

MANAGING RISKS OF METHYL BROMIDE EXPOSURE WHEN UNPACKING SHIPPING CONTAINERS INFORMATION SHEET

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This Information Sheet provides guidance for workers and supervisors managing risks of methyl bromide exposure when unpacking shipping containers.

Workers may be exposed to other hazardous chemicals when unpacking containers. For information about handling methyl bromide and other hazardous chemicals safely you should refer to the relevant safety data sheet (SDS) or seek advice from a competent person.



Further information is in the:

- [Information Sheet: Managing risks of hazardous chemical exposure when unpacking shipping containers](#)
- [Information Sheet: Managing risks when unpacking shipping containers](#)
- AS 2476-2008: *General fumigation procedures*, and
- [Code of Practice: Managing risks of hazardous chemicals in the workplace](#).



What is methyl bromide?

Methyl bromide is widely used as a fumigant to prevent unwanted pests, for example insects and rodents, from being imported into Australia.

It is a colourless non-flammable gas which is heavier than air and odourless at low concentrations.

Chloropicrin is sometimes added to methyl bromide to give off a strong, sharp and highly irritating odour so that it is possible to detect the presence of methyl bromide without special equipment.



What are the hazards?

Methyl bromide is a neurotoxic gas which can affect the central nervous system. It is suspected of causing genetic defects.

Methyl bromide is a dangerous cumulative poison. The effects of exposure can be delayed from 48 hours to several months after exposure.



What are the risks of exposure to methyl bromide?

Workers are usually exposed to methyl bromide by breathing in gas trapped in the container or between packages inside the container. They may also come into contact with methyl bromide when handling contaminated packages.

Depending on exposure levels it can cause headaches, dizziness, vomiting, nausea, tremors, slurred speech and irritation to the eyes, respiratory system and skin. Exposure to high concentrations may cause pulmonary oedema (fluid in the lungs) or death.

Workers may not realise they have been exposed to methyl bromide because it has no odour and the onset of symptoms is delayed.



How do you control the risks?

Exposure to methyl bromide can be eliminated or minimised, by:

- checking notices on containers for the presence of methyl bromide—if methyl bromide is present, refer to the SDS for information about selecting and using appropriate control measures
- venting containers before workers enter them to allow methyl bromide to dissipate—residual methyl bromide can remain after venting due to:
 - poor venting procedures
 - off-gassing from items in the container, or
 - entrapment of the gas in packaging
- capturing methyl bromide vented from the container using recapture technology
- training workers in safe working procedures for unpacking fumigated containers including training on how to use testing equipment and personal protective equipment (PPE), and
- providing appropriate PPE e.g. respirators.

The levels of methyl bromide that workers are exposed to must be minimised, so far as is reasonably practicable. Workers must not be exposed to methyl bromide in concentrations over five parts per million (5 ppm) averaged over eight hours.



Further information about workplace exposure standards is in the [Guidance on the interpretation of workplace exposure standards for airborne contaminants](#).

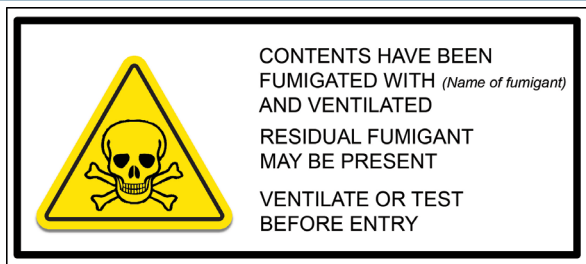
Safe work procedures for unpacking containers fumigated with methyl bromide include:

- treating the container as if it has been fumigated when unsure whether it has been fumigated or not
- placing the container in an open area with good natural ventilation and downwind from other activities

- preventing unauthorised access to the container using barriers and warning signs
- checking for fumigation warning notices (Figure 1) and clearance certificates

Note: Not all fumigated containers are labelled as fumigated or are certified. Importers and freight forwarders may not always include this information in consignment documentation.

Figure 1 Example of fumigation warning notice



NOTES:

- 1 Symbol to be in accordance with AS 1319
- 2 Notice to be at least 140 mm x 100 mm external dimensions.
- 3 This Notice is not suitable for in-transit fumigations. Refer to the 'Australian Code for the Transport of Dangerous Goods'

- asking overseas suppliers or importers if the container has been fumigated, and
- testing the container for methyl bromide using a gas detector.

Note: A safe reading at the entrance of the container does not mean the container was not fumigated or that further inside the container has been cleared of methyl bromide. A competent person should use the detector in various locations in and around the shipping container.

Venting

Venting is an important control used to reduce concentrations of methyl bromide and other hazardous chemicals to safe levels before workers enter and unpack containers.

Venting procedures include:

- locating containers in an open area with good natural ventilation and downwind from other activities
- using mechanical ventilation e.g. extraction or blowing for at least 30 minutes to remove methyl bromide before workers enter containers. Longer ventilation times may be needed if:

- goods in the container have an absorbent quality e.g. wood, nuts and seeds, or
- air flow has been restricted because of the way the goods have been packed— methyl bromide can settle in cavities or between items
- if mechanical ventilation is not reasonably practicable:
 - using natural ventilation for at least 12 hours before entering the container, or
 - testing the air in the container to ensure the methyl bromide level is below the exposure standard of 5 ppm
- partially unpacking to allow further venting if the goods are tightly packed, and
- using PPE during unpacking.

You should seek advice from a competent person:

- if you do not know what chemicals are present but suspect the air may be contaminated despite having followed venting procedures, or
- if you do not have the resources necessary to make the container safe.

Personal protective equipment

If respiratory PPE or other PPE such as protective clothing is required workers must be trained in how to properly use and maintain the equipment. When choosing PPE make sure it does not cause undue discomfort or introduce new hazards.



Further information is in:

- AS/NZS 1715:2009: *Selection, use and maintenance of respiratory protective equipment*
- AS/NZS 1716:2012: *Respiratory protective devices*, and
- AS/NZS 4501 Set: 2008: *Occupational protective clothing*.

Air testing equipment

Choose air testing equipment depending on the type of hazardous chemicals present and whether the goods are flammable.

You should seek advice from a competent person if you are unsure about what type of gas detector to use.



Further information

For further information see the Safe Work Australia website (www.swa.gov.au).