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# ENVIRONMENTAL Fact Sheet

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## Pressure-Treated Wood Can It Be Used in New Hampshire's Waters?

### **Concerns over health and environmental effects**

There is a great concern about the use of pressure-treated wood in New Hampshire waters. Historically, creosote, pentachlorophenol, and inorganic arsenicals have been the most common preservatives used to extend the life of wood by protecting it from damage by insects, fungi, water and weather. High concentrations of these wood preservatives have been determined to have the capability to cause birth defects, tumors or cancer. As a result, creosote has been banned from use for quite some time.

Both inorganic arsenicals and pentachlorophenol are known to accumulate in the tissues of animals. Exposure of fish to wood treatment solutions can rapidly cause harmful effects and death to fish at concentrations below 0.1 ppm. Though there is no evidence that sufficient amounts of these pesticides leach enough from docks to cause aquatic toxicity, the potential nevertheless exists.

Until recently, chromated copper arsenate (CCA) was widely used to treat wood because it is water insoluble, making it preferable over pentachlorophenol which dissolves in water. However, it was still possible that over time inorganic arsenic would leach from the wood and contaminate the environment. On February 12, 2002, the EPA announced a voluntary decision by the industry to shift consumer use of treated lumber for play-structures, decks, picnic tables, landscaping timbers, residential fencing, patios and walkways/boardwalks away from products that contain arsenic by December 31, 2003, supporting the use of new alternative wood preservatives.

Beginning January 1, 2004, the EPA prohibited the use of CCA products to treat wood intended for any of these residential uses. This was an important step toward the voluntary transition to arsenic-free wood preservative alternatives in both the manufacturing and retail sectors. The EPA has not yet reported results from risk assessment research on the use of CCA, but discontinuing the widespread use of this chemical will greatly reduce potential exposure to arsenic.

The U.S. Environmental Protection Agency along with the U.S. Department of Human Services recommends that "treated wood should not be used where it may come in direct or indirect contact with public drinking water, except for uses involving incidental contact such as docks and bridges." However, DES advises against using pressure treated wood in any waters of the state.

## **Alternatives**

Acceptable alternatives are available. Cedar and redwood are naturally resistant to decay, but are more difficult to get in this part of the country, however, other alternatives such as metals, plastics and composite materials are available. Wood-polymer composites made of 100 percent recycled wood and plastic are environmentally friendly and may outlast other dock products. Another solution would be to use stainless steel pipes for the part of the dock that has direct contact with the lake or pond.

Since the EPA restrictions were established in 2004, arsenic and chromium-free Alkaline Copper Quaternary (ACQ) has become widely used for pressure-treated lumber as well as copper azole (CBA-A, CA-B, or CA-C). Another alternative to CCA was ACC, acid copper chromate, which is arsenic-free but contains a form of chromium that has negative impacts to human health. In January of 2007, the EPA announced that it will deny applications for registration of ACC as a preservative for wood intended for residential use. The health risks associated with exposure to hexavalent chromium include skin irritation and cancer risk which outweigh any benefits the chemical may have as a preservative.

Although the ACQ and copper azole alternatives are suitable for use in areas where wood contacts freshwater, it is recommended that treated wood be coated with a product to seal the wood and reduce leaching of pesticides into the environment. Eco-friendly sealer is available which is not harmful to aquatic life or humans. Two coats of an appropriate sealer (urethane, epoxy, or shellac) should be applied to the wood. Apply the sealer away from the lake and allow time for the sealer to dry completely before the dock is installed.

## **Disposal**

Dispose of pressure-treated wood in landfills. Do not use treated wood as compost or mulch. Treated wood should NEVER be burned because of toxic chemicals produced as part of the smoke and ashes.

## **For more information**

Please contact your local hardware/lumber store for more information about pressure-treated wood and sealant products on the market. For questions about water quality and lake biology, contact the DES Limnology Center at (603) 271-3414.