Material Safety Data Sheet

Methyl Bromide (MUP)

Version: 1.0 | Revision Date: 11/30/2012 | Print Date: 03/21/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	*Methyl Bromide (MUP)*
Product Use Description:	EPA Registered Pesticide
Synonyms:	Methyl Bromide
Chemical nature:	Alkyl bromide Halonitroalkane
Company:	Chemtura Corporation 199 Benson Road Middlebury, CT 06749 United States of America Telephone: (US) +1 866-430-2775
Emergency telephone number:	CHEMTREC: (24 hours) 800-424-9300 : Chemtura Corporation Emergency Response: CHEMTURA : 800-292-5898 For additional emergency telephone numbers see section 16 of the Safety Data Sheet.
Prepared by: 11/30/2012	Product Safety Department (US) +1 866-430-2775 MSDSRequest@chemtura.com

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Danger

Form: gas Colour: colourless Odour: odourless

Hazard Summary	: Very toxic by inhalation. May be fatal if inhaled. Harmful if swallowed. Corrosive to eyes Corrosive to skin May cause burns or external ulcers. Severe respiratory irritant May cause: Cardiac arrest Respiratory distress Lung damage May cause central nervous system effects. WARNING: Contains methyl bromide, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

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OSHA Hazards	:	HIGHLY TOXIC CORROSIVE IRRITANT

Potential Health Effects

Primary Routes of Entry	:	Inhalation Ingestion Skin contact
Aggravated Medical Condition	:	Dermatitis Respiratory disorders
Target Organs	:	Liver Kidney Lungs Stomach Heart Nervous system Musculo-skeletal system
Inhalation	:	Toxic by inhalation. May be fatal if inhaled. Causes severe respiratory tract, nose and throat irritation or burns. May cause respiratory impairment and lung damage. May cause nervous system effects.
Skin	:	Corrosive to skin May cause burns or external ulcers.
Eyes	:	Corrosive to eyes May cause burns or external ulcers. Blurred vision May cause blindness.
Ingestion	:	Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
Chronic Exposure	:	Can cause weak and irregular heartbeat. May cause: Central nervous system disorders Peripheral nervous system disorders May cause respiratory system effects. Based on an epidemiology study, methyl bromide may be associated with an increase in prostate cancer risk in both private and commercial pesticide applicators.
Symptoms of Overexposure	:	irritant effects

mutagenic effects
Gastrointestinal disturbance
Nausea
Vomiting
Respiratory disorder
Unconsciousness
Inhalation may provoke the following symptoms:
Fatality

Carcinogenicity:

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Environmental Effects

Environmental Effects : Dangerous for the environment

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Component / CAS-No.	Weight percent
bromomethane 74-83-9	100 <= 100 %

SECTION 4. FIRST AID MEASURES

First aid procedures

Inhalation : Get medical attention immediately.
If breathed in, move person into fresh air.
Give oxygen or artificial respiration if needed.

Skin contact : Get medical attention immediately.
Take off contaminated clothing and shoes immediately.
Wash off immediately with plenty of water for at least 15 minutes.
Wash contaminated clothing before re-use.
Destroy contaminated shoes.

Eye contact : Get medical attention immediately.
Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.
Get medical attention.

Ingestion : Call a physician or poison control centre immediately.

If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.
Rinse mouth with water.
Never give anything by mouth to an unconscious person.

Notes to physician

Symptoms : irritant effects
mutagenic effects
Gastrointestinal disturbance
Nausea
Vomiting
Respiratory disorder
Unconsciousness
Inhalation may provoke the following symptoms:
Fatality

Treatment : For specialist advice physicians should contact the Poisons Information Service.

SECTION 5. FIREFIGHTING MEASURES

Flammable properties

Flash point : Remarks: none

Ignition temperature : Remarks: not determined

Lower explosion limit : ca.10 %(V)
Remarks: Methyl bromide

Upper explosion limit : ca.15 %(V)
Remarks: Methyl bromide

Fire fighting

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Keep containers and surroundings cool with water spray.

Further information : In the event of fire, wear self-contained breathing apparatus.
Wear personal protective equipment.

Protective equipment and precautions for firefighters

Specific hazards during firefighting : Burning produces noxious and toxic fumes.
Thermal decomposition can lead to release of irritating gases and vapours.
Container may explode if heated.

