

Laboratories

Health, Safety and the Environment

A Monthly Newsletter from Carnegie Mellon's Chemical Hygiene Officer

March 2009



Training Topic of the Month:

All new laboratory employees must receive Laboratory Safety training from EH&S as a requirement of the OSHA Laboratory Standard. While there is no OSHA requirement for refresher training in lab safety, we feel that regular review of lab safety topics is essential to a safe work place. Monthly reading of this newsletter will provide such a review. This month's topic is "Hoods and Ventilation".

Laboratory fume hoods and related ventilation devices (such as glove boxes) are recognized by OSHA to be the **primary, preferred** means of preventing chemical overexposure in laboratories. As a result, proper use and maintenance of fume hoods is essential to a safe laboratory. Users of fume hoods should follow these guidelines:

1. **Always be sure that your fume hood is working properly before using it.** Many fume hoods have hood alarms that indicate proper operation of the hood. If you do not have a monitor on your fume hood, simply attaching a kim-wipe or similar piece of paper to the edge of the sash can indicate whether there is airflow into the hood. **NEVER use a hood that has been "red-tagged" by EH&S (this tag appears to the side of a hood that is out of performance specifications; a green tag indicates suitable performance.)** If your hood does NOT currently have a hood monitor in it, please respond back to me at markb2@andrew.cmu.edu with the location(s). We want to get one installed as soon as possible.
2. EH&S tests all fume hoods at least annually. When this is done, we will place a sticker at the side of the hood at the point where the sash should be at its highest point, when you are not actually working in the hood. A **GREEN** sticker means the flow and capture properties are acceptable. If there is a **RED** tag, a work order to FMS will have been initiated to have the hood repaired. When the repair is complete, we will retest and, hopefully, you will then have a working hood with a **GREEN** tag.
3. Minimize the storage of chemicals and equipment in a fume hood. When hoods are overcrowded, the airflow is impeded which may result in turbulent airflow and chemical exposures outside of the hood.
4. **NEVER** modify a fume hood, such as by blocking airflow or removing the airfoil from the front edge of the hood. Hoods are specially designed to work in a certain way--to make changes may negate their effectiveness and also affect the performance of hoods in nearby labs.
5. Always work at least six inches inside of the front edge of the hood to allow the air flow to perform its function properly. While you work, always lower the sash as far as you can.
6. Be sure that you do not use perchloric acid in a hood that is not designed for this purpose. Perchloric acid use may create a build-up of explosive perchlorates in a hood, with possibly disastrous results. Perchloric acid hoods have a special "wash-down" feature that eliminates the hazardous accumulations of perchlorates. Our only Perchloric acid hood is in Roberts Hall.
7. Remember that many of our fumes hoods have asbestos cement board for their interior surfaces. This material appears as a very hard, gray, cement-like surface. When the material is in place and intact, there is no asbestos hazard. It is important, though, never to cut, drill or otherwise disturb this material to prevent a hazard from occurring.
8. Remember that you should **NOT** leave experiments in fume hoods unattended overnight or for longer periods. If the hood fails (as happens all-too-frequently) or if the power goes out (even more frequently) there could be a very serious build up of hazardous (or even deadly) fumes or gases.
9. When your hood alarm sounds, you **MUST** do the following:
 - **STOP ALL ACTIVITY IN THE FUME HOOD.**
 - Pull the sash all the way down.
 - Notify FMS of the problem and your location.
 - THEN, you may silence the alarm.

Laboratory Safety and Hazardous Waste Training

March 18, 2009	9:30 AM to Noon	MI 328	March 27, 2009	9:30 AM to Noon	UC Rangos II
April 8, 2009	9:30 AM to Noon	MI 328	April 24, 2009	9:30 AM to Noon	UC Rangos II

To register, go to <http://www.cmu.edu/ehs/training/index.html> and click on "Lab Safety and Hazardous Waste."

Visitors in Laboratories

Your University Laboratory Safety Committee has adopted guidelines and requirements for proper protocol for visitors in the laboratory. The criteria are different depending on whether the person is a short term, fully-escorted visitor or a non-Carnegie Mellon person working in our spaces. Here is the relevant portion of our recently updated Chemical Hygiene Plan reflecting this information. For more information, go to: <http://ehs-alert.fms.bap.cmu.edu/pdf/CHPFinal.pdf>

Volunteers in the laboratory

Volunteer workers in the laboratory (who are NOT Carnegie Mellon employees nor students) are NOT permitted. This includes (but is not limited to) children of any age or spouses of employees. Exceptions will be considered on a case by case basis by EH&S.

Non-Carnegie Mellon Persons working in Carnegie Mellon Labs

A formal relationship with the outside personnel must be established in such cases. The employer of this outside worker must have a current agreement with Carnegie Mellon addressing the issues of the liability of the worker while at our site. This addresses both outside researchers using Carnegie Mellon facilities as well as repair or maintenance personnel in our laboratories. **The lab or department is responsible to ensure that such an agreement is in place.** Where joint funding situations exist, University counsel will need to evaluate the situation. *Unaccompanied* visitors to the laboratories are not permitted (such as sales reps).

Environmental Subject of the Month: Batteries

In its efforts to adopt more environmentally-friendly practices, Carnegie Mellon has been recycling various types of batteries for many years now. Given the numbers of types present on campus, there are also a number of different ways to recycle them, depending on the inherent hazards that are present in each. Lead acid batteries, such as those found in automobiles and which are highly used in robotic applications are definitely hazardous waste, due to the acid and lead content. If you have this type of battery to be removed from your lab, you must treat it as any hazardous waste you generate and dispose of it through the on-line request service. Our contractors will pick up the items from your lab on the regular waste pick up day.

For rechargeable batteries, such as are used in laptops and some lab equipment, you should take them to either the Mellon Stores, the Green Practices Room in the University Center (just off the cut), or to the EH&S offices in the FMS Building. You can put them in a

plastic bag and drop them in the nearby container. They will be recycled, to reclaim the hazardous metal components.



Standard alkaline batteries are also recycled. They may be dropped off in the same locations as for rechargeable batteries.

Hazardous Waste Pick-up Schedule

Mellon Institute	Mar 3,17&31, Apr 14,28	9:30 AM to 11:30 AM
Wean and Doherty Halls	Mar 3,17&31, Apr 14,28	12:30 PM to 3:30 PM
All other main campus locations	Mar 4, Apr 1	9:30 AM to 11:30 AM
PTC	Mar 4, Apr 1	12:30 PM to 3:30 PM
Penn Ave., Robotics Consortium	Apr 29	
Computers	Mar 5, 9, Apr 2, 6	

To request a waste pick-up or receive waste labels, secondary containment or tags, go to:

<http://www.cmu.edu/ehs/chemical/waste/index.html>