SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Methyl Bromide (MUP)

Product Use Description: EPA Registered Pesticide

Synonyms: Methyl Bromide

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 : 800-292-5898

For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

Prepared by Product Safety Department
(US) +1 866-430-2775

MSDSRequest@chemtura.com

Recommended use of the chemical and restrictions on use

Recommended use: EPA Registered Pesticide

SECTION 2. HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Form</th>
<th>gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>odourless</td>
</tr>
</tbody>
</table>

GHS Classification

- Flammable gases: Category 1
- Acute toxicity (Oral): Category 3
- Acute toxicity (Inhalation): Category 3
- Skin irritation: Category 2
- Eye irritation: Category 2A
- Germ cell mutagenicity: Category 2
- Specific target organ toxicity - single exposure: Category 3 (Respiratory system)
- Specific target organ toxicity - repeated exposure: Category 2
SAFETY DATA SHEET

Methyl Bromide (MUP)

Version: 1.0  Revision Date: 05/14/2015  Print Date: 06/07/2016

Acute aquatic toxicity: Category 1

GHS Label element

Signal word: Danger

Hazard pictograms:

Hazard statements:
- H220 Extremely flammable gas.
- H301 + H331 Toxic if swallowed or if inhaled
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H341 Suspected of causing genetic defects.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.

Other hazards: None

Precautionary statements:

Prevention:
- P201 Obtain special instructions before use.
- 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 dust/ fume/ gas/ mist/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P273 Avoid release to the environment.
- P280 Wear eye protection/ face protection.
- P281 Use personal protective equipment as required.

Response:
- P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 + P311 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician.
- 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.
- P332 + P313 If skin irritation occurs: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/
attention.
P362 Take off contaminated clothing and wash before reuse.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P391 Collect spillage.

Storage:
P403 Store in a well-ventilated place.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

Carcinogenicity:
IARC Group 3: Not classifiable as to its carcinogenicity to humans
bromomethane 74-83-9
chloromethane 74-87-3

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.

Environmental Effects Environmental Effects : Dangerous for the environment

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bromomethane</td>
<td>74-83-9</td>
<td>&gt;= 90 - &lt;= 100 %</td>
</tr>
<tr>
<td>chloromethane</td>
<td>74-87-3</td>
<td>&gt;= 0.1 - &lt; 1 %</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

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

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

If swallowed: 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.

Most important symptoms and effects, both acute and delayed: irritant effects, mutagenic effects, Gastrointestinal disturbance, Nausea, Vomiting, Respiratory disorder, Unconsciousness. Inhalation may provoke the following symptoms: Fatality.

Notes to physician: For specialist advice physicians should contact the Poisons Information Service.

SECTION 5. FIREFIGHTING MEASURES

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

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.

Specific extinguishing methods: In the event of fire, wear self-contained breathing apparatus. Wear personal protective equipment.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: 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 and materials for containment and cleaning up: Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling: 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.

Conditions for safe storage: 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.

Materials to avoid: Aluminium, Magnesium, Zinc, Alkali metals, Strong bases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters
Methyl Bromide (MUP)

Components | CAS-No. | Form of exposure | Permissible concentration | Basis |
--- | --- | --- | --- | --- |
Bromomethane | 74-83-9 | TWA | 1 ppm | ACGIH |
| | | C | 20 ppm 80 mg/m³ | OSHA Z-1 |
| | | TWA | 5 ppm 20 mg/m³ | OSHA P0 |
Chloromethane | 74-87-3 | TWA | 100 ppm | ACGIH |
| | | STEL | 200 ppm | ACGIH |
| | | TWA | 200 ppm | OSHA Z-2 |
| | | CEIL | 400 ppm | OSHA Z-2 |
| | | Peak | 500 ppm | OSHA Z-2 |
| | | TWA | 50 ppm 105 mg/m³ | OSHA P0 |
| | | STEL | 100 ppm 205 mg/m³ | OSHA P0 |

**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**

**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 Institute's Practices of Respiratory Protection Z88.2.

**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.

**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.
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: gas
Color: colourless
Odor: odourless
Odour Threshold: No data available
pH: No data available
Melting point/range: Not applicable
Boiling point/boiling range: 3.56 °CMethyl bromide
Evaporation rate: Not applicable
Flash point: Not applicable
Upper explosion limit: ca. 15 %(V) Methyl bromide
Lower explosion limit: ca. 10 %(V) Methyl bromide
Vapour pressure: 1,900 hPa (20 °C) 1420 mm Hg Methyl bromide
Relative vapour density: ca. 3.27Methyl bromide
Relative density: No data available
Bulk Density: No data available
Density: No data available
Solubility(ies):
Water solubility: ca. 17.5 g/l Methyl bromide (20 °C)
Solubility in other solvents: No data available
Partition coefficient: n-octanol/water: No data available
Auto-ignition temperature: No data available
### SECTION 10. STABILITY AND REACTIVITY

- **Reactivity**: No dangerous reaction known under conditions of normal use.
- **Chemical stability**: No decomposition if stored and applied as directed.
- **Possibility of hazardous reactions**: Will not occur.
- **Conditions to avoid**: None known.
- **Incompatible materials**:
  - Aluminium
  - Magnesium
  - Zinc
  - Alkali metals
  - Strong bases
- **Hazardous decomposition products**:
  - Carbon oxides
  - Hydrogen halides

### SECTION 11. TOXICOLOGICAL INFORMATION

- **Acute oral toxicity (Product)**: Acute toxicity estimate: 214 mg/kg
  - Method: Calculation method

- **Acute inhalation toxicity (Product)**: Acute toxicity estimate: Exposure time: 4 h
  - Method: Calculation method

- **Skin irritation (Product)**: Remarks: Irritating to skin.

- **Eye irritation (Product)**: Remarks: Irritating to eyes.

- **Aspiration toxicity (Product)**: No aspiration toxicity classification
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects
Toxicity to fish (Product) : Remarks:
No data available

Elimination information (persistence and degradability)
Bioaccumulation (Product) : Remarks:
No data available
Mobility (Product) : Remarks:
No data available
Biodegradability (Product) : Result: No data available

Further information on ecology
Ecotoxicology Assessment
Results of PBT assessment (Product)
This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
Additional ecological information (Product) : 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

Disposal methods
Waste from residues : 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
Class : 2.3
Environmentally hazardous : no

Poison Inhalation Hazard - Zone C

IATA
UN number : 1062
Class : 2.3
Not permitted for transport

IMDG
UN number : 1062
Description of the goods : METHYL BROMIDE
Class : 2.3
EmS Number 1 : F-C
EmS Number 2 : S-U
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bromomethane</td>
<td>74-83-9</td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

SARA 304 Extremely Hazardous Substances Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
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</table>

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

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:
                      : bromomethane 74-83-9
bromomethane 74-83-9

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:
   bromomethane 74-83-9

California Prop 65 WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.
   bromomethane 74-83-9
   chloromethane 74-87-3

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.
   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

Other Emergency Phone Number

<table>
<thead>
<tr>
<th>Latin America:</th>
<th>Brazil</th>
<th>+55 113 711 9144</th>
</tr>
</thead>
<tbody>
<tr>
<td>All other countries</td>
<td>+44 (0) 1235 239 670</td>
<td></td>
</tr>
<tr>
<td>Mexico:</td>
<td>+52 555 004 8763</td>
<td></td>
</tr>
</tbody>
</table>

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