

Safety Data Sheet according to Regulation (EC)

No. 1907/2006 (REACH)

Printed 03.02.2011

Revision 03.02.2011 (GB) Version 8.4

Methyl bromide (Bromomethane)

2100



! 1. Identification of the substance/mixture and of the company/undertaking

Product identifier

Name of product Methyl bromide (Bromomethane)
Art-Nr.: 2100
Name of substance bromomethane
Index No 602-002-00-2
EC No 200-813-2
CAS No 74-83-9

Manufacturer/distributor

GHC Gerling, Holz & Co. Handels GmbH
Ruhrstraße 113, D-22761 Hamburg
Phone +49 (0) 40 853 123-0, Fax +49 (0) 40 853 123-66
E-Mail msds@ghc.de
Internet www.ghc.de

Advice

Phone +49 (0) 40 853 123-0
Fax +49 (0) 40 853 123-66

Emergency advice

GHC Gerling, Holz & Co. Handels GmbH
Phone +49 (0) 40 853 123-0

! Recommended intended purpose(s)

Basic substance.

2. Hazards identification

Classification according to 67/548/EEC or 1999/45/EC

T; R23/25
Xi; R36/37/38
Xn; R48/20
N; R50
N; R59
Muta. Cat. 3; R68

R-phrases

23/25 Toxic by inhalation and if swallowed.
36/37/38 Irritating to eyes, respiratory system and skin.
48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
50 Very toxic to aquatic organisms.
59 Dangerous for the ozone layer.
68 Possible risk of irreversible effects.

Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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Flam. Gas 2	H221	On basis of test data.
Liquef. Gas	H280	On basis of test data.
Acute Tox. 2	H330	On basis of test data.
Acute Tox. 3	H301	

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Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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Skin Irrit. 2	H315
Eye Irrit. 2	H319
Muta. 2	H341
STOT SE 3	H335
STOT RE 2	H373
Aquatic Acute 1	H400
Ozone	EUH059

Hazard statements for physical hazards

H221	Flammable gas.
H280	Contains gas under pressure; may explode if heated.

Hazard statements for health hazards

H301	Toxic if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.

Hazard statements for environmental hazards

EUH059	Hazardous to the ozone layer.
H400	Very toxic to aquatic life.

Additional hints

Listed substance (Regulation (EC) No 1272/2008, Annex VI, part 3).

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]



GHS04



GHS06



GHS08



GHS09

Signal word

Danger

Hazard statements for physical hazards

H221	Flammable gas.
H280	Contains gas under pressure; may explode if heated.

Hazard statements for health hazards

H301	Toxic if swallowed.
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Hazard statements for environmental hazards

EUH059	Hazardous to the ozone layer.
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Precautionary Statements

Prevention

- P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P260 Do not breathe gas/vapours.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage

- P403 Store in a well-ventilated place.
P405 Store locked up.

Hazardous ingredients for labeling

bromomethane

Adverse human health effects and symptoms

Contact with liquid may cause cold burns/frostbite.

Information pertaining to special dangers for human and environment

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

3. Composition/information on ingredients

CAS No 74-83-9

bromomethane

EC No 200-813-2

Index No 602-002-00-2

4. First aid measures

General information

Remove contaminated soaked clothing immediately.
Adhere to personal protective measures when giving first aid.
Seek medical advice immediately.

In case of inhalation

Remove the casualty into fresh air and keep him immobile.
In the event of pulmonary irritation treat initially with corticoid spray, e.g. Ventolair- or Pulmicort- metered-dose aerosol (Ventolair and Pulmicort are registered trademarks).
In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

In case of skin contact

In case of contact with skin wash off with soap and water.
In case of frostbite spray with lukewarm (not hot) water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
Consult a doctor if skin irritation persists.

In case of eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call for a doctor immediately.

In case of ingestion

Ingestion is not considered a potential route of exposure.

Physician's information / possible dangers

Risk of pulmonary oedema

Treatment (Advice to doctor)

Continue to monitor for pneumonia and pulmonary oedema.

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5. Firefighting measures

Suitable extinguishing media

Foam

Carbon dioxide

Water spray jet

Extinguishing media which must not be used for safety reasons

Full water jet

Special hazards arising from the substance or mixture

In case of fire formation of dangerous gases possible.

In the event of fire the following can be released:

Carbon monoxide (CO)

Hydrogen bromide (HBr)

Special protective equipment for fire-fighters

Use breathing apparatus with independent air supply (isolated).

Wear full protective clothing.

Additional information

Cool endangered containers with water spray jet.

