



Centre Anti-Poison pour le Québec: (800) 463-5060

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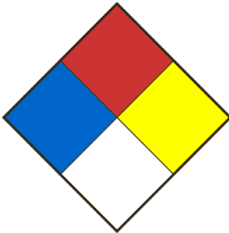
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SAFETY DATA SHEET

SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

Product Identifier BROMINE		Product Use Laboratory use	
Chemical formula Br ₂		Product code BR-0128	Molar weight 159,82
Chemical name / Commercial name / Synonymous BROMINE			
Supplier's name Laboratoire MAT		Address-Street 610, Adanac Street	
City Québec		Province Québec	
Postal code G1C 7B7	Internet www.labmat.com	Phone number 418-660-8666 / 800-890-8666	
Emergency phone	CANUTEC: 613-996-6666 CENTRE ANTI-POISON DU QUÉBEC 800-463-5060		
Date SDS 8/24/2023	SDS Prepared by Laboratoire MAT	E-Mail labmat@labmat.com	

SECTION 02 - HAZARDS IDENTIFICATION

Classification WHIMS / GHS	Skin corrosion/irritation - Skin corrosion category 1A Serious eye damage/eye irritation - Serious eye damage category 1 Acute toxicity - Inhalation category 1	
Signal Word	DANGER	
Hazards statements (H)	H314 Causes severe skin burns and eye damage. H318 Causes serious eye damage. H330 Fatal if inhaled.	
Precautionary statements (P)	P260 Do not breathe dust / fume / gas / mist / vapors / spray. P264 Wash the areas of the body that have been in contact with the product after handling. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection. P284 Wear respiratory protection. P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position 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 or doctor/physician. P320 Specific treatment is urgent (see section 4 on this SDS on this label). P321 Specific treatment (see section 4 of the SDS and on this label). P363 Wash contaminated clothing before reuse. P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. P501 Dispose of contents/container in accordance with local / regional / national / international regulations or contact a specialist waste disposal company.	
PICTOGRAMS		
Other dangers	NFPA (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Signifiant; 4=Extreme)	
	Health 3 Fire 0 Reactivity 0 Special danger OX	

SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingrédients (Dénomination chimique / synonymes)	Numéro CAS et tout identificateur unique	Concentration (%)
Brome	7726-95-6	<=100

SECTION 04 - FIRST AID MEASURES

Eye contact	Wash eyes with large amounts of water for at least 15 minutes while holding eyelids apart to rinse eyes. If irritation persists, seek medical attention.
Skin contact	Wash skin with plenty of water for at least 15 minutes. Remove soiled clothing. If irritation persists, seek medical attention.
Inhalation	Move the unwell person to the fresh air. If breathing is difficult, give oxygen. Consult a physician.
Ingestion	If the person is conscious, drink water or preferably milk. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.
Most important symptoms and effects (acute and delayed)	Main symptoms of high exposure: The product is toxic, corrosive and irritant. Kidney damage. Headaches. Diarrhea. Pneumonia. Nausea and vomiting. Cyanosis (blue to black coloring of the skin and nails). Vertigo. Cough. Lachrymator. Abdominal pain. Ref. section 11.
Immediate medical attention and special treatment, if necessary	In case of medical consultation, keep this sheet available.
General advice	Move out of dangerous area. Show this safety data sheet to the doctor in attendance.

SECTION 05 - FIREFIGHTING MEASURES

Flammability	No
Ignition conditions	Non flammable.
Suitable extinguishing media	Closed containers can be cooled by water spray.
Unsuitable extinguishing media	Not applicable.
Hazardous combustion products	Hazardous combustion products formed under fire conditions: Gaseous hydrogen bromide and/or bromine.
Special fire and explosion hazards	Powerful oxidizer Containers exposed to fire may explode. Spontaneously flammable by chemical reaction with reducing agents. Violent reactions in contact with the following products: acetaldehyde, acetylene, metal acetylides, acrylonitrile, alcohols, aldehydes, aluminum, antimony, arsenites, azides, boron, nitride calcium, rubber, carbides, ketones, diethyl zinc, dimethylformamide, diethyl ether, fluorine, hydrogen, ammonium hydroxide, metal hydrides, hypophosphites, lithium mixture + sodium, mercury and its salts, ozone, phosphorus, potassium, ferrous salts, sodium, titanium, tetrahydrofuran and trimethylamine. May react violently with incompatible products (Ref Section 10).
Special protective equipment and precautions for firefighters	Discard incompatible substances if this can be done without risk. Firefighters should be equipped with standard protective equipment, fireproof clothing, face mask, gloves, protective boots and, where appropriate, self-contained breathing apparatus.

