SAFETY DATA SHEET

RURAL METHYL BROMIDE 1000 FUMIGANT

Date Prepared: 18th September 2018 **Replaces:** 1st May 2016

1. IDENTIFICATION

Product Identifier:	Rural Methyl Bromide 1000 Fumigant
Other Means of Identification:	MeBr
Uses:	Insecticidal fumigant for food supplies, warehouses, barges, buildings and furniture.
Supplier Name:	TriCal Australia
Address:	5 Chamberlain St, Wingfield, SA, 5013
Telephone:	(08) 8347 3838 **or** 1300 FUMIG8
Email:	info@trical.com.au

2. HAZARDS IDENTIFICATION

Acute Toxicity – Inhalation, Category 1
Acute Toxicity – Oral, Category 1
Skin Corrosion/Irritation, Category 2
Serious Eye Damage/Irritation, Category 2A
Aquatic Toxicity Acute, Category 1

Danger **Warning** **Warning** **Danger**

GHS Hazard Phrases:

H280 Contains gas under pressure; may explode if heated
H330 + H300: Fatal if Inhaled or swallowed
H315: Causes skin irritation
H319: Causes serious eye irritation
H400: Very toxic to aquatic life
H420: Harms public health and the environment by destroying ozone in the upper atmosphere

GHS Precaution Phrases:

P260: Do not breathe gas
P270: Do not eat, drink, or smoke when using this product
P271: Use only outdoors in well ventilated areas
P284: Wear respiratory protection
P264: Wash hands, arms and face thoroughly after handling
P280: Wear protective gloves and eye protection
P273: Avoid release to the environment

GHS Response Phrases:

P304 + 340 + 310: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician
P301 + P310: Immediately call a POISON CENTRE or doctor/physician
P301 + P330 + P331: IF SWALLOWED: Rinse mouth.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water
P332 + P313: If skin irritation occurs: Get medical advice/attention
P362: Take off contaminated clothing and wash before use
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P337 + P313: If eye irritation persists: Get medical advice/attention

GHS Storage and Disposal Phrases:

P410: Protect from sunlight
P403 + P233: Store in a well-ventilated place. Keep cylinder tightly closed
P405: Store locked up
P501: Dispose of contents/cylinder by returning to supplier

Classified as **HAZARDOUS** according to the criteria of SafeWork Australia
Classified as **DANGEROUS GOODS** for Land and Marine Transport (See Section 14)

3. COMPOSITION/INGREDIENTS

Identity (Other Names)	CAS Number	Proportion
Methyl Bromide	74-83-9	100%

4. FIRST AID MEASURES

A 24-hour medical surveillance period is mandatory in all cases of exposure to Methyl Bromide, even in the absence of any immediate signs of poisoning. If poisoning occurs, contact a doctor or Poisons information centre: Phone 13 11 26

Swallowed: If swallowed, wash mouth thoroughly then give plenty of water to drink. Get immediate medical attention. Do NOT induce vomiting unless instructed to do so by a physician. Do not give anything by mouth to unconscious or convulsive person.

In Eye: If in eyes, hold eyelids open and wash with running water for at least 15 minutes. Ensure irrigation under eyelids by lifting them. Do not try to remove contact lenses unless trained. Take care not to rinse contaminated water into the unaffected eye or onto the face. Seek medical attention immediately.

On Skin: If skin contact occurs, immediately remove contaminated clothing and thoroughly wash skin with soap and water for at least 15 minutes. If irritation persists, repeat flushing and seek medical advice.

