

## Reference Publications

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# Is Your Child's Sandbox a Safe Place to Play?

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[Childhood Education](#) , 2006 by [Enge, Nola](#)

My father, visiting from another state, had just finished a homemade sandbox for my children and was unloading sand from the local home improvement store. I hurried outside to make sure the bag specifically was labeled play sand; I had heard bad things about all-purpose sand and didn't want it anywhere near my toddlers. Exactly what was dangerous about it I couldn't recall. I just remembered that some kinds of sand were considered "safer" than others. I decided to do some online research before he emptied the bags.

The company from which we purchased the sand had pictures of what appeared to be the very same play sand in California, with one disconcerting difference on the label:

### CALIFORNIA PROPOSITION 65 WARNING

This product contains crystalline silica, which is "known to the State of California to cause cancer . . . , birth defects and reproductive harm."

It was time to halt the sand project and figure out what California lawmakers disclose that those in other states do not. I needed to learn about crystalline silica, what it was doing in our sandbox, and how it could harm children.

Crystalline silica, as I should have recalled from geology class, is found everywhere. "It is in every part of every continent. It occurs plentifully in nature and is used commonly in industry" (United States Department of the Interior [USDOI], 1992, p. 5). It is in all soils, even in the dust in the air. Quartz, the most common form of crystalline silica, is the second most common mineral in the world. And silica is formed from silicon and oxygen, the two most common elements on the earth's crust. It is in the dust in our homes, in unwashed potatoes and carrots, in manmade items such as cleansers, jewelry, glass, furniture foam, and even the pharmaceuticals we swallow. Even the White House is made of materials containing crystalline silica in the form of quartz (USDOI, 1992). If it is literally everywhere, how bad can it be in our sandbox?

According to the Occupational Safety and Health Administration (OSHA), crystalline silica has been classified as a human carcinogen, and so breathing the dust can cause silicosis, a disease that can be disabling or even fatal. "Silica exposure remains a serious threat to nearly 2 million U.S. workers" (OSHA, 2002, p. 1). "Beach sand, play sand for sandboxes, and sand used in golf courses are no different than industrial sand used for construction, in sandblasting, or on icy roads. All are largely crystalline silica" (USDOI, 1992, table 2).

I was learning some disturbing facts that only seemed to create more questions. I found the hazards of crystalline silica in the workplace to be well documented. But I wanted to know if the exposure to children in sandboxes is so minimal as to not warrant studies, or, as I feared, did children simply lack the political power to be protected by agencies like those that monitor occupations?

While crystalline silica is a known human carcinogen, the amount of exposure is a factor. Were children simply not at risk because their exposure was not the 5-15 years associated with chronic silicosis? But acute silicosis can occur after only a few months of extremely high concentrations of respirable silica. Can we assume that play sand is highly concentrated because it is largely crystalline silica?

I turned to Dr. Michael Babich, a scientist at the Consumer Product Safety Commission (CPSC), who worked on the one study I found that looked specifically at play sand and children's exposure to it (CPSC, 2004, p. 71). While this study has not reached any definitive conclusions yet, he was able to help me understand the following:

The science is not well understood with regard to childhood exposure because there is no way to get the answers. Researchers would have to follow children for a lifetime, and even then couldn't distinguish cancers from a crystalline silica exposure and those from other environmental exposures, like pollution.

It is much easier to show a connection between cancer and workers in high-risk occupations. They are exposed to higher levels for longer periods of time than children are in the sandbox. Additionally, in the high-exposure settings (such as at work sites that involve sandblasting, concrete mixing, brick cutting), the freshly fractured particles release free radicals, which have large surface areas, that get into lungs and cause chemical reactions. Because these surfaces don't stay reactive for very long, the risk likely has decreased by the time consumers come into contact with play sand.

The CPSC study measured many different brands of play sand and found most of their samples were between 90-100 percent pure crystalline silica. Although children are exposed to crystalline silica in the sandbox, we just don't know at what levels or how it affects them. Babich said that we do know the risk to children is, at worst, much lower than it is for workers. Children are exposed at lower levels and intermittently (M. Babich, personal communication, August 26, 2005).

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