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Weekly Safety Meeting

Chemical Fume Hoods

A chemical fume hood is critical in a lab. A well-designed hood, when properly installed and maintained, offers a large degree of protection to the user, provided that it is used appropriately, and its limitations are understood. A fume hood is a ventilated enclosure used to control chemical exposure to gases, vapors, and fumes by the user and lab occupants. A fume hood can also limit the effects of a spill by preventing a chemical release into the laboratory and by partially enclosing the work area and drawing air into the enclosure through an exhaust fan.

An exhaust fan installed on top of the laboratory building pulls air and airborne contaminants through ductwork out of the building.

In a well-designed, properly functioning fume hood, only about 0.0001% to 0.001% of the material released within the hood actually escapes from the hood into the laboratory.

A hazard analysis can help determine if a fume hood is necessary for an experiment. Such an analysis should include: a review of the physical characteristics, the quantity and toxicity of the materials to be used, the experimental procedure, the volatility of the materials present during the experiment and the probability of their release, the number and sophistication of manipulations, and the skill level of the person performing the work.

Chemical fume hoods, when used properly, are one of the most reliable engineering controls in the laboratory.

They Protect Workers By:

- Containing vapors, dusts, gases, and fumes generated within the hood, and removing them as air flows into the hood and then out via the laboratory exhaust system;
- Contributing to laboratory ventilation as air flows through the hood; and
- Shielding the worker with a clear sliding window, called a “sash,” that contains aerosols and prevents injury form splashes, fires, or minor explosions that may occur inside the hood.

Before Using a Fume Hood:

- Make sure that you understand how the hood works;
- You should be trained to use it properly;
- Know the hazards of the chemical you are working with; refer to the chemical’s Safety Data Sheet if you are unsure;

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- Ensure that the hood is on;
- Make sure that the sash is open to the proper operating level, which is usually indicated by arrows on the frame; and
- Make sure that the air gauge indicates that the airflow is within the required range.

When Using a Fume Hood:

- Never allow your head to enter the plane of the hood opening;
    - For example, for vertical rising sashes, keep the sash below your face; for horizontal sliding sashes, keep the sash positioned in front of you and work around the side of the sash;
- Use appropriate eye protection;
- Be sure that nothing blocks the airflow through the baffles or through the baffle exhaust slots;
- Elevate large equipment (e.g., a centrifuge) at least two inches off the base of the hood interior;
- Keep all materials inside the hood at least six inches from the sash opening. When not working in the hood, close the sash;
- Do not permanently store any chemicals inside the hood;
- Promptly report any hood that is not functioning properly to your supervisor. The sash should be closed and the hood "tagged" and taken out of service until repairs can be completed; and
- When using extremely hazardous chemicals, understand your laboratory's Emergency Action Plan in case of an emergency, such as when a power failure might occur.

Remember:

Your laboratory fume hoods are a very important engineering control provided to remove airborne contaminants from your breathing zone. Improper use or operation of a fume hood may directly result in occupational exposure to hazardous chemicals, injuries, fires, and even explosions.

LABORATORY FUME HOODS MOVE MORE THAN JUST AIR!!

Safety Meeting Sign-In Sheet

Supervisor:	Subject:
Location:	Date:
Conducted By:	Trainer Signature:

Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests