



ALDON CORPORATION

MATERIAL SAFETY DATA SHEET

1533 W. Henrietta Rd.
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MSDS No. BB 175
Effective Date September 28, 1998

SECTION V HEALTH HAZARD DATA

BB 175

Threshold Limited Value RTECS No. EF9100000 Bromine TWA: 0.1 ppm (air), 0.66 mg/m³ (air); STEL: 0.3 ppm, 2 mg/m³ (ACGIH 1992-93)

Effects of Overexposure In both liquid and vapor form it seriously burns tissue upon contact. A toxic gas, very irritating to the eyes and respiratory tract. Lachrymation occurs at less than 1 part per million and respiratory damage occurs at 10 ppm. Irritating effect so great that no one would voluntarily remain in its presence. **INGESTION:** Of solution may cause severe gastroenteritis and death.

Emergency and First Aid Procedures **SKIN:** Flush with water for at least 15 minutes. Remove contaminated clothing. Get medical attention. **EYES:** Flush thoroughly with water for at least 30 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. **INGESTION:** If swallowed, do NOT induce vomiting. If conscious, give several glasses of water or milk to drink. Get immediate medical attention. Never give anything by mouth to an unconscious person.

SECTION VI REACTIVITY DATA

Stability	Unstable		Conditions to Avoid	Excessive temperature and heat.
	Stable	X		

Incompatibility (Materials to Avoid) Oxidizable and reactive materials. Heat of reaction may cause ignition of combustible materials.

Hazardous Decomposition Products When heated, emits highly toxic fumes of bromine.

Hazardous Polymerization		Conditions to Avoid	Not applicable.
May Occur	Will Not Occur		
	X		

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled Cover with a reducer (hypo, a bisulfite, or a ferrous salt, but not carbon, sulfur or strong reducing agents). Mix well and spray with water. A sulfite or a ferrous salt will require addition of some 3 molar-sulfuric acid to promote rapid reduction.

Waste Disposal Method Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only. Scoop slurry into a container of water, neutralize with soda ash and flush to drain with excess water.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type) Work in ventilation hood or wear a NIOSH/MSHA-approved respirator with organic vapor and acid gases canister or a self-contained breathing apparatus.

Ventilation	Local Exhaust	Yes.	Special	No.
	Mechanical (General)	Yes.	Other	Adequate to maintain below exposure limit.

Protective Gloves Rubber. **Eye Protection** Splash-proof goggles.

Other Protective Equipment Goggles and shield, lab coat and apron, ventilation hood, proper gloves, eye wash station.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing Store in a cool, dry area, out of direct sunlight. Separate from combustible, organic or other readily oxidizable materials. Keep above 32°F (0°C) to prevent freezing but avoid heating above atmospheric pressure; vapor pressure breaks container. Keep container tightly closed when not in use.

Other Precautions Read label on container before using. Do not wear contact lenses when working with chemicals.

Avoid contact with skin, eyes and clothing. Do not breathe vapor. Use with adequate ventilation. Immediately remove and wash contaminated clothing. Discard contaminated shoes. Wash thoroughly after handling.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Revision No. 5	Date 9/28/98	Approved Michael Raszeja	Chemical Safety Coordinator MR
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The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	BROMINE WATER	 <p>CHEMTREC 800-424-9300 Day 716-226-6177</p> <p>NFPA HAZARD RATING</p> <table border="1"> <tr> <td>LEAST</td> <td>SLIGHT</td> <td>MODERATE</td> <td>HIGH</td> <td>EXTREME</td> </tr> <tr> <td>0</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> <p>HMIS *</p> <table border="1"> <tr> <td>Health</td> <td>4</td> </tr> <tr> <td>Fire</td> <td>0</td> </tr> <tr> <td>Reactivity</td> <td>3</td> </tr> </table>	LEAST	SLIGHT	MODERATE	HIGH	EXTREME	0	1	2	3	4	Health	4	Fire	0	Reactivity	3
LEAST	SLIGHT		MODERATE	HIGH	EXTREME													
0	1		2	3	4													
Health	4																	
Fire	0																	
Reactivity	3																	
Chemical Synonyms	Bromine Saturated Water																	
Formula	Mixture. See Section II.																	
Unit Size	up to 4 Lt.																	
C.A.S. No.	Mixture. See Section II.																	

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Bromine: (CAS No. 7726-95-6)	3%	See Section V.
Water: (CAS No. 7732-18-5)	97%	None established.

DANGER! CORROSIVE!  **POISON**  **CAUSES SEVERE BURNS.**

VAPOR EXTREMELY HAZARDOUS. MAY BE FATAL IF INHALED OR SWALLOWED.

SECTION III PHYSICAL DATA

Melting Point (°F)	Freezes approx. 0°C (32°F)	Specific Gravity (H₂O = 1)	Approx. 1.01 @ 20°C.
Boiling Point (°F)	59°C (138°F) (Bromine).	Percent Volatile by Volume (%)	97%
Vapor Pressure (mm Hg)	175 mm at 21°C (Bromine).	Evaporation Rate (Ether = 1)	Greater than 1 (Bromine).
Vapor Density (Air=1)	5.5 (Bromine).		
Solubility in Water	3.35 grams Bromine per 100 mL. water at 25°C.		
Appearance & Odor	Clear, reddish-brown, liquid; strong characteristic odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-flammable (NA).	Flammable Limits in Air % by Volume	NA	Lower	Upper
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Extinguisher Media Use any media suitable for extinguishing supporting fire.

SPECIAL FIREFIGHTING PROCEDURES

This material is highly corrosive. When heated, emits highly toxic fumes. In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus and full protective clothing. Use large amounts of water to cool container and wash away spills. Hypo solution (Sodium Thiosulfate) or limewater should be poured over small spills.

(1996 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.7, GUIDE PAGE NO. 154)

UNUSUAL FIRE AND EXPLOSION HAZARDS

May ignite a combustible material upon contact. A very powerful oxidizer. Fire or heat will liberate hazardous bromine from solution.

D.O.T. **BROMINE SOLUTIONS, 8, UN 1744, PG I**

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20