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Frequently Asked Questions: Handling and Disposal of Chemically Treated Wood

Q: What is CCA treated wood

A: Chromated copper arsenate (CCA) is the most widely used waterborne chemical wood preservative in the United States. Containing chromium, copper and arsenic, CCA protects against attack by decay fungi, insects and most types of marine borers. CCA is injected into wood by a process that uses high pressure to saturate wood products with the chemical. The pressurized approach makes sure that the chemical makes it to the core of each piece of wood.

CCA-treated wood is used in a variety of outdoor structures and is widely available at retail lumberyards as green treated lumber. It is typically light green in color, but it is often stained or dyed by the manufacturer to various shades of brown. Many people have used CCA-treated wood for fences, posts, playsets, decks and gazebos. It should not be used where routine contact with food or animal feed can occur.

Another way of preserving wood is with an oil-based compound called creosote. Creosote is a complex mixture of many chemicals. About 300 chemicals have been identified in coal-tar creosote, but there could be 10,000 other chemicals present in the mixture. Creosote is effective in preventing attack by decay fungi, insects, and most marine borers. Creosote is widely used in railroad ties, utility poles, bridge timbers, and piling. Creosote-treated wood has a dark brown black color with an oily surface and strong odor. It is very difficult to paint, stain, or seal but does not dissolve readily in water.

Creosote is a wood preservative used for commercial purposes only; it has no registered residential uses. This treated wood is intended for exterior/outdoor uses only. Its commercial uses include railroad ties (70%), utility poles (15-20%), and other miscellaneous commercial uses (10-15%). It has been used in the United States since 1889.

Q: What are the health/environmental risks associated with CCA and creosote treated wood?

A: At certain levels, the amount of chemicals used to treat wood may be considered toxic. To date, EPA has not concluded that CCA-treated wood poses any unreasonable risk to the public or the environment. Nevertheless, arsenic is a known human carcinogen and, thus, the Agency believes that any reduction in the levels of potential exposure to arsenic is desirable. EPA believes that the voluntary transition to non-arsenic containing wood preservatives for residential sites is a responsible action by the registrants.

Scientific studies suggest that arsenic, over time, slowly leaches from CCA-treated wood products. The amount and rate at which arsenic leaches depends on many factors including (but not exclusively) the species of wood, amount of rain, the pH of the rain and soil in contact with the wood, and the age of the structure. In general, the concentration of arsenic in soil leached from treated wood decreases rapidly within a short distance from the treated wood. Small amounts of arsenic may also be dislodged from the surface of wood.

On February 12, 2002, EPA announced a voluntary decision by pesticide registrants to move consumer use of treated lumber products away from CCA pressure-treated wood effective December 31, 2003, in favor of new alternative wood preservatives. After December 30, 2003, EPA will not allow the affected CCA products to be used to treat wood intended for most residential settings.

Creosote, like arsenic is also considered a probable human carcinogen. Three of the classes of chemicals found in coal-tar creosote that are known to cause harmful health effects are polycyclic aromatic hydrocarbons (PAHs), phenol, and cresols. Some parts of the creosote mixture can enter groundwater or change into other substances while other parts persist in treated wood products for decades. Creosote can volatilize into the air, especially during hot weather, and plant foliage in the vicinity of the treated wood may be damaged by the vapors. It can also leach into the soil near the treated wood causing soil, surface or groundwater contamination.

Q: What safety precautions should one take when handling or coming into contact with treated wood?

A: While the Agency has not concluded there is an unreasonable risk to the public from these products, EPA believes that any reduction in exposure to arsenic, a known human carcinogen, is desirable. EPA does not believe there is any reason to remove or replace CCA-treated structures, including decks or playground equipment. EPA is not recommending that existing structures or surrounding soils be removed or replaced. While the available data are limited, studies suggest that applying certain penetrating coatings, for example, oil-based semitransparent stains, on a regular basis, can reduce CCA exposure.

