

Safety Data Sheet BROMINE

SDS no. LKRUCNVX • Version 1.0 • Date of issue: 2025-06-08

SECTION 1: Identification

GHS Product identifier

Product name BROMINE

Other means of identification

Product Product Code

BROMINE Liquid AR BA039

BROMINE Liquid LR BL039

Recommended use of the chemical and restrictions on use

Manufacture of ethylene dibromide (antiknock gasoline), organic synthesis, inorganic salts, bleaching, water purification, solvent, intermediate for fumigants (methyl bromide), analytical reagent, fire-retardant for plastics, dyes, pharmaceuticals, photography, shrink-proofing wool and laboratory reagent.

Supplier's details

Name ChemSupply Australia Pty Ltd
Address 38-50 Bedford Street
5013 Gillman South Australia
Australia

Telephone 08 8440 2000
email www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

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.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Acute toxicity, inhalation, Cat. 1

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- Serious eye damage/eye irritation, Cat. 1
- Skin corrosion/irritation, Cat. 1A
- Hazardous to the aquatic environment, short-term (acute), Cat. 1

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H314

Causes severe skin burns and eye damage

H330

Fatal if inhaled

H400

Very toxic to aquatic life

Precautionary statement(s)

P260

Do not breathe dust/fume/gas/mist/vapors/spray.

P264

Wash hands 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/eye protection/face protection.

P284

[In case of inadequate ventilation] wear respiratory protection.

P301+P330+P331

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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.

P310

Immediately call a POISON CENTER/doctor/physician

P363

Wash contaminated clothing before reuse.

P391

Collect spillage.

P403+P233

Store in a well-ventilated place. Keep container tightly closed.

P405

Store locked up.

P501

Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 159.81

Components

Component	CAS no.	Concentration
Bromine (EC no.: 231-778-1; Index no.: 035-001-00-5)	7726-95-6	3.2 - 100 % (weight)
CLASSIFICATIONS: Acute toxicity, inhalation, Cat. 2; Skin corrosion/irritation, Cat. 1A; Hazardous to the aquatic environment, short-term (acute), Cat. 1. HAZARDS: H314 - Causes severe skin burns and eye damage; H330 - Fatal if inhaled; H400 - Very toxic to aquatic life.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice	For advice, contact a Poisons Information Centre (e.g. phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor (at once).
If inhaled	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician immediately
In case of skin contact	Wash affected areas with copious quantities of water. Remove contaminated clothing and wash before re-use. Seek immediate medical attention.
In case of eye contact	If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Obtain medical attention immediately
If swallowed	Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical attention immediately

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor at once.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

Specific Methods: 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.

Specific hazards arising from the chemical

Hazards from Combustion Products: Liberates toxic fumes in fire including hydrogen bromide gas.

Material does not burn. Fire or heat will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated.

Special protective actions for fire-fighters

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.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate the area of all non-essential personnel. Avoid substance contact. Avoid generation of dusts:

do not inhale dusts. Ensure supply of fresh air in enclosed rooms.

Wear respiratory protection.

Wear protective clothing specified for normal operations (see Section 8)

Methods and materials for containment and cleaning up

ELIMINATE all ignition sources (no smoking, flares, sparks or flames) within at least 50m.

Do not touch or walk through spilled material.

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

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Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.
Cover with DRY earth, sand or other non-combustible material followed by plastic sheet to minimize spreading or contact with rain.
DO NOT GET WATER INSIDE CONTAINERS.

SECTION 7: Handling and storage

Precautions for safe handling

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.

Conditions for safe storage, including any incompatibilities

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

Corrosiveness: Attacks most metals, including platinum and palladium. Reacts vigorously with aluminium and explosively with potassium.
Dry bromine does not attack lead, nickel, magnesium, tantalum, iron or zinc.
Storage Regulations: Refer Australian Standard AS 3780 - 1994 'The storage and handling of corrosive substances'.

Other Information: Vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks).

SECTION 8: Exposure controls/personal protection

Control parameters

CAS: 7726-95-6

Bromine

AU/SWA (Australia): 0.3 ppm; 2 mg/m³ STEL inhalation; 0.1 ppm; 0.66 mg/m³ TWA inhalation

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

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.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Body protection

Footwear: Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection: 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.

