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 Bromoethane

1.2 Other means of identification

Product number -
Other names Hydrobromic ether; Ethane, bromo-; Monobromoethane

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
Acute toxicity - Category 4, Oral
Acute toxicity - Category 4, Inhalation
Carcinogenicity, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger
Hazard statement(s) H225 Highly flammable liquid and vapour
H302 Harmful if swallowed
H332 Harmful if inhaled
H351 Suspected of causing cancer
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. P270 Do not eat, drink or smoke when using this product. P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P271 Use only outdoors or in a well-ventilated area. 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. P301+P317 IF SWALLOWED: Get medical help. P330 Rinse mouth. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P317 Get medical help. P318 IF exposed or concerned, get medical advice.
Storage	P403+P235 Store in a well-ventilated place. Keep cool. 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
Bromoethane	Bromoethane	74-96-4	200-825-8	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 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

Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 131 [Flammable Liquids - Toxic]: TOXIC; may be fatal if inhaled, ingested or absorbed through skin. Inhalation or contact with some of these materials will irritate or burn skin and eyes. Fire will produce irritating, corrosive and/or

toxic gases. Vapors may cause dizziness or suffocation. 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

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . Anticipate seizures and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Cover skin burns with dry sterile dressings after decontamination . Bromine, methyl bromide, and related compounds

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.

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 131 [Flammable Liquids - Toxic]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion and poison hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. (ERG, 2016)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Remove all ignition sources. Ventilation. Collect leaking and spilled liquid in sealable metal containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Personal protection: chemical protection suit including self-contained breathing apparatus.

6.2 Environmental precautions

Evacuate danger area! Consult an expert! Remove all ignition sources. Ventilation. Collect leaking and spilled liquid in sealable metal containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Personal protection: chemical protection suit including self-contained breathing apparatus.

6.3 Methods and materials for containment and cleaning up

Absorb the spills with paper towels or the like materials. Place in hood to evaporate. Dispose by burning the towel.

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 incompatible materials. Cool. Dry. Well closed. Ventilation along the floor.Outdoor or detached storage is preferable. Indoor storage should be in a standard flammable liquid storage room.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 5 ppm as TWA; (skin); 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 goggles or eye protection in combination with breathing protection.

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	Ethyl bromide is a colorless volatile liquid. Slightly soluble in water and denser than water. Flash point below 0°F. Vapors are heavier than air. Toxic by inhalation. Irritates skin and eyes. Used to make pharmaceuticals and as a solvent.
Colour	Colorless to yellow liquid ... [Note: A gas above 101 degrees F].
Odour	... Ether-like odor.
Melting point/freezing point	-119 °C
Boiling point or initial boiling point and boiling range	38.4 °C
Flammability	Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Lower and upper explosion limit/flammability limit	% BY VOL: LOWER FLAMMABLE LIMIT: 6.8; UPPER FLAMMABLE LIMIT: 8.0
Flash point	-20 °C
Auto-ignition temperature	952° F (NTP, 1992)
Decomposition temperature	no data available
pH	no data available

Kinematic viscosity	0.379 cP @ 25 deg C
Solubility	Partially miscible with water
Partition coefficient n-octanol/water	log Kow = 1.61
Vapour pressure	25.32 psi (55 °C)
Density and/or relative density	1.4
Relative vapour density	~3.75 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on burning. This produces toxic and corrosive gases. Reacts violently with oxidants, strong bases, aluminium, zinc and magnesium. Attacks plastics and rubber.

10.2 Chemical stability

Conditions contributing to instability: heat

10.3 Possibility of hazardous reactions

Dangerously flammable by heat, open flame (sparks), oxidizers.The vapour is heavier than air and may travel along the ground; distant ignition possible.ETHYL BROMIDE will react with steam to produce toxic and corrosive fumes. It can react vigorously with oxidizers. It reacts with strong bases. It also reacts with chemically active metals such as sodium, potassium, calcium, powdered aluminum, zinc and magnesium. It will attack some forms of plastics, rubber and coatings. (NTP, 1992)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Explosion may occur by an impact with the mixture of this substance with alkali metals.

10.6 Hazardous decomposition products

Readily decomposes when heated to emit toxic fumes of /bromine/.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 1350 mg/kg
- Inhalation: LC50 Rat inhalation 27,000 ppm/1 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

Evaluation: No epidemiological data relevant to the carcinogenicity of bromoethane were available. There is limited evidence in experimental animals for the carcinogenicity of

bromoethane. Overall evaluation: Bromoethane is not classifiable as to its carcinogenicity to humans (Group 3).

Reproductive toxicity

no data available

STOT-single exposure

The substance is irritating to the eyes. The substance may cause effects on the central nervous system. Exposure could cause unconsciousness.

STOT-repeated exposure

no data available

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: no data available
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 350.7 mg/L - 24 h.
- Toxicity to algae: EC50 - Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) - 150 mg/L - 72 h.
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

Ethyl bromide, present at 100 mg/l, reached 13-45% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/l and the Japanese MITI test(1).

12.3 Bioaccumulative potential

An estimated BCF of 3.5 was calculated for ethyl bromide(SRC), using a log Kow of 1.61(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).

12.4 Mobility in soil

The Koc of ethyl bromide is estimated as 179(SRC), using a log Kow of 1.61(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that is expected to have moderate 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: UN1891 (For reference only, please check.)	IMDG: UN1891 (For reference only, please check.)	IATA: UN1891 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ETHYL BROMIDE (For reference only, please check.)	IMDG: ETHYL BROMIDE (For reference only, please check.)	IATA: ETHYL BROMIDE (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: 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
Bromoethane	Bromoethane	74-96-4	200-825-8
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

Creation Date	July 15, 2019
Revision Date	July 15, 2019

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

---