SLCC Laboratory Fume Hood Guidelines

September 2022

Work involving hazardous and noxious materials that are toxic, odoriferous, volatile or harmful shall be conducted within a chemical fume hood. The chemical fume hood in your laboratory functions to capture, retain and discharge noxious or hazardous vapors, fumes and dusts generated within it. It is not intended to capture contaminants generated outside the fume hood. Laboratory fume hoods and adjacent work areas need to be kept clean and free of debris at all times. Solid objects and materials (such as paper) need to be kept from entering the exhaust ducts of the hoods. Objects lodged in ducts or fans will adversely affect the systems operation. Also, the hood will have better airflow across the work surface if there are minimal numbers of bottles, beakers and laboratory apparatus inside the hood; therefore, it is prudent to keep unnecessary equipment and glassware outside of the fume hood.

The following is a list of guidelines for the proper use of your chemical fume hood:

Always assure the hood is operational before initiating an experiment. Unless a hood is fully functional it must not be used. If the air flow has ceased, close sash and call Environmental Health and Safety (EH&S) at 801-957-4902. Fume hood alarms must never be tampered with, bypassed, disengaged or turned OFF. Be aware that the alarms are in place to alert the user to a potential issue with the hood. All Low Flow Alarms shall be reported to EH&S.

Fume hoods are NOT to be used as permanent storage for chemicals or equipment. The purpose and function of a hood is NOT to store chemicals or unused items. The fume hood is NOT a storage cabinet. All chemicals utilized in the lab need to be stored in an appropriate storage cabinet.

Minimize activity in front of the hood. Avoid creation of strong cross drafts, greater than 100 feet per minute (fpm) caused by open windows and doors or pedestrian traffic. Keep windows and doors shut and pedestrian traffic, in front of the hood, to a minimum. Drafts will pull contaminants from the hood into the laboratory.

Do not work in the hood with the sash fully open. While performing work in the hood the sliding sash shall be kept at the height designated sixteen inches (16"). This allows the sash to serve as a physical barrier between your face and the contents of the fume hood should a spill, splash, explosion or fire occur. When not in use, the sash shall be kept closed.

Solid objects placed at the face of the hood cause turbulence in the air flow. Turbulence reduces the capture efficiency of the hood and increases the chance of contaminant release into the lab environment. Only items necessary to perform the current experiment shall be in the hood. Place equipment, materials, etc. back 6" from the face and avoid blocking the rear baffle. Large objects need to be placed on blocks 2-3" above the work surface to allow air flow under and around the object. The more equipment in the hood, the greater the air turbulence and the greater chance for gases and fumes to escape in the lab.

Avoid placing your head in the fume hood. Once your head has gone past the plane of the sash you are inside the hood with the chemicals.

All fume hoods must be inspected annually by EH&S. If your fume hood has not been inspected within the last year or if you have any questions, please call (801-957-4902). Fume hoods are inspected by measuring the average air flow along the face of the fume hood using a anemometer or equivalent instrument. The fume hood is divided into six sections and the air flow in each section is measured using the instrument. The air flow measurements for each section are then added or totaled up. This number is then divided by six to get the average air flow. The average air flow requirement is 80 cubic feet per minute (cfm). If the average air flow does not meet this requirement the fume hood will not be certified and the HVAC department will receive a work order to investigate why the fume hood failed the test and repair the problem. Upon notification that the fume hood has repaired the fume hood will be retested. A sticker indicating the date of the fume hood test, the date when the fume hood must be retested, and who tested the fume hood will be attached to the fume hood. DO NOT REMOVE OR DEFACE THIS STICKER.

Other things to keep in mind...

- Perform work in a chemical fume hood whenever feasible.
- Fume hood alarms must NEVER be tampered with, bypassed, disengaged or turned off.
- No electrical outlets shall be located inside the hood.
- Always wear appropriate PPE (gloves, goggles, lab coats, etc.) when working with chemicals.
- Do not use infectious materials in a chemical fume hood.
- Keep the sash glass clean. Never obstruct your view with paper, notices, decals or other items on the sashes.
- Radioactive materials may not be used in the hoods without prior approval of EH&S.
- Routine maintenance on the fume hood will need to be performed. This may require one or more fume hoods to be shut down. Depending on the type of repair, your cooperation will be required in sealing and removing all chemicals to prevent exposure to maintenance workers.
- Never use perchloric acid in a hood that is not designed for this use. Perchloric acid can leave explosive residues in a fume hood, duct system or on a fan. Perchloric acid also forms explosive mixtures with organic compounds. Perchloric acid hoods have a wash-down feature which shall be used after each use of the hood and at least every two weeks when the hood is not in use. The date of each wash down shall be recorded by laboratory personnel.
- Hoods shall not be used to evaporate toxic or irritating chemicals. Fume hoods are designed to remove small quantities of vapor and gas which might escape during laboratory operations.
- If vaporization of large quantities of such materials is a necessary part of the operation, a means of collecting the vapor by distillation or scrubbing shall be considered, rather than allowing it to escape through the hood vent. The collected liquid can then be disposed of as a liquid waste.