



# LABORATORIES

## Health, Safety & the Environment

### at Carnegie Mellon University

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A Newsletter from Carnegie Mellon University's Chemical Hygiene Officer

February 2007

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## Lab Safety Review

This month's Lab Safety Training review topic is **Fume 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](mailto: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 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. 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. Contact EH&S if you feel an exception should be made to this rule.
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.
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.

## Broken Glass Disposal

Nearly every lab has to deal with the proper disposal of broken glassware. Improper disposal can lead to problems ranging from cuts, to (for lack of a better phrase) people freaking out thinking they have been exposed to a hazardous chemical! Here is how to dispose of broken glass properly:

Broken glass should always be placed in rigid cardboard containers identified for this purpose. Mellon Stores sells a suitable product. The glass should not contain anything but a de minimus amount of chemical, to prevent damage to the container or interaction with other glassware. When the container is nearly full, it should be taped securely all around, to prevent glass from hurting anyone who may handle the box. The outside of the container should then be marked "trash" and placed for removal as regular trash—the custodial staff will pick up the container and dispose of it. Because of the special qualities of lab glass, it cannot be practically recycled.

Next month: Disposal of old chemical containers!

## Upcoming Training—February and March 2007

The next Hazardous Waste and Lab safety trainings will be held **February 22** in DH 1209 and **March 21** in MI 348. To enroll, please sign up at:

[http://ehs-alert.fms.bap.cmu.edu/Training/training\\_files/training\\_laboratory\\_safety.htm](http://ehs-alert.fms.bap.cmu.edu/Training/training_files/training_laboratory_safety.htm)

## Upcoming Waste Pick-ups

The following waste pick-ups are scheduled for January and February:

From Mellon Institute, 9:30 - 11:30 AM: **Feb 13, 27, Mar 13, 27**

From Wean and Doherty Halls, 12:30 - 3:00 PM: **Feb 13, 27, Mar 13, 27**

From Porter, Roberts, Hammerschlag and other main campus locations, 9:30 - 11:30 AM: **Feb 14, Mar 14**

From PTC: **Feb 14** and **Mar 14** in the afternoon

From Penn Avenue and Robotics Engineering Consortium: Next pick-up is **Feb 28**

Computers will be picked up **Feb 15** and **Mar 15**

***Remember, you need to be present in the lab for the pick-up--if you cannot, make prior arrangements with EH&S to ensure access to the waste.***

Do you need hazardous waste supplies such as bottle labels, waste tags or secondary containment? If so, go to

[http://www.cmu.edu/ehs/Waste\\_and\\_Recycling\\_Programs/Haz\\_Waste/hazardouswaste.htm#HWCertTags](http://www.cmu.edu/ehs/Waste_and_Recycling_Programs/Haz_Waste/hazardouswaste.htm#HWCertTags) to make an on-line request

Please print out this newsletter and post or circulate it in your lab!!