

1 Identification

Product identifier

Product name: Bromochloromethane

Stock number: A15373, L03139

CAS Number:
74-97-5

EC number:
200-826-3

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 1 H330 Fatal if inhaled.



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

STOT RE 2 H373 May cause damage to the lung and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS06 GHS08

Signal word Danger

Hazard statements

H330 Fatal if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H341 Suspected of causing genetic defects.

H335 May cause respiratory irritation.

H373 May cause damage to the lung and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.

Precautionary statements

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

P284 [In case of inadequate ventilation] wear respiratory 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.

P320 Specific treatment is urgent (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

D1B - Toxic material causing immediate and serious toxic effects

D2B - Toxic material causing other toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 1 Flammability = 1

REACTIVITY 1 Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Product name: Bromochloromethane

(Contd. of page 1)

3 Composition/information on ingredients
Chemical characterization: Substances
CAS# Description:
74-97-5 Bromochloromethane
Identification number(s):
EC number: 200-826-3

4 First-aid measures
Description of first aid measures
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures
Extinguishing media
Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Hydrogen bromide (HBr)
Hydrogen chloride (HCl)
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures
Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Prevention of secondary hazards: No special measures required.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage
Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires: No information known.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility:
Store away from oxidizing agents.
Store in the dark.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from exposure to light.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection
Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Components with limit values that require monitoring at the workplace:

Bromochloromethane
ppm
ACGIH TLV 200
Austria TWA 200
Denmark TWA 200
Finland TWA 200; 250-STEL
France VME 200
Germany MAK 200
Korea TLV 200
Netherlands MAC-TGG 200
Norway TWA 100
Poland TWA 1000 mg/m3; 1300 mg/m3-STEL
Switzerland MAK-W 200; 400-KZG-W
United Kingdom TWA 200; 250-STEL
USA PEL 200

Product name: Bromochloromethane		
(Contd. of page 2)		
Control parameters		
Components with limit values that require monitoring at the workplace:		
74-97-5 Bromochloromethane (100.0%)		
PEL (USA)	Long-term value: 1050 mg/m³, 200 ppm	
REL (USA)	Long-term value: 1050 mg/m³, 200 ppm	
TLV (USA)	Long-term value: 1060 mg/m³, 200 ppm	
EL (Canada)	Short-term value: 250 ppm	
	Long-term value: 200 ppm	
EV (Canada)	Short-term value: 250 ppm	
	Long-term value: 200 ppm	
Additional information: No data		
Exposure controls		
Personal protective equipment		
General protective and hygienic measures		
The usual precautionary measures for handling chemicals should be followed.		
Keep away from foodstuffs, beverages and feed.		
Remove all soiled and contaminated clothing immediately.		
Wash hands before breaks and at the end of work.		
Avoid contact with the eyes and skin.		
Maintain an ergonomically appropriate working environment.		
Breathing equipment: Use suitable respirator when high concentrations are present.		
Protection of hands:		
Impervious gloves		
Check protective gloves prior to each use for their proper condition.		
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.		
Eye protection: Safety glasses		
Body protection: Protective work clothing.		
9 Physical and chemical properties		
Information on basic physical and chemical properties		
General Information		
Appearance:		
Form:	Liquid	
Color:	Colorless	
Odor:	Not determined	
Odor threshold:	Not determined.	
pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	Not determined	
Boiling point/Boiling range:	67-69 °C (153-156 °F)	
Sublimation temperature / start:	Not determined	
Flash point:	Not determined	
Flammability (solid, gaseous)	Not determined.	
Ignition temperature:	Not determined	
Decomposition temperature:	Not determined	
Auto igniting:	Not determined.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	Not determined	
Upper:	Not determined	
Vapor pressure:	Not determined	
Density at 20 °C (68 °F):	1.991 g/cm³ (16.615 lbs/gal)	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix	
Partition coefficient (n-octanol/water):	Not determined.	
Viscosity:		
dynamic:	Not determined.	
kinematic:	Not determined.	
Other information	No further relevant information available.	
10 Stability and reactivity		
Reactivity No information known.		
Chemical stability Stable under recommended storage conditions.		
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.		
Possibility of hazardous reactions No dangerous reactions known		
Conditions to avoid No further relevant information available.		
Incompatible materials:		
Oxidizing agents		
Light		
Hazardous decomposition products:		
Carbon monoxide and carbon dioxide		
Hydrogen bromide		
Hydrogen chloride (HCl)		
11 Toxicological information		
Information on toxicological effects		
Acute toxicity:		
Fatal if inhaled.		
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.		
LD/LC50 values that are relevant for classification:		
Oral	LD50	5000 mg/kg (rat)
Inhalative	LC50/4H	15.85 mg/m3/4H (mouse)
(Contd. on page 4)		

