

## **Concerns on Workplace Exposures to Epoxy, Grout, and Adhesive Chemicals**

In July 2012, the Environmental Epidemiology Program (EEP), Utah Department of Health received an inquiry from a Utah resident regarding the health effects from workplace exposure to epoxy, grout, and adhesive chemicals. The resident reported a chemical burn, an allergic reaction, and ongoing health problems. The EEP researched the substances listed in the resident's inquiry, as well as the Material Safety Data Sheets (MSDS) for each chemical of concern. The EEP also investigated the prevalence of similar workplace incidents nationally.

The chemicals of concern were epoxy, grout, and supporting substances used in their manufacture. After reviewing the MSDS sheets for each chemical (for a complete list, see reference section), it was found that nearly all substances require the use of personal protection measures. Many of the chemicals are listed as corrosives, permeators (chemicals that can pass through the skin, eyes, and lining of the mouth and gut), sensitizers (chemicals that can cause an allergic reaction after repeated exposure), and/or irritants. In some instances, allergic reactions were included in the list of possible effects. The MSDS reports recommend seeking medical assistance if skin irritation occurs. The adverse health effects described by the resident are consistent with the known outcomes of exposures to these chemicals.

The Occupational Safety and Health Administration (OSHA) provide basic guidelines for safe handling of these substances (OSHA, 2008). Recommendations include wearing tight fitting, butyl or nitrile gloves (rather than cotton or leather), long pants, waterproof boots, eye protection, and knee pads (when necessary). It is recommended that any skin contact with epoxy, resin, or grout be washed thoroughly using cool, clean water and pH neutral or slightly acidic soap. If eye contact occurs, it is recommended that they are flushed with running water for at least 15 minutes and medical attention be sought by the victim. If ingestion occurs, vomiting should not be induced without the direction of a medical professional, and medical attention should be sought immediately.

The EEP notes that exposure to epoxy, grout, and adhesive chemicals are common sources of chemical burns. These substances are generally very alkaline in nature, some in excess of pH 12.5 (Wiersma, 2009). Due to this high alkalinity, chemical burns of this nature can occur without immediate symptoms (such as pain or burning) being experienced until the burn is already severe (OSHA, 2008).

After researching the issue, the EEP recommends that the resident seek medical attention from a qualified occupational physician. The resident should provide the attending physician with the MSDS information for these compounds of potential exposure. If further assistance is necessary, the EEP encourages the resident to contact the Utah Labor Commission.

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