



LABORATORIES

Health, Safety & the Environment

at Carnegie Mellon University

A Newsletter from Carnegie Mellon University's Chemical Hygiene Officer

September 2006

Chemical Hygiene Training Review (Part 4 of 12)

Topic of the Month – Particularly Hazardous Substances

By far the most common area of deficiency found in the EH&S laboratory inspections are those items associated with the use of Particularly Hazardous Substances (PHS). The OSHA Laboratory Safety Standard requires that special attention be given to workers who use the PHS. They are defined by OSHA as:

- **"Select" carcinogens: materials with STRONG evidence of carcinogenicity**, like chloroform, chromic acid, benzene, formaldehyde, methylene chloride
- **Materials of high acute toxicity**, like cyanide or hydrofluoric acid
- **Reproductive hazards, mutagens or teratogens**, like lead or ethidium bromide
- **Explosive or highly reactive materials**, like sodium azide, picric acid or ethyl ether.
- **Unknowns similar to the above items**

The following steps **must** be taken for the proper handling of PHS; they are part of our Chemical Hygiene Plan, as implemented by the Laboratory Safety Committee **and are enforceable by OSHA**.

1. Identify all PHS materials in your area. There is a fairly comprehensive list of PHS items on the EH&S web site which should help you out. Check out <http://www.cmu.edu/ehs/pdf/cmuphstable.pdf>
2. For each PHS in use, the laboratory must prepare a Standard Operating Procedure (SOP), outlining in detail the way the lab will use the PHS material. The procedure will include the following items:
 - Identifying health hazard information
 - Outlining storage and handling information
 - Identifying protective equipment and engineering controls
 - Specifying a designated area for the use of the material
 - Describing the decontamination and waste management aspects of the material's use
 - Identifying the steps to be taken in the event of an emergency (first aid, fire, spill)

The format for the SOP has been prepared by the Laboratory Safety Committee and is available at <http://www.cmu.edu/ehs/LabSafety/PHSformblank.xls> Contact me if you have any questions about procedure preparation.

3. Finally, each person using the PHS must be approved by the laboratory PI to do so, and must read the SOP and sign off on its requirements.

We ask that all laboratories send EH&S a copy of the final procedure and also to post it in the laboratory for reference by lab personnel.

WET?? Labs

As I write this, tropical storm Ernesto is approaching the Mid Atlantic states providing the possibility of significant rainfall. Just two years ago, hurricane Ivan stopped by in a similar way causing major flooding in campus areas, including laboratories. Just three weeks ago, the University dealt with the effects of a large water main break near Mellon Institute that caused flood damage in a number of areas, including laboratories. From time to time pipes burst, condensate drips and emergency showers are run (often over-challenging any nearby drain). All of these have caused flooding in laboratories with sometimes significant damage to infrastructure, chemicals, documents and equipment, and not always just in the lower parts of the buildings.

We can probably never plan sufficiently for total protection from water damage, but there are some simple things that can be done to help minimize the problem. For the most part, flood water seldom rises more than a few inches above floor level, as it then flows out of the lab, down a hall or stairwell, or down a drain. Keeping critical items stored above this level in your lab will help enormously in the protection of your lab materials and your research. Try to keep these materials off of the floor:

- Chemicals or hazardous material waste
- Valuable books, records or other paper documents (Recovery of these items is not always possible and a lifetime of data or documentation can be lost with one flood.)
- Equipment that is water sensitive or has electrical power
- Computers (also be sure to see that your data is backed up regularly on the public drives available)

Additionally, ensure that all water-reactive chemicals are stored in cabinets that would protect them from water either rising from the floor or dripping through the ceiling.

Keep your lab high and dry!

Training Classes

The next Hazardous Waste and Lab Safety training sessions will be held from 9:30 AM to Noon on:

Wednesdays: September 13th and October 11th at Mellon Institute 320.

Thursdays: September 28th and October 26th at Doherty Hall 4303.

Please check our training web site to reserve a spot at one of the sessions: http://ehs-alert.fms.bap.cmu.edu/Training/training_laboratory_safety.htm

Upcoming Hazardous Waste Pick-up

The following waste pick-ups are scheduled for **August and September:**

From Mellon Institute, 9:30 - 11:30 AM: **Sep 12, Sep 26, Oct 10, Oct 24**

From Wean and Doherty Halls, 12:30 - 3:00 PM: **Sep 12, Sep 26, Oct 10, Oct 24**

From Porter, Roberts, Hammerschlag, PTC and other campus locations, 9:30-11:30 AM: **Sep 13, Oct 11**

Penn Avenue and Robotics Engineering Consortium, your next pick-up is **November 21, 2006**

Computers will be picked up on **Sep 14 and Oct 12**

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.

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