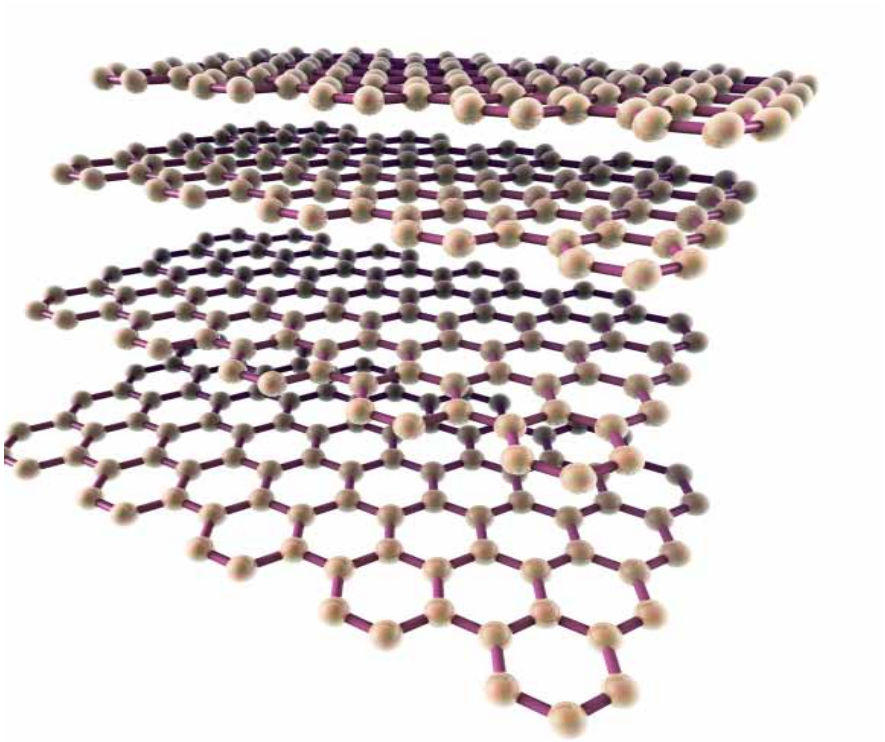
EU NANOMATERIALS REGULATION ON HORIZON

Consumer product regulations are set to change as EU publishes definition of nanomaterials, 2011/696/EU. On October 18, 2011 the European Commission (EC) adopted recommendation 2011/696/EU, providing for the first time a clear definition of nanomaterials, applicable to future legislation that may describe regulations for product labelling, testing and controls. It is anticipated that this definition will provide a basis for consistency across different areas of legislation that may be produced by the European Commission.



HOW ARE NANOMATERIALS USED IN ELECTRICAL AND ELECTRONIC INDUSTRIES?

Nanomaterials are a key part of the emerging field of nanotechnology, which has a range of current and potential applications in both consumer electronics and a range of other industries. Nanomaterials, usually regarded as those with structural features around 1 - 100 nanometres in scale, have potential due to the unique physical, chemical and electrical qualities exhibited at the nanoscale. Within the electrical and electronics (E&E) industry, nanomaterials and other nanotechnologies have shown application and promise in approving the efficiency of batteries, flash memory, processors, photovoltaics, lighting, displays for computers and mobile devices and in unique applications in medical sensors and interfaces. The value of the nanotechnology sector has continued to grow as a result of these developments.

WHAT ARE THE RISKS RELATED TO NANOMATERIALS?

While the benefits of nanomaterials continue to be explored, relatively little is known about their risks. At present, there is no international regulation of nanomaterials. What is known is that some of the properties that give nanotechnologies potential benefit also pose potential risks. Health effects include possible implications of easy absorption into tissues, organs, bloodstream, and possible permeation of blood-brain barrier.

Environmental concerns include permeation of NMs into soils, water cycle and airways. Some observers such as food industry body ELC have pointed out that nanoparticles are already abundant in nature and produced in inadvertently through a range of simple

NANOMATERIALS DEFINITION

The EC Recommendation defines nanomaterials as follows:

"A natural, incidental or manufactured material containing particles, in an unbound state or as an aggregate or as an agglomerate and where, for 50 % or more of the particles in the number size distribution, one or more external dimensions is in the size range 1 nm - 100 nm.