Inhaled: Remove to fresh air from contaminated area. DO NOT allow victim to move about unnecessarily. Give artificial respiration if not breathing. Get medical attention immediately. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

Advice to Doctor: Treat symptomatically. No specific antidote. Readily absorbed through lungs and to a lesser extent through the skin. Onset of toxicity may be delayed a number of hours. Typical signs include headache, nausea, vomiting and visual changes. Other signs and symptoms include blurred and double vision, nystagmus, hypotension, cough, tachypnoea, cyanosis, lethargy, profound weakness, dizziness, slurring of speech, hyperreflexia, albuminuria, haematuria, oliguria, anuria, and impaired liver function. Delayed effects can include pulmonary oedema. In case of respiratory and cardiac arrest initiate cardiopulmonary resuscitation immediately. In severe cases administer supplemental oxygen and treat bronchospasm, pulmonary oedema, seizures and coma. High doses thiopental anaesthesia seems effective in the treatment of methyl bromide-induced generalised seizures that have proved to be unresponsive to regular treatment with anti-epileptic drugs. No antidote available.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media appropriate for surrounding fire. All media allowed including water spray or fog, dry chemical foam and carbon dioxide. Flooding quantities of water should be used (where possible) to cool cylinders.

Hazardous Combustion Products: Methyl bromide is non-flammable under most practical circumstances but can be ignited by a high energy source. Decomposes on heating or burning, producing toxic and corrosive fumes including hydrogen bromide, bromide and carbon oxybromide as well as carbon dioxide and carbon monoxide. Risk of fire and explosion on contact with aluminium, zinc or magnesium. Cylinders may rupture violently if exposed to excessive heat.

Precautions for Fire Fighters: Shut off supply if possible. If there is no risk to surroundings, let fire burn itself out. Do not attempt to extinguish unless flow of material can be stopped. Move cylinders away from fire if

possible. Keep cylinders cool by spraying with water until well after fire is out. When fighting fires involving methyl bromide, wear safety boots, non-flammable overalls, gloves, hat, goggles and self-contained breathing apparatus. All skin areas should be covered. Prevent spillage entering drains or watercourses.

Hazchem Code: 2XE

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Evacuate area. Shut off all ignition sources. Use self-contained breathing apparatus. Approach release from upwind. Stop leak if possible. Use water spray to disperse vapours and protect personnel if possible. Do not allow unprotected entry until monitoring has shown vapour levels have dispersed to safe levels. Prevent material from entering sewers or confined spaces.

Containment of Spill: **Major spill:** Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Keep all personnel upwind. Extinguish sources of ignition if possible. Immediately call the fire service.
Small Spills: If possible, stop flow of vapour and shut off all ignition sources. Contain spilled liquid with earth, sand or absorbent material that does not react with spilled material. After clean-up of spills, wash area ensuring runoff does not enter drains. If a significant quantity of material enters drains, advise emergency services.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Do NOT drop, bump or drag cylinders.
Do NOT unload by rope-sling, hooks or tongs.
Keep cylinders upright. The cylinders should be moved carefully and when not in use they should be safeguarded by adequate holding devices. They should be inspected periodically for leaks using an appropriate halide detector. Do not eat, drink or smoke while handling the product.

Conditions for Safe Storage: Store in a locked, secure, cool, dry, well ventilated location away from food and feed stuffs. Outside or detached storage is preferred for cylinders. Isolate from active metals.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:	TWA: 5ppm	HSIS, SafeWork Australia
	TWA: 19 mg/m^3	HSIS

Engineering Controls: Prevent escape into the atmosphere. Capture at source where possible. Local exhaust ventilation can be effective. Use only in well ventilated areas where human exposure is possible.

