

MATERIAL SAFETY DATA SHEET (MSDS)

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form	: Substance
	:
EC Index-No.	: 035-001-00-5
EC-No.	: 231-778-1
CAS-No.	: 7726-95-6
Product code	: 02259
Chemical structure	:



1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals, Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

CHEMIECALL
Jl. Diklat Pemda, Dukuh Pinang No. 24 RT.001/003
Kel. Bojong Nangka Kec. Kelapa Dua Tangerang 15821
Contact: +62(21) 54210228
info@chemiecall.com www.chemiecall.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity (inhal.), H330
Category 2
Skin corrosion/irritation, H314
Category 1A
Hazardous to the aquatic H400
environment — Acute
Hazard, Category 1

Full text of H statements : see section 16

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Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

T+; R26

C; R35

N; R50

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP] Extra labelling to display Extra classification(s) to display

Hazard pictograms (CLP) :



GHS05

GHS06

GHS09

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H314 - Causes severe skin burns and eye damage.
H330 - Fatal if inhaled.
H400 - Very toxic to aquatic life.

Precautionary statements (CLP) :

P260 - Do not breathe vapours, dust, fume, gas.
P273 - Avoid release to the environment.
P284 - Wear respiratory protection.
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.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : BROMINE AR
CAS-No. : 7726-95-6
EC-No. : 231-778-1
EC Index-No. : 035-001-00-5

Full text of R- and H-statements: see section 16

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3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
- First-aid measures after skin contact : Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER/doctor.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects : Causes severe skin burns and eye damage.
- Symptoms/effects after eye contact : Causes serious eye damage.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Collect spillage. On land, sweep or shovel into suitable containers.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not breathe vapours. Avoid contact during pregnancy/while nursing. Avoid contact with skin and eyes.

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Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection : Protective gloves
Eye protection : Chemical goggles or face shield
Skin and body protection : Wear suitable protective clothing
Respiratory protection : [In case of inadequate ventilation] wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Molecular mass : 159.82 g/mol
Colour : Brownish red.
Odour : pungent odor.
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point : 7.2 °C
Freezing point : No data available
Boiling point : 58 °C
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : 233 hPa at 20 °C
Relative vapour density at 20 °C : 5.52
Relative density : No data available

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Density	: 3.119 g/cm ³
Solubility	: Water: 4 g/100ml @ 20°C
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Air contact. Direct sunlight.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Inhalation: Fatal if inhaled.
Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Serious eye damage, category 1, implicit
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Very toxic to aquatic life.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1744

UN-No. (IMDG) : 1744

UN-No. (IATA) : 1744

UN-No. (ADN) : 1744

UN-No. (RID) : 1744

14.2. UN proper shipping name

Proper Shipping Name (ADR) : BROMINE

Proper Shipping Name (IMDG) : BROMINE

Proper Shipping Name (IATA) : Bromine

Proper Shipping Name (ADN) : BROMINE

Proper Shipping Name (RID) : BROMINE

Transport document description (ADR) : UN 1744 BROMINE, 8 (6.1), I, (C/D), ENVIRONMENTALLY HAZARDOUS

Transport document description (IMDG) : UN 1744 BROMINE, 8 (6.1), I, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS

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Transport document description (IATA) : UN 1744 Bromine, 8, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN) : UN 1744 BROMINE, 8 (6.1), I, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID) : UN 1744 BROMINE, 8 (6.1), I, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 8 (6.1)
Danger labels (ADR) : 8, 6.1



IMDG

Transport hazard class(es) (IMDG) : 8 (6.1)
Danger labels (IMDG) : 8, 6.1



IATA

Transport hazard class(es) (IATA) : 8 (6.1)



ADN

Transport hazard class(es) (ADN) : 8 (6.1)
Danger labels (ADN) : 8, 6.1



RID

Transport hazard class(es) (RID) : 8 (6.1)
Danger labels (RID) : 8, 6.1



14.4. Packing group

Packing group (ADR) : I
Packing group (IMDG) : I
Packing group (IATA) : Not applicable
Packing group (ADN) : I

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Packing group (RID) : I

14.5. Environmental hazards

Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : CT1
Limited quantities (ADR) : 0
Excepted quantities (ADR) : E0
Packing instructions (ADR) : P804
Mixed packing provisions (ADR) : MP2
Portable tank and bulk container instructions (ADR) : T22
Portable tank and bulk container special provisions (ADR) : TP2, TP10
Tank code (ADR) : L21DH(+)
Tank special provisions (ADR) : TU14, TU33, TC5, TE21, TT2, TM3, TM5
Vehicle for tank carriage : AT
Transport category (ADR) : 1
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13, CV28
Special provisions for carriage - Operation (ADR) : S14
Hazard identification number (Kemler No.) : 886
Orange plates : 
Tunnel restriction code (ADR) : C/D
EAC code : 2XE
APP code : B

- Transport by sea

Packing instructions (IMDG) : P804
Tank instructions (IMDG) : T22
Tank special provisions (IMDG) : TP2, TP10, TP13
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-B
Stowage category (IMDG) : D
Stowage and handling (IMDG) : SW1, SW2, H2
Segregation (IMDG) : SG6, SG16, SG17, SG19
Properties and observations (IMDG) : Very dark brown, heavy liquid with an extremely irritating odour. Density: 3.1 (pure product). Boiling point: 59°C . Powerful oxidant; may cause fire in contact with organic materials such as wood, cotton or straw. Highly corrosive to most metals. Solutions have the same properties to a lesser degree, depending on concentration. Toxic if swallowed, by skin contact or by inhalation. Causes burns to skin, eyes and mucous membranes.
MFAG-No : 154

- Air transport

PCA Limited quantities (IATA) : Forbidden
PCA limited quantity max net quantity (IATA) : Forbidden

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PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: Forbidden
CAO max net quantity (IATA)	: Forbidden
Special provisions (IATA)	: A2
ERG code (IATA)	: 8P

- Inland waterway transport

Classification code (ADN)	: CT1
Special provisions (ADN)	: 802
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP, EP, TOX, A
Ventilation (ADN)	: VE02
Number of blue cones/lights (ADN)	: 2

- Rail transport

Classification code (RID)	: CT1
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P804
Mixed packing provisions (RID)	: MP2
Portable tank and bulk container instructions (RID)	: T22
Portable tank and bulk container special provisions (RID)	: TP2, TP10
Tank codes for RID tanks (RID)	: L21DH(+)
Special provisions for RID tanks (RID)	: TU14, TU33, TU38, TC5, TE21, TE22, TE25, TT2, TM3, TM5
Transport category (RID)	: 1
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW28
Hazard identification number (RID)	: 886

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

BROMINE AR is not on the REACH Candidate List

BROMINE AR is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 2, significant hazard to water (Classification according to AwSV; ID No. 2355)

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12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-statements:

Acute Tox. 2 (Inhalation)	Acute toxicity (inhal.), Category 2
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1A
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H400	Very toxic to aquatic life.
R26	Very toxic by inhalation
R35	Causes severe burns
R50	Very toxic to aquatic organisms
C	Corrosive
N	Dangerous for the environment
T+	Very toxic

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product