Office of Health, Safety and Security

Safety Advisory

Use of Grinding Wheels Containing Uranium

No. 2009-01 **April 2009**

Purpose

This Advisory provides information regarding the potential for radiological consequences associated with the use of grinding wheels containing uranium. A recent Department of Energy (DOE) assessment identified a lack of awareness and controls associated with use of grinding wheels containing uranium. Under certain conditions, the use of these products may lead to contamination control issues and internal exposures.

Background

Due to its extreme hardness, uranium is used in industrial grinding wheels. The process of grinding causes uranium to be removed from the wheel. This results in the production of airborne radioactive material or generation of surface contamination. These could result in a radiation dose to a worker. Surface contamination from these materials may also create difficulties in identifying the source of, and responding to, contamination events.

What are the Hazards?

Certain use of these materials may result in the production of airborne radioactive material or generation of surface contamination.

Implementation of standard-accepted industrial hygiene or radiological control work practices should be adequate to address any radiological concern. Relatively simple actions, such as the proper use of exhaust ventilation and proper positioning; i.e., upstream of the airflow, can significantly lower potential intakes. A hazard assessment, commensurate with the hazard, will determine the magnitude of the hazard and whether additional assessment is needed.

If the hazard assessment suggests that an individual may receive elevated exposures while working with these materials, review workplace controls; e.g., local exhaust ventilation and housekeeping, to ensure that exposures are appropriately controlled.

Minimizing Exposure and Contamination

The following actions are good practices as applied to use of consumer products containing radioactive material:

- Read Material Safety Data Sheets (MSDS) and other product literature for all materials used;
- Use substitute products to eliminate the potential for exposure where possible;
- Make use of local and exhaust ventilation to clear the breathing zone of particles and fumes;
- If there is potential for generating airborne radioactive material, consider using a face mask respirator or helmet and position the head to minimize exposure to fumes and dust;
- After use of the material is complete, ensure the work area is adequately cleaned using practices to minimize airborne dust generation; and
- Ensure workers are trained in the safe and efficient operation of the use of the material, and they understand measures to reduce possible surface contamination.

Summary

- Using consumer products containing radioactive material can result in radiation exposures.
- Perform a hazard analysis, commensurate with the hazard, before using these materials to evaluate needed controls.
- Institute appropriate radiological controls to reduce potential exposure during use, and clean the area after use.
- If the appropriate industrial hygiene and radiological controls (ISM program) are applied, then employee exposures will be minimized.

DOE is developing a more comprehensive policy on use of consumer products containing radioactive material.

If you have any questions regarding this Advisory, please contact the Office of Worker Safety and Health Policy at (301) 903-6061.

Glenn S. Podonsky
Chief Health, Safety and Security Officer
Office of Health, Safety and Security