

Legal Lookout: Nanotechnology, Boom or Bust

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by Lynn L. Bergeson

A well-known consumer organization now believes that the government should provide more funds for risk research and regulation of nanotechnology, and should require manufacturers to report health problems linked with nano-ingredients.

The explosion of nanotechnology-enabled products has caught the eye of the prominent Consumers Union, the nonprofit publisher of *Consumer Reports*, the widely read and influential magazine that features product information. The July issue included an article entitled "NANOtechnology: Untold Promise, Untold Risk."^[1] According to the article, while nanotechnology "promises to be the most important innovation since electricity and the internal combustion engine," the article goes on to note that "some applications might pose substantial risks to human health and the environment."

Background

The article reported the nanomaterials market would be nearly \$2.6 trillion worldwide by 2014, up from \$50 billion in 2006. Recently, a global dialogue has emerged about the human health and environmental implications of nanotechnology. While there is broad agreement that nanotechnology holds great promise in many areas, including energy, medicine and remediation, there is no consensus on whether there is adequate information on the biological and environmental implications of such products and processes to fully assess potential risks they pose.

The article concluded that the responsibility for protecting consumers mainly rests with government and industry. In particular, the organization believes that the government should provide more funds for risk research and regulation, and should require manufacturers to report health problems linked with nano-ingredients.

The magazine acknowledged that no confirmed cases of harm to humans from manufactured nanoparticles have been reported, but stated "there is cause for concern based on several worrisome findings from the limited laboratory and animal research so far," including the following examples:

Certain benign materials can become toxic when nanosized because microscopic particles tend to react more readily with human tissues and other substances; Nanoparticles can enter the body and its vital organs, including the brain, easier than larger particles;

Some nanomaterials seem to linger in the environment, especially in the water supply, where studies suggest they can damage the ecosystem;

Fullerenes, composed of spherically arranged carbon atoms used in cosmetics and other products, might damage cells in fish, and harm human liver cells and DNA; and

Carbon nanotubes have similar fibrous shapes to asbestos and some animal studies have indicated that one type can inflame the lungs.

Implications

The clearest implication of the article was heightened awareness of an ongoing debate around the inherent safety of nano-enabled products. While this debate is not likely to subside any time soon, the fact that *Consumer Reports* featured the topic certainly will raise consumer awareness by a significant margin.

Stay tuned. There will be many more articles and controversy on these and related topics as nanotechnology continues its march toward commercialization.

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References

1. The full article is available in the July 2007 issue of *Consumer Reports*. The article is also available at www.ConsumerReports.org.