Bromine Water

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).
Date of Issue: 10/31/2022 Version: 1.0

SECTION 1: IDENTIFICATION

1.1. Product Identifier

Product Form: Mixture

Product Name: Bromine Water

Product Code: BR6000

1.2. Intended Use of the Product

Laboratory chemicals

1.3. Name, Address, and Telephone of the Responsible Party

Company

AquaPhoenix Scientific, Inc.
860 Gitts Run Road
Hanover, PA 17331 USA
Tel +1 (717)632-1291
Toll-Free: (866)632-1291
tech@aquaphoenixsci.com

1.4. Emergency Telephone Number

Emergency Number : VelocityEHS
(800)255-3924 (North America)
+1 (813)248-0585 (International)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

GHS-US/CA Classification

Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation Category 2	H315
Serious eye damage/eye irritation Category 2	H319
Hazardous to the aquatic environment - Acute Hazard Category 2	H401

2.2. Label Elements

GHS-US/CA Labeling

Hazard Pictograms (GHS-US/CA) :

GHS07

Signal Word (GHS-US/CA) : Warning

Hazard Statements (GHS-US/CA) : H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H401 - Toxic to aquatic life.

Precautionary Statements (GHS-US/CA) : P261 - Avoid breathing vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 - Call a POISON CENTER or doctor if you feel unwell.
P321 - Specific treatment (see section 4 on this SDS).
P332+P313 - If skin irritation occurs: Get medical advice/attention.

P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

2.4. Unknown Acute Toxicity (GHS-US/CA)

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Not applicable

3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Water	water / AQUA	(CAS-No.) 7732-18-5	98.7	Not classified
Bromine	Bromine, elemental / bromine	(CAS-No.) 7726-95-6	1.3	Acute Tox. 2 (Inhalation), H330 Skin Corr. 1, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400

Full text of H-statements: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Give oxygen or artificial respiration if necessary. Ventilate the area. Get medical advice/attention.

Skin Contact: Remove contaminated clothing. Immediately drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Immediately rinse with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

General: Harmful if inhaled. Causes skin irritation. Causes serious eye irritation.

Inhalation: Inhalation is likely to cause adverse health effects including but not limited to: irritation, difficulty breathing, and unconsciousness.

Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis.

Eye Contact: Contact causes severe irritation with redness and swelling of the conjunctiva.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Water spray, fog, carbon dioxide (CO_2), alcohol-resistant foam, or dry chemical.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may intensify fire.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions. May accelerate the burning of other combustible materials.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Bromine compounds. Irritating fumes.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Avoid breathing (vapor, mist, spray).

6.1.1. For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

6.3. Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions. Ventilate area.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Cautiously neutralize spilled liquid. Use soda ash to neutralize liquid. Absorb and/or contain spill with inert material. Transfer spilled material to a suitable container for disposal. Use water spray to disperse vapors. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Spilled material may present a slipping hazard.

Precautions for Safe Handling: Use only outdoors or in a well-ventilated area. Avoid contact with skin, eyes and clothing. Avoid breathing vapors, mist, spray. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store locked up/in a secure area.

Incompatible Materials: Strong acids, strong bases, strong oxidizers. Reducing agents. Ammonia. Metals. Alkali metals. Combustible materials. Direct sunlight.

7.3. Specific End Use(s)

Laboratory chemicals

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Bromine (7726-95-6)		
USA ACGIH	ACGIH OEL TWA [ppm]	0.1 ppm
USA ACGIH	ACGIH OEL STEL [ppm]	0.2 ppm
USA OSHA	OSHA PEL (TWA) [1]	0.7 mg/m³
USA OSHA	OSHA PEL (TWA) [2]	0.1 ppm

USA NIOSH	NIOSH REL (TWA)	0.7 mg/m³
USA NIOSH	NIOSH REL TWA [ppm]	0.1 ppm
USA NIOSH	NIOSH REL (STEL)	2 mg/m³
USA NIOSH	NIOSH REL STEL [ppm]	0.3 ppm
USA IDLH	IDLH [ppm]	3 ppm
Alberta	OEL STEL	1.3 mg/m³
Alberta	OEL STEL [ppm]	0.2 ppm
Alberta	OEL TWA	0.7 mg/m³
Alberta	OEL TWA [ppm]	0.1 ppm
British Columbia	OEL STEL [ppm]	0.2 ppm
British Columbia	OEL TWA [ppm]	0.1 ppm
Manitoba	OEL STEL [ppm]	0.2 ppm
Manitoba	OEL TWA [ppm]	0.1 ppm
New Brunswick	OEL STEL	1.3 mg/m³
New Brunswick	OEL STEL [ppm]	0.2 ppm
New Brunswick	OEL TWA	0.66 mg/m³
New Brunswick	OEL TWA [ppm]	0.1 ppm
Newfoundland & Labrador	OEL STEL [ppm]	0.2 ppm
Newfoundland & Labrador	OEL TWA [ppm]	0.1 ppm
Nova Scotia	OEL STEL [ppm]	0.2 ppm
Nova Scotia	OEL TWA [ppm]	0.1 ppm
Nunavut	OEL STEL [ppm]	0.2 ppm
Nunavut	OEL TWA [ppm]	0.1 ppm
Northwest Territories	OEL STEL [ppm]	0.2 ppm
Northwest Territories	OEL TWA [ppm]	0.1 ppm
Ontario	OEL STEL [ppm]	0.2 ppm
Ontario	OEL TWA [ppm]	0.1 ppm
Prince Edward Island	OEL STEL [ppm]	0.2 ppm
Prince Edward Island	OEL TWA [ppm]	0.1 ppm
Québec	VECD (OEL STEL)	1.3 mg/m³
Québec	VECD (OEL STEL) [ppm]	0.2 ppm
Québec	VEMP (OEL TWA)	0.66 mg/m³
Québec	VEMP (OEL TWA) [ppm]	0.1 ppm
Saskatchewan	OEL STEL [ppm]	0.2 ppm
Saskatchewan	OEL TWA [ppm]	0.1 ppm
Yukon	OEL STEL	2 mg/m³
Yukon	OEL STEL [ppm]	0.3 ppm
Yukon	OEL TWA	0.7 mg/m³
Yukon	OEL TWA [ppm]	0.1 ppm

