

Nanomaterials – are they insurable?

The collaboration between scientists of different disciplines is producing spectacular results: sun creams which block much more UV than ever before, delivery agents that place drugs precisely where needed in the body, or revolutionary new microchips which hold the promise of vastly more powerful computers, mobile phones and MP3 players.

There could, however, be a storm gathering on the nano horizon, one which threatens to derail many of the advances now under development and which may even bring the entire nano revolution to a crashing halt. This potential agent of destruction is one of the world's oldest and well-established industries. Insurance.

It is a bold statement, but most products available in the world today owe their continued existence as much to the global insurance industry as to their original inventor. From deckchairs to scalpels, from toothpicks to oil rigs, to be commercially viable your product needs to be insurable.

Few enterprises would sink resources into developing products for which there is no market. Likewise, why develop a product which nobody is willing to insure? Your product may be fabulous, but if its functionality relies on exotic nanomaterials you may first need to convince your insurance company of its safety and fitness for purpose.

At its core, insurance is a form of risk transfer – a promise to pay if things go wrong. If your product's use gives rise to costly liabilities you will want your insurance company to protect you. In turn, your insurer will expect full disclosure by you of all material facts – those facts which influence the insurer's decision on whether to insure and at what price.

The "A" word

Many companies assume that their existing insurance policies cover the development of products on a nanoscale. In fact, they will probably find that insurance firms would, if and when consulted, regard this as a material change in the risks insured that should have been notified to them.

Even so, with a few exceptions, insurance

companies actually know very little about nanotechnology. Critically, there is a lack of understanding of what nanomaterials are and the risks they may pose. What is apparent is a growing concern about the potential impact on the body and on the environment of small particles having large surface areas. Some studies have shown similarities between carbon nanotubes and asbestos fibres, giving insurers reason to be wary; liabilities from asbestos have cost insurers billions of dollars, and will ravage their balance sheets for decades to come.

Therefore, anyone developing nanotechnology-based products would do well to consider insurance at the conceptual stage, rather than regard it as an automatic right in return for premium paid. Some insurers and reinsurers (companies who insure the insurance companies) are taking a longer term view. The 'emerging risks' team at Lloyd's of London, for example, includes people with a science background who work hard to provide information to the insurance giants' underwriters about the potential risks posed by nanotechnology

🔗 Lloyd's emerging risks

So, if education is the best defence, what are the main risk elements of nanotechnology and how do you obtain adequate insurance?

Main areas of concern

From the insurance standpoint there are three principal risk elements:

- * Occupational health and safety – what level of risk is your workforce exposed to when handling, processing or disposing of nanomaterials?
- * Environmental impact – what happens if nanomaterials escape into the wider environment? What are the implications of materials getting into the atmosphere or watercourse?
- * Product-related exposures – what risks exist in the everyday use of the product, and what risks arise at the end of the product's lifecycle?

There are no off-the-shelf insurance solutions for nanotechnologies. Insurers will treat each case on its merits. Therefore, it's critical that you take all reasonable steps to demonstrate your insurability. Below is a checklist of essential steps:



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- * Gather as much data as possible about the known and predicted impact on the body and environment of the materials your staff will work with. Share this information with your insurer.
- * Agree health and safety practices and procedures for your employees. Provide appropriate personal protective equipment and monitor working environments continually. Where necessary, operate from controlled environments with high security laboratory conditions.
- * Ensure that you have adequate business continuity plans in place to deal with an adverse event.
- * Devise appropriate product recall procedures and maintain accurate records to ensure full traceability in all raw materials and components.
- * Adopt a system of product lifecycle monitoring.
- * Adhere to relevant regulatory frameworks and industry standards and document your compliance. Share this information with your insurer.

Is there a nano future?

A report by specialist emerging technologies analyst Lux Research predicts 15% (by value) of all products will contain nanotechnology by the year 2014 🔗 [Lux Research](#). Insurers will ultimately come to view this exciting new science as an opportunity as well as a challenge.

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