

SAFETY DATA SHEET

Version 4.5
Revision Date 07/01/2014
Print Date 10/09/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 **Product identifiers**
Product name : Bromobenzene

Product Number : B57702
Brand : Aldrich
Index-No. : 602-060-00-9
CAS-No. : 108-86-1

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 **Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 **Emergency telephone number**

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 **Classification of the substance or mixture**

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226
Skin irritation (Category 2), H315
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 **GHS Label elements, including precautionary statements**

Pictogram



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.

Aldrich - B57702

Page 1 of 8

P264
P273
P280

Wash skin thoroughly after handling.
Avoid release to the environment.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

P303 + P361 + P353

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
Specific treatment (see supplemental first aid instructions on this label).
If skin irritation occurs: Get medical advice/ attention.
Take off contaminated clothing and wash before reuse.

P321

P332 + P313

P362

P370 + P378

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

P391

P403 + P235

P501

Collect spillage.
Store in a well-ventilated place. Keep cool.
Dispose of contents/ container to an approved waste disposal plant.

2.3 **Hazards not otherwise classified (HNOC) or not covered by GHS - none**

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 **Substances**

Formula : C₆H₅Br
Molecular Weight : 157.01 g/mol
CAS-No. : 108-86-1
EC-No. : 203-623-8
Index-No. : 602-060-00-9

Hazardous components

Component	Classification	Concentration
Bromobenzene	Flam. Liq. 3; Skin Irrit. 2; Aquatic Acute 2; Aquatic Chronic 2; H226, H315, H411	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 **Description of first aid measures****General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

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

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

no data available

Aldrich - B57702

Page 2 of 8

5. FIREFIGHTING MEASURES

5.1 **Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 **Special hazards arising from the substance or mixture**

Carbon oxides, Hydrogen bromide gas

5.3 **Advice for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 **Further information**

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 **Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 **Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 **Reference to other sections**

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 **Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 **Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 **Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

8.2 **Exposure controls****Appropriate engineering controls**

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment**Eye/face protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact

Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested: Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 **Information on basic physical and chemical properties**

a) Appearance	Form: liquid, clear Colour: colourless
b) Odour	no data available
c) Odour Threshold	no data available
d) pH	no data available
e) Melting point/freezing point	-31.0 °C (-23.8 °F)
f) Initial boiling point and boiling range	154.0 - 155.0 °C (309.2 - 311.0 °F)
g) Flash point	51.0 °C (123.8 °F) - closed cup
h) Evaporation rate	no data available
i) Flammability (solid, gas)	no data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 36.5 %(V) Lower explosion limit: 6 %(V)
k) Vapour pressure	13.3 hPa (10.0 mmHg) at 40.0 °C (104.0 °F) 5.3 hPa (4.0 mmHg) at 25.0 °C (77.0 °F)

Aldrich - B57702

Page 3 of 8

Aldrich - B57702

Page 4 of 8

- l) Vapour density no data available
- m) Relative density 1.49 g/cm³
- n) Water solubility no data available
- o) Partition coefficient: n-octanol/water log Pow: 2.99log Pow: 5
- p) Auto-ignition temperature 566.0 °C (1,050.8 °F)
- q) Decomposition temperature no data available
- r) Viscosity no data available
- s) Explosive properties no data available
- t) Oxidizing properties no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

- 10.1 Reactivity**
no data available
- 10.2 Chemical stability**
Stable under recommended storage conditions.
- 10.3 Possibility of hazardous reactions**
no data available
- 10.4 Conditions to avoid**
Heat, flames and sparks.
- 10.5 Incompatible materials**
Strong oxidizing agents
- 10.6 Hazardous decomposition products**
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

- 11.1 Information on toxicological effects**
 - Acute toxicity**
LD50 Oral - rat - 2,383 mg/kg
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Chromodacryorrhea. Diarrhoea
Nutritional and Gross Metabolic:Weight loss or decreased weight gain.
LC50 Inhalation - mouse - 2 h - 21,000 mg/m³
Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Muscle contraction or spasticity.
Dermal: no data available
no data available
 - Skin corrosion/irritation**
no data available
 - Serious eye damage/eye irritation**
no data available
 - Respiratory or skin sensitisation**
no data available
 - Germ cell mutagenicity**
no data available

Carcinogenicity

- IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
- ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
- NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney -

12. ECOLOGICAL INFORMATION

- 12.1 Toxicity**
 - Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 35.7 mg/l - 96.0 h
 - Toxicity to daphnia and other aquatic invertebrates Immobilization EC50 - Daphnia magna (Water flea) - 1.6 mg/l - 24 h
- 12.2 Persistence and degradability**
no data available
- 12.3 Bioaccumulative potential**
Does not bioaccumulate.
Bioaccumulation Leuciscus idus (Golden orfe) - 3 d - 0.05 mg/l
Bioconcentration factor (BCF): 48
- 12.4 Mobility in soil**
no data available
- 12.5 Results of PBT and vPvB assessment**
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
- 12.6 Other adverse effects**
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods**
 - Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
 - Contaminated packaging**
Dispose of as unused product.

14. TRANSPORT INFORMATION

- DOT (US)**
UN number: 2514 Class: 3 Packing group: III
Proper shipping name: Bromobenzene
Marine pollutant: No
Poison Inhalation Hazard: No
- IMDG**
UN number: 2514 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: BROMOBENZENE
Marine pollutant: Marine pollutant
- IATA**
UN number: 2514 Class: 3 Packing group: III
Proper shipping name: Bromobenzene

15. REGULATORY INFORMATION

- SARA 302 Components**
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313 Components**
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
- SARA 311/312 Hazards**
Fire Hazard, Acute Health Hazard
- Massachusetts Right To Know Components**

Bromobenzene	CAS-No. 108-86-1	Revision Date 1993-04-24
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- Pennsylvania Right To Know Components**

Bromobenzene	CAS-No. 108-86-1	Revision Date 1993-04-24
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- New Jersey Right To Know Components**

Bromobenzene	CAS-No. 108-86-1	Revision Date 1993-04-24
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- California Prop. 65 Components**
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

- Full text of H-Statements referred to under sections 2 and 3.**
 - Aquatic Acute Acute aquatic toxicity
 - Aquatic Chronic Chronic aquatic toxicity
 - Flam. Liq. Flammable liquids

- H226 Flammable liquid and vapour.
- H315 Causes skin irritation.
- H401 Toxic to aquatic life.
- H411 Toxic to aquatic life with long lasting effects.
- Skin Irrit. Skin irritation

HMIS Rating

Health hazard: 1
Chronic Health Hazard: *
Flammability: 2
Physical Hazard 0

NFPA Rating

Health hazard: 2
Fire Hazard: 2
Reactivity Hazard: 0

Further information

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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.5 Revision Date: 07/01/2014 Print Date: 10/09/2015