In specific cases and where warranted by concerns for the environment, health, safety or competitiveness the number size distribution threshold of 50 % may be replaced by a threshold between 1 and 50 %. By derogation from the above, fullerenes, graphene flakes and single wall carbon nanotubes with one or more external dimensions below 1 nm should be considered as nanomaterials.".

[1] ELC statement regarding the Commission Recommendation (2011/696/EU) on the definition of nanomaterial

and apparently benign mechanical processes, such as coffee grinding or wheat milling.[1] As such it might seem reasonable to expect that many nanomaterials will turn out to be of low risk.

Even with such reassurances, and while nanomaterials embedded in E&E products may be less likely to come into direct contact with consumers than in textiles or cosmetics, potential risk factors related to E&E use of nanomaterials are still demanding attention. For example, work is already underway from within the Environment Directorate of the OECD to determine means of dealing with nano-risk in battery disposal.[2]

While carbon nanotubes show promise in batteries, they have also been shown to cause low level DNA damage in some contexts. Furthermore, nanomaterials show promise in medical electronics, where more direct exposure to living tissue may be expected. Toy manufacturers will likely also be among those needing to consider risk factors related to contact with or ingestion of nanomaterials that they may wish to employ in batteries, displays, coatings and other parts of their products.

WHAT ARE THE REGULATORY IMPLICATIONS FOR E&E BUSINESSES?

The actual regulatory implications of the EU's definition of nanomaterials remain to be seen. The EU definition is seen for now as being a tool for future legislation that may need to make reference to nanomaterials.[3]

However, it is expected that Risk assessment and REACH implications will exist for all materials classified as nanomaterials. REACH guidelines will be presumably updated, referencing the EU definition of nanomaterials, and providing unique means of risk assessment for nanomaterials based on their unique properties. For now, E&E manufacturers may need to wait to see what regulatory changes emerge.

A key concern raised about the EU's definition is the question of its scope, which some have argued may result in a range of products that have existed for many years being now classified as nanomaterials. These include some mineral pigments and fillers. Among those who have raised this concern are the German Federation of the Chemical Industry (VCI) and Cefic, the European Chemical Industry Council.[4]

For more information on nanomaterials and how the new EC definition of nanomaterials might affect your business, contact:

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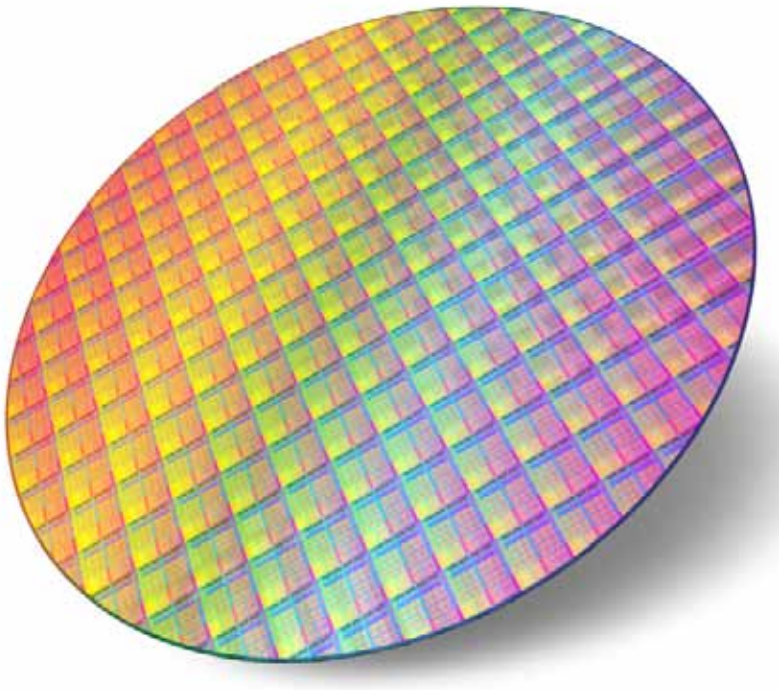

[2] OECD: Nanomaterial Approaches to Enhance Lithium Ion Batteries

[3] Asser Institut: Commission adopted Nanomaterial Recommendation

[4] Getting the measure of nanomaterials