

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: May 31, 2024

SECTION 1: Identification

1.1 GHS Product identifier

Product name Bromochloromethane

1.2 Other means of identification

Product number CCHM701415

Other names bromochlorometane; succinic acid benzyl ester chloromethyl ester; benzyl chloromethyl butanedioate

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F, Building B, No. 179 BASIGO, Guangpu Rd East, Huangpu Dist, Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Skin corrosion, Sub-category 1B

Hazardous to the ozone layer, Category 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage

Precautionary statement(s)

Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash ... thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P363 Wash contaminated clothing before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P316 Get emergency medical help immediately.

P321 Specific treatment (see ... on this label).

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

P405 Store locked up.

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.

P502 Refer to manufacturer or supplier for information on recovery or recycling

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

SECTION 3: Composition information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Bromochloromethane	Bromochloromethane	74-97-5	200-826-3	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Administration of oxygen may be needed. Artificial respiration may be needed. 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

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 160 [Halogenated Solvents]: Toxic by ingestion. Vapors may cause dizziness or suffocation. Exposure in an enclosed area may be very harmful. Contact may irritate or burn skin and eyes. Fire may produce irritating and/or toxic gases. Runoff from fire control or dilution water may cause pollution. (ERG, 2016)

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

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR if necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Halogenated Aliphatic Hydrocarbons and Related Compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 160 [Halogenated Solvents]: Some of these materials may burn, but none ignite readily. Most vapors are heavier than air. Air/vapor mixtures may explode when ignited. Container may explode in heat of fire. (ERG, 2016)

5.3 Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

ACCIDENTAL RELEASE MEASURES: Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas; Environmental precautions: Do not let product enter drains; Methods and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

See Chemical Dangers 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.

7.2 Conditions for safe storage, including any incompatibilities

Separated from food and feedstuffs, strong oxidizers, strong bases and metals. Ventilation along the floor. Do NOT store or transport in containers made from aluminium or plastic. 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. Light sensitive. Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 200 ppm as TWA. MAK: skin absorption (H); carcinogen category: 3B

Biological limit values

no data available

8.2 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.

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

Eye/face protection

Wear safety goggles, face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

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	Bromochloromethane is a clear colorless liquid with a sweet chloroform-like odor. Denser than water (density 1.991 g / cm ³) and insoluble in water. Hence sinks in water. Boiling point 68°C. Vapors may cause illness if inhaled. Nonflammable. When exposed to high temperatures may emit toxic fumes. Used as a fire extinguishing agent.
Colour	Clear, colorless liquid
Odour	2100 mg/cu m (odor threshold low); 2100 mg/cu m (odor threshold high) sweet.
Melting point/freezing point	-88°C
Boiling point or initial boiling point and boiling range	68°C
Flammability	Noncombustible Liquid
Lower and upper explosion limit/flammability limit	no data available
Flash point	11°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	0.670 mN.s/sq m at 20 deg C
Solubility	1 to 5 mg/mL at 68° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 1.41
Vapour pressure	117 mm Hg (20 °C)
Density and/or relative density	1.991
Relative vapour density	4.5 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on heating. This produces toxic and corrosive fumes including hydrogen chloride, phosgene and hydrogen bromide. Reacts violently with strong oxidants, strong bases and metals such as sodium, potassium, magnesium and powdered aluminium. This generates fire and explosion hazard. Attacks some forms of rubber, plastics and coatings.

10.2 Chemical stability

Chemical stability: Stable under recommended storage conditions. Contains the following stabilizer(s): BHT (<=100 ppm)

10.3 Possibility of hazardous reactions

No flash or fire points by standard tests in air. The vapour is heavier than air. BROMOCHLOROMETHANE is sensitive to light (may discolor). Incompatible with strong bases and strong oxidizing agents. Also incompatible with active metals, calcium, aluminum, magnesium, zinc and their alloys. Attacks some forms of plastics, rubber and coatings. (NTP, 1992).

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Incompatible materials: Aluminum, Calcium, Magnesium, Zinc, strong bases, strong oxidizing agents

10.6 Hazardous decomposition products

Toxic gases & vapors (such as hydrogen chloride, phosgene, carbon monoxide, & hydrogen bromide) may be released when chlorobromomethane decomposes.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Mouse oral 4300 mg/kg
- Inhalation: LC50 Mouse inhalation 3000 ppm/7 hr
- 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

CLASSIFICATION: D; not classifiable as to human carcinogenicity. BASIS FOR CLASSIFICATION: Based on the lack of data regarding the carcinogenicity of bromochloromethane in humans or animals; however, there are data indicative of genotoxic effects and structural relationships to halogenated methanes classified as B2 probable human carcinogens. HUMAN CARCINOGENICITY DATA: None. ANIMAL CARCINOGENICITY DATA: None.

Reproductive toxicity

no data available

STOT-single exposure

The vapour is irritating to the eyes, skin and respiratory tract. If swallowed the substance may cause vomiting and could result in aspiration pneumonitis. Inhalation of high concentrations of the vapour may cause lung oedema. See Notes. Exposure at high concentrations could cause lowering of consciousness. Exposure could cause carbon monoxide poisoning. This may result in impaired functions. The effects may be delayed.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the central nervous system and liver.

Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Bromochloromethane, present at 100 mg/L, reached 0% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(1). In a screening test, bromochloromethane at an initial concentration of 5 or 10 mg/L underwent 100% degradation within seven days using an adapted settled domestic wastewater inoculum under aerobic conditions(2,3). Complete degradation ensued with 3 successive subcultures(2,3).

12.3 Bioaccumulative potential

An estimated BCF of 4 was calculated for bromochloromethane(SRC), using a log Kow of 1.41(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low.

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of bromochloromethane can be estimated to be 22(SRC). According to a classification scheme(2), this estimated Koc value suggests that bromochloromethane is expected to have very high mobility in soil. The partition coefficient of bromochloromethane between a sandy loam soil and water was 0.2497(3). The electrostatic attraction between negatively charged clay particle and charged carbon atom is hypothesized to be the prime adsorption mechanism of halogenated organic contaminants to a sandy loam. The negative charge on the halogen atoms repels negatively charged soil particles(3).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 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

14.1 UN Number

ADR/RID: UN1887 (For reference only, please check.) IMDG: UN1887 (For reference only, please check.) IATA: UN1887 (For reference only, please check.)

14.2 UN Proper Shipping Name

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

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.) IMDG: 6.1 (For reference only, please check.) IATA: 6.1 (For reference only, please check.)

14.4 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.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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

Chemical name	Common names and synonyms	CAS number	EC number
Bromochloromethane	Bromochloromethane	74-97-5	200-826-3
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.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
Revision Date	May 31, 2024

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/>

Other Information

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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