

3.5.1.2 Fume Hood Safety and Guidelines

While the chemical fume hood is a very effective engineering control, it does not provide absolute containment or protection. This is true in respect to materials with very low exposure limits in the low parts per billion range. However, adequate protection can be provided by an efficiently working hood in a properly ventilated room. Certain work practices are required for the hood to have this efficiency. The following work practices are required at a minimum. More stringent practices may be necessary in some circumstances.

- Wear appropriate personal protective equipment when working with chemicals, even when work is conducted in a fume hood. At a minimum wear eye protection, gloves and lab coat.
- The recommended working heights are most commonly between 12 and 18 inches depending on the procedure. Contact your principal investigator for the recommended working height of the particular hood. Always mark the hoods showing where the sash must be positioned and the measured face velocity.
- It is suggested that the hood sash be lowered or closed when not in use. As a general rule, the hood should not be used with the sash fully open.
- All chemical hoods at Stephen F. Austin State University should have face velocities between 80-120 feet per minute with the sash at the recommended working height.
- Any and all operations & experiments that generate air contaminants above the exposure limit must be conducted inside a hood



GOOD

(This person is using the fume hood at the certified or marked working height. They are also wearing gloves, safety glasses and their lab coat as additional protection against spills, splatters and explosions)



BAD

(This person is not using the fume hood at the certified or marked working height. They are not wearing any personal protective equipment which is even more important when someone is not using the fume hood correctly.)

- Do not position air vents or fans so as to direct airflow across the face of the hood.
- All apparatus should be a minimum of 6 inches back from the face of the hood.
- Do not put your head in the hood when contaminants are being generated.
- Fume hoods are not to be used as a waste disposal mechanism except for very small quantities of volatile materials.
- Do not store excessive amounts of chemicals or apparatus in the hood. This can greatly impair its performance.



Fume hoods cannot be used for storage

- Be sure that the hood is on when in use. (A simple way to make sure that the hood is pulling in air is to tape a wipe or paper to the bottom of the sash. If it is not pulled back towards the inside of the hood, it may not be on or may be broken and need to be checked EHSRM.)



- Fume hoods may not adequately contain hazardous solids in powder form. Please contact your principal investigator or EHSRM.
- The slots of the baffles along the back of the hood should be kept free of obstruction. No more than 25% of the bottom slot should be blocked.



- Foot traffic past the hood should be kept to a minimum when in use.
- Laboratory doors and windows should be kept closed. (Except when the lab is designed for them to be open)
- Do not remove the hoods sash or panels except when it is necessary to set-up apparatus. They must be replaced before any operations begin.
- Do not place any spark source (i.e. electrical receptacles) inside the hood when flammable gases or liquids are present.
- Permanent electrical receptacles are not permitted in the hood.
- If there is a chance of explosion or eruption, use an appropriate barricade or shield.



- All chemical hoods should have spill protection lips along the front of the hood. If your hood has a cup sink, it should have a lip as well.
- If the hood sash is supposed to be partially closed for operation, the hood should be labeled as so. The appropriate closure point should be clearly indicated.
- It is suggested that all large equipment be elevated 1-2 inches above the working surface of the hood. This reduces the amount of baffle blockage and maintains the hoods performance.
- If perchloric acid will need to be heated above ambient temperatures or is used at a concentration above 72%, one must use a specifically designed hood for this process. (Please refer to the definition of perchloric acid hoods in the previous section if this rule applies to you)

3.5.1.3 Certification of Fume Hoods

Annually, the Department of Environmental Health, Safety & Risk Management measures the face velocity of every chemical fume hood on the campus of Stephen F. Austin State University. Physical Plant Department is notified when repairs are needed to restore any marginal or failing hood to a passing range or to fix any monitor or general issues associated with the hood. Once repairs have been made, EHSRM is notified by Physical Plant and the hood is rechecked and recertified if passing. If you work in a lab with a chemical fume hood and notice a problem with the air flow, monitor, or general function of the hood, please contact EHSRM at 468-6034.

3.5.2 Personal Protective Equipment

The most important thing to remember about personal protective gear is that it only protects you if you wear it. Safety Data Sheets or other references should be consulted for information on the type of protective equipment required for the particular work you are performing. The principal investigator and laboratory safety officer are primarily responsible to ensure that all workers and personnel are using the appropriate personal protective equipment.