Personal Protective Equipment: Very dangerous. Poisonous if inhaled. May irritate eyes, skin, nose and throat. The liquids can cause burns. Use a halide detector or detection tubes to determine the presence of gas in any work situation. If gas is detected, wear appropriate protective equipment as described below and comply with label instructions.
Respiratory: When releasing gas or opening structures for aeration, wear a full face respirator with a methyl bromide 'O' canister. For potentially higher exposures, it is advisable to wear a self-contained breathing apparatus. All equipment should be selected and used in accordance to AS/NZ 1715 and should comply with AS/NZS 1716.
Skin/Hands: Gas can be trapped inside gloves. When handling product, do not wear gloves, rings or adhesive bandages.
Body: No special clothing available. Avoid skin contact. Avoid wearing clothing that can trap vapours/fumes next to skin.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless, shipped as a liquefied compressed gas. Product is colourless to straw-coloured liquid when under pressure or below boiling point.
Odour:	Essentially odourless gas with a chloroform-like odour at high concentrations
Vapour Pressure:	1.9 atm; 1250 mmHg @ 20°C
Boiling Point/Range:	3.3°C – 4°C
Freezing/Melting Point:	-94°C
Solubility:	1.75% w/w (liquid)
Specific Gravity/Density:	Liquid: 1.73 @ 0°C (H_2O = 1 @ 25°C) Gas: 3.3 @ 21°C (air = 1)
Specific Volume:	0.256m^3/kg @ 1 atm and 21°C
Flash Point:	N/A (gas): Flammable Gas, but only in presence of a high energy ignition source
Flammability Limits:	UEL: 16% v/v LEL: 10% v/v
Autoignition Temperature:	535°C

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable and non-corrosive
Conditions to Avoid:	Open flames or other ignition sources. Contact with aluminium, zinc, magnesium or pure oxygen. Contamination with water.
Incompatible Materials:	Aluminium, zinc, magnesium and strong oxidizers.
Hazardous Decomposition Products:	Decomposes on heating and on burning producing toxic and corrosive fumes including hydrogen bromide, bromine and carbon oxybromide, carbon dioxide and carbon monoxide.
Hazardous Reactions:	Reacts with strong oxidants. Attacks many metals in presence of water. (Note: Attacks aluminium to form aluminium trimethyl, which is SPONTANEOUSLY flammable)

11. TOXICOLOGICAL INFORMATION

ACUTE

Initial acute affects may include headache, dizziness, nausea or vomiting, chest and abdominal pain, and irritated eyes, nose, and throat. With sufficient exposure, symptoms of slurred speech, blurred vision, temporary blindness, mental confusion, and sweating may occur.

Swallowed: Extremely toxic. Severe irritant to mucous membranes. LD_{50} 20 mg/L (rat – administered as liquid).

In Eyes: Severe irritant and vesicant. May cause severe (but usually reversible) injury, including temporary blindness.

On Skin: Can burn skin. Low concentrations can induce tingling and burning sensation. Can be absorbed through the skin to cause systemic toxicity. Onset of symptoms may be delayed by a number of hours to several days. LD_{50} 15ppm (rabbit).

Inhaled: Highly toxic vapour. Readily absorbed through the lungs, Inhalation of 1600ppm for 10-20 hours, or 1700ppm for 1.5 hours is lethal to humans. The lowest inhalation level found to cause toxicity in humans is 35ppm in air. LC_{50} 3120ppm/15 minutes, 2700 ppm/30 minutes, and 1164ppm/60 minutes (rat).

CHRONIC

Chronic exposure to methyl bromide can cause extensive damage to neurons (nerve cells) involved in cognitive processes and physical coordination or muscular control. The symptoms of chronic exposure may include dizziness, vision and hearing disturbances, depression, confusion, hallucinations, euphoria, personality changes, and irritability. A chronic pneumonia-like syndrome may become apparent after repeated exposure to sufficient levels.

Reproductive Effects: No reproductive effects were seen in rats exposed to levels up to 0.3 mg/L for 7 hours/day, 5 days a week, for 3 weeks prior to mating and during gestation.

Teratogenic Effects: No teratogenic effects were seen in rats exposed to levels up to 0.3 mg/L for 7 hours/day, 5 days a week, for 3 weeks prior to mating and during gestation.

Mutagenic Effects: Methyl bromide is classed as a Mutagen Class 3 (substances that cause concern for man owing to possible mutagenic effects). Methyl bromide is considered to be weakly mutagenic as some effects were seen in mouse cell cultures, mutagenicity assays with bacteria, and in human white blood cells. However rat liver cells did not display increased rates of mutation after exposure to methyl bromide.

