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

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- **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

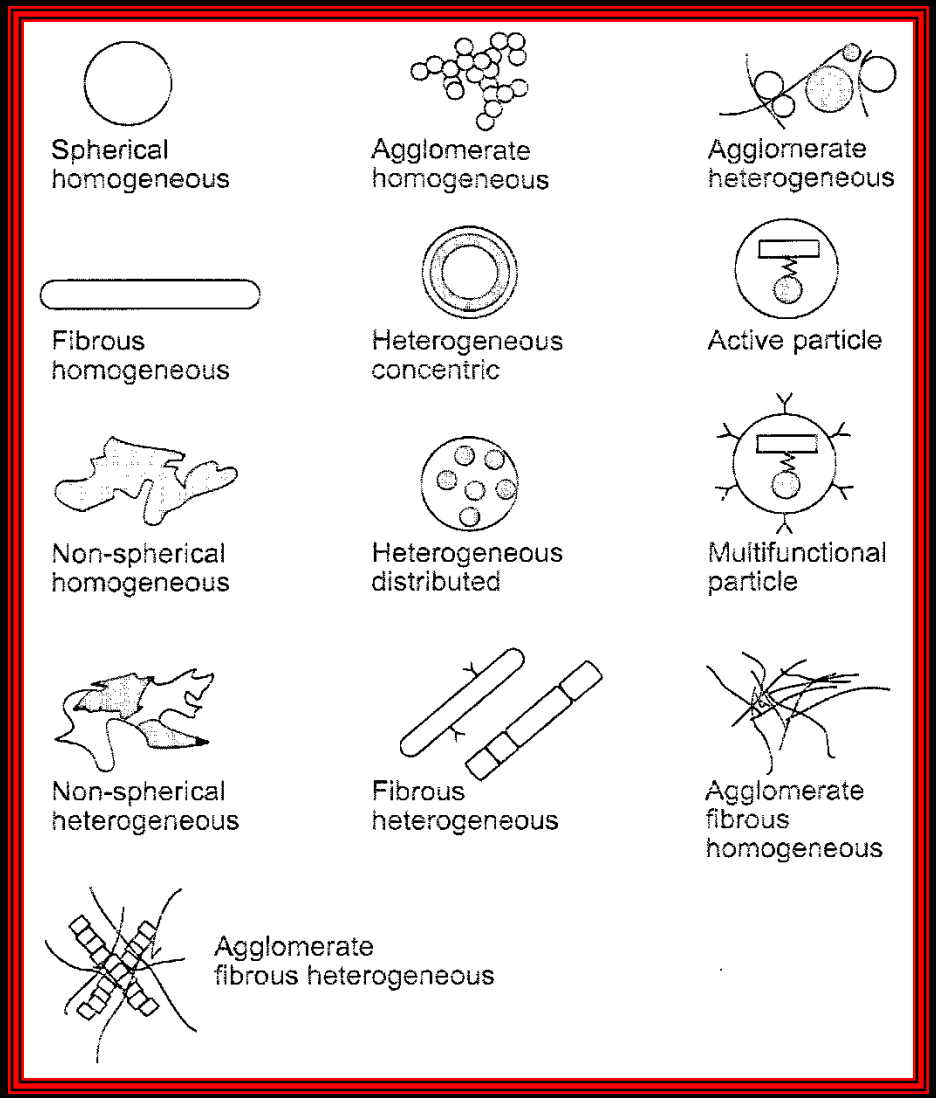
- OSHA has established approximately 500 substance-specific occupational exposure limits (i.e. Permissible Exposure Limits - PELs)
  - Most contained in 29 CFR 1910.1000 (Z tables)
  - Full standards have been established for 30 specific substances
- OSHA sets PELs to protect workers from health effects 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- Establishing PELs on a substance-by-substance basis is very time-consuming, costly, and can quickly become outdated as more scientific evidence is developed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

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

OSHA

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

OSHA