Parents should manage risks to their children by following several suggested measures, including:

- Always washing hands thoroughly after contact with any wood, especially prior to eating and drinking;
- Ensure that food does not come into direct contact with any treated wood,

When working with treated wood the following precautions should be taken:

- Wear gloves when handling wood,
- Wear goggles and dust-mask when sawing and sanding,
- Always wash hands before eating; and,
- Never burn CCA-treated wood.

CCA-treated wood should not be used:

- For cutting boards, counter tops, beehives, compost, mulch, or structures or containers for storing human food or animal feed,
- Where animals can chew on the treated wood

- Where it may come into direct or indirect contact with drinking water, except for uses involving incidental contact with docks or bridges.

Since creosote penetrates deeply into and remains in the pressure-treated wood for a long time exposure to creosote may present certain hazards. Therefore, the following precautions should be taken both when handling the treated wood and in determining where to use the treated wood:

- Wood treated with creosote should not be used where it will be in frequent contact with bare skin (for example, chairs and other outdoor furniture) unless an effective sealer has been applied.
- Creosote-treated wood should not be used in residential interiors.
- Wood treated with creosote should not be used in the interiors of farm buildings where there may be direct contact with domestic animals or livestock which may crib (bite) or lick the wood.
- Do not use creosote-treated wood where it may come into direct or indirect contact with drinking water for domestic animals or livestock, except for uses involving incidental contact such as docks and bridges.
- Do not use creosote-treated wood for farrowing or brooding facilities.
- Do not use treated wood under circumstances where the preservative may become a component of food or animal feed. Examples of such use would be structures or containers for storing silage or food.
- Do not use treated wood for cutting-boards or countertops.
- Creosote-treated wood should not be used where it may come into direct or indirect contact with public drinking water, except for the uses involving incidental contact such as docks or bridges.
- Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood.
- Avoid frequent or prolonged skin contact with creosote-treated wood; when handling the treated wood, wear long-sleeved shirts and long pants and use gloves impervious to the chemicals (for example, gloves that are vinyl coated).
- When power-sawing and machining, wear goggles to protect eyes from flying particles.
- After working with the wood, and before eating, drinking and the use of tobacco products, wash exposed areas thoroughly.
- If oily preservatives or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Q: How should treated wood be disposed of?

A: Salvage and reuse. Keeping treated wood out of the waste stream by salvaging and reusing it in another application for which treated wood is appropriate makes a great deal of sense and should be the first priority. If the wood does not enter the waste stream, it will not even be considered waste, let alone considered potentially hazardous waste.

Incineration. No type of treated wood should ever be burned in open fires or in small wood stoves or fireplaces. Treated wood from commercial or industrial use (e.g., construction

sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and Federal regulations.

CCA-treated wood should not be burned, even in state-of-the-art incinerators. The heavy metals in CCA are not destroyed; the chromium and copper become concentrated in the ash, while the arsenic becomes a vapor that either escapes into the air or is trapped in pollution control equipment.

Landfilling. Landfilling of CCA-treated wood is the only environmentally acceptable disposal option today. The problem is that tremendous quantities of CCA-treated wood will be coming out of service over the next decades. As lined municipal landfills can be more expensive, there is increasing pressure to keep bulky C&D waste out. Unlined landfills may not adequately protect area groundwater from contaminants in CCA-treated wood.

Homeowners should not encounter creosote-treated wood in the residential environment. If they do, it can be disposed of by ordinary trash collection (i.e., as municipal solid waste). Do not compost or mulch sawdust or remnants from creosote-treated wood.

Avoided Use. Finally, try to avoid specifying or using CCA-treated wood. Use construction details that minimize use of wood in locations where rot or insect infestation is likely. If wood must be used, go with one of the newer, copper-based products, such as ACQ Preserve. Naturally rot-resistant species are an option, especially if any are available from certified, well-managed forests. Recycled plastic lumber is an alternative for some applications. Borate preservatives are much less toxic, but they will leach out of wood in wet conditions. They are effective for treatment against termites when wood will not be exposed to weather.