SECTION 06 - ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up / Personnel precautions, protective equipment	Evacuate personnel to safe areas. Recommended distance: at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids. Avoid breathing vapors, mist or gas. Ensure a good ventilation of the premises. When handling, wear appropriate safety equipment. Use a respirator as needed. Absorb the product with sand or vermiculite. Do not use cellulose-based absorbent. Dispose of residues in a container provided for the disposal of hazardous materials. Do not let product enter drains.
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SECTION 07 - HANDLING AND STORAGE

Conditions for safe storage	Store in a cool, dry place. Keep container tightly closed and store away from heat, moisture, combustible and incompatible products. Protect from the sun's rays. May develop pressure, occasionally vent containers.
Methods of handling	Bottle in the glass only. Do not store in plastic or metal containers. Always open containers slowly to allow any excess pressure to vent. Ensure good ventilation. Avoid contact with the skin, eyes and clothes. Avoid ingestion and inhalation. Avoid contact with combustible materials. Wear personal protective equipment when handling. Always ensure good ventilation. Transport according to TDG (ref Section 14)

SECTION 08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace control parameters

Components	No.-CAS	Control parameters	Value	Basis
Bromine	7726-95-6	TWA	0.1 ppm 0.7 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		STEL	0.2 ppm 1.3 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWA	0.1 ppm	Canada. British Columbia OEL
		STEL	0.2 ppm	Canada. British Columbia OEL
		TWA	0.1 ppm 0.66 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		STEL	0.2 ppm 1.3 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

Data source	Sigma-Aldrich (Millipore Sigma)
Ventilation	Use fan.
Respiratory	If work under the hood is not possible, or if the permissible levels are exceeded, use a mechanical filter / cartridge against NIOSH vapors or a respirator with air supply.
Gloves	Handle with gloves.
Eyes	Safety goggles with safety shutters.
Shoes	Safety shoes.
Clothing	Labcoat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Engineering control	Have safety showers and eyewash stations in the workplace in case of an emergency and a ventilation system to maintain the level of concentrations in the air below the exposure limit values.

SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid.
Appearance	Liquide brun-rouge.
Odour	Forte et suffocante.
Odour threshold	3.5ppm
pH	Donnée non disponible.
Melting point / Freezing point	-7.25°C
Initial boiling point	59.5°C
Boiling range	Data not available
Flash point	Data not available
Evaporation rate	Data not available
Flammability	No
Lower flammable / Explosive limit	Data not available
Upper flammable / Explosive limit	Data not available
Vapour pressure	175.0 mm @ 20°CmmHg
Vapour density	5.51 (Air = 1.0)-
Relative density	3.102g/cm ³
Solubility	Peu soluble dans l'eau (36g/L à 20°C). Miscible avec l'alcool et l'éther.
Partition coefficient water/n-octanol	0.314-
Auto-ignition temperature	Data not available
Decomposition temperature	Data not available
Viscosity	0.314 cs at 25 °C.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	Oxidizer: risk of fire in case of contact with combustible / organic substance. Vapor/air-mixtures are explosive at intense warming. May form explosive mixtures with air on intense heating. May react violently with incompatible substances.
Chemical stability	Moisture sensitive. Oxidizer: Fire hazard in case of contact with combustible / organic substance. Containers can develop pressure over time, releasing pressure regularly.
Possibility of hazardous reactions	Vapors may form explosive mixture with air. Violent reactions with: arsenic, rubber, copper acetylide, copper hydride, mercury, sodium hydroxide, titanium. Risk of explosion with: acrylonitrile, antimony, silver, hydrogen, white and red phosphorus, alkali metals, Tetracarbonylnickel, ammonia, azides, silanes, diethyl zinc, ozone, Nitriles, halogen oxides, halogen oxides, phosphines. Mixtures with lithium or sodium are shock sensitive.
Conditions of instability (Including sensitivity to shock / static discharge / vibration)	Avoid excessive heat and humidity.
Incompatible material	Reacts with: organic acids, hydrocarbons, phenols, aluminum, amine, ketone, iron carbide, lithium germanium carbide, lithium silicide, magnesium phosphide, oleofins, amides, iron and iron compounds, heat, moisture. Exothermic reaction with:Hydrides, amides, phenols, ether, halogen-halogen compounds, halogen oxides, metals, alcohols, organics, alkali oxides, alkali metals, metalloids, acetylene, amines, ketones, nitrides, iron compounds/containing iron, boranes. Violent reactions with: arsenic, rubber, copper acetylide, copper hydride, mercury, sodium hydroxide, titanium. Risk of explosion with: acrylonitrile, antimony, silver, hydrogen, white and red phosphorus, alkali metals, Tetracarbonylnickel, ammonia, azides, silanes, diethyl zinc, ozone, Nitriles, halogen oxides, halogen oxides, phosphines. Mixtures with lithium or sodium are shock sensitive.
Hazardous decomposition products	Gaseous hydrogen bromide and/or bromine.

