Safety Note #126

FUME HOOD SAFETY

Fume hoods are designed to protect laboratory personnel from toxic, flammable, and other dangerous chemical gases, vapors, and fumes. Protection is provided by a continuous air stream that flows into the hood and pulls airborne contaminants through the upper exhaust ventilation system. This prevents contaminants from leaving the hood and reaching the worker. The effectiveness provided depends on the condition and proper airflow of the hood and good work practices. California Code of Regulations, Title 8, Section 5154.1 addresses the safe operation of fume hoods.

Pre-Use Activities

- Laboratory personnel must be trained prior to using fume hoods. Training should include: how to turn the hood on and off, (when equipped with an on/off switch), understanding airflow characteristics, knowing where the airflow monitor is located on the hood and how it is used, assuring the last date of performance hood test is current, and proper use of the hood and its features.
- Each fume hood must have a quantitative airflow monitor that indicates the hood is working properly (CCR/8-5154.1(e).
- Ensure face velocity is no less than 70 fpm and no more than 150 fpm. Fume hoods should be calibrated to an average face velocity of at least 100 fpm. Fume hoods with a face velocity lower than 70 fpm and higher than 150 fpm must not be used until recalibrated.
- The fume hood should have the recommended sash height marked with a sticker on the side to indicate optimum placement to maintain face velocity airflow and containment of gases, vapors, and fumes. Keep the sash at the marked height when using.
- Be familiar with the location of fire extinguishers, spill clean-up materials, and emergency procedures.
- Check the hood for damaged parts. The sash window should be clean and easy to see through. The interior working area of the hood should be cleaned prior to use.

Operating Precautions

- Maintain working operations at least six inches inside the hood face.
- Minimize foot traffic around the fume hood to keep from creating competing air currents at the hood face. Other sources of competing air currents such as open windows and fans must also be avoided while using a fume hood.
- Only have working amounts of chemicals stored in the hood. Keep the slot in the back bottom of the hood clear at all times as it serves as an exhaust port. Raise large objects at least two inches off the fume hood surface to minimize airflow disruption. Remove all unnecessary materials from the fume hood before starting work.
- Keep your head out of the fume hood at all times. Keep the sash window between your face and your experiment whenever possible.
- Do not use perchloric acid in a chemical fume hood. Perchloric acid must only be used in a specially designed fume hood that contains a wash-down apparatus.
- Do not store incompatible chemicals in the fume hood. Doing so can result in a chemical reaction, explosion, and/or fire. Keep chemical containers capped when not in use.
- If the fume hood is not operating properly, do not use it until repaired. Red tag the hood and notify your supervisor.
- Do not evaporate hazardous waste in a fume hood.
- Do not place sources of electrical power (power strips) or other ignition sources inside a fume hood when working with flammable materials.
- Use appropriate personal protective equipment (PPE), such as eye protection, protective gloves, and aprons, when required.