

AUSTRALIAN WOOD PANELS ASSOCIATION INCORPORATED

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THE GOOD WOOD — MDF/PARTICLEBOARD

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FORMALDEHYDE

What is formaldehyde?

Formaldehyde is a colourless, water-soluble liquid that is released into the air as a gas.

How common is formaldehyde and where does it come from?

Formaldehyde is common in the environment. Trees in their natural state emit formaldehyde.

Car exhausts are the largest generators of formaldehyde, followed by domestic solid fuel fires. Lawn mowing also produces significant quantities.

What is formaldehyde used for?

Formaldehyde is used as an additive in the adhesive resin in engineered wood products, such as MDF and Particleboard.

Formaldehyde-based resins are also commonly used in other household products, such as carpets and draperies.

What does LFE mean?

LFE stands for Low Formaldehyde Emission. Australian Standard MDF and Particleboard are classified as LFE products. This means they release low levels of formaldehyde, below the workplace exposure limit set by the National Occupational Health and Safety Commission.

The Australian Wood Panels Association runs a JAS ANZ Product Certification Scheme, which is overseen by the Australian Wood Panels Quality Council comprised of representatives from various industry sectors to safeguard impartiality. Technical support for the Scheme is provided by the Australian Wood Panels Test Centre, a NATA Accredited laboratory.

Members of the AWPA submit random production samples for analysis. To market board as LFE, Australian wood panel manufacturers must meet the formaldehyde requirements of the product certification scheme.

I've heard formaldehyde causes cancer. Is that true?

The latest review by the International Agency for Research on Cancer (IARC) classified formaldehyde in Group 1, meaning it is carcinogenic to humans. However, the cancer causing properties of formaldehyde rely on exposure to high concentrations of the substance.

The current manufacturing process results in boards that have very low residual formaldehyde and are therefore called LFE (Low Formaldehyde Emission) boards.

Recent state-of-art measurements in numerous workplaces in Australia using wood panel products have found formaldehyde levels to be so low as to be undetectable on many occasions, and on all occasions to be well below all occupational and environmental standards, including the cancer threshold of 2.4 mg/m³.

Tell me more about the threshold level – what does that actually mean?

The threshold level for cancer defined by the World Health Organisation (WHO) is 2.4mg/m³. This means the preconditions linking formaldehyde exposure to cancer can only be created if a person is exposed to very high concentrations of the substance – more than 2.4mg/m³ – for extended periods of time.

This is supported by the International Agency for Research on Cancer (1995) and the International Program on Chemical Safety (1998) who identified increases in cell turnover or DNA synthesis, which are measures of cytotoxicity and hyperplasia, in the nasal mucosa after subchronic or chronic exposure to formaldehyde do not occur at concentrations less than 2.4mg/m³.

AWPA TEST CENTRE



TESTING ALL AWPA MEMBERS
MDF AND PARTICLEBOARD

FORMALDEHYDE

continued

How much formaldehyde is present at workplaces in Australia?

AMCOSH Occupational Health Services conducted an occupational hygiene evaluation at 6 Victorian 13 NSW and 14 Qld workplaces. A total of 159 formaldehyde samples were taken. The results ranged from 0.01 mg/m³ to 0.56.

The 148 samples taken ranged from <0.01 to 0.18mg/m³ and 11 samples 0.1 to 0.56 mg/m³.

Even at 0.56 mg/m³, the level of emissions from Australia Standard wood panel products is significantly below the WHO cancer threshold level of 2.4 mg/m³.

Does exposure to low concentrations of formaldehyde pose a problem?

The International Agency for Research on Cancer (1995) considers the irritation threshold for eyes, nose and throat as 0.6–1.2mg/m³

Between 0 to 0.36 mg/m³ of formaldehyde there is no significant increase in eye or nose irritation above the general background incidence level of around 10-20%, which is observed with exposure to clean air (Paustenbach et al 1997).

How long has the AWPA been investigating the possible health effects associated with formaldehyde?

Since the early 1980s there have been numerous studies into the effects of formaldehyde on humans. In reviewing the extensive amount of research undertaken the AWPA is not aware of any findings linking Australian Standard MDF and Particleboard, to cancer caused by exposure to formaldehyde.

The AWPA monitors world research relating to wood dust and formaldehyde. This monitoring has shown no research linking Australian wood panels with cancer caused by exposure to formaldehyde.

I've heard MDF has been banned in the United States. Is that correct?

No. The Composite Panels Association, which represents US MDF manufacturers, has confirmed that the product is not banned in the United States and advises that no such action is contemplated.

Furthermore, demand for MDF continues to grow in both industrial and construction applications in the United States. Wood panel products, like MDF, are increasingly being specified for

construction/structural applications, in addition to more traditional applications like residential and office furniture.

For further information on the correct health and safety procedures for handling wood panel products, workers and employers should refer to the Material Safety Data Sheet (MSDS), available at the Australian Wood Panel Association website:

www.woodpanels.org.au