

Chemical fume hoods protect the user from hazardous gases, vapors, and dusts of toxic, flammable, corrosive or otherwise dangerous materials. They are one of the most important engineering controls in a laboratory.

Fume hoods are tested quarterly and semi-annually by our department. Each fume hood must have a current certification posted for performance tested. If the fume hood cannot meet the test performance criteria, the hood will be declared not certified and will be declared out of service. Fume hood that do not meet these requirements must not be used.

FUME HOOD SAFETY

To maximize hood effectiveness and minimize personal exposure to toxic vapors or gases, use fume hoods in accordance with these operational guidelines:

- **Operate the hood at the proper sash height.** Sash opening is generally 10-18"; face velocities range from 80 to 120 linear fpm. When not in use, close sash.
- **Reduce pedestrian traffic in front of hoods.** Also minimize nearby disturbances, such as doors opening or closing, and any quick motion in order to prevent cross drafts.
- **Do not position fans, air conditioners, or vents so as to direct airflow across the face of the hood.** This can interfere with airflow and containment of hazardous chemicals. The cross draft should be 20% of the face velocity, in order to minimize turbulence. (ex: 100 fpm face velocity / 20 fpm cross draft)
- **Do not block airfoil.** The airfoil provides airflow across the floor of the hood. If you use absorbent paper in the hood, do not block the airfoil.
- **Place bulky equipment away from sidewalls.** This allows airflow around the equipment.
- **Place any bulky equipment towards the rear of the hood.** Raise equipment about 2 inches off the surface with blocks or bricks, but do not place this equipment against the rear wall of the hood, as it will block airflow to the rear baffles.
- **Work as far inside the hood as possible.** When prepping, work at least 4 to 6 inches from the front edge with the sash face between you and the task at hand. All equipment should be a minimum of 9–12 inches away from the hood face.
- **Keep sash face clean and clear.** To encourage use of sash as added protection against splashes, sprays, etc. keep sash face clean. If sash face must be blocked with paper for certain experiments, take it down after the experiment is complete.
- **Do not use the hood as a storage cabinet for chemicals or equipment.** Materials in a fume hoods should be kept to a minimum and stored in manner that will not interfere with airflow.
- **Place any heat generating equipment in the rear of the hood.** Heating devices in the hood produce convection currents that can disrupt airflow.
- **Do not use a hood for any function it was not designed for:** such as perchloric acid, radioisotopes, etc. The generation of perchloric acid vapors requires specially designed fume hoods with wash-down systems.
- **Wear protective equipment.** Fume hoods do not prevent accidents or chemical splashes.
- **Close sash when finished or not in use.** When leaving experiments or chemicals unattended, sash needs to be closed. This simple procedure has contained many fires and explosions within a hood.

GENERAL LABORATORY VENTILATION REFERENCES & STANDARDS

- 29 CFR 1910.1450 Appendix A
- ANSI/ASHRAE Z9.5 – 2003 Laboratory Ventilation
- ACGIH – Industrial Ventilation
- NFPA 45-2000 Fire Protection for Laboratories Using Chemicals
- SEFA 2002 Scientific Equipment and Furniture Association
- Prudent Practices in the Laboratory