Chemical Safety Data Sheet MSDS / SDS

Bromobenzene SDS

Revision Date:2024-04-25 Revision Number:1

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

Product identifier

Product name: Bromobenzene

CAS: 108-86-1

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

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification

Classification of the substance or mixture

Flammable liquids, Category 3
Skin irritation, Category 2

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

GHS label elements, including precautionary statements

Pictogram(s)

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)

Prevention

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P264 Wash ... thoroughly after handling.
P273 Avoid release to the environment.

Response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378 In case of fire: Use ... to extinguish.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P321 Specific treatment (see ... on this label).
P332+P317 If skin irritation occurs: Get medical help.
P362+P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Bromobenzene
Common names and synonyms:	Bromobenzene
CAS number:	108-86-1
EC number:	203-623-8
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Do NOT induce vomiting. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Contact with liquid causes irritation of eyes and mild irritation of skin. Ingestion causes mild irritation of mouth and stomach. (USCG, 1999)

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

Minimum/Potential Fatal Human Dose

4 (?). 4= very toxic: probable oral lethal dose (human) is 50-500 mg/kg, between 1 teaspoon & 1 ounce for 70 kg person (150 lb).

Absorption, Distribution and Excretion

Absorbed through lungs, gi tract & intact skin. excreted as catechol derivatives both free & conjugated with sulfate or mercapturic acid.

SECTION 5: Firefighting measures

Suitable extinguishing media

If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped or safely confined. Use water in flooding quantities as fog. Solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. Use foam, dry chemical or carbon dioxide.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Irritating hydrogen bromide and other gases may be produced in fire. (USCG, 1999)

Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible.

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. NO open flames, NO sparks and NO smoking. Above 51°C use a closed system, ventilation and explosion-proof electrical equipment. Prevent build-up of electrostatic charges (e.g., by grounding). Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Fireproof. Ventilation along the floor.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

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

Eye/face protection

Wear safety spectacles.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid. Liquid.
Colour:	MOBILE LIQUID
Odour:	AROMATIC ODOR
Melting point/freezing point:	-30.73 °C. Atm. press.:1 013.25 hPa. Remarks:Result in publication = -30.73°C.
Boiling point or initial boiling point and boiling range:	156.2 °C. Atm. press.:760 mm Hg.;132.3 °C. Atm. press.:400 mm Hg.;110.1 °C. Atm. press.:200 mm Hg.
Flammability:	Flammable.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	51 °C. Atm. press.:1 013.25 hPa.

Auto-ignition temperature:	565 °C. Atm. press.:1 013.25 hPa.
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	1.124 CP @ 20 DEG C
Solubility:	Insoluble in water
Partition coefficient n-octanol/water:	log Pow = 3.12. Temperature:35 °C.;log Pow = 3.14. Temperature:25 °C.;log Pow = 3.25. Temperature:15 °C.
Vapour pressure:	9.97 hPa. Temperature:35 °C.;7.48 mm Hg. Temperature:35 °C.
Density and/or relative density:	1.496 g/cm3. Temperature:20 °C.;1.414 g/cm3. Temperature:80 °C.
Relative vapour density:	5.41 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

On combustion, forms toxic gases including hydrogen bromide.

Chemical stability

no data available

Possibility of hazardous reactions

MODERATE, WHEN EXPOSED TO HEAT OR FLAME...As a result of flow, agitation, etc., electrostatic charges can be generated.BROMOBENZENE may be sensitive to light. May react with oxidizing agents (NTP, 1992).

Conditions to avoid

no data available

Incompatible materials

Dangerous...can react with oxidizing materials.

Hazardous decomposition products

no data available

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

Inhalation: LC50 - (male/female) - 29.7 mg/L air (nominal).

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the skin. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the nervous system.

STOT-repeated exposure

The substance may have effects on the liver and kidneys. This may result in impaired functions.

Aspiration hazard

No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 15.7 mg/L - 48 h.

Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 12.3 mg/L - 72 h.

Toxicity to microorganisms: no data available

Persistence and degradability

Using the MITI Test, 30 mg/l of bromobenzene was innoculated with 100 mg/l activated sludge. After an incubation period of four weeks, a theoretical BOD of 0 percent was obtained(1).

Bioaccumulative potential

When exposed to 50 ug/l of bromobenzene, the experimental BCF in carp ranged from 8.8 to 34. When exposed to 5 ug/l of bromobenzene, the experimental BCF in carp ranged from 12 to 33(1). The experimental BCF in algae (Chlorella fusca) was 190 for one day. The experimental BCF for the fish golden ide (Leuciscus idus melanotus) was determined to be 50 after three days(2). Concentration of bromobenzene in the water for the algae and the golden ide was unreported(2). According to a classification

scheme(3), these BCF values suggest that bioconcentration in aquatic organisms ranges from low to moderately high(SRC).

Mobility in soil

The Koc of bromobenzene is estimated as approximately 268 (SRC), using an experimental log Kow of 2.99 (1,SRC) and a regression-derived equation(2,SRC). According to a recommended classification scheme(3), this estimated Koc value suggests that bromobenzene has moderate mobility in soil(SRC).

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: UN2514 (For reference only, please check.)
IMDG: UN2514 (For reference only, please check.)
IATA: UN2514 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: BROMOBENZENE (For reference only, please check.)
IMDG: BROMOBENZENE (For reference only, please check.)
IATA: BROMOBENZENE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)
IMDG: 3 (For reference only, please check.)
IATA: 3 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)
IMDG: III (For reference only, please check.)
IATA: III (For reference only, please check.)

Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/