

## Chemical Safety Data Sheet MSDS / SDS

## Halothane

Revision Date:2024-07-06 Revision Number:1

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

**Product identifier**

Product name : Halothane  
CBnumber : CB8488628  
CAS : 151-67-7  
EINECS Number : 205-796-5  
Synonyms : Halothane,2-Bromo-2-chloro-1,1,1-trifluoroethane

**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  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

**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

**Label elements****Pictogram(s)**

☐☐

Signal word : Danger

**Hazard statement(s)**

H315 Causes skin irritation  
H318 Causes serious eye damage  
H335 May cause respiratory irritation  
H341 Suspected of causing genetic defects  
H360 May damage fertility or the unborn child

### Precautionary statement(s)

P201 Obtain special instructions before use.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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

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

P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

### 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.

### Other hazards

no data available

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## SECTION 3: Composition/information on ingredients

### Substance

Product name : Halothane

Synonyms : Halothane,2-Bromo-2-chloro-1,1,1-trifluoroethane

CAS : 151-67-7

EC number : 205-796-5

MF : C2HBrClF3  
MW : 197.38

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## SECTION 4: First aid measures

### Description of 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 .

### Most important symptoms and effects, both 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)

### Indication of any immediate medical attention and special treatment needed

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

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## SECTION 5: Firefighting measures

### Extinguishing media

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

### Specific Hazards Arising from the Chemical

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

### Advice for firefighters

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

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## SECTION 6: Accidental release measures

### 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.

### **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.

### **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).

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## **SECTION 7: Handling and storage**

### **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.

### **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.

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## **SECTION 8: Exposure controls/personal protection**

### **Control parameters**

#### **Occupational Exposure limit values**

TLV: 50 ppm as TWA; A4 (not classifiable as a human carcinogen). MAK: 41 mg/m<sup>3</sup>, 5 ppm; peak limitation category: II(8); pregnancy risk group: B

#### **Biological limit values**

no data available

### **Exposure 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**

#### **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

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Physical state	Colorless liquid
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	Slightly soluble in water, miscible with anhydrous ethanol and with trichloroethylene.
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

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## SECTION 10: Stability and reactivity

### Reactivity

Decomposes on heating. This produces toxic and corrosive fumes including hydrogen bromide, hydrogen chloride and hydrogen fluoride.

Decomposes under the influence of light.

### Chemical stability

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

### Possibility of hazardous reactions

Non-flammableThe 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)

### Conditions to avoid

no data available

### **Incompatible materials**

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

### **Hazardous decomposition products**

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

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## **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.

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## **SECTION 12: Ecological information**

## 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

## Persistence and degradability

no data available

## 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).

## 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).

## Other adverse effects

no data available

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## 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.

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## SECTION 14: Transport information

### UN Number

ADR/RID: no data available

IMDG: no data available

IATA: no data available

### UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

### **Transport hazard class(es)**

ADR/RID: no data available

IMDG: no data available

IATA: no data available

### **Packing group, if applicable**

ADR/RID: no data available

IMDG: no data available

IATA: no data available

### **Environmental hazards**

ADR/RID: No

IMDG: No

IATA: No

### **Special precautions for user**

no data available

### **Transport in bulk according to IMO instruments**

no data available

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## 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**

Not Listed.

#### **China Catalog of Hazardous chemicals 2015**

Not Listed.

#### **New Zealand Inventory of Chemicals (NZIoC)**

Listed.

#### **PICCS**

Not Listed.

#### **Vietnam National Chemical Inventory**

Not Listed.

#### **IECSC**

Not Listed.



## Korea Existing Chemicals List (KECL)

Listed.

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## 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](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.

#### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.