

Environmental Risk Management Authority Questions and Answers on Copper Chromium Arsenic (CCA) Treated Timber

This series of questions and answers has been compiled to give a lay summary of a report by Dr Deborah Read reviewing the public health issues surrounding the use of copper chromium and arsenic (CCA) treated timber. This report was commissioned by the Environmental Risk Management Authority in December 2002. The final report has been peer reviewed and released to the public on 2 May 2003 with a covering list of actions proposed by the Authority.

Q What is CCA?

A CCA is a mixture of chemical compounds containing copper chromium and arsenic. It is a preservative used to treat wood to stop it rotting when used outdoors. CCA treated timber was developed in the 1930s and has more or less been in constant production ever since.

Q How is CCA used in wood?

A CCA is chemically fixed to the wood, making it generally highly resistant to leaching. CCA is injected into the wood by a process that uses high pressure to achieve saturation. CCA is intended to protect wood from dry rot, fungi, moulds and other pests that can threaten the integrity of wood products. CCA-treated wood is most commonly used in outdoor settings. Around the home, CCA-treated wood is commonly used for decks, walkways, fences, gazebos, playground equipment and retaining walls. CCA is a particularly effective product for treating *Pinus radiata*.

Q What is ERMA doing to assess the safety of CCA in treated wood?

A CCA is one of a very large number of chemicals which are kept under review by ERMA. However, it has not been comprehensively assessed because it is an existing chemical. This means it was first approved for use in New Zealand before the HSNO Act came into effect. The mechanism for ERMA to assess CCA is to carry out the statutory process of reassessment. One of the reasons for commissioning the Read report was to see whether a reassessment would be justified on the basis of public health effects. The conclusion is that a reassessment would be difficult to justify.

Q Why hasn't the Authority banned CCA?

A The Authority cannot just ban CCA. It must first trigger a reassessment. Currently there is not sufficient evidence to demonstrate that the health risks associated with exposure to CCA treated timber warrant the substance being reassessed. There are other actions that the Authority proposes which include prudent measures to limit voluntary exposure to CCA and further investigation into any environmental and occupational risks associated with the use of CCA and to feasibility of alternatives to CCA.

Q Does Arsenic leach from treated wood products into soil? If so, what happens to it?

A Published results of scientific studies suggest that arsenic, over time, slowly leaches from CCA-treated wood products. The amount and rate at which arsenic leaches, however, varies considerably depending on numerous factors such as local climate, acidity of rain and soil,

age of the wood product, and how much CCA was applied. Some chemicals may also be dislodged from the surface of the wood upon contact with the skin, particularly on newly treated timber.

Q What risks does Arsenic pose to human health?

A Arsenic is a known human carcinogen and is acutely toxic. However, in relatively low concentrations it already exists naturally in the environment. When estimating the potential risks that a chemical may pose, one must consider two factors: toxicity and exposure. Toxicity is described as the harmful effects that the chemical may cause, and this is often dependent on the amount or dose received. Exposure is the dose received, typically orally or through contact with the skin, or by inhaling, over a certain period of time. Thus, the degree of risk of toxic effects is dependent on both toxicity and exposure.

Q Does CCA treated wood present any health risks to me or my family?

A Based on currently available evidence ERMA has concluded that CCA-treated wood does not pose any significant risk to the public. Nevertheless, arsenic is a known human carcinogen and, thus, it would be prudent to avoid unnecessary exposure to arsenic.

Q Is Arsenic present in the environment from other sources?

A Arsenic is a chemical element and is a natural constituent of the Earth's crust. It occurs naturally in rocks and soil, water, air, and plants and animals. When in the natural environment, arsenic usually binds to other molecules, such as those found in soils, and does not tend to travel very far. Arsenic can be released into the environment through natural occurrences such as volcanic activity, erosion of rocks, and forest fires, or through human actions.

Q What precautions should be taken when working with CCA?

A Certain activities can facilitate the release of inorganic arsenic, so people working with CCA-treated wood should take a number of precautions, as follows:

- Saw, sand, and machine CCA-treated wood outdoors. Wear a dust mask, goggles, and gloves.
- Clean up all sawdust, scraps, and other construction debris thoroughly and dispose of in the trash (i.e., municipal solid waste). Do not compost or mulch sawdust or remnants from CCA-treated wood.
- Do **not** burn CCA-treated wood, as toxic chemicals may be released as part of the smoke and ashes.
- After working with the wood, wash all exposed areas of your body, especially the hands, thoroughly with soap and water before eating, drinking, toileting, or using tobacco products.
- Wash your work clothes separately from other household clothing before wearing them again.