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	For personal protection see section 8.
Environmental precautions	:	Toxic to aquatic life. Do not contaminate ponds, waterways or ditches with chemical or used container. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for containment / Methods for cleaning up	:	Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains.
Additional advice	:	Evacuate personnel to safe areas. Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains. Only qualified personnel equipped with suitable protective equipment may intervene.

SECTION 7. HANDLING AND STORAGE

Handling

Handling procedures	:	Methyl bromide has no odor at dangerous levels and is extremely hazardous. Use personal protective equipment as required. Do not contaminate water, food or feed by storage or disposal. Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Persons moving or handling containers should wear protective clothing. Open container only in a well-ventilated area wearing protective clothing and respiratory protection if necessary. Cylinders should not be subjected to rough handling or mechanical shock such as dropping, bumping, dragging, or sliding. Do not use rope slings, hooks, tongs, or similar devices to unload cylinders. Transport cylinders using hand truck, fork truck or other device to which the cylinder can be firmly secured. Do not remove valve protection bonnet and safety cap until immediately before use. Replace safety cap and valve protection bonnet when cylinder is not in use. When cylinder is empty close, valve, screw safety cap onto valve outlet, and replace protection bonnet before returning to shipper. Only a registrant is authorized to refill cylinders. Do not use cylinders for any other purpose.

Storage

Requirements for storage areas and containers	:	Store in upright position only. Keep in a dry, cool and well-ventilated place. Store locked up. Post as a pesticide storage area. Store cylinders upright, secured to a rack or wall to prevent tipping. Keep away from flames and sparks. Keep away from heat and sources of ignition. Keep container tightly closed.
Other data	:	Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Components with workplace control parameters

Components / CAS-No.	Value / Basis / Update	Control parameters	Further information
bromomethane 74-83-9	TWA ACGIH 2007-01-01	1 ppm	
	C OSHA P1 2006-02-28	20 ppm 80 mg/m3	
	TWA OSHA P0 1989-01-19	5 ppm 20 mg/m3	

Engineering measures

Engineering measures : Use local ventilation to keep levels below established threshold values.
Adequate general ventilation is recommended when handling to control airborne levels.
Do not use in areas without adequate ventilation.
Use mechanical ventilation for general area control.

Personal protective equipment

Eye protection : Full face shield or safety glasses with brow and temple shields. Do NOT wear goggles.
If full face respiratory protection is not required, wear full-face shield when handling liquid fumigant.

Hand protection : Do not use gloves.

Skin and body protection : Loose-fitting or well ventilated long-sleeved shirt and pants. Shoes and socks. Do NOT wear jewelry, gloves, tight clothing, rubber protective clothing, or rubber boots when handling.

Respiratory protection : Use a direct reading detection device for determining methyl bromide air concentrations. Detection devices must have a sensitivity of at least 1 ppm for methyl bromide. Device manufacturers instructions must be followed.
For protection from concentrations greater than 50 times the PEL, wear a NIOSH/MSHA approved self contained breathing apparatus (SCBA). All persons entering the affected area must wear a NIOSH/MSHA approved SCBA if the air concentrations of methyl bromide is unknown, or, if the methyl bromide air concentrations is measured at greater than 1ppm.
In emergencies such as a spill or leak, or when corrective action is needed to reduce air concentrations to acceptable levels, wear a SCBA and PPE required

for potential contact with fumigant liquid.
Consult the OSHA respiratory protection information located at 29CFR1910.134 and the American National Standard Institue's Practices of Respiratory Protection Z88.2.

Hygiene measures : Wash thoroughly after handling.
For personal hygiene purposes, use adequate clothing to prevent skin contact.
Make sure piping is empty before doing maintenance work.
All persons working with methyl bromide should be trained in the hazards, use of required respirator equipment, emergency procedures and in the proper use of methyl bromide as a fumigant where applicable.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form : gas
Colour : colourless

