

OECD WPMN SG8 Co-operation on Exposure Measurement and Exposure Mitigation

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***International Workshop on Documentary Standards for
Measurement and Characterization in Nanotechnologies***

Overview of Current Nanotech Standards Program (1)

- Area of standardization in nanotech related areas:
 - *guidance for exposure measurement (including sampling techniques and protocols) and exposure mitigation for manufactured nanomaterials*
 - 1) *exposure in occupational settings;*
 - 2) *exposure to humans resulting from contact with consumer products and environmental releases of manufactured nanomaterials;*
 - 3) *exposure to environmental species resulting from environmental releases of manufactured nanomaterials including releases from consumer products containing manufactured nanomaterials.*

Overview of Current Nanotech Standards Program (2)

- Pertinent work completed:
 - *Operational Plan [ENV/CHEM/NANO(2007)24];*
 - *Exposure Measurement in Occupational Settings, [ENV/CHEM/NANO(2007)24/ADD1], 2007;*
 - *Exposure Mitigation in Occupational Settings, [ENV/CHEM/NANO(2007)24/ADD2], 2007.*

Overview of Current Nanotech Standards Program (3)

- Work underway:
 - *TNO Report on Identification and compilation and preliminary analysis of guidance information for exposure measurements and exposure mitigation*
- Any prioritization efforts underway (e.g., roadmap development):
 - *Prioritization of projects to be undertaken by WPMN for exposures in occupational settings*

Overview of Current Nanotech Standards Program (3)

- Collaborations:
 - *ISO TC 229 (Nanotechnologies);*
 - *OECD WPMN SG1, SG2, SG5, and SG6;*
 - *WHO Global Network of Collaborating Centers for Occupational Health.*
- Immediate and medium term plans:
 - *Complete projects for exposures in occupational settings*
- Challenges and obstacles:
 - *Lack of national or international consensus standards on measurement techniques for nanoparticles in the workplace*

Research needs (1)

- Measurement
 - commercially available personal samplers designed to measure the particle number, surface area, or mass concentration of nanoaerosols;
 - techniques to discriminate between engineered and incidental airborne nanomaterials and to analyse nanomaterials on surfaces;
 - evaluate sampling and analytical methods developed for assessing dermal exposures for their applicability to characterize dermal exposures to nanomaterials in the workplace;
 - metrics of exposure to nanomaterials;
 - biomarkers of exposure to nanoparticles;
 - correlations between exposures to low concentrations of nanomaterials and changes in biological indicators.

Research needs (2)

- Mitigation
 - effectiveness of engineering controls to reduce exposure levels;
 - limitations of personal protection equipment;
 - applicability of Exposure Mitigation frameworks, such as Control Banding, to nanomaterials.