Respiratory protection

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If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Dark reddish-brown liquid.
Color	No data available.
Odor	Pungent, suffocating odour.
Odor threshold	No data available.
Melting point/freezing point	-7 - -7.2 °C
Boiling point or initial boiling point and boiling range	58.8 °C
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Oxidizing properties	No data available.
pH	No data available.
Kinematic viscosity	Viscosity: (dynamic, 20 °C): 1 mPa*s; (kinetic, 20 °C): 0.314 mm ² /s
Solubility	Solubility in Water: Slightly soluble (42 g/L @ 20 °C) Solubility in Organic Solvents: Soluble in common organic solvents.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	220 mmHg @ 20 °C
Evaporation rate	No data available.
Density and/or relative density	Specific Gravity: 3.12
Relative vapor density	5.5 g/L @ 20 °C
Particle characteristics	No data available.

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Refractive index: 1.647 @ 15 °C

Specific heat: 0.107 cal/g

Dielectric constant: 3.2

SECTION 10: Stability and reactivity

Reactivity

Stable under normal conditions of storage and handling.

Reacts with incompatible materials

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Reacts violently with many organic compounds, many metals and phosphorus. Reacts vigorously with aluminium and explosively with potassium.

Conditions to avoid

Avoid storing in direct sunlight and avoid extremes of temperature.

Incompatible materials

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.

Hazardous decomposition products

Liberates toxic fumes in fire including hydrogen bromide gas.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Acute Toxicity - Oral: LD50 (rat): 2600 mg/kg.

Acute Toxicity - Inhalation: LC50 (rat): 2700 mg/m³.

Ingestion: Can be absorbed into the body by ingestion. May cause sore throat, vomiting, diarrhea and abdominal spasm. Burns of mucous membranes.

Inhalation: Very toxic by inhalation. Substance may be absorbed into the body by inhalation. Corrosive to the respiratory tract. May cause sore throat, irritation, coughing, shortness of breath, laboured breathing, dizziness, headache, lacrimation, epistaxis, feeling of oppression, pneumonia and lung edema. After a latency period: cyanosis, cardiovascular failure, respiratory arrest and lung edema; symptoms aggravated by physical effort.

// ----- From the Suggestion report (07/07/2025, 10:21 AM) ----- //

The ATE (gas inhalation) of the mixture is: 100 ppmV

Skin corrosion/irritation

Causes severe burns. May cause redness, pain, irritation, necrosis, poorly healing wounds and measles-like eruptions. May be absorbed through the skin.

Serious eye damage/irritation

Causes severe burns. May cause redness, irritation, pain and blurred vision.

Serious eye damage/irritation: Eye Damage/Irritation: Category 1

Respiratory or skin sensitization

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

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Reproductive toxicity

Not classified based on available information.

Specific target organ toxicity (STOT) - single exposure

Not classified based on available information.

Specific target organ toxicity (STOT) - repeated exposure

Not classified based on available information.

Aspiration hazard

Not classified based on available information.

Additional information

Chronic Effects: Repeated or prolonged skin contact may cause chronic dermatitis.

SECTION 12: Ecological information

Toxicity

Ecotoxicity: Highly toxic for aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Other Precautions: Prevent fire-fighting water from entering surface water or groundwater. Do not allow to enter waters, waste water, or soil!

Persistence and degradability

Not readily degradable.

Other adverse effects

Environmental Fate: Distribution: log P (o/w): 1.03

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 1744

Class: 8, 6.1

Packing Group: I

Proper Shipping Name: BROMINE or BROMINE SOLUTION

Hazchem emergency action code (EAC)

2XE

IMDG

UN Number: 1744

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Class: 8, 6.1
Packing Group: I
EMS Number:
Proper Shipping Name: BROMINE or BROMINE SOLUTION

IATA

UN Number: 1744
Class: 8, 6.1
Packing Group: I
Proper Shipping Name: BROMINE or BROMINE SOLUTION

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: S7

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd 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 ChemSupply Australia Pty Ltd 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 ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.
Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.
Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019
Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au
IATA, Dangerous Goods Regulations (DGR)
IMO, International Maritime Dangerous Goods Code (IMDG)