# Meth-O-Gas® Q

Version: 1.3 Revision Date: 02/22/2012 Print Date: 10/02/2012

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: *Meth-O-Gas® Q*

Product Use Description: EPA Registered Pesticide

Synonyms: Methyl Bromide

Chemical nature: Alkyl 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 Corporation Emergency Response: CHEMTURA : 800-292-5898

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

Prepared by: Product Safety Department
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02/22/2012

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## SECTION 2. HAZARDS IDENTIFICATION

**Emergency Overview**

### Danger

Form: gas Colour: colourless Odour: odourless

Hazard Summary :

Highly Toxic
May be fatal if inhaled.
Toxic
Harmful if swallowed.
May cause burns or external ulcers.
May cause:
Respiratory distress
Lung damage
Cardiac arrest
May cause central nervous system effects.

| | | |
|---|---|---|
| OSHA Hazards | : | THIS MATERIAL IS HAZARDOUS UNDER THE CRITERIA OF THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD 29CFR 1910.1200. |

**Potential Health Effects**

| | | |
|---|---|---|
| Primary Routes of Entry | : | Inhalation<br>Ingestion<br>Skin contact |
| Aggravated Medical Condition | : | Dermatitis<br>Respiratory disorders |
| Inhalation | : | Highly Toxic<br>May be fatal if inhaled.<br>May cause:<br>Respiratory distress<br>Cardiac arrest<br>Nervous system effects |
| Skin | : | May cause burns or external ulcers. |
| Eyes | : | May cause burns or external ulcers.<br>Blurred vision |
| Ingestion | : | Toxic<br>May be harmful if swallowed. |
| Chronic Exposure | : | Long term exposure may cause effects in the following:<br>Peripheral nervous system disorders<br>Central nervous system<br>Respiratory system<br>Heart<br>Based on an epidemiology study, methyl bromide may be associated with an increase in prostate cancer risk in both private and commercial pesticide applicators.<br>In vitro tests showed mutagenic effects |
| Symptoms of Overexposure | : | Symptoms may be delayed.<br>Dizziness<br>Blurred vision<br>Weakness<br>Staggering gait<br>Slurred speech<br>Nausea<br>Vomiting<br>Loss of appetite<br>Effects of breathing high concentrations of vapour may include:<br>Convulsions<br>Lung oedema<br>Lack of coordination<br>Fatigue |

corrosive effects

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. |

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Hazardous components**

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

## SECTION 4. FIRST AID MEASURES

**First aid procedures**

Inhalation : Get medical attention immediately.
Remove to fresh air.
Keep patient warm and at rest.
Keep respiratory tract clear.
Give oxygen or artificial respiration if needed.
Gently wipe or rinse the inside of the mouth with water.

Skin contact : Get medical attention immediately.
Take off contaminated clothing and shoes immediately.
Wash off with soap and water.

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 : Get medical attention immediately.
Never give anything by mouth to an unconscious person.

**Notes to physician**

Symptoms : Symptoms may be delayed.
Dizziness
Blurred vision
Weakness
Staggering gait
Slurred speech

Nausea
Vomiting
Loss of appetite
Effects of breathing high concentrations of vapour may include:
Convulsions
Lung oedema
Lack of coordination
Fatigue
corrosive effects

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

## SECTION 5. FIREFIGHTING MEASURES

**Flammable properties**

Flash point : Remarks: none

Lower explosion limit : ca.10 %(V)

Upper explosion limit : ca.15 %(V)

**Fire fighting**

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Further information : Use a water spray to cool fully closed containers.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

**Protective equipment and precautions for firefighters**

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

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Complete suit protecting against chemicals

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Evacuate personnel to safe areas.
Ensure adequate ventilation.
Use personal protective equipment.

Environmental precautions : Toxic to aquatic life.
Do not allow contact with soil, surface or ground water.
Do not flush into surface water or sanitary sewer system.
Do not use product nearer than 10 m from streams and lakes.
insoluble

Methods for containment / : Allow to evaporate.

Methods for cleaning up
Additional advice : Evacuate immediate area of spill or leak. Use a NIOSH/MSHA approved self-contained breathing apparatus (SCBA) or combination air-supplied/SCBA respirator for entry into affected area to correct problem. Move leaking or damaged cylinders or containers outdoors or to an isolated location, observing strict safety precautions. Work upwind if possible. Allow spill to evaporate. Do not permit entry into spill area by persons without appropriate respiratory protection until concentration of methyl bromide is determined to be less than 5 ppm.
Do not contaminate water, food or feed by storage or disposal or cleaning of equipment.

