IOM

WORKING FOR A HEALTHIER FUTURE

SAFENANO

Are you staying safe with nanotechnology? Take the Nanosafety Test

Nanomaterials and nanotechnology-based products are developing at a more rapid pace than the understanding of the potential risks. Take our test below to see how well you understand:

- **the risks to your business;**
- **your responsibilities across the product lifecycle;**
- **the current regulations applicable to nanomaterials.**

Questions about... Risks

1. Do you know if your nanomaterials are safe?

The hazard characterisation of nanoparticles is carried out by either in vitro or in vivo toxicity assessment, or a combination of both. The novel properties of nanomaterials are such that the toxicological response of these products cannot always be predicted from toxicity data of the bulk material i.e. to fully understand the hazard presented by a specific grade of nanomaterial, a bespoke toxicological assessment may need to be carried out.

2. Do you know what properties determine how hazardous your materials are?

In general, the physicochemical properties and their impact on physiological and environmental systems drive toxicity. For a given nanoparticle it is important to understand the link between physicochemical properties and specific toxicological responses, to determine the most suitable means of identifying and controlling the hazard of that nanomaterial.

3. Do you know if your nanomaterial(s) are released during production or processing?

Release of nanoparticles into the workplace atmosphere can be assessed through an exposure survey. Assessment and characterisation of nanoparticles requires nano-specific instrumentation to determine the presence of nanoparticles released under process conditions and to discriminate these from nanoparticles already present in the ambient atmosphere. The measurement of nanoparticles in the atmosphere is a specialised area and whilst uncertainty still remains on what is the most suitable metric (e.g. particle count, mass, surface area, size, shape etc.), it is prudent not to limit the scope of your assessment.

4. Does the Safety Data Sheet contain appropriate information to allow you to make a satisfactory assessment of the hazards?

A true hazard assessment of a nanomaterial can only be achieved if the relevant toxicology assessments have been carried out. In some cases, Safety Data Sheets (SDS) have been shown to contain data corresponding to the bulk material or an analogue, or simply leave sections blank.

5. Have you developed or refined your Risk Assessments to ensure you have adequately identified and controlled any potential hazards and exposures?

Risk assessment practice should use the best available scientific methods and evidence, in order to develop risk management strategies to protect workers health by ensuring the effectiveness of industrial hygiene practices, exposure controls and other risk management measures.

Questions about... Responsibilities

6. Do you have suitable operational procedures for handling and disposing of nanomaterial hazards?

In order to have appropriate and safe operational procedures in place for nanomaterials, you must first understand the hazard and exposure risks presented by the nanomaterial, the suitability and effectiveness of control measures (e.g. engineering controls and PPE), and the means to monitor safe working.

7. Have you carried out any workplace exposure measurements?

Identifying potential exposure scenarios and carrying out an exposure assessment survey will allow you understand and manage the potential risk to your employees. Measurements inform your decision-making, so that practices and controls are introduced and maintained which are appropriate to the risk.

8. Have you assessed risks to your workers, researchers and/or consumers using your materials and products?

There is a need for a greater understanding, due to limited availability of information on the sources and effects of exposure to nanomaterials in workplaces and consumer settings, throughout the life cycle of products.

9. Have you and your staff been briefed about nanomaterials safety?

The hazards and risks presented by nanomaterials can be significantly different from those of the bulk chemical. It is important to educate workers on the sources and job tasks that may expose them to nanomaterials, and train them on how to use appropriate controls, work practices and PPE to minimise exposure**.**

Questions about... Regulations

10. Do you know what existing legislation you have to comply with?

It is important that the relevance and requirements of applicable local and national legislation on health & safety at work, chemical safety, product safety and waste management are considered for nanomaterials.

Some nanomaterial specific regulatory measures have also already been implemented around the World, whilst others are currently under development.

11. Do you have a strategy to develop your business in the light of uncertainties in how nanomaterials will be regulated?

The uncertainty associated with nanotechnology risks and how regulation is evolving to address nanomaterials creates an interesting dilemma: ensuring a high level of protection of public and environmental health and safety must be weighed up against the benefits to society from emerging technologies being developed by large and small enterprises.

CONTACT

William Brown

Tel: +44(0)131 449 8072

william.brown@iom-world.org

OUR COMPANY

The Institute of Occupational Medicine (IOM) is one of the leading providers of workplace health research, consulting and services. Our expertise extends across a very wide range of disciplines.

Established in 1969 in the UK as an independent charity, we have our origins in the research sector where we continue to have an international reputation for pioneering workplace health projects.

IOM employs around 140 staff who help deliver safer working environments and healthier working lives for thousands of employees around the world, across every possible industry and service sector.

From our UK base and headquarters in Scotland, we have 4 regional offices (Edinburgh, London, Stafford and Chesterfield) which serve our UK, European and North American clients. We established our Asian base with IOM Singapore in 2012.

In our research work, IOM has a high global standing through its published research and also the service work it undertakes for leading organisations.

In our consulting and services work, we have a reputation for high quality, authoritative and independent measurement, surveys and reporting, which we undertake for hundreds of clients – large and small – each year.

Today, IOM is one of a select few internationally recognised authorities on workplace health. Our work is accepted across all stakeholder groups, from management to employee representatives as well as regulatory agencies and governments around the world.

www.iom-world.org
Email: iom@iom-world.org

IOM Edinburgh
Research Avenue North
Riccarton, Edinburgh
EH14 4AP
Tel: 0131 449 8000
Fax: 0131 449 8084

IOM Chesterfield
Tapton Park Innovation Centre
Brimington Road, Tapton
Chesterfield, S41 0TZ
Tel: 01246 383 110
Fax: 01246 383 128

IOM Stafford
Brookside Business Park
Cold Meece, Stone
Staffordshire, ST15 0RZ
Tel: 01785 333 200
Fax: 01785 333 228

IOM London
Research House Business
Centre, Fraser Road, Perivale
Middlesex, UB6 7AQ
Tel: 0203 668 0000
Fax: 0203 668 0018