Chemical Fume Hood Questions and Information

Q: How should I work in a chemical fume hood?

A: Before beginning use, make sure you have been properly trained by your professor, supervisor, teaching assistant, lab manager, or your Laboratory Chemical Hygiene Officer (LCHO). Some general points to keep in mind are:

- Know the hazards of the materials you are working with and ensure the hood is appropriate (e.g. radioisotopes, perchloric acid digestions, biological agents, solvent extractions, etc.)
- In some cases, variable vapor densities may require hood baffles be adjusted - please refer to your supervisor/LCHO for guidance or contact the University Chemical Hygiene Officer in EHS
- Verify the hood has a current certification label from EHS and that all removable side panels and valves are in place
- In general, operate the hood with the sash at the height indicated by either: the manufacturer (with stops in the track or noted in the operation manual), by arrow labels along the track, notes on certification label, or if none of these is available, the general rule is 18-19 inches from airfoil
- Do not put your head into the work space of the hood (behind the sash)
- Wear appropriate PPE based on hazards (goggles, gloves, lab coat, etc)
- Keep traffic around hood to a minimum and avoid rapid movements while working
- Minimize storage in the hood and keep the exhaust baffles clear
- Do not use the hood for permanent chemical storage
- Keep all materials inside the hood at least six inches from the sash / airfoil
- If possible, elevate large equipment at least two inches off the base to facilitate air flow
- If you are using highly toxic materials, review your department's Emergency Action Plan (EAP) so you will be aware of what to do in the event of a power outage
- Notify your supervisor or LCHO if the hood is not working properly
- When not in use, close the sash

Q: How do I use combination panels in a sash?

A: Always use one or the other (horizontal or vertical settings), do not use together. Horizontal sashes can be positioned in order to keep a sash in front of your face while working for added protection.

Q: My hood isn't working. What should I do?

A: Notify your professor, supervisor, lab manager, or LCHO and then verify that EHS is contacted in order to post the hood as out of service until repairs can be made.

Q: Various mechanical items have failed, for example: lights are out, sash isn't working correctly or is stuck, alarms are sounding, etc. How do I get these repaired?

A: Notify your professor, supervisor, lab manager, or LCHO of the problem(s). They should then contact the building Preventative Maintenance contact for assistance. If your group does not know who the PM person is, call Facilities Customer Service at 231-4300 for assistance.

Q: How often are fume hoods checked for proper air flow?

A: Hoods should be checked at least annually to ensure proper air flow. Checks should also be made after repairs.

Q: Do I need to wait a year for a check?

A: No. If you have reason to suspect your hood is not functioning correctly, you may contact EHS, 231-3600 or 231-3427 to request a check.

Q: Can I use my fume hood for storage?

A: Hoods are designed to provide protection when working with hazardous materials. Storage can negatively affect the performance of the hood and put users at risk for exposure. Please limit storage in hoods.

Q: What are the criteria for passing or failing a hood?

A: Hoods are currently tested for an optimum of 80 to 120 feet per minute (fpm) face velocity with an allowable average of 70 – 150 depending on individual value variability. Smoke testing is used when turbulence is suspected and/or when anemometer readings are erratic. The sash is set at the manufacturer's stop or industry standard of 18-19 inches for vertical position. Adjustments may be made depending on values and equipment set-ups in hood. Holes in the walls of the hood (missing valves or side panels, drilled, etc), excessive storage disrupting testing or access, and broken sash glass or a sash that is not movable are causes for failing.

Q: How do I get a fume hood sash repaired or replaced:

A: Vehicular glass repair companies have been contacted to replace cracked/broken sashes for various departments on campus. EHS recommends using tempered glass for all chemical fume hood sash replacements.

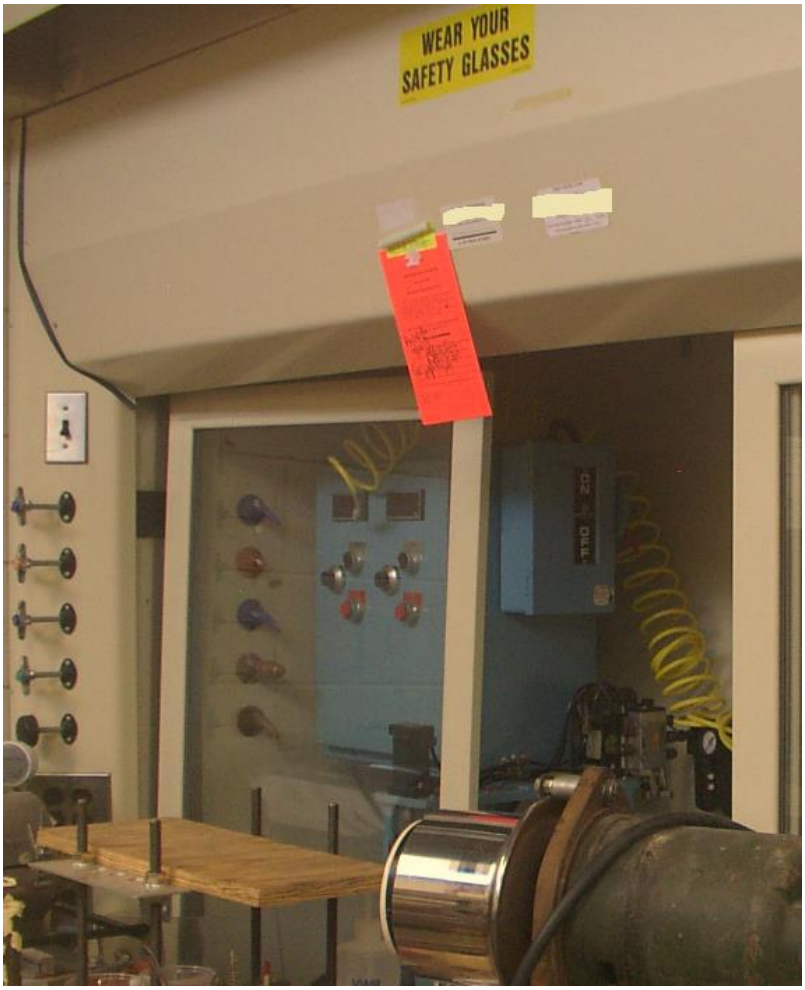
Q: My hood has a rejection label and/or a "Caution! This Hood is Out of Order" tag. What do I do?

