

Chemical Fume Hood: Proper Use



Required Use

In general, laboratory fume hoods are required when using hazardous chemicals that are:

- Acutely toxic, carcinogenic, or have reproductive hazards
- Highly reactive
- Volatile (e.g., solvents) or easily dispersible in air
- Substances with uncharacterized hazards
- Nanoparticles
- Stench chemicals or that have a low odor threshold

Before Starting Work

- **Verify the hood is properly operating.** If local on/off switch, ensure the switch is in “On” position. If a flow monitor is present the optimal flow should read between 80-100 fpm. In the absence of a monitor, observe the yellow plastic low check ribbon” taped near lower corner of sash. The ribbon should be pulling gently into the hood. If no yellow ribbon, you can also use a kim-wipe to check flow. Place wipe at bottom of sash and it should pull gently into hood.
- **Ensure that the hood has a current certification sticker (dated within the last year).** If the sticker is missing or out of date, request certification by contacting DEHS at 852-6670.
- **Never use a fume hood that is not functioning properly.** Call Physical Plant Work Control for assistance (HSC Campus locations 852-5695; Belknap Campus locations 852-6241).

Procedure for Use

- **Allow for proper air flow around equipment.** Raise equipment on blocks or a jack so it is approximately 2” above the surface and air may pass beneath it.
- **Do not use the hood for storage of equipment, chemicals, or hazardous waste.** Keep only the materials necessary for the experiment inside of the hood.
- **Lower sash to optimum working height (no more than 18”).** A yellow label placed on the hood face indicates the recommended sash height (this does not apply to variable volume chemical fume hoods). This ensures the most effective flow. Only raise sash completely for setup or takedown and when there are no hazardous materials present. It is acceptable to operate hood at a lower height if you are able to safely do so.
- **Avoid swift arm and body movements in front of or inside the hood.** These actions may increase turbulence and reduce the effectiveness of the fume hood.
- **Work at least 6” into the fume hood.** Place chemicals and equipment at least 6” into the fume hood (behind the air foil) to avoid disturbances, such as air currents due to movement in the lab, which interfere with airflow at the face of the hood. Larger equipment should be set up in the rear of the fume hood to minimize air turbulence.

Best Practices

- Lab doors should be closed to maintain negative pressure of room.
- Do not place spark or flame sources inside the hood when flammable liquids or gases are present.
- Close the sash completely when hood is unattended. This also helps reduce energy consumption.
- Run cords, cables, and tubing under the air foil.
- When running unattended reactions, place a sign on the fume hood alerting lab users to the details and safety information of the reaction taking place. Include emergency contact information.

Do Not Use

- **To evaporate chemical waste.** A fume hood should never be used for evaporation or waste disposal as this is a violation to local air ordinance and waste regulations. Use condensers, traps and scrubbers to prevent chemical release.
- **Working with biological materials:** Work involving biological materials should be done in a biosafety cabinet (BSC) as fume hoods are not HEPA filtered. See the University Biosafety Manual for more information.

Questions or Concerns contact DEHS at 502.852.6670.

DEHS web-site: www.louisville.edu/dehs