Exposure to fire may cause containers to rupture/explode.

Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

Collect contaminated firefighting water separately, must not be discharged into the drains.

6. Accidental release measures

Personal precautions

See chapter 8.

Remove persons to safety.

Evacuate area.

Keep people away and stay on the upwind side.

Environmental precautions

Do not discharge into the drains or bodies of water..

Collect contaminated water / firefighting water separately.

If possible, stop flow of product.

Prevent spread over a wide area (e.g. by containment or oil barriers).

If necessary, secure leaky pressure receptacles in a salvage packaging.

Suppress gases/vapours/mists with water spray jet

Do not discharge into the subsoil/soil.

Methods for cleaning up

Ensure adequate air ventilation.

Clean contaminated objects and floor thoroughly under consideration of environment regulations.

Additional Information

Informations for safe handling see chapter 7.

Informations for personal protective equipment see chapter 8.

No water on the leaks.

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7. Handling and storage

Advice on safe handling

Use only in thoroughly ventilated areas.
Transfer and handle only in enclosed systems.
Provide good room ventilation even at ground level (vapours are heavier than air).
Prevent cylinders from falling over.
Avoid release to the environment.
Ensure valve outlet cap nut or plug is correctly fitted.
Ensure valve protection device is correctly fitted.
Open valve slowly to avoid pressure shock.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature.
Do not allow backfeed into the container.
Suck back of water into the container must be prevented.
No water to valves, flanges and other fittings.
Purging of pipes and valves with inert gases - to avoid: water, solvents.

Advice on protection against fire and explosion

The product is not combustible, but supports burning.

Requirements for storage rooms and vessels

Ventilate store-rooms thoroughly.
Use transportable pressure equipment.
Suitable materials: Normalised steel and carbon steel, tempered steel, stainless steel.
Valve: Suitable materials: Brass, copper alloys, carbon steels, stainless steel.
Unsuitable materials: Aluminium alloys.

Advice on storage compatibility

Do not store with combustible materials.
Do not store with spontaneously flammable materials.
Do not store together with feedstuff.
Do not store together with explosives.
Do not store together with infectious substances.
Do not store together with radioactive material.
Do not store together with food.
Do not store together with oxidizing liquids or oxidizing solids.

Further information on storage conditions

Ensure valve protection device is correctly fitted.
Store closed container at cool and aired place.
Store only in original container at temperature of 50°C maximum (=122°F).
Prevent cylinders from falling over.
Protect from heat/overheating.

Information on storage stability

Unlimited stability.

Recommendation(s) for intended use

Use in accordance with regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

8. Exposure controls/personal protection

Ingredients with occupational exposure limits to be monitored

CAS No	Name	Code	[mg/m ³]	[ppm]	Remark
74-83-9	Bromomethane	WEL, 8 hours	20	5	EH40, 2007, UK
		Short-term	59	15	
74-83-9	Methyl bromide	PEL, 8 hours	80	20	OSHA, Table Z-1, USA
		Short-term			

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Respiratory protection

Breathing apparatus in the event of high concentrations.

Keep self contained breathing apparatus readily available for emergency use.

Short term: filter apparatus, filter AX

Hand protection

Leather gloves

FKM gloves

Eye protection

Do not wear contact lenses.

safety goggles, in case of increased risk add protective face shield

Skin protection

Safety shoes with steel toe.

Body covering work clothing, or chemical resistant suit at increased risk.

General protective measures

Do not inhale gases/vapours/aerosols.

Hygiene measures

At work do not eat, drink, smoke or take drugs.

Wash hands before breaks and after work.

9. Physical and chemical properties

Form

Gaseous / liquefied under pressure.

Colour

colourless, clear

Odour

sweetish, similar to chloroform

Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
pH value in delivery state	not applicable				
Acid number	not applicable				
boiling point	3,6 °C		1013 hPa		
melting point	-93,7 °C				
Flash point	194 °C				
Flammable solid	not applicable				
Ignition temperature	535 °C				
Lower explosion limit	8,6 Vol-%				
Upper explosion limit	20 Vol-%				
Vapour pressure	1890 hPa	20 °C			
Density	1,73 g/cm ³	0 °C			liquid phase

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	Value	Temperature	at	Method	Remark
Bulk density	not applicable				
Rel. vapour density	3,07				air = 1
Solubility in water	17,5 g/l	20 °C			hydrolyses
Partition coefficient (log p_{OW})	1,19				
Viscosity dynamic	0,397 mPa*s	20 °C			liquid phase
Solvent concentration	not applicable				

Oxidizing properties

no

Additional information

Vapours are heavier than air.

