

Edible Nanomaterials Spur Renewed Campaign

The 2009 nanomaterial product safety shareholder resolutions renew a call for U.S. companies using this emerging science to disclose its use and possible associated risks in consumer products they make and sell.

Focusing on the use of nanomaterials in the food industry, proponents this year request that **Kraft, McDonald's** and **Avon Products** report on nanotechnology policies and outline initiatives they've taken to reduce potential risks to the environment and human health. The [As You Sow Foundation](#) states that these extremely small particles create opportunities for innovation, but the scientific community also has raised serious questions about their safety. Nanomaterials will be used in 15 percent of globally manufactured goods by 2014, accounting for a \$2.6 trillion market share, according to projections by an independent research and advisory firm studying emerging technologies, Lux Research.

Concerns about the rapid diffusion of nanotechnology around the world, with minimal regulatory oversight or health and safety testing, are driving the activists' campaign.

The production of nanomaterials, achieved through the manipulation of matter at the smallest scale, is primarily found in cosmetics, anti-aging skin creams and sunscreens, along with other pharmaceutical, retail and food products. Initial research on nanoparticles shows that some of these minuscule materials can interact with human DNA, with unidentified effects.

This quantum physics phenomenon has captured manufacturers' attention because nanomaterials exhibit unique properties such as strength, resilience and superconductivity. To date, researchers have manipulated matter at the nanoscale into many different shapes for commercial use. One example is carbon nanotubes, which are 100 times stronger than steel. At the nanoparticle level, gold melts at room temperature and aluminum becomes explosive. In liquid foods, nanomaterials are said to be used as thickeners or flavor enhancers, among other applications.

But the implications of manipulating matter at such a small atomic level are unknown at this point. Regulators, investors and consumers are increasingly concerned about the health implications of skin absorption and inhalation of nanomaterials during the manufacturing and

disposal processes of products.

The application of nanomaterials in the food industry poses a risk to consumers because minuscule nanofood particles could come into direct contact with cellular tissue and may interrupt tissue and organ function. According to studies cited in a *Friends of the Earth* 2008 report on nanotechnology in food and agriculture, some nanoparticles can even interact with human DNA. For example, nano-titanium dioxide, used as a food additive and antimicrobial agent in food packaging, has been shown to damage human skin when exposed to UV light, has caused liver and kidney damage in female mice, and at certain

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levels in laboratory studies, even destroys DNA.

According to their proxy submissions this year, the proponents believe nanomaterials are being sold to the public at large without adequate testing to ensure safety, and often without any notice or warning of their presence or potential hazard. They say the best way to protect the public and to prevent unnecessary litigation-related financial losses for the companies involved may be to avoid producing products with nanomaterials unless they have been subject to greater evaluation, and to label all products that contain nanomaterials.

In 2008, a shareholder resolution at **Avon Products** was the only nanomaterial proposal that came to a vote in the U.S. proxy season; it gained 25.4 percent support. Calvert re-filed this proposal in 2009.

The [As You Sow Foundation's proposals at Kraft and McDonald's](#) this year concentrate on the growing use of nanomaterials in products known as "nanofood," and potential risk to public health. The proponent notes, "The novel properties of nanomaterials offer many new opportunities for food industry applications, such as potent nutritional additives, stronger flavorings and colorings, or antibacterial ingredients for food packaging. However, these same properties may also result in greater toxicity for human health and the environment." [As You Sow](#) requests that both companies disclose policies on the use of nanotechnology as well as public disclosure of food products and packaging that contain nanomaterials.

—Rachel Miller