

CONSUMER SAFETY**NANOTECHNOLOGY**

The Consumer Product Safety Commission is responding effectively to the rise in nanotechnology and potential risks, the commission's chairman tells Bloomberg BNA. This Special Report examines the agency's efforts in protecting consumers from the uncertain health risks posed by nanoparticles, which Chairman Elliot Kaye said could mimic the hazards of asbestos when inhaled.

*Special Report***Proposal for CPSC Nanotechnology Center Would Study Consumer Health Risks**

BY REBECCA KERN

The use of nanotechnology in consumer products continues to grow each year, prompting the CPSC to seek funding to expand research into the health effects of the tiny particles in goods sold to consumers.

"Our understanding is that nanotechnology is very prevalent and it's not well-labeled," Consumer Product Safety Commission Chairman Elliot Kaye (D) said in a recent Bloomberg BNA interview.

"So consumers have no idea when they swing a tennis racket, and the ball hits the racket, some nanoparticles may be released, and you're breathing it in," he said.

Kaye made a comparison that indicated a high level of concern about nanotechnology. "From a health perspective, it might mimic, to some extent, asbestos and the hazards that are posed by asbestos," specifically that consumers can be exposed to nanomaterials through inhalation, he said.

Tiny Particles

Nanotechnology involves the ability to see and to control individual atoms and molecules. The use of nanotechnology allows scientists to produce materials

at a nanoscale, which is about 1 to 100 nanometers. One nanometer is approximately 1/100,000th the width of a human hair.

The CPSC recognizes that nanotechnologies can improve a product's strength, flexibility, stain resistance and cleaning ability, according to the agency's fiscal year 2016 budget request.

The agency requested \$7 million to establish a nanotechnology center—the Center for Consumer Product Applications and Safety Implications of Nanotechnology (CPASION) (43 PSLR 170, 2/9/15). The center would be a consortium of scientists tasked with researching "robust methods to quantify and characterize the presence, release and mechanisms of consumer exposure to nanomaterials from consumer products," the CPSC said in the budget document.

However, the funding is still contingent upon Congressional approval. CPSC staff members recently briefed the four appropriations subcommittees in Congress on their budget request, including the funding increase for nanotechnology research.

"My sense of it was that there was interest in the [nanotechnology] proposal, without tipping in one direction or another," Kaye told Bloomberg BNA Feb. 10. "I'm certain that should I have an oversight hearing of

some sort, we'll all get a good gauge as to how they feel about it then."

Kaye said the agency anticipates there may be a House appropriations subcommittee oversight hearing in early March for CPSC as part of the budget cycle.

Nanotechnology Center Set-Up

The CPSC would establish a five-year interagency agreement with the National Science Foundation and an academic institute to house the center, similar to the existing model between the NSF, the Environmental Protection Agency and Duke University.

"We envision the center being much more than researchers taking money and looking at things," Kaye said.

"We look at it as a hub where not only can this core research be done, but the manufacturers can go to it, can engage with it, learn from it and see what they can do to make sure that they use nanoscale materials in their manufacturing process safely," he said. "Also consumer advocates or any other representative can have a place to have policy questions answered and just to engage and learn more."

He said the CPSC would play a role in overseeing the research.

"We would be providing the overall guidance and direction from a research perspective, and then I would imagine that you would see a lot of regular interaction between our in-house experts and those academics and scientists from the outside who would be located at the center," Kaye said.

Ubiquity

Nanotechnology has become a ubiquitous ingredient in consumer products today.

"Our sense is that it's already out there to a large degree," Kaye said.

The Woodrow Wilson International Center for Scholars issued a report in 2008 analyzing the CPSC's role in nanotechnology, their most recent report on the topic, saying that nanotechnology is used in all of the categories that CPSC regulates, including toys and baby products, sports and fitness equipment, home improvement and garden equipment, clothing, appliances, electronics and computers.

The Wilson Center also established a Consumer Products Inventory, which has documented more than 1,800 consumer products to date that have been identified as containing nanotechnology, Todd Kuiken, a senior program associate in the Science and Technology Innovation Program in the Wilson Center, said in a Feb. 12 interview.

"We know we're probably grossly underestimating the actual number of products that are on the market [with nanotechnology]," Kuiken said, as their inventory only includes products containing nanomaterials that have been identified by the manufacturer, an advertis-

ing agency, a research organization or third party. "It's probably impossible to suggest what a number would be" for all of the consumer products that contain nanomaterials, as many do not label these ingredients.

Kaye said his initial priority in nanotechnology research would be children's products.

Likewise, Jaydee Hanson, the policy director at the International Center for Technology Assessment, said in a Feb. 10 interview, "Any of the products that children are going to be using would be my first priority. I would like the CPSC first to focus on the products that children might put into their mouths or that adolescents exercising might be using."

Timing of CPSC's Regulatory Approach

Kaye said the CPSC is trying to take a proactive approach to nanotechnology, unlike the slower approach the agency took toward lead and phthalates before Congress stepped in.

"This [nanotechnology center] reflects where we're trying to go as an agency," he said. "This is a forward-thinking, yet cost-effective approach to consumer safety."

He said the agency's approaches toward regulating lead and phthalates in consumer products "churned and stewed for a long time without definitive government action." He said this led the lawmakers on Capitol Hill to "take somewhat of a blunt and crude approach [in the Consumer Product Safety Improvement Act] to trying to address concerns of those two particular hazards after they've already been well-established hazards and manufacturers have been using those hazards in either those heavy metals or chemicals for years."

Kaye said the delayed reaction toward lead and phthalates "caused significant disruption to the market."

"Unfortunately nanotechnology is already out there to a large degree but it's still relatively early in the nano world," he said. "What we're proposing is a better model for not only public health, but also for keeping federal costs down."

However, others think that the CPSC is actually bit behind the ball on nanotechnology.

"If they can pull off and get this center up and running, I think that's a good thing," said the Wilson Center's Kuiken. "It's a little late for it, but it's better late than never."

"The CPSC is doing the best they can," Kuiken said. "They are one of the agencies we've identified as needing to take a bigger role in looking at nanomaterials because we were seeing all of these products enter the market, and a lot of them fell under the purview of CPSC."

He expressed concerns about the CPSC's funding for nanotechnology. "They have a small budget to be able to do the kind of research into these products" necessary to determine their impact, he said.

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Past Work on Nano in Consumer Products

The CPSC started receiving small amounts of funding for nanotechnology research in 2009, but the funding was increased to a constant \$2 million per year starting in 2011, Scott Wolfson, the CPSC spokesman, told Bloomberg BNA.

The CPSC has spent the nanotechnology funds researching children's products, paints and coatings, pressure-treated wood, clothing and textiles, laser printers, and sports equipment, he said.

The agency has also used the funding to establish agreements with other agencies, including the EPA, NSF and Food and Drug Administration. It's also set up agreements with academic institutions, including the Virginia Polytechnic Institute and State University, the Harvard School of Public Health, Rutgers University and Duke University, he said.

The CPSC has also been a member of the National Nanotechnology Initiative, which is composed of 25 government agencies that have committed resources for nanotechnology research to meet data gaps in environmental, health and safety research needs (41 PSLR 1107, 9/16/13).

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The CPSC's budget request is available at <http://op.bna.com/pslr.nsf/r?Open=rken-9t1rl7>.

The Wilson Center's Consumer Products Inventory is available at <http://www.nanotechproject.org/cpi/>.

The Wilson Center report is available at <http://op.bna.com/pslr.nsf/r?Open=rken-9t1rye>.