## SECTION 7. HANDLING AND STORAGE

Handling

Handling procedures : Handle in accordance with good industrial hygiene and safety practice.
Avoid contact with skin, eyes and clothing.
Use personal protective equipment as required.
Do not breathe vapours or spray mist.
Handle with extreme care.
Wear respiratory protection.

**Storage**

Requirements for storage areas and containers : Keep container tightly closed.
Keep in a dry, cool and well-ventilated place.
Store in upright position only.
Store locked up.

Other data : Stable under recommended storage 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<br>74-83-9 | TWA<br>ACGIH<br>2007-01-01 | 1 ppm | |
| | C<br>OSHA P1<br>2006-02-28 | 20 ppm<br>80 mg/m3 | |
| | TWA<br>OSHA P0<br>1989-01-19 | 5 ppm<br>20 mg/m3 | |

**Engineering measures**

| | | |
|---|---|---|
| Engineering measures | : | Use local ventilation to keep levels below established threshold values.<br>Adequate general ventilation is recommended when handling to control airborne levels.<br>Do not use in areas without adequate ventilation.<br>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.<br><br>Face-shield |
| Hand protection | : | Impervious 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.<br><br>Complete suit protecting against chemicals |
| Respiratory protection | : | If the concentration of methyl bromide as measured by detector tube exceeds 5 ppm at any time, all persons must wear NIOSH/MSHA approved SCBA.<br>A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use. |
| Hygiene measures | : | Pump and detector tubes for determining methyl bromide concentrations.<br>Make sure piping is empty before doing maintenance work.<br>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 |
| Lower explosion limit | : | ca.10 %(V) |

| | | |
|---|---|---|
| Upper explosion limit | : | ca.15 %(V) |
| Boiling point/boiling range | : | 38.5 °F (3.6 °C) |
| Vapour pressure | : | 1,866.5 hPa (186,650.0 mmHg)<br>at 68 °F (20 °C) |
| | | 3,466.4 hPa (346,640.0 mmHg)<br>at 104 °F (40 °C) |
| Density | : | Note: 14.45 lb/gal |
| Specific Gravity | : | 1.7 at 0 °C |
| Water solubility | : | 17.5 g/l<br>at 68 °F (20 °C) |
| Relative vapour density | : | ca.3.27 |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Conditions to avoid | : | Remarks: None known. |
| Materials to avoid | : | Remarks: Aluminium<br>Zinc<br>Alkali metals<br>Strong bases |
| Hazardous decomposition products | : | Note: Bromine<br>Carbon dioxide (CO2)<br>Carbon monoxide<br>Hydrogen halides |
| Hazardous reactions | : | Hazardous polymerisation does not occur. |

## SECTION 11. TOXICOLOGICAL INFORMATION

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50: 214 mg/kg<br>Species: rat<br>Remarks: Toxic if swallowed. |
| Acute inhalation toxicity | : | LC50: Exposure time: 0.25 h<br>Species: rat |
| | : | LC50: Exposure time: 8 h<br>Species: rat |
| | : | LCLo: Exposure time: 2 h<br>Species: Human |

Acute dermal toxicity :
Remarks: Not classified due to lack of data.

Skin irritation : Result: Irritating to skin.

Eye irritation : Result: Irritating to eyes.

Sensitisation : Remarks: no data available

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 : Methyl bromide is a poison and can cause respiratory distress, cardiac arrest and central nervous system effects. Overexposure may cause neurotoxic effects from which recovery may be slow.

Methyl bromide demonstrates genotoxicity in several test systems at levels above the TLV.

In a two year inhalation cancer bioassay with rats at 3, 30 and 90 ppm no tumors were observed.

In a two generation inhalation reproduction study with rats at 3, 30 and 90 ppm the no observed effect level was 3 ppm. At the higher doses organ weight variation was observed in some offspring.

In a 24 month chronic dietary study in rats, a no observable effect level (NOEL) for systemic toxicity of microencapsulated methyl bromide was considered to be 50 ppm (equivalent to 2.20 mg/kg/day for males and 2.92 mg/kg/day for females). The low observable effect level (LOEL) was considered to be 250 ppm (equivalent to 11.10 mg/kg/day for males and 15.12 mg/kg/day for females) based on reduced food consumption, body weight gains and body weights noted during the first 12 to 18 months of the study. Methyl bromide was not oncogenic upon dietary administration for two years.

In a two year inhalation study in B6C3FI mice, exposed to levels of 0, 10, 33 or 100 ppm for 6 hours per day, 5 days per week, degenerative changes in the cerebellum and cerebrum, myocardial degeneration and cardiomyopathy, sternal dysplasia, and olfactory epithelial necrosis and metaplasia were observed. There was no evidence of carcinogenic activity.

