Strategies for Developing Occupational Exposure Limits for Engineered Nanomaterials: An OSHA Perspective

Janet Carter

Health Scientist
Occupational Safety and Health Administration
Department of Labor

10 September 2012
• Why are OELs important?

• What are the issues with OELs?
Occupational Exposure Limits

- Occupational exposure limits (OELs) are a primary tool for preventing adverse health effects in workers.

- OELs are an important part of a comprehensive occupational safety and health program.
OSHA Permissible Exposure Limits

- OSHA has established approximately 500 substance-specific occupational exposure limits (i.e. Permissible Exposure Limits - PELs)
  - Most contained in 29 CFR 1910.1000 (Z tables)
  - Full standards have been established for 30 specific substances

- OSHA sets PELs to protect workers from health effects of exposure to hazardous substances
  - 8 hour TWA
  - Ceiling limit
  - STEL

- OSHA PELs are based on:
  - Risk assessment
  - Technical feasibility
  - Economic feasibility
OSHA’s Conundrum with PELs

- The Agency has high legal hurdles set through various court decisions (GAO report 2012)
- Establishing PELs on a substance-by-substance basis is very time-consuming, costly, and can quickly become outdated as more scientific evidence is developed
Nanomaterials – highly diverse in form, structure, chemistry

Source: Maynard et al., 2005
OSHA’s Interest in Workshop

• Protect workers
• Promote safe and sustainable stewardship of nanotechnology and the safe use of engineered nanomaterials in the workplace
• Promote collaboration between Federal partners, industry and labor
Potential Workshop Outcomes

• Promote scientific rigor in establishing OELs for nanomaterials

• Develop appropriate parameters/criteria for establishing OELs and potentially updating OELs for nanomaterials

• Identify potential alternatives to setting OELs to protect workers and promote sustainable development of nanomaterials