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Major brands of kids' crayons contain asbestos, tests show

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SEATTLE POST-INTELLIGENCER REPORTERS

Three major brands of crayons – scribbled with and nibbled on by millions of children worldwide -- contain asbestos, tests conducted for the Seattle Post-Intelligencer show.

Eight brands were examined -- four domestic and four manufactured overseas. Analysis of three brands -- Crayola, Prang and Rose Art -- by two government-certified laboratories repeatedly showed the crayons contained asbestos.

Of the 40 crayons tested from the brands that had asbestos, 80 percent of them were contaminated above the trace level. (See Commission cautions parents)

As the manufacturers and the federal government reacted with surprise and concern to the P-I's test results yesterday, the institute that is paid to certify the crayons as non-toxic initially said that crayons could not contain asbestos. The institute's chief toxicologist said the P-I's tests were likely mistaken. But then he acknowledged the institute does not routinely test for asbestos.

The crayon makers said product safety is a paramount concern, and some said they had already begun to review their manufacturing processes and materials in light of the P-I's findings.

The asbestos is most likely a contaminant of the talc that most companies use in crayons as a strengthener for the paraffin and coloring agents.

Public-health experts, including pediatricians and asbestos specialists, reacted angrily and called for the immediate removal of asbestos from crayons.

"It just makes no sense in the world to put a substance with the toxicity of . . . asbestos in crayons when safe alternatives exist," said Dr. Philip Landrigan, pediatrician and director of the Center for Children's Health and the Environment at Mount Sinai School of Medicine in Brooklyn, N.Y.

"This is not a circumstance where you go through the rigorous toxicological and epidemiological studies," Landrigan said. "You just get it out of there."

The P-I tested the crayons as part of its continuing examination of asbestos hazards in consumer products and the difficulties of regulating them.

In Crayolas, by far the world's largest-selling crayon, the amount of asbestos ranged from .05 percent in Carnation Pink to 2.86 percent in Orchid. Prang went from .3 percent in its Periwinkle to .54 percent in a yellow crayon. Rose Art had .03 percent in a brown crayon and 1.20 percent in an orange.

"We are in the process of looking at all of our materials," said Tracey Muldoon Moran, a corporate spokesperson for Binney & Smith, which makes Crayolas, after the P-I notified the company of the test results.

"With the information that we have today, we do believe that our products pose no health threat, but we have already begun to investigate alternatives to the material being questioned -- the talc -- so we can properly address any potential concerns consumers might have," she said.

"We have taken this matter very seriously and were getting as much information as we can. Safety is crucial to our brand and the trust we've built with consumers."

Prang Crayons are made in Sandusky, Ohio, by the Dixon Ticonderoga Co. of Heathrow, Fla.

Ronald Shaffer, Dixon Ticonderoga's chief operating officer, said his company's main concern is the safety of its products.

"Every crayon that we and our competition makes are for the kids and we spend a lot of money certifying the safety of our products through testing done by the Arts and Creative Materials Institute," said Shaffer. "They set all the standards for the toxicity testing and they tell us that there isn't asbestos in the crayons.

"We are collecting all of the information from our suppliers that provide the talc, trying to see what they know is in it."

Repeated attempts were made to contact officials from Rose Art Industries Inc. in Livingston, N.J., but no one could be reached for comment.

No one could point to any study that has examined the asbestos contamination of crayons, but everyone interviewed agreed that asbestos at any level should not be in products that children play with.

The dangers of asbestos are well known. Tens of thousands of miners, shipyard and construction workers and their family members have died of asbestos-caused diseases.

(For more information, see **Asbestos, the Forgotten Killer**)

The Environmental Protection Agency banned products containing the lethal fibers in July 1989, but two years later a federal appeals court threw out the ban after a legal challenge by the U.S. and Canadian asbestos industries. Despite increased attention by the EPA to asbestos in consumer products, the agency's leadership has not attempted to reinstate the ban.

The amounts of asbestos found in the crayons were far lower than the exposures received by workers. But many studies show that infants and children are far more susceptible to toxins and carcinogens than adults.

One of the problems is that the latency period -- the length of time between exposure and the onset of disease -- can be 20 years or more.

To ensure that the asbestos in crayons purchased in the Seattle area was not a regional anomaly, the P-I also bought and tested crayons bought in Massachusetts, Florida, Texas and California. The level of asbestos contamination was consistent in all of them.