Product name: **Bromochloromethane**

(Contd. of page 3)

Skin irritation or corrosion: Causes skin irritation.
Eye irritation or corrosion: Causes serious eye irritation.
Sensitization: No sensitizing effects known.
Germ cell mutagenicity:
Suspected of causing genetic defects.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.
Carcinogenicity: EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure:
May cause damage to the lung and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.
Specific target organ system toxicity - single exposure: May cause respiratory irritation.
Aspiration hazard: No effects known.
Other information (about experimental toxicology):
Mutagenic effects have been observed on tests with bacteria.
Mutagenic effects have been observed on tests with laboratory animals.
Subacute to chronic toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:
Behavioral - general anesthetic.
Behavioral - altered sleep time (including change in righting reflex).
Behavioral - tremor.
Behavioral - muscle weakness.
Lungs, Thorax, or Respiration - dyspnea.
Liver - fatty liver degeneration.
Kidney, Ureter, Bladder - changes in bladder weight.
Nutritional and Gross Metabolic - changes in metals, not otherwise specified.
Nutritional and Gross Metabolic - weight loss or decreased weight gain.
Lungs, Thorax, or Respiration - fibrosis, focal (pneumoconiosis).
The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.
Subacute to chronic toxicity:
Bromochloromethane causes narcotic effects of moderate intensity. Acute effects reported by firefighters using bromochloromethane as a fire extinguishing agent include severe headache, loss of consciousness and, after the exposure, gastric upsets, loss in weight and slow recovery.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.



12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

UN-Number DOT, IMDG, IATA	UN1887
UN proper shipping name DOT IMDG, IATA	Bromochloromethane BROMOCHLOROMETHANE
Transport hazard class(es) DOT 	6.1 Toxic substances. 6.1 6.1 (T1) Toxic substances 6.1
Class Label Class Label IMDG, IATA 	6.1 Toxic substances. 6.1
Packing group DOT, IMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user Segregation groups	Warning: Toxic substances Liquid halogenated hydrocarbons
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

(Contd. on page 5)
USA

Product name: Bromochloromethane	
(Contd. of page 4)	
Transport/Additional information:	
DOT Marine Pollutant (DOT):	No
UN "Model Regulation":	UN1887, Bromochloromethane, 6.1, III

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)
Hazard pictograms



Signal word Danger
Hazard statements
H330 Fatal if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H341 Suspected of causing genetic defects.
H335 May cause respiratory irritation.
H373 May cause damage to the lung and the liver through prolonged or repeated exposure. Route of exposure: Inhalative.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P284 [In case of inadequate ventilation] wear respiratory 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.
P320 Specific treatment is urgent (see on this label).
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).
SARA Section 313 (specific toxic chemical listings) Substance is not listed.
California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.
Prop 65 - Developmental toxicity, male Substance is not listed.
Information about limitation of use:
For use only by technically qualified individuals.
This substance is subject to a Significant New Use Rule (SNUR) promulgated under Section 5(a)(2) of the Toxic Substances Control Act (TSCA). See 40 CFR 721.
This product is being sold for research and development use.
Other regulations, limitations and prohibitive regulations
Although this chemical may sometimes be used as a food or drug or cosmetic, our products are not approved or suitable for such use or for human consumption.
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/23/2015 / -
Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)