Odour : odourless

Safety data

Flash point : Note: none

Ignition temperature : Remarks: not determined

Lower explosion limit : ca.10 %(V)
Note: Methyl bromide

Upper explosion limit : ca.15 %(V)
Note: Methyl bromide

pH : Note: no data available

Boiling point/boiling range : 38.41 °F (3.56 °C)
Note: Methyl bromide

Vapour pressure : 1,900 hPa at 68 °F (20 °C)
1420 mm Hg Methyl bromide

Density : Note: no data available

Bulk density : Note: no data available

Water solubility : ca.17.5 g/l
at 68 °F (20 °C)
Note: Methyl bromide

Relative vapour density : ca.3.27
Note: Methyl bromide

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Remarks: None known.
Materials to avoid	:	Remarks: Aluminium Magnesium Zinc Alkali metals Strong bases
Hazardous decomposition products	:	Note: Carbon oxides Hydrogen halides
Hazardous reactions	:	Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity bromomethane	:	LD50 Oral: 214 mg/kg Species: rat
Acute inhalation toxicity bromomethane	:	0.63 mg/l Exposure time: 6 h Species: rat Remarks: Very toxic by inhalation.
Skin irritation	:	Remarks: Irritating to skin.
Eye irritation	:	Remarks: Irritating to eyes.
Sensitisation	:	Remarks: Not classified due to lack of data.
Aspiration toxicity	:	No aspiration toxicity classification

Toxicology Assessment

CMR effects	:	Carcinogenicity: Not classified due to lack of data. Mutagenicity: Suspected of causing genetic defects. Reproductive toxicity: Not classified due to lack of data.
Further information	:	Acute Health Hazard

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish :
Remarks:
no data available

Elimination information (persistence and degradability)

Bioaccumulation : Remarks:
no data available

Mobility : Remarks:
no data available

Biodegradability : Result: no data available

Further information on ecology

Ecotoxicology Assessment

Results of PBT assessment
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

Additional ecological information : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
These products are toxic to fish and wildlife.Keep out of lakes, streams and ponds. Do not contaminate water by cleaning of equipment or disposal of wastes.

SECTION 13. DISPOSAL CONSIDERATIONS

Further information : Dispose of as hazardous waste in compliance with local and national regulations.
Dispose of wastes in an approved waste disposal facility.
Do not contaminate ponds, waterways or ditches with chemical or used container.

SECTION 14. TRANSPORT INFORMATION

DOT

UN number : 1062
Description of the goods : Methyl bromide
: (Methyl bromide)
Class : 2.3
ERG Code : 123

IATA

UN number	:	1062
Class	:	2.3
		Not permitted for transport

IMDG

UN number	:	1062
Description of the goods	:	METHYL BROMIDE (Methyl bromide)
Class	:	2.3
EmS Number 1	:	F-C
EmS Number 2	:	S-U
Marine pollutant	:	no
Environmentally hazardous	:	no

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Highly Toxic, Corrosive, Irritant

CERCLA Reportable Quantity : 1000 lbs

bromomethane 74-83-9 1000 lbs

SARA 302 Reportable Quantity : 1000 lbs

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

SARA 302 Reportable Quantity :

bromomethane 74-83-9 1000 lbs

SARA 304 Components : 1000 lbs

bromomethane 74-83-9 1000 lbs

SARA 313 Components : bromomethane 74-83-9

The components of this product are reported in the following inventories:

US.TSCA On TSCA Inventory

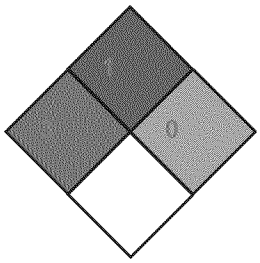
DSL	All components of this product are on the Canadian DSL list.
AICS	On the inventory, or in compliance with the inventory
NZIoC	Not in compliance with the inventory
ENCS	On the inventory, or in compliance with the inventory
KECI	On the inventory, or in compliance with the inventory
PICCS	On the inventory, or in compliance with the inventory
IECSC	On the inventory, or in compliance with the inventory
CH INV	The formulation contains substances listed on the Swiss Inventory

SECTION 16. OTHER INFORMATION

Further information

HMIS Classification : Health hazard: 3
Chronic Health Hazard: *
Flammability: 1
Reactivity: 0
PPI:Ask supervisor or safety specialist for handling instructions

NFPA Classification : Health hazard: 3
Fire Hazard: 1
Reactivity Hazard: 0



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Other Emergency Phone Number

Latin America:	Brazil	+55 113 711 9144
	All other countries	+44 (0) 1235 239 670
Mexico:		+52 555 004 8763

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.