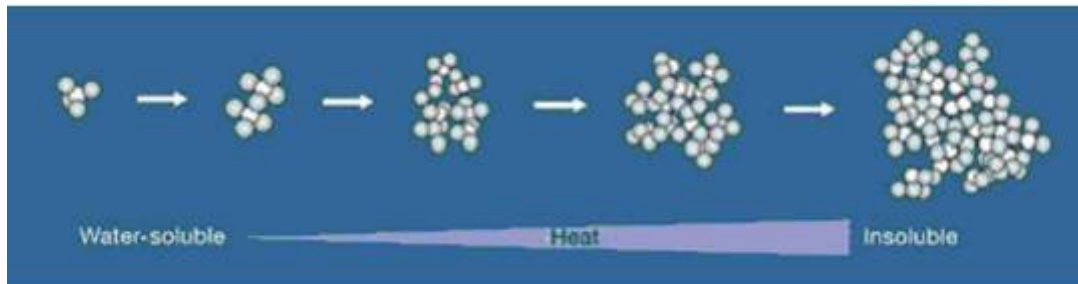


Toxin-free TimberSIL®

Wood produced by an innovative and environmentally friendly process called TimberSIL® will soon be available to builders and consumers for decks, docks, fences, and children's playground equipment. TimberSIL®, based on a sodium silicate formula, protects wood in a radically new way. The new barrier product promises to be gentle to the environment.

Wood intended for outdoor use must be protected from common wood problems. Since the 1970s, most wood used in outdoor residential settings has been treated with chromated copper arsenate (CCA). Because of health and environmental concerns about the chemicals, including arsenic, that leach out of structures made with CCA-treated wood, CCA was phased out of consumer use in 2003, thanks to an agreement between the U.S. EPA and industry.



Molecule growth during polymerization of TimberSIL®. Ultimately, the molecules grow large enough to form a barrier to organisms.

Since the phaseout of CCA, several arsenic-free alternatives have emerged, including preservatives based on amine copper quat (ACQ), borates (disodium octoborate tetrahydrate), and copper azoles. Other building materials, including composites and redwoods such as cedar, have also grown in use.

The TimberSIL® process combines wood with an amorphous glass barrier, making wood no longer available as a food source for bugs and other microbial agents.

“We don’t kill anything,” explains TimberSIL®’s inventor Karen Slimak, an environmental toxicologist and CEO of TimberSIL® Products (www.timbersilwood.com). “We just don’t interact at all. Organisms are not going to get a food source.

TimberSIL® uses a “micro-manufacturing process” to create a barrier, making wood unavailable to small insects and microbes and rendering it unrecognizable as a food source at the cellular level.

Although, for competitive reasons, Slimak declines to describe the process in much detail, she acknowledges that it involves first infusing a water-based formula containing various ingredients, including sodium silicate, into the wood and then heating it under certain conditions. The end result is that “we surround the millions of fibers that comprise wood with layers of amorphous glass that are only a few molecules thick.” Organisms perceive the finished product as glass, not wood.

Because TimberSIL® is not toxic, its environmental impact is expected to be negligible, says Slimak. “The properties of amorphous glass are well known, and known to be innocuous.”

“Assuming that it performs as expected [over the years], the TimberSIL® process has the potential to revolutionize the wood industry, because it eliminates the use of toxic chemicals,” explains

Alex Wilson, executive editor of Environmental Building News.

“Sodium silicate is a fairly harmless chemical that has been widely used in laundry detergent and other consumer products for over 100 years and as a corrosion inhibitor in municipal water treatment plants. It is not considered harmful to humans and is not regulated by the EPA,” Wilson says. A further benefit, he points out, is that, “TimberSIL® is not corrosive to steel. Corrosivity has become a significant problem. In some situations, steel fasteners are corroding and structural failures may occur.” —Mary Kathleen Flynn

