

Lloyd's
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Call for Evidence: Nanotechnologies and Food

Lloyd's is the world's leading specialist insurance market, trusted to shoulder the risks of the world. The Corporation of Lloyd's operates a performance framework for firms in the market to ensure that underwriting, risk management and capital setting is robust. In this capacity we have established an Emerging Risks Team which monitors for potential new threats and assesses the possible impact on the insurance industry.

The rapid pace of development led us to publish a report, at the end of 2007, on the risks and opportunities associated with nanotechnologies. This was launched at a co-hosted seminar assembling an expert panel of insurers, academics and legal experts who presented their views to an audience of underwriters and risk managers. There are many interesting applications for nanotechnology and we understand the societal benefits that will be gained through pursuing this field. However, given the nature of our industry, we are also concerned over the potential health and safety risks that could make manufacturers of nano-enhance products future targets for litigation. There is a compensation culture spreading within Europe and Asia¹ which heightens our concerns.

According to the Project on Emerging Nanotechnologies the use of nanotechnologies in the Food industry the 3rd largest sector to use nanotechnology enabled products, as of August 2008. Therefore it is a major industry in this growing field. Whilst far from clear whether insurance claims would arise, or if made whether they would be upheld, we believe it is important to consider now the extent of insurability of these products. The impact to insurers could manifest itself through several insurance products including:

- Product liability coverage that may pay out for having to recall a large number of products through health risks, perceived or actual;
- general liability coverage may be triggered if manufacturers were negligent in their duty of care to consumers, for example if the nano element of a product was shown to directly cause, or contribute to, a disease;

¹ "Directors in the dock" - Lloyd's 360 project report,

- general and environmental liability policies may also become exposed with respect to environmental disasters, for example if silver nano particles were to accumulate within the environment and either travel up the food chain or by killing bacteria and microbes essential to local or national ecology;
- employer's liability policies, may cover employees who suffer disease or disability through their work in the nanotechnology industry if it were to be shown that the risk management of health risks of processes were to blame.

These risks predominantly relate to health risks that nanotechnology may pose when used in food containers, within food products themselves, or in the exposure of workers when creating the products. There is also the issue of full lifecycle management including how nano-materials behave after they have been disposed. For example, the 27th report by the Royal Commission on Environmental Pollution stated that "to date, adverse effects on populations or communities of organisms in situ have not been investigated and potential effects on ecosystem structure and processes have not been addressed." We understand that questions like this and many others cannot currently be answered. We are also aware of worrying research that suggests that some forms of nanotechnology may have adverse health implications.

One of our key concerns relates to the length of time it takes to establish health impacts in humans. This is important for insurers as, depending on policy terms, we can face the risk of claims for decades after the premium is paid. When setting the premium we have to estimate the level of risk and, with respect to nanotechnology, such estimates are inherently uncertain. The asbestosis cases of the 1990's, led to massive losses for the whole insurance industry. We believe that current spending on health impacts of nanotechnologies is materially smaller than the amount spent on developing products. While we recognise that investment in developing new technologies is essential if the UK wishes to remain at the forefront of the technological economy, we must also protect ourselves from the potential pitfalls of producing the next product equivalent of asbestos insulation, leaded petrol or DDT pesticide.

As insurers it is our business to manage risk. However the quantum of risk must be well understood and limited in aggregate. Where this is not the case the risk can become uninsurable. We are aware of at least one US company that has excluded all aspects of nanotechnology; others are actively avoiding providing direct cover to this industry. There is a danger that some inherently safe nanotechnologies will be treated in the same way as others, such as carbon nano-tubes, which are causing much concern. To combat this we need to identify those specific nanotechnologies that could, or do, pose a significant or long term risk. These could be excluded from cover, or conversely cover could be restricted according to a published list of technologies understood to be generally safe. This would help insurers calculate premium rates that better reflect the risk and ultimately provide assurance against the societal cost of insurer insolvencies over the longer term.

We believe a clearer understanding can be achieved through coordinated research into the effects of nanotechnologies at a national or international level. The outcomes of such research should include standard, flexible and *auditable* risk frameworks that will protect

employees and enable insurers to assess the robustness of companies' risk controls. There should be a requirement to demonstrate compliance with the framework before products are used in food. There should be requirement for companies and Research Councils to advise immediately there is material research evidence to suggest adverse health impacts and the level of materiality should be agreed by an independent body. To utilise a risk framework or perform a risk assessment, research would also have to identify the level of hazard and exposure mechanisms that each type of nanotechnology presents.

It is vital that products, especially food products, have adequate labelling when nanotechnologies are used. In this way the consumer can make an informed choice on whether to purchase the product and this, we hope, will reduce liability costs in the future.

We believe the insurance industry is an important stakeholder in this debate and thank the House of Lords Science and Technology Committee for giving Lloyd's an opportunity to contribute.

Supporting information

<http://www.lloyds.com/emergingrisks/> Lloyd's report on Nanotechnology: Recent developments, risks and opportunities.

<http://www.safenano.org/NanoInsurancePerspective.aspx> Nanotechnology: An insurer's perspective.

http://www.lloyds.com/News_Centre/360_risk_project/Research_and_reports.htm Directors in the dock: Is business facing a liability crisis?

<http://www.nanotechproject.org/> The Project on Emerging Nanotechnologies.

www.lighthillrisknetwork.org Website of Lighthill Risk Network sponsored by Lloyd's, Catlin, Guy Carpenter and Aon-Benfield.

<http://www.rcep.org.uk/novelmaterials.htm> Royal Commission on Environmental Pollution – Novel Materials in the Environment: The case of nanotechnology