The laboratories contracted by the P-I reported only the asbestos fibers that government and medical experts have stated are the length, size-ratio and type known to cause cancer.

The Art and Creative Materials Institute, a trade association paid to certify such materials as non-toxic, insisted the tests must be wrong.

"There is no asbestos in crayons," said Debbie Fanning, the institute's executive director. "The toxicologist evaluates the products and if there was asbestos in crayons, he'd be right on top of that. We check for lead in crayons and asbestos is that much worse," she answered when asked how she knows the crayons aren't contaminated.

The institute's toxicologist, Dr. Woodhall Stopford, suggested that the government-certified laboratories used by the P-I were "confused" as to what they were seeing under the microscope. The labs, which routinely do work for the EPA, stand by their results.

Stopford said that his earlier analysis of Crayola, Prang and Rose Art products showed no asbestos at all. But then he added, "We don't analyze crayons for asbestos and doubt that we ever will."

Stopford continued, "I basically don't allow any detectable asbestos in any product that I certify," but then said, "We don't analyze talc for asbestos that goes into crayons because I'm not aware of any talc in our program that had asbestos in it."

The Consumer Product Safety Commission said yesterday that the agency has never heard about asbestos in crayons.

"We are surprised that it's there and we're in the process of getting ahold of companies to find out what they know about what's in their crayons. We're having discussions with them now," said Ronald Medford, assistant executive director of Hazards Identification at CPSC.

"We're trying to find out exactly what's going on. Is there asbestos in crayons? How much is there? Where's it coming from? And what's the risk as a result of its being there?"

Medford said the commission must determine not only whether there is asbestos in the products, but also how much, and how it would get into a child's body.

"We certainly know how to do the exposure assessment to the crayons but we need to try to determine how much they would ingest and we now have a scientist looking into it," he said.

Asbestos fibers cause cancer, but to do so, they must enter the body.

Inhalation, the breathing of fibers into the lungs, is the most common and heavily researched pathway.

Ingestion -- eating, drinking or otherwise swallowing of fibers -- is a less researched route of exposure and discounted by some as a serious threat.

But in 1987, the Department of Health and Human Services gathered a team of experts from EPA, CDC, NIOSH and OSHA and evaluated 11 studies on ingestion done over the previous 20 years.

The interagency report concluded: "The potential hazard should not be discounted, and ingestion exposure to

asbestos should be eliminated whenever possible."

The task force's work was unchallenged by experts in the field and remains so today, said Dr. Richard Lemen, formerly deputy director of NIOSH and an assistant surgeon general.

Toxic material has been found in crayons before. In 1994, the Consumer Product Safety Commission ordered 11 brands of crayons, all produced overseas, off store shelves because lead was found in the pigments. Lead has been proven to cause brain damage in young children and infants.

Crayons are the unchallenged favorite of children. Researchers at Crayola, which makes 12 million crayons a day, have determined that by age 10, the average child has worn down 723 Crayons.

Today's vivid colors, far brighter and varied then the traditional eight that baby boomers grew up with, can hold the attention of a child for hours. And they don't just use them to make pretty pictures.

Children eat crayons, as many parents know.

"Everyone who has a child knows that everything goes into their mouth," said Dr. Michael Harbut, director of the Center for Occupational and Environmental Medicine in Detroit. "The old shoe box, or whatever a child uses to keep their old crayons, has a layer of bits of wax and crayon shavings in the bottom. This gets all over their hands and into their nose and mouth. If there's asbestos in that wax, you've got the potential for real health hazards."

Watching children at a preschool presents a wide range of creative uses for the waxy sticks.

Some children enjoy sharpening the crayons down to a nub, pausing only to color long enough to break off the point and sharpen it again.

They burrow their heads into the containers, sniffing the distinctive crayon scent.

Crayola says that a Yale University study documented that the aroma of crayons are among the country's 20 most recognizable smells.

More than 100 different brands of crayons are sold in North America. Scores more come in from overseas. Twenty-five companies that produce about 100 different brands and packaging of crayons are members of the Art and Creative Materials Institute, according to Fanning. Membership in this association costs between $450 to $41,000 a year, depending on the size of the company, and permits the use of the dime-sized logo, mandated by the government, which says CP Non-Toxic.

