



Formaldehyde in the Indoor Environment of Caravans, Mobile Homes and Demountable Buildings

A report by the Australian Government's National Industrial Chemicals Notification and Assessment Scheme (NICNAS) concluded that occupants of caravans, mobile homes, and demountable buildings may experience health effects from exposure to the chemical formaldehyde. This information sheet contains a summary of the findings of the report and guidance for reducing exposure to formaldehyde.

What is formaldehyde?

Formaldehyde is -

- a colourless gas with a pungent, irritating odour
- used in the production of resins that act as glues for wood products, pulp, paper, glasswool and rockwool
- also found in some plastics, coatings, paints and varnishes, and in textile finishing.

What should I know?

Australian and overseas studies indicate that indoor air concentrations of formaldehyde can reach levels that may cause sensory irritation. Levels inside some caravans, mobile homes and demountable buildings may be high because of the construction materials used, the relatively small space inside, and the fact that these buildings may remain closed up for significant amounts of time.

What are the health effects?

The route of exposure to formaldehyde for occupants of caravans, mobile homes and demountable buildings is expected to be through inhalation of formaldehyde vapour. Breathing formaldehyde vapour has been shown to cause sensory irritation in humans. Sensory irritation is irritation of the nerve endings in the eyes and nose and is felt as a stinging or burning sensations in the eyes, nose and/or a sore throat.

Formaldehyde has been shown to cause nasal tumours in some animals, however the risk to the public of nasal cancer is estimated to be low.

Sources of formaldehyde in buildings

Pressed wood

One of the major sources of formaldehyde in these buildings is pressed wood products, including particleboard, fibreboard and some plywood products. Formaldehyde is used in the production of glues that are used in the manufacture of these pressed wood products, and is released over time.

Pressed wood products are often used in the construction of both structural and decorative items for caravans, mobile homes and demountable buildings e.g. for interior wall and ceiling linings, flooring, cabinetry and furniture.

The amount of formaldehyde released by wood products can vary. Levels can increase

- with hotter and more humid conditions, and
- where panel surfaces are uncoated, and
- where high emission products are used.

Levels decrease with time.

Low formaldehyde emission pressed wood panels that meet Australian Standards are readily available in Australia.

Combustion

Formaldehyde is present in the smoke or vapour of burning fuel (e.g. natural gas, LPG, kerosene, oil, coal, wood) and therefore non-electric fuel-burning stoves, space heaters and water heaters are potential sources of formaldehyde, especially if they are not vented to the outside. Formaldehyde is also present in tobacco smoke and car exhaust.

Other

Some consumer products (such as household cleaners, disinfectants, fabric softeners, and cosmetics), as well as permanent press fabrics and paper products can also release formaldehyde. However, most of the products have low levels of formaldehyde, and are used intermittently and are therefore unlikely to contribute significantly to indoor formaldehyde levels.

Safety checklist for reducing formaldehyde exposure

The following steps will help reduce your exposure to formaldehyde if you occupy a caravan, mobile home or demountable building.

Make sure:

- Caravan/building is adequately ventilated (e.g. open windows, use exhaust ventilation or fans)
- Caravan/building is aired prior to occupation after a period of being unoccupied
- Any new fixtures or furniture added during renovations
 - are made from products that use glues that do not contain formaldehyde; or,
 - are made from tested and certified products with low formaldehyde emissions (for particleboard and fibreboard products ensure products are certified to Australian Standards and are labelled with a formaldehyde emission class) and/or;
 - are coated or sealed on all sides (e.g. with laminate, acrylic paint or polyurethane)
- Smoking is not allowed inside the caravan/building
- Non-electric stoves and heaters are vented to the outside
- Regular maintenance checks are performed on non-electric stoves and heaters, checking for leakage and blockage
- Temperature and moisture levels within the caravan/building are controlled (e.g. with ventilation, air conditioning or dehumidifiers)
- Engines are not run in spaces attached to the caravan/building.

For More Information

National Industrial Chemicals Notification and Assessment Scheme (NICNAS) (2006)
Priority Existing Chemical Assessment Report No. 28 – Formaldehyde. Sydney, NICNAS.
Available at: <http://www.nicnas.gov.au/Publications/CAR/PEC/PEC28.asp>

Standards Australia/Standards New Zealand (2004) AS/NZS 1859.1:2004:
Reconstituted wood-based panels - Specifications – Particleboard. Sydney, Standards Australia.

Standards Australia/Standards New Zealand (2004) AS/NZS 1859.2:2004:
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Standards Australia/Standards New Zealand (2002) AS/NZS 1860.1:2002: Particleboard flooring –
Specifications. Strathfield, Standards Australia