

Infosafe No™	3CHCZ	Issue Date : November 2016	RE-ISSUED by ACR
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Product Name : **BROMINE WATER**

Classified as hazardous

## 1. Identification

<b>GHS Product Identifier</b>	BROMINE WATER
<b>Product Code</b>	0428
<b>Company Name</b>	AUSTRALIAN CHEMICAL REAGENTS (ACR) (ABN 19 008 264 211)
<b>Address</b>	38 - 50 Bedford Street Gillman S.A. 5013 Australia
<b>Telephone/Fax Number</b>	Tel: (08) 8440 2000 Fax: (08) 8440 2001
<b>Recommended use of the chemical and restrictions on use</b>	Laboratory reagent.
<b>Other Information</b>	EMERGENCY CONTACT NUMBER: +61 08 8440 2000 Business hours: 8:30am to 5:00pm, Monday to Friday.

Australian Chemical Reagents (ACR) does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Australian Chemical Reagents (ACR) with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Australian Chemical Reagents (ACR) is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

## 2. Hazard Identification

<b>GHS classification of the substance/mixture</b>	Skin Corrosion/Irritation: Category 2 Eye Damage/Irritation: Category 1
<b>Signal Word (s)</b>	DANGER
<b>Hazard Statement (s)</b>	H315 Causes skin irritation. H318 Causes serious eye damage.
<b>Pictogram (s)</b>	Corrosion, Exclamation mark



<b>Precautionary statement – Prevention</b>	P264 Wash thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection.
<b>Precautionary statement – Response</b>	P302+P352 IF ON SKIN: Wash with plenty of soap and water. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P362 Take off contaminated clothing and wash before reuse. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor/physician.
<b>Precautionary statement – Disposal</b>	P501 Dispose of contents/container to an approved waste disposal plant.

## 3. Composition/information on ingredients

Ingredients	Name	CAS	Proportion	Hazard Symbol	Risk Phrase
	Bromine	7726-95-6	1-5 %		
	Water to make a total of 100%	7732-18-5	-		
<b>Other Information</b>	Bromine water contains approximately 3.2 g bromine in 100 g water.				

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## 4. First-aid measures

<b>Inhalation</b>	If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
<b>Ingestion</b>	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. Give water to drink. DO NOT INDUCE VOMITING. Seek medical advice if symptoms persist.
<b>Skin</b>	Wash skin with water using soap if available. If rapid recovery does not occur, obtain medical attention. Wash affected areas with copious quantities of water. Remove contaminated clothing and wash before re-use. Seek immediate medical attention.
<b>Eye contact</b>	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek immediate medical assistance.
<b>First Aid Facilities</b>	Maintain eyewash fountain and safety shower in work area.
<b>Advice to Doctor</b>	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
<b>Other Information</b>	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor at once.

## 5. Fire-fighting measures

<b>Hazards from Combustion Products</b>	Liberates toxic fumes in fire including hydrogen bromide gas.
<b>Specific Methods</b>	Small fire: Use dry chemical, CO2 or water spray. If safe to do so, move undamaged containers from fire area. Large fire: Use dry chemical, CO2, foam or water spray - Do not use water jets. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
<b>Specific hazards arising from the chemical</b>	Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated.
<b>Hazchem Code</b>	2XE
<b>Precautions in connection with Fire</b>	Wear SCBA and chemical splash suit. Fully-encapsulating, gas-tight suits should be worn for maximum protection. Structural firefighter's uniform is NOT effective for these materials.

## 6. Accidental release measures

<b>Personal Precautions</b>	Evacuate the area of all non-essential personnel. Avoid inhalation, contact with skin, eyes and clothing.
<b>Personal Protection</b>	Wear respiratory protection.
<b>Clean-up Methods - Small Spillages</b>	Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.
<b>Environmental Precautions</b>	Avoid release to the environment.

## 7. Handling and storage

<b>Precautions for Safe Handling</b>	Use in well ventilated areas away from all ignition sources. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid prolonged or repeated contact with skin and clothing. Contaminated clothing should be removed and washed before reuse.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep container tightly closed in a dry, well-ventilated place away from direct sunlight and other sources of heat or ignition. Store at room temperature (15 - 25 °C). May develop pressure. Open carefully. Do not use polyethylene.
<b>Corrosiveness</b>	Attacks most metals, including platinum and palladium. Reacts vigorously with aluminium and explosively with potassium.
<b>Storage Regulations</b>	Refer Australian Standard AS 3780 - 1994 'The storage and handling of corrosive substances'.
<b>Other Information</b>	Vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks).