Crayons tested from the P-I manufactured in Malaysia, China, Indonesia and Mexico all carried the words non-toxic but did not carry the institute's logo.

No asbestos was found in these products.

The three domestic products in which asbestos was found all carried the institute's seal.

Cancer specialists and public health experts were not shy yesterday about saying something must be done immediately.

"It's just imprudent to put a product as manifestly hazardous as asbestos in material such as crayons," said Mount

Sinai's Landrigan, who is also a long-time asbestos expert and served as senior adviser on children's environmental health to the EPA.

"The way you use crayons is to abrade them. That's how they transfer the color. In the course of using them, the risk exists that some of the asbestos fibers are liberated and can be inhaled by a child whose face is close to the paper. It's not sensible."

Landrigan said it's not time for the CPSC to be subtle.

"The commission loves to persuade manufacturers to adopt voluntary codes. They hate to put the hammer on people," Landrigan said. "But they should put the hammer on manufacturers for something . . . like this."

Dr. Michael McCann, a chemist and industrial hygienist who founded and directed New York's Center for Safety in the Arts, said the industry must take action immediately.

"Once an issue like this is raised, it's up to the industry to prove it's safe, not the other way around. I don't believe that products are innocent until proven guilty," McCann said.

"The crayon particles can get into the lungs in the form where it can do damage," he said. "I'd be concerned about what happens to it there. Is the asbestos covered by the wax? Does the child's body temperature melt the wax? There are lots of questions which must be answered and answered promptly."

Harbut said, "The metabolism of a young child is such that they are even more sensitive to toxins. Levels of asbestos exposure that would do minimal harm to an adult can cause serious disease in a child after the latency period has run its course."

The risk is real, said Dr. Alan Ducatman, professor of medicine at West Virginia University School of Medicine. "If there's inhalation of asbestos it has been demonstrated time and again that there is a risk. It's possible the risk is small, but there is a risk."

"The stuff is clearly a carcinogen," said Dr. Barry Castleman, an environmental consultant and doctor at the Johns Hopkins school of Public Health.

"There's just absolutely no reason to be exposing children needlessly to asbestos and then have the industry and the government standing together saying, 'Well you can't prove it's killing anybody,'" Castleman said.

Dr. Drew Brodkin, co-director of the University of Washington's Pediatric Environmental Health Specialty Unit, said any exposure to a carcinogen is worrisome.

"There's not a safe level, and any route of exposure -- inhalation or ingestion -- would be a concern."

"Childhood exposures to carcinogens are responsible for a very significant incidence of adult cancers," said Dr. Samuel Epstein, professor of environmental and occupational medicine at the University of Illinois Medical Center and director of the Cancer Prevention Coalition. "And that is also an overwhelmingly neglected area."

West Virginia's Ducatman said parents should understand that "no one should ever say there's no risk.

"I'm not saying there's any good news here, but the relatively good news is the probable level of individual risk is very low, otherwise we would have noticed the increase in cancer already.

"At least I'm hoping so."

For more information

- **Crayola:** 800-CRAYOLA
- **Prang:** 800-624-9430 ext. 598
- **Rose Art:** 800-CRAYONS
- **Consumer Product Safety Commission:** 800-638-2772

About the testing

The Post-Intelligencer tested crayons after readers, responding to the newspaper's earlier stories on the hazards of asbestos, suggested that products containing talc should be examined.

Talc is used by almost all crayon manufacturers as a strengthening agent, and asbestos is a frequent contaminant of talc.

Because of the sensitivity of the issue, and after the early testing showed significant levels of asbestos in most of the samples, the P-I ordered additional, more sensitive testing of the crayons.

The standard method used to analyze bulk materials for asbestos is Polarized Light Microscopy (PLM). That process uses light shifted with a polarizing lens to identify the percentage of asbestos fibers present.

This is a good method for samples that contain larger asbestos fibers, explains John Harris, director of Lab/Cor, one of the two laboratories used by the newspaper.

But if the bulk sample contains smaller fiber populations or has some type of interfering material present, transmission electron microscopy (TEM) is a preferred analysis type.

The TEM method, with its greater sensitivity, uses a combination of chemical and atomic crystalline information to determine the exact asbestos type and characteristics in a sample.

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