SECTION 11 - TOXICOLOGICAL INFORMATION

BROMINE

Routes of exposure	Ingestion and inhalation.
Acute exposition effects / symptoms:	By exposure route below.
- Eyes	Severe burns and destruction of ocular tissue that can lead to corneal ulceration and blindness.
- Skin	Severe burns and tissue ulcerations. May be fatal, if the extent of the burns is considerable. A rash in the form of blisters or pustules may appear a few hours after heavy exposure to the product.
- Inhalation	Spasms, irritation and inflammation of the nose, throat and lungs. Edema of the larynx and bronchi. Chemical pneumonitis and pulmonary edema that can lead to death.
Acute toxicity (Ingestion)	Burns and ulcerations of the mouth, throat, esophagus, stomach and abdominal wall. Dysphagia, abdominal pain, chest tightness, cramps, diarrhoea, melena, hematemesis, sweating, salivation, headache, dizziness, tremors, convulsions, stupor, respiratory collapse, unconsciousness, coma and may result in death.
Chronic exposure effects / symptoms	Burning sensation, thyroid and cardiovascular disorders, lung damage, chest pain, cough, dyspnoea, laryngitis, headache, dizziness, irritability, epistaxis, lacrimation, sweating, salivation, tremors, joint pain, asthenia, weight loss and loss of appetite, convulsions, nausea and vomiting.
DL50 (specify species and route of entry)	LD50 Oral - Rat - 2600 mg/kg LD50 Dermal: Data not available.
CL50 (specify species and route of entry)	LC50 Inhalation - Mouse - 4h - 145ppm.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity	Toxicity to fish: LC50 - <i>Lepomis macrochirus</i> - 0.54 mg/l - 96.0 h. Toxicity to daphnia and other aquatic invertebrates: Static test: NOEC - <i>Daphnia magna</i> (Water flea): 0.4 mg/L - 48 h
Persistence and degradability	Persistence is unlikely based on information available.
Bioaccumulative potential	Data not available.
Mobility in soil	Data not available.
Other adverse effects	All littering must be avoided in the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Method	Dispose of contents / container in accordance with local / regional / national / international regulations / or contact a specialist waste disposal company.
Contaminated Packaging	Dispose of as unused product.

SECTION 14 - TRANSPORT INFORMATION

UN Number	1744
UN Proper shipping name	BROME
Transport hazard class(es)	8 Corrosive substances 6.1 Toxic substances
Packing group	I
Limited quantity index	0L
ERAP Index	3000
Special precautions	23

SECTION 15 - REGULATORY INFORMATION

WHIMS CANADA	Skin corrosion/irritation - Skin corrosion category 1A Serious eye damage/eye irritation - Serious eye damage category 1 Acute toxicity - Inhalation category 1
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SECTION 16 - OTHER INFORMATION

Further information

The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. It does not represent any guarantee of the properties of the product. Laboratoire MAT Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

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