A: Read the notes given on the tag and notify your professor, supervisor, lab manager, or LCHO for assistance in correcting the concerns. If you have questions, call EHS at 231-3600 for additional information.

Q: I have questions that have not been answered and would like further assistance. What should I do?

A: If at any time you feel uncomfortable with your hood's performance, or would like further support, please contact the University Chemical Hygiene Officer in EHS, 231-3427 or 231-3600.

Examples



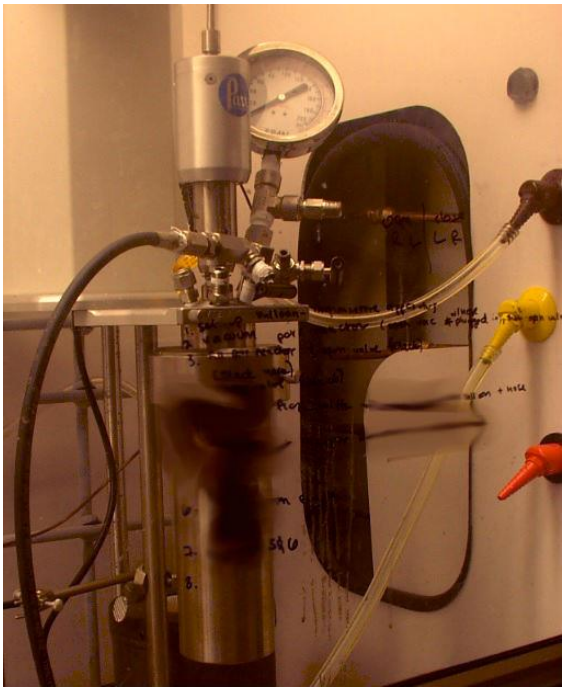
Fume hood clutter, hood sash off track

http://www.laboratoryequipment.com/articles/2012/11/fume-hood-protocols-are-critical-student-safety

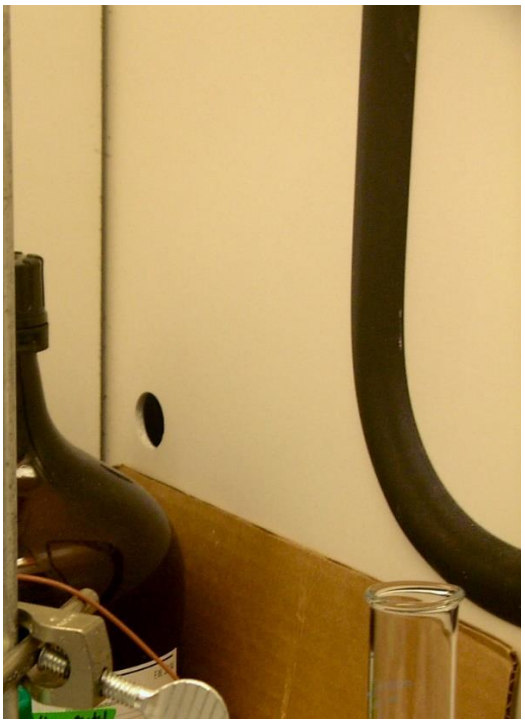
Quoted from article by Kelly Williams while speaking with Mike Russell, Director of EH&S, Univ. of Kansas (KU)

"……The work area inside a fume hood is expensive real estate that should be used for procedures where protection of students is needed, not as a chemical storage area," Decker says. Waste bottles and chemicals should be stored in areas designated for proper chemical storage, not left in the fume hood. Air flow patterns within fume hoods are affected when objects are blocking the baffles and can actually jeopardize fume containment if conditions are severe enough.

Russell runs into this same problem and emphasizes that students employ good housekeeping within the hood. He sees experiments being set up and not being taken down before the next step in the procedure is started. “Fume hood clutter is a collection that is constantly being added to, but not being reduced,” says Russell…..”



Side panel out of place; hood will not pass certification.



Hole in side wall (missing plug or added opening); hood will not pass certification.

References

Labconco Fume Hood Do's & Don'ts video, https://www.youtube.com/watch?v=yqU5bGP0i5I

OSHA Quick Facts Chemical Fume Hoods