FUME HOOD USE AND SAFETY PRACTICES
HVCC Environmental Health and Safety

One of the most important safety devices in a laboratory is a properly functioning fume hood. The fume hood protects users by containing and exhausting airborne hazards; it does this by constantly pulling room air into the hood and exhausting it directly outside the building through fans located at the roof level. Fume hood sashes also provide shielding in the event of an explosion or fire inside the hood.

A fume hood should be used in the following situations:

- When working with chemicals with significant inhalation hazards
- When carrying out procedures that could explode or generate high pressure
- When chemical vapors generated could cause a fire hazard if allowed to accumulate
- When working with chemicals that have an offensive odor
- Special hoods are needed for the use of perchloric acid. Perchloric acid vapors may create explosive perchlorates in the duct work and need to be used in a perchloric acid hood equipped with a water wash-down.

HOOD SET-UP AND USE

- Verify proper hood airflow. All hoods at HVCC are equipped with a flow monitor that alarms if a low flow condition is detected. In case of a low flow alarm, discontinue work and close the sash. Tag the hood out of service and report the issue to your supervisor. Submit a work order to Physical Plant with the room number and hood ID.
- Place apparatus and equipment as far back as possible in hood for safety and optimal performance. Equipment should be placed a minimum of 6 inches back from the hood sash to prevent obstruction of airflow.
- Ensure that equipment or materials do not block the baffle vents in the back of the hood.
- When using a large apparatus inside the hood, place the equipment on blocks or stands when safe and practical, to allow air flow beneath it.
- Turn the fume hood light on before working with hazardous materials. If the hood light is not working, submit a work request to Physical Plant to repair the light. It is important to be able to see properly when working with hazardous materials.
- Adjust the sash to protect you. Position sash as low as possible to conduct the work but always position at or below the sash stop arrows (18”) to ensure proper airflow through the work opening.
- Conduct all work at least 6 inches inside of the hood. The capture ability of a fume hood is reduced at the front edge of the hood because of air turbulence.
- When using the fume hood, keep your face outside of the hood

- Always wear splash goggles, and use a full face shield if there is possibility of an explosion or eruption. Wear gloves appropriate for the materials being used.
- Do not make quick motions into or out of the hood, use fans, or walk quickly by the hood opening. All will cause airflow disturbances which reduce the effectiveness of the hood.
- Keep the lab windows closed. Drafts from open windows and doors can significantly affect the hood's performance.
- Keep the hood sash closed, except when working within the hood.
- In case of exhaust system failure while using a hood, shut off all services and accessories and lower the sash completely. There should still be some minimal inflow of room air up the ductwork from a chimney effect, which will assist in keeping contaminants in the hood even if the hood fan goes out. Discontinue all work and leave the room until power and exhaust is restored.

GOOD HOUSEKEEPING PRACTICES

- Do not use fume hoods for equipment storage. Excessive storage of materials or equipment can cause eddy currents or reverse flow, resulting in contaminants escaping from the hood.
- Do not use fume hoods for chemical storage. Keep the smallest amount of chemicals in the hood needed to conduct the procedure at hand. Store hazardous chemicals such as flammable liquids in an approved safety cabinet.
  Never use the hood to evaporate excess chemical waste. All chemical containers must be capped when not in use.
- Keep the hood clean. Remove unneeded experimental glassware and clutter. Wipe-up any spilled chemicals or residues.

For further information on chemical fume hoods or for related safety training contact the Environmental Health and Safety Department