10. Stability and reactivity

Conditions to avoid

Heat sources / heat - risk of bursting.

Humidity.

Evolution of ignitable vapour-air mixtures possible if stored in large containers and above room temperature.

Materials to avoid

Reactions with alkali metals.

Reactions with earth alkali metals.

Reactions with numerous chemical compounds.

Hazardous decomposition products

Carbon monoxide

Hydrogen bromide

Thermal decomposition

Remark No decomposition below 400°C.

Additional information

Stable under normal conditions.

11. Toxicological information

Acute toxicity/Irritability/Sensitization

	Value/Validation	Species	Method	Remark
LD50 acute oral	104 mg/kg	rat		
LC50 acute inhalation	302 ppm (8 h)	rat		

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	Value/Validation	Species	Method	Remark
Irritability skin	irritant			experiences
Irritability eye	irritant - risk of strong eye injuries			experiences
Skin sensitization		not determined		
Subacute Toxicity - Carcinogenicity				

	Value	Species	Method	Validation
Chronic Toxicity				Disorders of the central nervous system: mental confusion, lethargy, incoordination, amyosthenia (muscular weakness).
Mutagenicity				Information on genotoxicity in vivo available.
Reproduction-Toxicity				No indications of toxic effects were observed in reproduction studies in animals.
Carcinogenicity				No indications of carcinogenic effects are available from long-term trials.

Toxicity test (Additional information)

Experimental indication of genotoxicity in vitro (Ames-test positive).

Experiences made from practice

Risk of strong health injuries in case of long-term exposition.

Repetitive skin contact may cause dermatitis.

Inhalation can cause damage to the respiratory tract or lungs.

Irritates respiratory tract.

Renal damage is possible.

Irritates mucous membranes.

12. Ecological information**Data on elimination (persistence and degradability)**

	Elimination rate	Method of analysis	Method	Validation
Physico-chemical degradability				not determined
Degradability	17 % (28 d)		Closed-bottles-test	not readily degradable

Ecotoxicological effects

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	Value	Species	Method	Validation
Fish	LC50 3,9 mg/l (96 h)	rainbow trout		
Daphnia	EC50 2,6 mg/l (48 h)	Daphnia magna		
Algae	EC50 5 mg/l (48 h)	Selenastrum capricornutum		

Additional ecological information

	Value	Method	Remark
COD			not determined
BOD			not determined

General regulation

Do not allow uncontrolled leakage of product into the environment.

Product is not allowed to be discharged into the ground water or aquatic environment.

Product is not allowed to be discharged into aquatic environment, drains or sewage treatment plants.

ODP: 0,6

13. Disposal considerations

Waste code No.

16 05 04*

Name of waste

gases in pressure containers (including halons) containing dangerous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 91/689/EEC on hazardous waste.

Recommendations for the product

Dispose of as hazardous waste.

Recommendations for packaging

Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

14. Transport information

Land and inland navigation transport ADR/RID

UN 1062 METHYL BROMIDE, 2.3, (C/D), Classification code: 2T

ADR / RID: Environmentally hazardous substance - special marking: symbol "fish and tree".

Marine transport IMDG

UN 1062 METHYL BROMIDE, 2.3, yes

Ems: F-C, S-U

Air transport ICAO/IATA-DGR

UN 1062 Methyl bromide, 2.3

FORBIDDEN

15. Regulatory information

Application restrictions

Use in accordance with regulation (EC) No 1005/2009 on substances that deplete the ozone layer.

Other regulations (EU)

Regulation (EU) No. 1005/2009 concerning materials, which cause damage to the ozone layer.

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VOC standard

VOC content

>=99 % 20 °C 1890 hPa

16. Other information

Recommend uses and restrictions

National and local regulations concerning chemicals shall be observed.

Further information

All declarations of safety-data-sheet refer to pure substance.

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product.

Wording of the R/H-phrases specified in chapter 3 (not the classification of the mixture!)

R 23/25 Toxic by inhalation and if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.

R 50 Very toxic to aquatic organisms.

R 59 Dangerous for the ozone layer.

R 68 Possible risk of irreversible effects.

EUH059 Hazardous to the ozone layer.

H221 Flammable gas.

H280 Contains gas under pressure; may explode if heated.

H301 Toxic if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H330 Fatal if inhaled.

H335 May cause respiratory irritation.

H341 Suspected of causing genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

H373 May cause damage to organs (or state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

H400 Very toxic to aquatic life.