## 8. Exposure controls/personal protection

Occupational exposure limit values	Name	STEL	TWA
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	<u>mg/m3</u>	<u>ppm</u>	<u>mg/m3</u>	<u>ppm</u>	<u>Footnote</u>
<b>Other Exposure Information</b>	Bromine	2	0.3	0.66	0.1
<b>Appropriate engineering controls</b>	A time weighted average (TWA) has been established for Bromine (Safe Work Australia) of 0.66 mg/m3, (0.1 ppm). The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. A Short term exposure limit (STEL) has been established for Bromine (Safe Work Australia) of 2 mg/m3, (0.3 ppm). The exposure value at the STEL is the average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight-hour workday.				
<b>Respiratory Protection</b>	Provide sufficient ventilation to keep airborne levels below the exposure limit. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flame proof exhaust ventilation system is required.				
<b>Eye Protection</b>	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.				
<b>Hand Protection</b>	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.				
<b>Personal Protective Equipment</b>	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Viton rubber gloves. Butyl rubber gloves				
<b>Footwear</b>	Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.				
<b>Body Protection</b>	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.				
<b>Hygiene Measures</b>	Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals. Recommendation: Acid-resistant clothing.				
	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.				

## 9. Physical and chemical properties

<b>Appearance</b>	Light brown liquid.
<b>Odour</b>	Pungent, suffocating odour.
<b>Flammability</b>	Non combustible material. Vigorously supports combustion.

## 10. Stability and reactivity

<b>Conditions to Avoid</b>	Sensitive to heating. Incompatibles.
<b>Incompatible Materials</b>	Bromine is incompatible with the following. Combustible material, strong oxidizing agents, alcohols, aldehydes, aluminium, amides, amines, ammonia, arsenites, azides, carbides, ketones, organic nitro compounds, organic substances/reducing agents, ethers, phenols, fluorine, phosphides, alkali hydroxides, alkali oxides, halogen oxides, halogen-halogen compounds, hydrides, lithium silicide, metals, non-metals, ozone, metallic salts, ferrous salts, mercurous salts, hypophosphites, phosphorus and potassium.
<b>Hazardous Decomposition Products</b>	Liberates toxic fumes in fire including hydrogen bromide gas.
<b>Possibility of hazardous reactions</b>	Bromine reacts violently with many organic compounds, many metals and phosphorus. Reacts vigorously with aluminium and explosively with potassium.

## 11. Toxicological Information

<b>Acute Toxicity - Oral</b>	Bromine LD50 (rat): 2600 mg/kg.
<b>Ingestion</b>	May cause sore throat, vomiting, diarrhea and abdominal spasm. Burns of mucous membranes.
<b>Inhalation</b>	May cause sore throat, irritation, coughing, shortness of breath, laboured breathing, dizziness, headache, lacrimation, epistaxis, feeling of oppression, pneumonia and lung edema. A
<b>Skin</b>	May cause redness, pain, irritation, necrosis, poorly healing wounds and measles-like eruptions. May be absorbed through the skin.
<b>Eye</b>	Causes severe burns. May cause redness, irritation, pain and blurred vision.

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**Carcinogenicity** No evidence of carcinogenic properties.

**Mutagenicity** No evidence of mutagenic properties.

## 12. Ecological information

**Ecotoxicity** May cause long-term adverse effects in the aquatic environment.

**Persistence and degradability** Not readily degradable.

## 13. Disposal considerations

**Disposal Considerations** Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.

## 14. Transport information

**Transport Information** Dangerous goods of Class 8 (Corrosive) are incompatible in a placard load with any of the following: Class 1, Class 4.3, Class 5, Class 6, if the Class 6 dangerous goods are cyanides and the Class 8 dangerous goods are acids, Class 7; and are incompatible with food and food packaging in any quantity.

**U.N. Number** 1744

**UN proper shipping name** BROMINE or BROMINE SOLUTION

**Transport hazard class(es)** 8

**Sub.Risk** 6.1

**Hazchem Code** 2XE

**Packaging Method** 3.8.8RT5

**Packing Group** I

**EPG Number** 8C5

**IERG Number** 37

## 15. Regulatory information

**Poisons Schedule** S7

**Hazard Category** Very Toxic, Corrosive, Dangerous for the environment

## 16. Other Information

**Literature References**

- 'Standard for the Uniform Scheduling of Medicines and Poisons No. 15', Commonwealth of Australia, November 2016.
- Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997.
- National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007.
- Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011.
- Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010.
- Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'.
- Safe Work Australia, 'Hazardous Substances Information System, 2005'.
- Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'.
- Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.

**Contact Person/Point**

Paul McCarthy Ph. (08) 8440 2000 **DISCLAIMER STATEMENT:**  
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