

Methyl Bromide use in Victoria

Community factsheet

Updated June 2018

Methyl bromide (MeBr) is an odourless, colourless gas used as a fumigant pesticide for the control of a wide variety of pests including insects, spiders, mites, snails and rodents. The only use of methyl bromide in Australia is for soil treatment for strawberry runner production and the fumigation of items to be imported or exported to prevent the transportation of harmful organisms. This information sheet aims to outline the regulatory controls in place in the State of Victoria which are designed to protect public health in relation to the use of methyl bromide for quarantine purposes.

The fumigation process

Fumigation involves the application of methyl bromide to the inside of an enclosed space, such as a shipping container, for a set period of time.

Standards that relate to methyl bromide use in Victoria include the Department of Agriculture and Water Resources, Compliance Division "Australian Fumigation Accreditation Scheme (AFAS) Methyl Bromide Fumigation Standard" and the Australian Standard AS2476-2008 "General Fumigation Procedures".

The Australian Standard and the AFAS Methyl Bromide Fumigation Standard both require that a fumigation plan/risk assessment is prepared for each application of a fumigant. The fumigation enclosure is carefully checked to detect any excessive leakage. For purpose-built fumigation chambers this is done by regular pressure testing to a set standard and verifies that the enclosure is gas-tight. For temporary enclosures sensitive instruments are used to check the enclosure for any significant leaks which are addressed at the time ensuring that most of the gas is contained. However, by their nature all temporary enclosures will leak to a small degree but any escaping gas dissipates rapidly and presents minimal risk.

Methyl bromide is introduced as a gas to the enclosed area for a set period of time and is required to be retained in the enclosure for the specified period. After

this period has elapsed (usually 24 hours) the fumigant is either vented into the atmosphere at a controlled rate to ensure concentrations of the gas in the air remain low, below 5ppm (19mg/m³) outside the risk area, or the gas is captured using activated carbon.

The 5ppm concentration is the Australian occupational exposure guideline which is considered to cause no adverse health effects for exposures of eight hours per day, five days per week (that is, 40 hour weekly exposure). A conservative element has also been built into this exposure guideline to protect more sensitive individuals.



A shipping container enclosed in a tarpaulin for fumigation

Protecting public health

The use of methyl bromide is strictly regulated in Australia with controls at both the national and state levels. Risks to public health are managed through licensing by the Department of Health and Human Services and the Department of Economic Development, Jobs, Transport and Resources. Fumigators must meet minimum training requirements and are required to adhere to standards and guidelines. The risk to the public is also minimised by restricting access around fumigation sites and designating risk areas.

Toxicity

Methyl bromide is toxic by inhalation and if swallowed. It can be irritating to eyes, the respiratory system and to skin. Human health risks through exposure are greatest for the workers that are in close proximity to the fumigation area. Workers are required to use a type of

personal protective equipment known as a full face respirator or self-contained breathing apparatus when releasing fumigant and while working within the risk area after the fumigant has been released.

As the risk of exposure to the fumigant decreases so too does the risk to human health therefore there should be negligible risk to the general public outside the risk area.

Methyl bromide is a naturally occurring substance, mostly produced in the ocean, which causes a background level of 10 ppt. It is a highly volatile gas and readily dissipates into the air on venting. This means that the gas quickly disperses in the atmosphere.

Biosecurity New Zealand has compared methyl bromide and carbon monoxide (CO) emitted from car exhausts. The exposure dangers were considered similar. People do not run their car engines in a closed garage as it is too dangerous. However CO emitted by cars on roads does not pose the same danger. Similarly the controlled venting of methyl bromide does not pose a risk to the community.

Quarantine and pre-shipment

Fumigation with methyl bromide is authorised by the Commonwealth Department of Agriculture and Water Resources. The Department of Agriculture and Water Resources manages quarantine at Australia's borders to ensure that no exotic pests are allowed to enter Australia.

For the protection of public health, the Department of Agriculture and Water Resources requires all fumigators to comply with the Methyl Bromide Fumigation Standard and audits the performance of operators.

Risk areas /exclusion zones

The fumigation site must be able to be isolated from unprotected personnel. A precautionary "risk area" must be placed around a fumigation activity to ensure people who are not wearing the required personal protective equipment are excluded. The AFAS Standard and the Australian Standard set out a minimum risk area of three metres from the boundary of the outdoor fumigation enclosure and require warning signs and a physical barrier to be put in place. As a result of the risk assessment process the risk area is usually increased during ventilation depending on the weather conditions.

Methyl bromide recapture

Methyl bromide recapture technology involves the capture of methyl bromide on a series of activated charcoal filters before venting to the atmosphere and is a proven way of reducing exposures.

The Montreal Protocol on Substances that Deplete the Ozone Layer 1989

The Montreal Protocol on Substances that Deplete the Ozone Layer 1989 (the Montreal Protocol) is an international treaty that aims to restore the ozone layer by controlling the manufacture and use of ozone depleting substances.

