

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: April 19, 2024

SECTION 1: Identification

1.1 GHS Product identifier

Product name Halothane (1 mL) ((+/-)-2-Bromo-2-chloro-1,1,1-trifluoroethane)

1.2 Other means of identification

Product number C1327234
Other names Halotan; Phthorothanum; Ftorotan

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 irritation, Category 2
Serious eye damage, Category 1
Specific target organ toxicity – single exposure, Category 3
Reproductive toxicity, Category 1B

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H315 Causes skin irritation
H318 Causes serious eye damage
H335 May cause respiratory irritation
H360 May damage fertility or the unborn child

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
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	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+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P317 Get medical help. 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+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
Halothane (1 mL) ((+/-)-2-Bromo-2-chloro-1,1,1-trifluoroethane)	Halothane	151-67-7	205-796-5	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. Do NOT induce vomiting. Refer for medical attention.

4.2 Most important symptoms/effects, acute and delayed

Exposure Routes: inhalation, skin absorption, ingestion, skin and/or eye contact Symptoms: Irritation eyes, skin, respiratory system; confusion, drowsiness, dizziness, nausea, analgesia, anesthesia; cardiac arrhythmias; liver, kidney damage; decreased audio-visual performance Target Organs: Eyes, skin, respiratory system, cardiovascular system, central nervous system, liver, kidneys, reproductive system (NIOSH, 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 as needed. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Minimize physical activity and provide a quiet atmosphere. Monitor for pulmonary edema 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. 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. Treat frostbite with rapid rewarming techniques. Chlorinated fluorocarbons (CFCs) and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Not combustible. Gives off irritating or toxic fumes (or gases) in a fire.

5.2 Specific hazards arising from the chemical

Literature sources indicate that this chemical is nonflammable. (NTP, 1992)

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: self-contained breathing apparatus. Ventilation. 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: self-contained breathing apparatus. Ventilation. 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

Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. (Extra personal protection: self-contained breathing apparatus).

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

Keep in the dark. Ventilation along the floor. Store below 40 deg C (104 deg F), preferably between 15 and 30 deg C (59 and 86 deg F), unless otherwise specified by manufacturer. Store in a tight, light resistant container.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 50 ppm as TWA; A4 (not classifiable as a human carcinogen). MAK: 41 mg/m³, 5 ppm; peak limitation category: II(8); pregnancy risk group: B

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	PHYSICAL DESCRIPTION: Clear colorless highly volatile liquid with a sweet chloroform-like odor . Density 1.875 g / cm ³ . Boiling point 122.4°F (50.2°C). Noncombustible.
Colour	Colorless, volatile liquid
Odour	Characteristic, sweetish, not unpleasant odor
Melting point/freezing point	-180° F (NIOSH, 2016)
Boiling point or initial boiling point and boiling range	49°C
Flammability	Noncombustible Liquid
Lower and upper explosion limit/flammability limit	no data available
Flash point	49-50°C
Auto-ignition temperature	no data available
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	0.1 to 1.0 mg/mL at 64° F (NTP, 1992)
Partition coefficient n-octanol/water	2.3
Vapour pressure	4.5 psi (20 °C)
Density and/or relative density	1.87

Relative vapour density

6.8 (calculated) (NTP, 1992) (Relative to 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 bromide, hydrogen chloride and hydrogen fluoride. Decomposes under the influence of light.

10.2 Chemical stability

Sensitive to light, may be stabilized with 0.01% thymol.

10.3 Possibility of hazardous reactions

Non-flammable The vapour is heavier than air. HALOTHANE is sensitive to exposure to light. Incompatible with oxidizing materials. Tarnishes or corrodes most metals, with the exception of chromium, nickel and titanium. When moisture is present, it attacks aluminum, brass and lead, but not copper. Contact causes rubber and some plastics to deteriorate rapidly. (NTP, 1992)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Some plastics and rubber are soluble in halothane and will deteriorate rapidly in contact with halothane vapor or liquid.

10.6 Hazardous decomposition products

Halothane is decomposed by sunlight and should be stored in dark colored bottles.

SECTION 11: Toxicological information

Acute toxicity

- Oral: no data available
- Inhalation: LC50 Mouse inhalation 22000 ppm/10 minutes
- 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

A4; Not classifiable as a human carcinogen.

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 and cardiovascular system. Exposure at high levels could cause unconsciousness.

STOT-repeated exposure

The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the liver. This may result in liver impairment. 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: 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

no data available

12.3 Bioaccumulative potential

An estimated BCF of 12 was calculated for 2-bromo-2-chloro-1,1,1-trifluoroethane(SRC), using a measured log Kow of 2.3(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 2-bromo-2-chloro-1,1,1-trifluoroethane is estimated as 425(SRC), using a measured log Kow of 2.3(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 2-bromo-2-chloro-1,1,1-trifluoroethane is expected to have moderate mobility in soil(SRC).

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: no data available

IMDG: no data available

IATA: no data available

14.2 UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.3 Transport hazard class(es)

ADR/RID: no data available

IMDG: no data available

IATA: no data available

14.4 Packing group, if applicable

ADR/RID: no data available

IMDG: no data available

IATA: no data available

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
Halothane	Halothane	151-67-7	205-796-5
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Not Listed.
Vietnam National Chemical Inventory			Not Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Not Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
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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/>

Other Information

0.01% Thymol is used as a stabilizer.High concentrations in the air cause a deficiency of oxygen with the risk of unconsciousness or death.Check oxygen content before entering area.

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

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.