In an EPA/NIH sponsored epidemiology study entitled Agricultural Health Study, pesticides were evaluated based on cancer related deaths and questionnaire results provided by farmers, nursery workers and commercial pesticide applicators in Iowa and North Carolina. Results associated methyl bromide with an increase in prostate cancer risk in pesticide applicators. Exposures to methyl bromide were not confirmed. Incidence and intensity estimations were based solely on self-reporting via a questionnaire. Although the interpretation of the data collected in the study led to a statistically significant increase in prostate cancer risk for methyl bromide applicators, the authors could not rule out the possibility that the observations may have occurred by chance alone and findings need to be confirmed.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity effects**

Toxicity to fish :

Remarks:
Very toxic to aquatic organisms.

**Elimination information (persistence and degradability)**

Bioaccumulation : Remarks:
no data available

Mobility : Remarks:
no data available

Biodegradability : Remarks:
no data available

**Further information on ecology**

**Ecotoxicology Assessment**

Results of PBT assessment
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

Additional ecological information : 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 : Pesticide wastes are toxic.
Improper disposal of excess product, spray mixture or rinsate is a violation of Federal Law.
If these wastes cannot be disposed of by use according to label instructions, contact your Environmental Control Agency or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance. For registered pesticides, contact your State

Pesticide Agency.
Return empty cylinders freight collect to the Great Lakes Chemical Corporation location from which shipment was made. Close cylinder valve by turning clockwise until hand tight. Disconnect lines. Replace safety caps and bonnet. Return partial cylinders only after consulting Great Lakes Chemical Corporation for proper shipping instructions.

## SECTION 14. TRANSPORT INFORMATION

**DOT**

| | | |
|---|---|---|
| UN number | : | 1062 |
| Description of the goods | : | 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 |
| 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** : This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

**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

**SARA 302 Reportable Quantity** :

| | |
|---|---|
| bromomethane 74-83-9 | 1000 lbs |

**SARA 304 Components** : This material does not contain any components with a section 304 EHS RQ.

**Massachusetts Right To Know Components** : bromomethane 74-83-9Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

**Pennsylvania Right To Know Components** : bromomethane 74-83-9Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

chloromethane 74-87-3OSHA a. United states occupational safety and health administration substances, 29 cfr 1910.1000, sub part z.
ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances
NFPA49 national fire protection association 'hazardous chemicals data' substances (NFPA 49).
NFPA325m national fire protection association 'fire hazard properties of flammable liquids, gasses, volatile solids' substances (NFPA 325 m).
Volatile Organic Substances (VOCs). Listed in EPA National Drinking Water Regulations tables 1 and 6, 40 CFR parts 141 and 142, 52 FR 25690 (7/8/87).
CERCLA hazardous substances. 40 cfr part 302. May be subject to emergency release notification under SARA Title III.
Toxic chemical release substances. 52 fr 21152 (6/4/87). Subject to SARA Title III.

**New Jersey Right To Know Components** : bromomethane 74-83-9 Chemicals on the original list that do not meet toxicity criteria but because of their high production volume and recognized toxicity are considered chemicals of concern ("Other chemicals").

chloromethane 74-87-3 OSHA a. United states occupational safety and health administration substances, 29 cfr 1910.1000, sub part z.
ACGIH American conference of governmental industrial hygienists threshold limit value (TLV) substances
NFPA49 national fire protection association 'hazardous chemicals data' substances (NFPA 49).
NFPA325m national fire protection association 'fire hazard properties of flammable liquids, gasses, volatile solids' substances (NFPA 325 m).
Volatile Organic Substances (VOCs). Listed in EPA National Drinking Water Regulations tables 1 and 6, 40 CFR parts 141 and 142, 52 FR 25690 (7/8/87).
CERCLA hazardous substances. 40 cfr part 302. May be subject to emergency release notification under SARA Title III.
Toxic chemical release substances. 52 fr 21152 (6/4/87).
Subject to SARA Title III.

**California Prop. 65 Components** : WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

| | |
|---|---|
| Methyl bromide | 74-83-9 bromomethane |
| Methane, chloro- | 74-87-3 chloromethane |

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

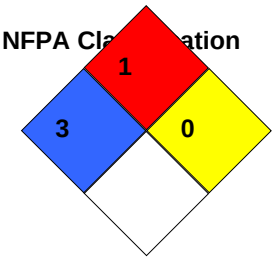
| | |
|---|---|
| **US.TSCA** | On TSCA Inventory |
| **DSL** | All components of this product are on the Canadian DSL list. |
| **AICS** | On the inventory, or in compliance with the inventory |
| **NZIoC** | Not in compliance with the inventory |
| **ENCS** | On the inventory, or in compliance with 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 Cla ation** : Health hazard: 3
Fire Hazard: 1
Reactivity Hazard: 0




**Other Emergency Phone Number**

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

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