

# MANAGING RISKS OF HAZARDOUS CHEMICAL EXPOSURE WHEN UNPACKING SHIPPING CONTAINERS INFORMATION SHEET

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



Further information is in the:

- [Information Sheet: Managing risks of methyl bromide exposure when unpacking shipping containers](#)
- [Information Sheet: Managing risks when unpacking shipping containers](#), and
- [Code of Practice: Managing risks of hazardous chemicals in the workplace](#).

## Hazardous chemicals

Containers can have hazardous chemical residues in the air and on surfaces. Airborne hazardous chemicals are a significant risk to workers' health and safety.

The most common types of hazardous chemical residues in containers are:

- fumigants e.g. methyl bromide and phosphine—these are used to control pests, for example insects and rodents, and
- solvents e.g. formaldehyde—these can be released from transported goods (off-gassing).

Other examples of hazardous chemical residues include:

- n-hexane
- ethylene dibromide (EDB)
- ethylene dichloride (EDC)
- benzene
- alkylbenzenes—a group of chemicals derived from benzene
- ammonia
- chloropicrin
- ethylene oxide
- hydrogen cyanide
- styrene, and
- toluene.

For information about handling hazardous chemicals safely you should refer to the relevant safety data sheet (SDS) or seek advice from a competent person.



## What are the risks?

Depending on the type and concentration of hazardous chemicals, health effects can include:

- allergic contact dermatitis
- headaches, dizziness and nausea
- irritation to the eyes, respiratory system and skin
- respiratory disease, and
- in some cases, death.

Some hazardous chemicals like methyl bromide are also suspected of causing genetic defects, while others are known or suspected carcinogens.

Some solvents are a safety risk because they are highly flammable. Fires or explosions may happen if vapours are exposed to heat, sparks or a naked flame.

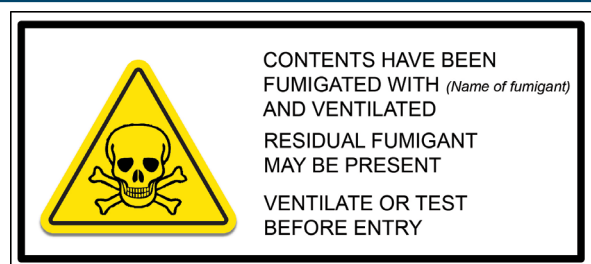


## How do you control the risks?

Exposure to hazardous chemicals can be eliminated or minimised by:

- preventing unauthorised access to containers using barriers and warning signs
- asking overseas suppliers or importers if containers have been fumigated, and
- checking for fumigation warning notices (See Figure 1) and clearance certificates.

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'

*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

- knowing what goods are packed in the container and whether or not they are likely to produce residual hazardous chemicals e.g. from off-gassing
- obtaining information about appropriate control measures from SDS and implementing them
- prohibiting smoking and naked flames in or near containers to avoid risks of fire or explosion
- venting containers before unpacking to clear hazardous chemicals noting some hazardous chemical residues may remain e.g. due to poor venting procedures, off-gassing from items in the container or entrapment of gas in packaging
- capturing methyl bromide vented from the container using recapture technology
- training workers in safe working procedures for unpacking containers including the use of hazardous chemical testing equipment and personal protective equipment (PPE), and
- using PPE to avoid exposure to airborne or surface hazardous chemicals when opening containers.

### Venting

Venting can be used to reduce the concentration of airborne contaminants in a container to safe levels before workers enter and start unpacking.

Venting procedures may include:


- ensuring containers are located 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 hazardous chemicals before entering the container. Longer ventilation may be needed if:
  - the contents 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—airborne contaminants can settle in cavities or between items
- when mechanical ventilation is not reasonably practicable:

- using natural ventilation for at least 12 hours before entering the container, or
- testing the air in and around the container, or
- surfaces in the container for the presence of hazardous chemicals
- partially unpacking tightly packed goods to allow further venting, and
- using PPE during unpacking.

If you do not know what chemicals are present but suspect the air may be contaminated despite following venting procedures you should seek advice from a competent person.

### Personal protective equipment

If respiratory PPE and protective clothing is required, workers must be trained in how to 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.

Air testing equipment varies in sensitivity, user-friendliness and cost and is often specific to one or a few hazardous chemicals.

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](http://www.swa.gov.au)).