

A Collaborative Effort to Promote the Safe Development of Nanotechnology in Massachusetts

*Carol Rowan West
Massachusetts Department of Environmental
Protection
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Background

Perchlorate Workgroup, 2001-2006
1st drinking water standard in US

Emerging Contaminant Workgroup, 2006
Screening and Priority Setting Process

MA Interagency Nanotech Committee, 2007

MA Interagency Nanotechnology Committee

- Collaborating agencies include:
 - Department of Environmental Protection
 - Department of Public Health
 - Division of Occupational Safety
 - Office of Business Development
 - Office of Technical Assistance
 - Toxic Use Reduction Institute



Committee Goal: Collaborative Process

- Initiate dialogue
- Share information
- Identify projects
- Proactive/Encourage Federal Efforts

External Advisors

Broaden participation:
Workshops,
forums, etc.

2009 Workshop on Promoting Safe Nanotechnology in Massachusetts

- Overview of Interim Best Practices and Good Current Practices
- Breakout sessions
- Measurement of Nanoparticles
 - Demonstrations

Overview of Best & Current Good Practices

- Dr. Geraci, NIOSH: Managing the Health and Safety Concerns Associated with Engineered Nanomaterials

<http://www.cdc.gov/niosh/topics/nanotech/safenano/>

- Dr. Michael Ellenbecker, Toxics Use Reduction Institute, Center for High-rate Nanomanufacturing (CHN), UM-Lowell

http://www.nano.neu/press/documents/Best_Practices_for_Working_with_Nanoparticles.pdf



Case Studies

- Paint with silver nanoparticles
- Groundwater remediation with zero valent iron nanoparticles
- Sunscreen with titanium oxide and zinc oxide nanoparticles
- Carbon nanotubes in a research setting

Where Can Best Practices Be Applied?

- Paint
 - Manufacturing
- Groundwater Remediation
 - Transportation, groundwater monitoring
- Carbon Nanotubes (CNTs)
 - NIOSH & CHN guidelines applicable

Are Best Practices Feasible and Practical?

- Paint with silver nanoparticles (NPs)
 - Large versus smaller manufacturing companies
- Carbon Nanotubes (CNTs)
 - Adherence to guidelines

Gaps in Best Practices

- Paint with NPs
 - » Labeling, application practices
 - » Environmental releases
 - » Toxicity

- Groundwater remediation with NP
 - » Environmental fate
 - » Breakdown products
 - » Toxicity
 - » Cost benefit

Gaps in Best Practices

- Sunscreen with NP
 - Toxicity, labeling, water impacts, disposal impacts
- Carbon Nanotubes
 - Toxicity, medical monitoring, limited measurement capabilities

Steps State Agencies Can Take:

- Paint : Education, Labeling, Guidance
- Groundwater remediation: Research, Review DuPont's position, Guidance
- Sunscreen: Labeling, product regulation
- CNTs: Guidance on measurement, establish state program, disposal

Overall Themes

- Best and good current practices provide useful guidance
- Gaps need to be addressed
 - Toxicity>Disposal, Water Impacts>Labeling>More practices/guidance
- More consideration of product lifecycle releases
- Promote research, education, guidance, labeling, regulation

MA Future Steps

- Planned Forums
- Guidance & Outreach Materials
- Further deliberations

Questions?

Thank you!

Carol.Rowanwest@state.ma.us

<http://www.mass.gov/dep/toxics/sourcest.htm#ec>

