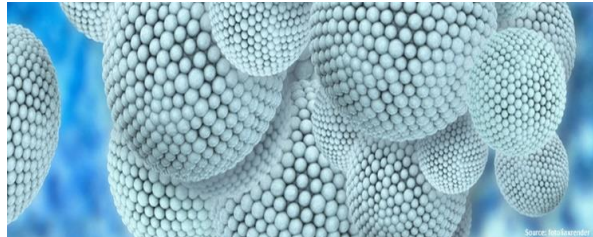


Exposure measurements and risk assessment of manufactured materials-nanoparticles (Nanodustiness project)

Leader(s): INRS

Members: NFA, IFA, INSST and HSE

Completed in 2014



General information

To date, relatively few information is available on assessment of occupational exposure to MMNPs. Although new measurement techniques have been developed, quite some knowledge needs to be developed on their performances, and their applicability remains to be evaluated for exposure assessment. Measurement strategies have to be developed and tested in workplaces. In addition, relevance of dustiness to be used as one exposure determinant in control banding approach need to be examined.

Scientifically credible measurement methods are essential in order to control potential occupational health risk from current and emerging nanotechnologies. Given the fast pace of developments in applications of nanomaterials and the complex and multidisciplinary nature of this issue, there is an urgent need for more international cooperation to accelerate the process of risk assessment. Exposure assessment is a critical component of risk assessment, and improvements in this area will allow development in toxicology, epidemiology and evaluation of effectiveness of prevention measures. The overall goal of the project is to improve the knowledge into how exposure to MMMPs should be measured in the context of risk assessment.

Nanodustiness Project

In the framework of a call for tender of the European Committee for Standardization (CEN) "Standardisation activities regarding nanotechnologies and nanomaterials", PEROSH partners CIOP, HSL, NRCWE, TNO, INRS together with IGF (Institute for the Research on Hazardous Substances) were selected to carry out a work item entitled: "Measurement of dustiness of bulk nanomaterials".

The objectives of the project are to:

- develop a harmonized approach within the involved institutes for evaluating dustiness of nanopowders taking into account the different existing concepts and test apparatus;
- assess the comparability between involved institutes and the reproducibility within one's institute for a given test apparatus using the developed approach;
- evaluate how the dustiness ranking of a selection of nanopowders is similar using the different test apparatus and approach developed within the project.

The work will consist of a prenormative research phase and of elaboration of five European standards. In the research phase four different measurement methods of dustiness of bulk nanomaterials will be evaluated and adjusted. One of the European standards will deal with general guidance and requirements and four standards will specify these methods. To start this 65 month project, a kick off meeting took place at INRS Paris on 29 and 30 April 2013.

Latest news

O. Witschger, K.A Jensen, D. Brouwer, I. Tuinman, E. Jankowska, D. Dahmann, G. Burdett, D. Bard (2014) DUSTINANO: [a CEN pre-normative research project to harmonize dustiness methods for manufactured nanomaterial powders](#). Aerosol Technology 2014, Karlsruhe, Abstract T230A09

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