These precautions will reduce your exposure from inhaling or ingesting sawdust, protect your eyes from flying particles, and prevent exposure to toxic smoke and ash

Q How should I use CCA treated wood?

A CCA-treated wood is used in a variety of outdoor structures including fences, posts, decks, and gazebos. While there is no evidence of adverse effects from such uses, it is inadvisable to use it where routine contact with food or animal feed can occur. Neither is it advisable to use CCA-treated wood for cutting boards, counter tops, bee hives, compost, mulch, or structures or containers for storing human food or animal feed. Furthermore, since some animals like to eat wood, CCA-treated wood should not be used where animals can chew on the treated wood.

Q What steps can parents take to reduce their families' potential exposure to CCA?

A As a responsible parent, you manage a wide range of risks in your child's environment. Here are some common sense tips for minimizing unnecessary exposure to CCA:

- Treated wood should **never** be burned in open fires, stoves, fireplaces, or residential boilers.
- Always wash hands thoroughly after contact with any wood, especially prior to eating and drinking.
- Food should not come into direct contact with any treated wood.
- Precautions should be taken to wear protective gear when working with CCA-treated wood.

Additional measures that may be taken include the following:

- Apply a coating product such as paint or polyurethane (see below) to pressure-treated wood on a regular basis. Some studies suggest that this can reduce the amount of CCA that leaches from treated wood.
- When conducting new construction or repairs, consider the range of alternatives to CCA-treated wood. These alternatives include both non-arsenical chemical wood preservatives, as well as other woods and non-wood products. Consult your local home improvement store for more information about available alternatives.

Q How can I tell if my deck has been constructed with CCA treated wood?

A Freshly treated wood, if not coated, has a greenish tint, which fades over time. As a practical matter, CCA has been the principal chemical used to treat wood for decks and other outdoor uses around the home. Generally, if your deck has been constructed with radiata pine, then most likely the deck was constructed with CCA-treated wood. Alternatively, if you know who constructed the deck, you may want to call and ask.

Q Should I replace my CCA-treated deck or other structures including playground equipment?

A ERMA does not recommend that consumers replace or remove existing structures made with CCA-treated wood or the soil surrounding those structures.

Q What types of coatings are most effective?

A While available data are very limited, some studies suggest that applying certain penetrating coatings (e.g., oil-based, semi-transparent stains) on a regular basis (e.g., once per year or every other year depending upon wear and weathering) may reduce the migration of wood

preservative chemicals from CCA-treated wood. In selecting a finish, consumers should be aware that, in some cases, "film-forming" or nonpenetrating stains (e.g., latex semitransparent, latex opaque, and oil-based opaque stains) on outdoor surfaces such as decks and fences are not recommended, as subsequent peeling and flaking may ultimately have an impact on durability as well as exposure to the preservatives in the wood. Coatings that make playground equipment more slippery should also be avoided. Talk with your local hardware store about available coatings.

Q What alternatives to CCA-treated wood will be available?

A A number of preservatives are available, and wood treated with these preservatives is already available in the marketplace. In addition, nonwood alternatives, such as plastics, metal, and composite materials are available. Your local hardware store or timberyard can provide more information about available alternatives.

Q How should you dispose of CCA-treated wood?

A Homeowners should never burn CCA-treated wood or use it as compost or mulch. CCA-treated wood can be disposed at Council landfills. For further guidance home owners should contact their local Council.

Q What are other countries doing?

A

United States

February 12, 2002, EPA announced a voluntary decision by industry to move consumer use of treated lumber products away from CCA pressure-treated wood by December 31, 2003, in favour of new alternative wood preservatives. As of January 1, 2004, EPA will not allow CCA products to be used to treat wood intended for most residential settings.

The European Union

The European Commission has announced a partial prohibition on the use of CCA-treated timber, to take effect by 30 June 2004, unless structural integrity of the timber is needed for human or livestock safety and skin contact by the public is unlikely. Situations in which CCA preservatives may not be used include residential or domestic constructions. The directive does not apply to CCA-treated timber already in use.

Australia

The Australian Pesticides and Veterinary Medicines Authority (APVMA) is to conduct a review of arsenic based timber treatments. The scope of the review is to examine the potential for exposure of people to CCA and any possible environmental impacts associated with its use. (The Australian Pesticides and Veterinary Medicines Authority (APVMA) is the national regulator of agricultural and veterinary chemicals. The Authority has recently changed its name from the National Registration Authority for Agricultural and Veterinary Chemicals.)