

Laboratories

Health, Safety and the Environment

A Monthly Newsletter from Carnegie Mellon's Chemical Hygiene Officer

October 2009

Training Topic of the Month

All new laboratory employees must received 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 "Chemical Exposure Limits and Medical Activities".

In olden times (say the 1500's), Paracelsus stated "the dose makes the poison." This means that for most hazardous materials, the level to which one is exposed determines whether a chemical will cause harm. **How do we know what a "safe" or an "unsafe" level for a chemical exposure is?** One way is to look at the OSHA Permissible Exposure Limit (**PEL**). This value indicates an airborne level of a contaminant, below which no harm is expected to healthy workers, if exposed at that level for an eight-hour work shift. As you might expect, less hazardous materials have fairly high PELs while the more hazardous ones have lower PELs. If a PEL has been established for a chemical, that PEL is given on the MSDS for the material. Under the OSHA Laboratory Standard, we are required to keep all exposure levels below the PEL.

While air tests may be taken to determine the airborne level of a chemical to which one is exposed, we seldom do this testing in laboratories. At Carnegie Mellon, scores of people work with scores of chemicals, all in different ways. To perform air monitoring for all these combinations would not be possible. Nevertheless, we are confident that you will have exposures below the PELs if you are working **properly** with a chemical. That is, working with volatile chemicals while using a fume hood, proper handling practices and appropriate protective equipment. We DO perform

air monitoring in certain circumstances, such as with very hazardous materials. **If you are concerned about the airborne levels of materials you work with, contact EH&S and we can discuss whether air monitoring is indicated.**

The OSHA Lab Standard requires us to offer "medical consultations" to lab employees in certain circumstances. This consultation involves a discussion with a physician about the situation that produced a possible overexposure. The physician then decides whether further action is needed, testing or treatment, for example. This medical activity is confidential between you and the physician; the employer (Carnegie Mellon) will only get a physician's report of recommendations to follow. Medical consultation will be offered to you in these circumstances:

- ✓ If you develop signs or symptoms associated with overexposure to a chemical
- ✓ If an air test shows you are exposed over the PEL
- ✓ If you were involved in a significant spill or leak of a chemical material

Contact Mark Banister at 8-1493 if you meet any of these criteria, and we can discuss the process.

Laboratory Safety and Hazardous Waste Training

October 7, 2009	9:30 AM to Noon	FMSB 3 rd fl conf rm	October 23, 2009	9:30 AM to Noon	FMSB 3 rd fl conf rm
November 4, 2009	9:30 AM to Noon	FMSB 3 rd fl conf rm	November 20, 2009	9:30 AM to Noon	FMSB 3 rd fl conf rm

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

To find the FMS Building, go to: http://www.cmu.edu/homeimages/campus-map/CMU_MapBW_8x11.pdf (we are building #8)

Environmental Topic of the Month: Mercury

As most of you are aware, mercury is one of the most hazardous materials we find in the laboratory—hazardous to people in the lab and also very harmful to the environment. For many years we here at EH&S have tried to encourage our labs to turn in mercury thermometers and other mercury containing devices that can easily be replaced with non-mercury items. Over the years, we have certainly removed a great deal of mercury from our campus, though we still have a lot to address.

Please look through your lab equipment and identify any mercury containing items that you do not use. Put in a request for a hazardous waste pick-up for those items. They will be removed safely and the mercury recycled.

If you absolutely must have mercury-containing devices for critical uses, please be sure that you have a **mercury spill response kit**. Various options are available commercially. If you would like some advice on selecting spill response

materials for mercury, please contact me at markb2@andrew.cmu.edu.

MELLON UPDATES

There are two topics I'd like to address especially for the Mellon Institute lab folks.

*There was a potentially very serious incident recently where a large cylinder of liquid nitrogen tipped over as it was moved into an elevator. (Note to campus folks: MI lab people transport their own gas cylinders.) Additional safety precautions and procedures are being developed for cylinder transport and will be presented soon. **In the meanwhile**, please use **EXTRA caution** when moving cylinders in and out of the elevator. Should this have occurred when the elevator doors were closed, there may have been very serious consequences.*

Also, there have been incidents of a strong sulfur odor in Mellon from time to time. This is typically related to cage washing activity on the lower floors of the building and the resultant exhaust ventilation. Cage washing typically occurs on Tuesday and Friday. Continue to report the odors to FMS as there may actually be a gas leak or similar problem, but also realize that the cage washer is typically the cause.

Respiratory Protection

Here at Carnegie Mellon, we strive to provide laboratory facilities, practices and procedures that should preclude any person's need to wear respiratory protection in the course of their work. As a result, there are VERY FEW campus situations where one is needed. Additionally, due to fairly strict and comprehensive OSHA respirator regulations, it is **IMPERATIVE** that EH&S know where any respirators are being used, to determine that they are properly used and offering the protection needed. If you or your lab workers use or have respiratory protection, please let me know promptly. I will ensure that both compliance and safety are properly achieved. If respirator use is necessary, EH&S will provide you with the proper respirators.

Disposable face-piece masks are permitted in most circumstances, though please contact me regarding these as well, as there are still regulatory requirements associated with them.

Hazardous Waste Pick-up Schedule

Mellon Institute	Oct 13,27 Nov 10,24	9:30 AM to 11:30 AM
Wean and Doherty Halls	Oct 13,27 Nov 10,24	12:30 PM to 3:30 PM
All other main campus locations	Oct 14, Nov 11	9:30 AM to 11:30 AM
PTC	Oct 14, Nov 11	12:30 PM to 3:30 PM
Penn Ave., Robotics Consortium	October 28	
Computers	Oct 1, 5, Nov 5, 9	

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>