

Lach-Ner, Ltd. Safety Data SheetCatalogue No: **30058**Product name: **Bromine****1. Identification of the substance/preparation and of the company/undertaking***Identification of the product*Product name: **Bromine***Supplier/distributor identification*Company: *Lach-Ner, Ltd.*

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Use of the substance/preparation

Chemical production, Reagent for analysis, Pharmaceutical production and analysis

2. Composition/information on ingredients

Molar mass: 159.82

Molecular formula: Br₂ EC-Index-No.: 035-001-00-5

CAS-No: 7726-95-6 EC-No: 231-778-1

Hazard symbols: T+, C, N

R-phrases: 26-35-50

S-phrases: 7/9-26-45-61

3. Hazards identification

Very toxic by inhalation. Causes severe burns. Very toxic to aquatic organisms.

4. First aid measures

First-aid personnel: ensure self-protection!

After inhalation: fresh air. If necessary, apply mouth-to-mouth resuscitation or mechanical ventilation. Summon doctor.

After skin contact: wash off with plenty of water or - better still – sodium bicarbonate solution. Immediately remove contaminated clothing.

After eye contact: rinse out with plenty of water for at least 10 minutes with the eyelid held wide open. Immediately summon eye specialist.

After swallowing: make victim drink plenty of water, avoid vomiting (risk of perforation!). Immediately summon doctor.

5. Fire-fighting measures

Suitable extinguishing media:

In adaption to materials stored in the immediate neighbourhood.

Special risks:

Vapours heavier than air. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighting:

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Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

Other information:

Non-combustible. Contain escaping vapours with water. Cool container with spray water from a safe distance. Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Person-related precautionary measures:

Do not inhale vapours/aerosols. Avoid substance contact.

Procedures for cleaning/absorption:

Take up with liquid-absorbent material (e.g. Chemisorb®). Forward for disposal. Clean up affected area.

Environmental-protection measures:

Do not allow to enter sewerage system.

Additional notes:

Render harmless: cause to react with excess of sodium thiosulfate solution.

7. Handling and storage

Handling:

Avoid generation of vapours/aerosols. Do not inhale substance. Work under hood.

Storage:

Tightly closed in a well-ventilated place. Protected from light. Storage temperature: at +15°C to +25°C.

Accessible only for authorized persons.

8. Exposure controls/personal protection

Specific control parameter

MAK Germany (max. workplace conc.) Bromine: 0.1 ml/m³ or 0.66 mg/m³

Personal protective equipment:

Respiratory protection: required

Eye protection: required

Hand protection: required

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Other protective equipment: Acid-resistant protective clothing.

Industrial hygiene: Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance. Under no circumstances eat or drink at workplace.

9. Physical and chemical properties

Form:	liquid	Odour:	biting
Colour:	reddish-brown	pH value (20°C): at 50 g/l H ₂ O	not available
Melting temperature (°C):	-7.2	Boiling temperature (°C):	58.8
Ignition temperature (°C):	not combustible	Flash point (°C):	not flammable
Explosion limits: lower -	not available	Density (20°C):	3.12 g/cm ³

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Solubility in water (20 °C): 35.5 g/l

Relative vapour density: 5.5

10. Stability and reactivity*Condition to be avoided*

heating

Substances to be avoided

alkali metals, alkali oxides, ammonia, aluminium, metals, metallic salts, semimetals in powder form, nonmetals, fluorine, halogen oxides, halogen-halogen compounds, organic substances, organic substances/ reducing agents, alcohols, aldehydes, ketones, ethers, unsaturated hydrocarbons, phenols, amines, amides, nitril compounds, carbides, hydrides, azides, phosphides, lithium silicide, ozone.

Hazardous decomposition products

toxic and corrosive vapours

Further information

highly reactive; strong oxidizing agent.

11. Toxicological information*Acute toxicity*LD₅₀ (oral, rat): 2600 mg/kgLD_{Lo} (oral, human): 14 mg/kgLC₅₀ (inhalation, rat): 2700 mg/m³

The literature data available to us do not conform with the labelling prescribed by the EC. The EC has dossiers which have not been published.

Subacute to chronic toxicity

Checks into the substance have so far not disclosed any investigations concerning possible teratogenic effects. Noncarcinogenic in animal experiments. No indication of mutagenic activity.

Further toxicological information

After inhalation: severe mucosal irritations; pulmonary oedema, pneumonia, dyspnoea. Latency time until onset of action.

After skin contact: burns, necrosis. Causes poorly healing wounds.

After eye contact: burns.

After swallowing: burns of mucous membranes.

Systemic effects: after a latency period: After inhalation of vapours: cyanosis, cardiovascular failure, respiratory arrest.

Further data

The product should be handled with the care usual when dealing with chemicals.

12. Ecological information

Biologic degradation:

Biologically not readily degradable.

Ecotoxic effects:

Biological effects: Highly toxic for aquatic organisms.

Fish toxicity: Cladophora LC₁₀₀: 10 mg/l /10 h

Daphnia toxicity: Daphnia magna EC₅₀: 1.5 mg/l /24 h

Algal toxicity: chlorella pyrenoidosa IC₁₀₀: > 0.0028 mg/l /96 h

Further ecologic data:

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Do not allow to enter waters, waste water, or soil!

13. Disposal considerations*Product:*

There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

Packaging:

Disposal in compliance with official regulations. Handle contaminated packaging in the same way as the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

14. Transport informationTransport over land ADR/RID

ADR/RID class:	8	UN-No.:	1744
Classification code:	CT1	Packaging group:	I
Labels:	8+6.1	Hazard identification No.:	886
Name of material:	BROMINE		

River transport ADN/ADNR

not examined

Sea transport IMDG

IMDG class:	8	UN-No.:	1744	Packaging group:	I
EMS:	8-03	MFAG:	740		
Correct technical name:	BROMINE				

Air transport ICAO/ IATA

ICAO/IATA class:	8 / 6.1	UN/ID-No.:	1744	Packaging group:	I
Correct technical name:	BROMINE				

The transport regulations are cited according to international regulations. Possible national deviations in other countries are not considered.

15. Regulatory information*Labelling according to EC Directives*

Symbol: T+, C, N Very toxic, Corrosive, Dangerous for the environment

R-phrases: 26-35-50

Very toxic by inhalation. Causes severe burns. Very toxic to aquatic organisms.

S-phrases: 1/2-7/9-26-45-61

Keep locked up and out of the reach of children. Keep container tightly closed and in a well-ventilated place. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/Safety data sheets.

EC-No.: 231-778-1 EC label

16. Other information*Reason for alteration*

Change in labelling.

Change in the chapter on ecology.

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Catalogue No: **30058**

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The information contained herein is based on the present state of our knowledge.

It characterises the product with regard to the appropriate safety precautions.

It does not represent a guarantee of the properties of the product.