8.2. Exposure Controls

Appropriate Engineering Controls: Ensure adequate ventilation, especially in confined areas. Gas detectors should be used when toxic gases may be released. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Colorless
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	2 – 3
Evaporation Rate	:	No data available
Melting Point	:	No data available
Freezing Point	:	No data available
Boiling Point	:	No data available
Flash Point	:	No data available
Auto-ignition Temperature	:	No data available
Decomposition Temperature	:	No data available
Flammability	:	Not applicable
Lower Flammable Limit	:	No data available
Upper Flammable Limit	:	No data available
Vapor Pressure	:	No data available
Relative Vapor Density at 20°C	:	No data available
Relative Density	:	No data available
Density	:	1 g/ml
Specific Gravity	:	No data available
Solubility	:	Water: Soluble
Partition Coefficient: N-Octanol/Water	:	No data available
Viscosity	:	No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity:

Hazardous reactions will not occur under normal conditions. May accelerate the burning of other combustible materials.

10.2. Chemical Stability:

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

10.4. Conditions to Avoid:

Direct sunlight, extremely high or low temperatures, and incompatible materials.

10.5. Incompatible Materials:

Strong acids, strong bases, strong oxidizers. Reducing agents. Ammonia. Metals. Alkali metals. Combustible materials. Direct sunlight.

10.6. Hazardous Decomposition Products:

Thermal decomposition may produce: Bromine compounds. Irritating fumes.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Harmful if inhaled.

LD50 and LC50 Data:

Bromine Water	
ATE US/CA (dust, mist)	3.85 mg/l/4h

Skin Corrosion/Irritation: Causes skin irritation.

pH: 2 – 3

Eye Damage/Irritation: Causes serious eye irritation.

pH: 2 – 3
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Carcinogenicity: Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: Inhalation is likely to cause adverse health effects including but not limited to: irritation, difficulty breathing, and unconsciousness.
Symptoms/Injuries After Skin Contact: Redness, pain, swelling, itching, burning, dryness, and dermatitis.
Symptoms/Injuries After Eye Contact: Contact causes severe irritation with redness and swelling of the conjunctiva.
Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.
Chronic Symptoms: None expected under normal conditions of use.

11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Bromine (7726-95-6)	
LD50 Oral Rat	2600 mg/kg
LC50 Inhalation Rat (vapors)	0.784 mg/l/4h

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General: Toxic to aquatic life.

Bromine (7726-95-6)	
LC50 Fish 1	0.068 mg/l Exposure time: 96 hour (Species: Oncorhynchus mykiss)
EC50 - Crustacea [1]	1 mg/l

12.2. Persistence and Degradability

Bromine Water	
Persistence and Degradability	Not established.

12.3. Bioaccumulative Potential

Bromine Water	
Bioaccumulative Potential	Not established.

Bromine (7726-95-6)	
BCF Fish 1	(no bioaccumulation expected)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.
Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

14.1. In Accordance with DOT

Proper Shipping Name : BROMINE SOLUTIONS
Hazard Class : 8
Identification Number : UN1744
Label Codes : 8, 6.1
Packing Group : I
ERG Number : 155
DOT Vessel Stowage Location : D

14.2. In Accordance with IMDG

Proper Shipping Name : BROMINE SOLUTION
Hazard Class : 8 (6.1)
Identification Number : UN1744
Label Codes : 8, 6.1
Packing Group : I
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B

14.3. In Accordance with IATA

Proper Shipping Name : BROMINE SOLUTION
Hazard Class : 8 (6.1)
Identification Number : UN1744
ERG Code (IATA) : 8P

14.4. In Accordance with TDG

Proper Shipping Name : BROMINE SOLUTION
Hazard Class : 8
Identification Number : UN1744
Label Codes : 8, 6.1
Packing Group : I

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

Bromine Water	
SARA Section 311/312 Hazard Classes	Health hazard - Skin corrosion or Irritation Health hazard - Serious eye damage or eye irritation Health hazard - Acute toxicity (any route of exposure)

Water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Bromine (7726-95-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active Listed on the United States SARA Section 302 Subject to reporting requirements of United States SARA Section 313	
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb
SARA Section 313 - Emission Reporting	1 %

15.2. US State Regulations

Bromine (7726-95-6)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

15.3. Canadian Regulations

Water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)

Bromine (7726-95-6)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 10/31/2022

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

GHS Full Text Phrases:

H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H330	Fatal if inhaled
H332	Harmful if inhaled
H400	Very toxic to aquatic life
H402	Harmful to aquatic life

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

NA GHS SDS 2015 (Can, US)