

Research Priorities in Nanotech: The Consumer Protection Imperative

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ConsumerReports

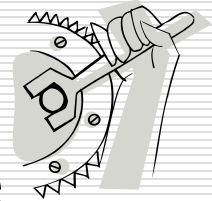
Are they "Safe ?"

- How are they used?
 - What are the hazards?
 - Exposure and Fate?
 - Known Risks? Uncertainties?
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Consumer Expectations



- Ingredients are "Safe"
- Products Perform
- Consumer Can Choose
- Government Can Act



Consumer Protections Needed

- Labeling – definitions, test methods, nomenclature
 - Premarket safety testing
 - Strong regulations limiting use in exposure-intensive applications
 - Life cycle assessment
 - Ongoing public involvement
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More Nano Products

- ANEC/BEUC Inventory
2009 - 150
2010- 475 products
claiming to contain nano-materials
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5-MINUTE CONSULT

No-nano sunscreens?

The claim. Some sunscreen and sunblock makers claim their products contain no ultrasmall nanoparticles.

The check. Tests we commissioned from an outside lab found nano-size ingredients in four of five purportedly nano-free products...

clear the blockage with angioplasty, insert The patient who chose conservative All of them.*

CLAIM CHECK

No-nano sunscreens?

The claim. Some sunscreen and sunblock makers claim their products contain no ultrasmall nanoparticles.

The check. Tests we commissioned from an outside lab found nano-size ingredients in four of five purportedly nano-free products we bought between December 2007 and January 2008. They had nanoparticles of titanium dioxide or zinc oxide (or both). Those compounds help protect against ultra-violet radiation that can cause sunburn, skin cancer, and wrinkles. The maker of the sixth product tested never claimed it didn't have nano.

Bottom line. The risks these nanoparticles might pose and how they compare with the risks of other sunscreen ingredients remain unestablished. Consumer Union, publisher of Consumer Reports, thinks the FDA should require safety testing for nano-size ingredients and labeling that discloses their presence.



Product	Nanoclaim	Our findings
Aubrey Organics Natural Sun SPF 25 Green Tea Protective Sunscreen	No. A company representative said the titanium dioxide is not in nano form.	Yes
Badger SPF 30 Sunscreen	No. A customer service representative said the product has micro-fine zinc that sits on the skin and is not absorbed.	Yes
California Baby SPF 30+ Sunscreen	Yes. In its raw form the titanium dioxide is nano, but it is coated with waxes so that it does not enter the skin, a company representative said.	Yes
Kiss My Face SPF 30+ SunScreen	No. The product does not contain nanoparticles of titanium dioxide, a customer service representative said.	Yes
Melanin SPF 30 Sunscreen	No. The titanium dioxide and zinc oxide used are not nanoparticles, according to a customer service representative.	Yes
Zinka Colored Nonoxant*	No. The product contains no nano, a customer service representative said.	No

None of the products tested had nano claims on its label.

*Zinka makes no SPF claim on the package.

New Products with Warnings



Due to the extreme reactivity of the naNO Vapor formula, make sure the container is stabilized for at least 10 to 15 seconds before opening the lid. Otherwise, **nanoparticulated particles invisible to the naked eye may escape the confines of the container. Do not leave the container open for more than 30 seconds.** Due to the unbridled power of naNO Vapor, make absolutely certain that you have read the entire label before using naNO Vapor. You must precisely follow the directions provided.

Product Performance Important

- Much hype in the market
 - Risk vs benefit – trade offs?
 - carbon nanofibers as fire retardant for polyurethane foam?
toxic dust left after fire?
 - manganese oxides for odor control?
 - targeted chemotherapy
 - solar panels; lithium batteries
 - energy to produce carbon nanotubes vs steel?
 - fullerene health risks vs wrinkles
 - Nano-silver – antibacterial: pathogens vs nitrogen-fixing
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Dialogue For Accelerated Action

- Avoid duplicate efforts
 - Mutually supportive research
 - Prepare to Act on Findings to Prevent Risks
 - Clear and Transparent Communication
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