### Section 10: Stability and Reactivity

**Chemical Stability:** Stable under normal conditions of use and storage. Bromine is very volatile, the Bromine concentration may slowly decrease from its initial concentration of 3% (w/v) at the time of packaging.

**Incompatibility:** combustible organics, oxidizable material, and most metals.

**Hazardous Decomposition Products:** Can emit irritating fumes and gases when heated to decomposition.

**Hazardous Polymerization:** Will not occur.

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### Section 11. Toxicological Information

LC50, Inhalation, Rat: 2700 mg/m3 (Bromine), respiratory effects noted. LCLo, Inhalation, Human: (Bromine) 1000 ppm, details of toxic effects not reported other than lethal dose value. LD50, Oral, Rat: 2600 mg/kg (Bromine), details of toxic effects not reported other than lethal dose value.

### Section 12. Ecological Information

**Ecotoxicological Information:** No information found.

**Chemical Fate Information:** Bromine is highly persistent in water, with a half-life between 20 and 200 days.

### Section 13. Disposal Considerations

Add slowly in a fume hood to a dilute solution of Ammonium or Sodium Hydroxide with stirring to form non-toxic, water soluble Ammonium or Sodium Bromide and Bromate. Flush down the drain with excess water. Ammonia vapors will neutralize Bromine vapors. Always dispose of in accordance with local, state and federal regulations.

### Section 14. Transport Information

Part Numbers: 1195-16, 1195-32, 1195-4, SB016100-1C1, SB016100-500C1

D.O.T. Shipping Name: Bromine Solutions

D.O.T. Hazard Class: 8 (6.1)

U.N. / N.A. Number: UN1744

Packing Group: I

D.O.T. Label: 8, 6.1



### Section 15. Regulatory Information (Not meant to be all inclusive - selected regulation represented)

**OSHA Status:** These items meet the OSHA Hazard Communication Standard (29 CFR 1910.1200) definition of a hazardous material.

**TSCA Status:** All components of this solution are listed on the TSCA Inventory or are mixtures (hydrates) of items listed on the TSCA Inventory.

Sara Title III:

**Section 302 Extremely Hazardous Substances:** Not Applicable.

**Section 311/312 Hazardous Categories:** Acute, Chronic: Yes      Fire, Pressure, Reactivity: No

**Section 313 Toxic Chemicals:** Not Applicable.

**California:** None Reported.

**Pennsylvania:** Bromine is listed as an Environmental Hazard on the state's Hazardous Substances List. Bromine is listed as an Environmental Hazard on the state's Hazardous Substances List.

**RCRA Status:** Not Applicable.

**CERCLA Reportable Quantity:** None Reported.

**WHMIS:** E: Corrosive Material. D-1A: Poisonous and Infectious Material. Materials causing immediate and serious toxic effects - Very Toxic Material.



### Section 16. Other Information

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## NFPA Ratings:

Health: 3

Flammability: 0

Reactivity: 0

Special Notice Key:None

## HMIS Ratings:

Health: 3

Flammability: 0

Reactivity: 0

Protective Equipment:B (Protective Eyewear, Gloves)

Rev 1, 10-09-2001: Reformatted to electronic data format.

Rev 2, 10-22-2003: (Section 1) added Solutions Plus catalog number B016100.

Rev 3, 06-02-2008: Reviewed and approved for distribution.

Rev 4, 01-16-2012: (Section 15) revised WHMIS icon from D2A.

When handled properly by qualified personnel, the product described herein does not present a significant health or safety hazard. Alteration of its characteristics by concentration, evaporation, addition of other substances, or other means may present hazards not specifically addressed herein and which must be evaluated by the user. The information furnished herein is believed to be accurate and represents the best data currently available to us. No warranty, expressed or implied, is made and RICCA CHEMICAL COMPANY assumes no legal responsibility or liability whatsoever resulting from its use.