



P50 : NANOMATERIALS AND USE IN BIOCIDAL PRODUCTS

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Nanotechnology deals with particles of 10⁻⁹ meters at molecular level. The upper limit is set 100 nm. Because of it is part of many disciplines such as medicine, physics, chemistry, engineering ultimately new areas was born such as nanophysics, nanomedicine, nanoengineering. Improvements are closely related to many sectors including health, energy, information technology, cosmetics.

Except the size, nanomaterials differ in physical, chemical, optical and conductivity properties. It quickly spread because of many advantages such as being sustainable, lighter, stronger. But harmful effects of nanomaterials to human and environment is not fully understood.

Recently, carbon nanotubes that looks like asbestos has shown to cause diseases of respiratory system with similar effects. Primary mechanism is disturbing protein synthesis and also DNA damage. In addition to inhalation and digestive system it may enter our body through skin.

These reasons requires monitoring and evaluation should based on advanced criteria. New criteria of the European Union to control use of nanomaterials in biocidals are included in Biocidal Products Regulations (EU) No. 528/2012.

Nanofoms of substances in biocidals should not considered to have approval.

Due to properties, active or non-active nanofoms are subject to different assessments.

Each nanomaterial should be in nano-brackets in the label.

Nanomaterial containing products may not take simplified authorization procedure.

Member States have to report on implementation to Commision every five years.

Regulation has entered into force in September 2013, however nanomaterials in biocidal will be re-evaluated. European Commission adopted synthetic amorphous silicon dioxide as the first active nanomaterial in 2014.

Conclusion

Along with the potential to start new era with its features, nanomaterials are also contributing to effective biocidal products, but its potential damage to human and environment make its evaluation must be made with actual assessment methods.

Keywords: Biocidal, Biocidal Product Regulation, Nanomaterial