

# Nanotechnology in the Workplace: NIOSH Research to Meet the Challenge

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Nanotechnology has the potential to transform many industries, from medicine to manufacturing, and the products they produce. Research in nanoscale technologies continues to expand worldwide. While this emerging technology holds great promise, it also presents unknown risks, especially to the health of workers. Many questions remain about how to best manage and control the potential hazards associated with the safe handling of nanomaterials. Occupational safety and health issues of nanomaterials are complex. The types of nanomaterials and the opportunities for workplace exposure to them continue to grow rapidly. The challenge is to effectively address the safety and health issues of nanotechnology while helping society realize nanotechnology's far-reaching potential benefits.

The National Institute for Occupational Safety and Health (NIOSH) is the Federal agency in the U.S. responsible for conducting research and making recommendations to prevent work-related injury, illness, and death. NIOSH has collaborated with stakeholders at home and abroad to fill knowledge gaps related to nanotechnology, to identify and characterize hazards associated with nanomaterials, and to develop guidance for workers exposed to nanomaterials. Protecting the health of workers involved with nanotechnology is a global issue that requires international cooperation, commitment, and collaboration

NIOSH created a nanotechnology field research team in 2006 to gain a better understanding of the risk management challenges associated with the research, manufacture and use of engineered nanomaterials. This team was also charged with using a variety of approaches to assess potential workplace emissions and exposures to engineered nanomaterials. A variety of workplaces were evaluated using an array of techniques

As of May, 2010, this approach has been in 26 investigations conducted at 19 separate facilities to assess workplace emissions of engineered nanomaterials, and potential worker exposures. Lessons learned from these investigations have been used as a primary resource in preparing the NIOSH guidance document, "Approaches to Safe Nanotechnology: Managing the Safety and Health Concerns Associated with Engineered Nanomaterials". This presentation will focus on key findings from the NIOSH Nanotechnology Research Program and how they relate to findings from workplace investigations.