

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name 1-bromopropane

1.2 Other means of identification

Product number -
Other names 1-Bromopropane; 1-BROMOPROPANE FOR SYNTHESIS;
bromo propane

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yansheng Internet Technology Co., Ltd
Address 513, A3 / F, green space future center, Fengxian District,
Shanghai, 201400, China
Telephone +86-4000-6969-66

1.5 Emergency phone number

Emergency phone number +86-4000-6969-66
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

Flammable liquids, Category 2
Skin irritation, Category 2
Eye irritation, Category 2
Specific target organ toxicity – single exposure, Category 3
Specific target organ toxicity – single exposure, Category 3
Specific target organ toxicity – repeated exposure, Category 2
Reproductive toxicity, Category 1B

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger
Hazard statement(s) H225 Highly flammable liquid and vapour
H315 Causes skin irritation

H319 Causes serious eye irritation
 H335 May cause respiratory irritation
 H336 May cause drowsiness or dizziness
 H373 May cause damage to organs through prolonged or repeated exposure

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.
 P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P271 Use only outdoors or in a well-ventilated area.
 P260 Do not breathe dust/fume/gas/mist/vapours/spray.
 P203 Obtain, read and follow all safety instructions before use.

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.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P319 Get medical help if you feel unwell.
 P318 IF exposed or concerned, get medical advice.

Storage

P403+P235 Store in a well-ventilated place. Keep cool.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 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.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
1-bromopropane	1-bromopropane	106-94-5	203-445-0	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

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.

4.2 Most important symptoms/effects, acute and delayed

Irritating to the eyes, nose, throat, upper respiratory tract, and skin. (USCG, 1999)

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

Good curative action is shown by such cysteine derivatives as acetyl-cysteine in poisoning with haloid-alkyls. Dithiol antidotes and other drugs proved ineffective. SRP: 1-Bromopropane is metabolized by glutathione S-transferases (at least in rodents). Therefore, N-acetyl-cysteine would be a good antidote to serve as a precursor in glutathione synthesis and the NAC should be a good antidote.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

If material on fire or involved in fire: Do not extinguish fire unless flow can be stopped. Use water in flooding quantities as fog. Solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. Use "alcohol" foam, dry chemical, or carbon dioxide. Keep run-off water out of sewers and water sources. Bromopropanes

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic fumes of Hydrogen Bromide Behavior in Fire: 914°F (USCG, 1999)

5.3 Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide. 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. Remove all ignition sources. 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. Do NOT wash away into sewer.

6.2 Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Remove all ignition sources. 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. Do NOT wash away into sewer.

6.3 Methods and materials for containment and cleaning up

Personal protection: filter respirator for organic gases and vapors adapted to the airborne concentration of the substance. Remove all ignition sources. 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. Do NOT wash away into sewer.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. 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

Fireproof. Separated from strong oxidants and strong bases. Fireproof. Separated from strong oxidants, strong bases.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 0.1 ppm as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans). MAK: skin absorption (H); carcinogen category: 2

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 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.
Colour	< 100 APHA.
Odour	Sweet odor
Melting point/freezing point	-110 °C.
Boiling point or initial boiling point and boiling range	Ca. 71 °C. Atm. press.:Ca. 101.325 Pa.
Flammability	Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit	no data available
Flash point	Atm. press.:Ca. 101.325 Pa.
Auto-ignition temperature	914 deg F (490 deg C)
Decomposition temperature	no data available
pH	no data available

Kinematic viscosity	0.489 mPa-s
Solubility	Insoluble in water
Partition coefficient n-octanol/water	log Pow = Ca. 2.1. Temperature:20 °C.
Vapour pressure	146 mm Hg (20 °C)
Density and/or relative density	1.354. Temperature:20 °C.
Relative vapour density	4.3 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on burning. This produces toxic gases including hydrogen bromide. Reacts with strong bases and strong oxidants.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Highly flammable. Gives off irritating or toxic fumes (or gases) in a fire. The vapour is heavier than air and may travel along the ground; distant ignition possible. Halogenated aliphatic compounds, such as 2-BROMOPROPANE, are moderately or very reactive. Halogenated organics generally become less reactive as more of their hydrogen atoms are replaced with halogen atoms. Low molecular weight haloalkanes are highly flammable and can react with some metals to form dangerous products. Materials in this group are incompatible with strong oxidizing and reducing agents. Also, they are incompatible with many amines, nitrides, azo/diazo compounds, alkali metals, and epoxides. Emits toxic fumes of bromine when burned.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

no data available

10.6 Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /hydrogen bromide/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral >2000 mg/kg
- Inhalation: LC50 - rat (male/female) - ca. 35 mg/m³ air.
- Dermal: LD50 - rat (male/female) - > 2 000 mg/kg bw.

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 eyes and respiratory tract. The substance may cause effects on the central nervous system. This may result in lowering of consciousness.

STOT-repeated exposure

Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Aspiration hazard

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

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - *Oryzias latipes* - > 67 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - ca. 23 mg/L - 48 h.
- Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - > 260 mg/L - 72 h.
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: 1-Bromopropane, present at 100 mg/L, reached 70% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(5).

12.3 Bioaccumulative potential

An estimated BCF of 11 was calculated in fish for 1-bromopropane(SRC), using a measured log Kow of 2.10(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(SRC). 1-Bromopropane was classified as having low bioconcentration based on fish accumulation studies (specific data not reported)(4).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of 1-bromopropane can be estimated to be 40(SRC). According to a classification scheme(2), this estimated Koc value suggests that 1-bromopropane is expected to have very high mobility in soil.

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: UN2344 (For reference only, please check.) IMDG: UN2344 (For reference only, please check.) IATA: UN2344 (For reference only, please check.)

14.2 UN Proper Shipping Name

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

14.3 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.)

14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.) IMDG: II (For reference only, please check.) IATA: II (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
1-bromopropane	1-bromopropane	106-94-5	203-445-0
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			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

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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/>

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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