



Nanotech, “Toxic Socks” Raise Concerns

Nanotechnology is available at a store near you. Valued for its antiseptic and odor-fighting properties, nanoparticle silver is the star attraction in products from socks to bandages to washing machines. But as its benefits make it popular, scientists suggest a closer look at the environmental and health effects of nanosilver.



Nanotechnology is used in many forms of sportswear

Recent research says that laundering can wash off some of these nanosilver particles from socks treated with the material. They suggest that the particles, intended to prevent foot odor, could travel in wastewater, entering natural waterways where they might have unwanted effects on organisms living in the water and possibly on humans, too. “This is the first report of anyone looking at the release of silver from (a) clothing product,” said the scientist.

Behind those concerns lies a simple experiment. Researchers bought six pairs of name brand anti-odor socks treated with nanosilver. They soaked them in a jar of room temperature distilled water, shook the contents for an hour and tested the water for two types of silver — the harmful “ionic” form and the less-studied nanoparticle kind. “From what we saw, different socks released silver at different rates,” said a scientist. “Some of the sock materials released all of the silver in the first few washings ... Some didn’t release any silver.”

Ionic silver does not just attack odor-causing bacteria. It can change chemical processes essential for life in other microbes and aquatic animals. “Once the silver ions get into the gills of fish, it’s a pretty efficient killer,” said one scientist.

Silver has been used since ancient roman times, though the nanoparticle form has only recently appeared in consumer products. Beyond socks, nanosilver is used in certain bandages, athletic wear and cleaning products. “I’ve spoken with a lot of people who don’t necessarily know what nanotechnology is but they are out there buying products with nanoparticles in them. Our work suggests that consumer groups need to start thinking about these things,” said a scientist. **ST**

