SAFETY DATA SHEET

Meth-O-Gas® 100

Version: 1.0 | Revision Date: 05/14/2015 | Print Date: 07/15/2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Meth-O-Gas® 100

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 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
(US) +1 866-430-2775

MSDSRequest@chemtura.com

Recommended use of the chemical and restrictions on use

Recommended use : EPA Registered Pesticide

Restrictions on use : Restricted to professional users.

SECTION 2. HAZARDS IDENTIFICATION

Form	gas
Colour	colourless
Odour	odourless

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
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.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

Chemical Name	CAS-No.	Concentration (%)
bromomethane	74-83-9	>= 90 - <= 100 %
chloromethane	74-87-3	>= 0.1 - < 1 %

SECTION 4. FIRST AID MEASURES

If inhaled : 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.

In case of skin contact : Get medical attention immediately.
Take off contaminated clothing and shoes immediately.
Wash off with soap and water.

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	:	Get medical attention immediately. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	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
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.
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.
Specific extinguishing methods	:	Use a water spray to cool fully closed containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.
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, protective equipment and emergency procedures	:	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. 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 and materials for containment and cleaning up	:	Allow to evapourate.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	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.
Conditions for safe storage	:	Keep container tightly closed. Keep in a dry, cool and well-ventilated place. Store in upright position only. Store locked up.
Materials to avoid	:	Aluminium, Zinc, Alkali metals, Strong bases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

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	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
		TWA	100 ppm	OSHA Z-2
		CEIL	200 ppm	OSHA Z-2
		Peak	300 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 : 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.
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.

Eye protection : Full face shield or safety glasses with brow and temple shields. Do NOT wear goggles.

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 : Use the appropriate detector tubes and pumps for determining methyl bromide air concentrations.
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	:	Not applicable
Melting point/range	:	Not applicable
Boiling point/boiling range	:	3.6 °C
Evaporation rate	:	Not applicable
Flash point	:	Not applicable

Upper explosion limit	:	ca. 15 %(V)
Lower explosion limit	:	ca. 10 %(V)
Vapour pressure	:	1,866.5 hPa (20 °C)
		3,466.4 hPa (40 °C)
Relative vapour density	:	ca. 3.27
Relative density	:	1.7 (0 °C)
Density	:	14.45 lb/gal
Solubility(ies)		
Water solubility	:	17.5 g/l (20 °C)
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Thermal decomposition	:	No data available
Viscosity		
Viscosity, kinematic	:	Not applicable

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	:	Hazardous polymerisation does not occur.
Conditions to avoid	:	None known.
Incompatible materials	:	Aluminium Zinc Alkali metals Strong bases
Hazardous decomposition products	:	Bromine Carbon dioxide (CO2) Carbon monoxide Hydrogen halides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity (Product)	:	LD50: 214 mg/kg Species: Rat Remarks: Toxic if swallowed.
Acute inhalation toxicity (Product)	:	LC50: Exposure time: 0.25 h Species: Rat
	:	LC50: Exposure time: 8 h Species: Rat
	:	LCLo: Exposure time: 2 h Species: Human
	:	Acute toxicity estimate: Exposure time: 4 h Method: Calculation method
Skin irritation (Product)	:	Result: Irritating to skin.
Eye irritation (Product)	:	Result: Irritating to eyes.
Sensitisation (Product)	:	Remarks: No data available
Aspiration toxicity (Product)	:	No aspiration toxicity classification
Further information (Product)	:	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.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Toxicity to fish (Product) : Remarks:
Very toxic to aquatic organisms.

Elimination information (persistence and degradability)

Bioaccumulation (Product) : Remarks:
No data available

Mobility (Product) : Remarks:
No data available

Biodegradability (Product) : Remarks:
No data available

Further information on ecology

Ecotoxicology Assessment

Results of PBT assessment (Product)

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Additional ecological information (Product) : Do not contaminate water with the product or its container (Do not clean application equipment near surface water/Avoid contamination via drains from farmyards and roads).
Toxic to aquatic organisms.
Toxic to terrestrial vertebrates.
Toxic to terrestrial invertebrates.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : 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 Solutions 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 Solutions for proper shipping instructions.

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	:	yes

SECTION 15. REGULATORY INFORMATION

FIFRA (Federal Insecticide, Fungicide, Rodenticide Act): This product is a registered pesticide.,In compliance with Section 611 of the Clean Air Act:
WARNING: contains methyl bromide, a substance which harms public health and environment by destroying ozone in the upper atmosphere.

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

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
bromomethane	74-83-9	1000	1000

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
bromomethane	74-83-9	1000	1000

SARA 302 : The following components are subject to reporting levels established by SARA Title III, Section 302:
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

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.