CHEMICALS IN POWDERED FORM

Powdered chemicals used in laboratories can become airborne particularly during weighing or mixing. When these hazardous powders or their subliming vapors enter the breathing zone or settle on surfaces, lab personnel can be exposed via inhalation or skin contact. Particles that settle on equipment, countertops or clothing can later and unknowingly contaminate hands, food and surfaces outside the lab resulting in exposures through inhalation, ingestion or skin absorption. Particular caution must be taken when working with chemicals such as those listed below.

- Acrylamide
- Cadmium compounds
- Chromium compounds
- Ethidium bromide
- Lead compounds
- Mercury compounds
- Paraformaldehyde
- Phenol
- Potassium cyanide
- Potassium hydroxide
- Sodium azide
- Sodium cyanide
- Sodium dodecyl sulfate (SDS)
- Sodium hydroxide

1. Engineering Controls

1.1. Use a vented balance enclosure or weigh the powder in a chemical fume hood, Class B2 biosafety cabinet, glove box, or directly under a snorkel exhaust vent.

1.2. If not practical, place the balance on a sturdy cart or table positioned in front of the hood. Cardboard or Plexiglas positioned around this table can be used to extend and increase the capture velocity from the hood, thereby minimizing release of powders or vapors into the lab.

2. Work Practice Controls

2.1. Purchase the hazardous powders pre-dissolved in solution when possible.

2.2. Use pre-packaged, pre-weighted amounts or find a safer substitute for a hazardous chemical.

2.2.1. Tare the container and lid on the balance then carry the container to the chemical fume hood and add the powder chemical.

2.2.2. Close the lid and carry the container back to balance for initial weighing.

2.2.3. Calculate weight and adjust amount of chemical back in the chemical fume hood. Once the correct weight is obtained, complete making the solution inside the chemical fume hood.

2.2.4. Clean container and lid used for weighing.

2.3. If the balance or mixing vessel cannot be located in or near the chemical fume hood or Class B2 biosafety cabinet, use containers with sealable lids to weigh the powder.

3. **Personal Protective Equipment**

If there are no chemical fume hoods or other engineering controls available, an N-95 respirator may be necessary while weighing the powder chemical. Respirator use requires a medical evaluation, fit test and enrollment in the University's Respiratory Protection Program. Contact EH&S before using the respirator. Also use safety glasses, gloves, lab coat, close toed shoes and other protective equipment appropriate for the task.