Methyl bromide and other organohalogens, such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are recognised as ozone depleting. The use of methyl bromide has been retained for quarantine and pre-shipment (QPS) purposes. For further information on the Montreal Protocol visit <http://ozone.unep.org/en/>

Methyl bromide use in Victoria is subject to the following Commonwealth and State Regulations:

Commonwealth Government

Department of the Environment and Energy

The Department of the Environment and Energy is responsible for administering the *Ozone Protection and Synthetic Greenhouse Gas Management Act 1989* (the Ozone Act). The Ozone Act outlines Australia's obligations as a party to the Montreal Protocol, which includes prohibiting all uses of methyl bromide, other than those permitted under the Protocol and establishes licensing requirements for the manufacture, import and export of methyl bromide. The Ozone Act and associated regulations also sets out specific record keeping and reporting requirements for the manufacture, importation, export, supply, purchase and use of methyl bromide throughout Australia. Anyone selling or using methyl bromide must be aware of their obligations under this legislation.

For further information visit <http://www.environment.gov.au/atmosphere/ozone/ods/methylbromide/index.html>

Australia Pesticides and Veterinary Medicines Authority (APVMA)

Methyl bromide is registered for use as a fumigant with the APVMA. The APVMA's role is to independently evaluate the safety and performance of chemical products intended for sale. A product is only registered if, when used as directed on the product label, it will have no harmful or unintended effects on people, fauna and the environment.

For more information on the APVMA, including access to current methyl bromide product labels visit www.apvma.gov.au.

Department of Agriculture and Water Resources

The Department of Agriculture and Water Resources manages quarantine controls at our borders to minimise the risk of exotic pests and diseases entering the country. They also provide import and export inspection and certification to help retain Australia's highly favourable animal, plant and human health status and wide access to overseas export markets.

Internationally traded cargo is often inspected, treated and certified to control the spread of pests and diseases. Methyl bromide fumigation is a treatment suitable for some import and export situations. Fumigators that are trained and found competent to apply the AFAS Methyl Bromide Fumigation Standard can become Department of Agriculture and Water Resources Biosecurity accredited fumigators under the Onshore Quarantine Fumigation Scheme.

Victorian Government

Department of Health and Human Services (DHHS)

Anyone who uses pesticides in the course of a pest control business in Victoria is required to hold a licence issued by DHHS under the *Public Health and Wellbeing Act 2008*. This includes the fumigation of commodities for non-agricultural and non-horticultural purposes. In order to obtain a licence, individuals are required to have completed a prescribed qualification which includes training in the safe handling, storage and application of pesticides.

All licences are subject to a number of conditions one of which requires the holder to 'only apply chemicals according to the directions for use and comply with any other relevant safety information stated on the label'. Pest control operators are also required to make and keep certain records which relate to pesticide use. The Department of Health and Human Services conducts inspections of pest control operators to ensure compliance with legislative requirements.

Licensing and regulation of the pest control industry is designed to protect pest control operators, consumers, members of the public and the environment from the harmful effects of pesticides.

Department of Economic Development, Jobs, Transport and Resources (DEDJTR)

DEDJTR imposes controls in relation to methyl bromide chemical use, training, licensing, sale and record keeping. DEDJTR is responsible for regulating the use of methyl bromide in agricultural production systems, specifically fumigation of perishables for domestic quarantine purposes and soil fumigation for strawberry runner production.

Environment Protection Authority (EPA)

The EPA does not directly regulate users of methyl bromide but does set standards for emissions from industry which may include methyl bromide. These standards are outlined in the State Environment Protection Policy- Air Quality Management (SEPP-AQM) and Industrial Waste Management Policy- Protection of the Ozone Layer.

SEPP-AQM outlines the criteria that need to be followed to manage ozone depleting substances, including methyl bromide. The criteria are based on the protection of human health and the well-being of the environment. They have a significant margin of safety included in them so that when met there should be negligible risk to the health of surrounding communities.

IWMP (Protection of the Ozone Layer) seeks to reflect the international and industry developments in ozone layer protection. Victorian requirements for the use of methyl bromide can be found on EPA Victoria's Waste Management Policies webpage.

Worksafe Victoria

WorkSafe Victoria is responsible for administering the *Occupational Health and Safety Act 2004* in order to improve the standards of health and safety of Victoria's workforce. Under the *Occupational Health and Safety Regulations 2017*, pest control operators are required to control the risk to health associated with the use of hazardous substances. While the Regulations do not explicitly require employers to perform a risk assessment, this duty is implied in the duty to control the risk. A risk to health cannot be effectively controlled without the conduct of a risk assessment.

WorkSafe aims to protect employees' health, safety and welfare at work, protect the public from the health and safety risks of business activities and eliminate workplace risks at the source. WorkSafe Victoria is able to advise fumigation businesses about their legal requirements and ways to improve workplace health, welfare and safety.

*To receive this publication in an accessible format email
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Available at <https://www2.health.vic.gov.au/public-health/environmental-health/pesticide-use-and-pest-control>