Carcinogenic Effects: Data on cancer are inconclusive. In one study of industrial workers, exposure to methyl bromide was suggested as the possible common factor in two fatal cases of testicular cancer, but exposures to other substances could not be ruled out. In a rat study, methyl bromide given at 50mg/kg/day by stomach tube for 90 days induced stomach tumour increases but it appeared that the cancerous growth was due to severe localised cellular injury, which is not likely to occur at low doses.

12. ECOLOGICAL INFORMATION

Ecotoxicity: Methyl bromide is highly toxic to most air-breathing animals. It is highly toxic to aquatic organisms. Acute toxicity to fish occurs at concentrations > 10mg/L.

Persistence / Degradability: Methyl bromide quickly evaporates at temperatures ordinarily encountered in fumigating, but some may be trapped in the soil following application. Methyl bromide is moderately persistent in the soil environment, with a field half-life of between 30 and 60 days. Transformation of methyl bromide into bromide increases as the amount of organic matter in the soil increases. It is soluble in water and very poorly sorbed by soils. Run-off from fields into surface waters is very rare.

Mobility: Highly mobile. A gas at ambient temperatures.

Environmental Fate: Expected to be highly mobile in soil (estimated Koc 9 to 22). Volatilisation is a major route for loss for methyl bromide from soil and water. In water, hydrolysis is a significant degradation pathway. Degrades rapidly in water (the average half-life has been calculated to be 6.6 hours at 11°C). Half-life of methyl bromide in air is estimated to be approximately one year.

Bioaccumulation Potential: Estimated to be low (calculated BCF 2)

Other Adverse Effects: Listed as an Ozone Depleting Substance.

13. DISPOSAL CONSIDERATIONS

Disposal Methods: Dispose of chemical by use where possible. Product can be neutralised by pouring or sifting over soda ash then mixing and washing slowly into large tank.
Empty cylinders should have all valves closed and be returned to the point of sale. Do not use empty containers to store any other material.

14. TRANSPORT INFORMATION

UN Number:	1062
Proper Shipping Name:	Methyl bromide
DG Class (Subsidiary Risk):	2.3 (subsidiary risk: N/A)
Packaging Group:	Not applicable to compressed gas in cylinders
Special Precautions for Users:	Cylinders should be transported in a secure upright position in a well ventilated truck.
Hazchem Code:	2XE

15. REGULATORY INFORMATION

Poison Scheduling:	S7
Registration/Notification:	APVMA Product Number 53267 Check Local, State or Territory regulations before use to confirm intended use is permitted.
Labelling	Use of this product requires the following signage: DANGER – TOXIC GAS – KEEP AWAY
AICS	Methyl bromide is listed in the Australian Inventory of Chemical Substances (AICS)

16. OTHER INFORMATION

Abbreviations:

N/A:	Not Applicable	TLV:	Threshold Limit Value
ES:	Exposure Standard	ppm:	parts per million
TWA:	Time –Weighted Average	UEL:	Upper Explosive Limit
STEL:	Short Term Exposure Limit	LEL:	Lower Explosive Limit

Prepared using data supplied by information supplied by manufacturer and publicly available databases including US Occupational Safety & Health Administration (OHSA); American Conference of Industrial Hygienists (ACGIH); Extension Toxicology Network (Extoxnet); International Programme on Chemical Safety (IPCS Inchem); Toxnet; National Occupational Health and Safety Commission of Australia (NOHSC Australia) – SafeWork Australia; Australian Pesticides & Veterinary Medicines Authority (APVMA).

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Please read the label carefully before using this product.

CHANGE REGISTER

Revision Date	Revision Details
1 May 2016	**2. HAZARD IDENTIFICATION** – Hazard, Risk and Safety Phrases update in line with GHS **11. TOXOLOGICAL INFORMATION** – Added information for acute toxicological effects.
8 September 2018	**Company Details changed –** from A-Gas Rural to TriCal Australia Pty Ltd