

### *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 "**Compressed Gas Storage and Use**".

#### **Compressed Gases**

1. Compressed gas cylinders shall be stored and secured in an upright position.
2. In areas of gas cylinder storage, cylinders shall be segregated according to their hazard properties. When more than one cylinder is stored together, cylinders shall be kept tightly nested and secured with straps or chains.
3. On cylinders not equipped with a valve shutoff, a wrench shall be provided and kept on the valve at all times to permit rapid emergency shutoff.
4. Cylinders shall be stored with the protective valve cap in place. No cylinder may be stored with the regulator still installed.
5. Cylinders of compressed gases should be securely strapped or chained to a wall or bench top.
6. Close the gas cylinder at the top of the tank when not in use—do not rely on the regulator for this purpose.
7. All compressed gas cylinders and chemical containers should be stored away from heat sources and direct sunlight.
8. Only use regulators and equipment (especially with regard to materials to be used for lines and fittings) approved for the gas being handled.
9. Cylinder handling will be performed using equipment appropriate for the task, i.e., cylinder hand carts.
10. Wherever toxic gases are present, special precautions are needed to ensure safe usage. This

may include detection and alarms, and gas cabinets with fire protection. Typical toxic gases include carbon monoxide, hydrogen sulfide, ammonia and silanes.

11. Wherever hydrogen is present, all tubing must be of braided stainless steel hose. Alternative tubing materials will be approved by EH&S on a case by case basis, to ensure that the alternative meets fire protection requirements.
12. Always use caution when placing any compressed gas cylinder in an enclosed area. A leak of even an inert gas can quickly displace sufficient oxygen to cause suffocation of a person within that area!

**Do you ever watch the television show MythBusters? Some time ago they checked out the claim that if a compressed gas cylinder valve was sheared off, the cylinder would have sufficient force to penetrate a block wall. Well, they found out that it was TRUE! Check out episode 63 of that series.**

**Here is a picture of the results of REAL cylinder explosion! (This is, or was, a concrete floor!)**



#### **Laboratory Safety and Hazardous Waste Training**

February 21, 2008

9:30 AM to Noon

MI 348

To register, go to: [http://ehs-alert.fms.bap.cmu.edu/EHSWebSite/Training/ClassDescriptons/training\\_laboratory\\_safety.htm](http://ehs-alert.fms.bap.cmu.edu/EHSWebSite/Training/ClassDescriptons/training_laboratory_safety.htm)

## Particularly Hazardous Substances

Proper management of PHS materials continues to be a common area of non-compliance in our lab inspections. While this newsletter discusses the details of compliance annually in the September issue, I received a recommendation that it would be helpful to list the most common campus PHS materials, to assist our labs in identifying them:

We find these to be the most frequently found PHS in our labs:

Acetaldehyde	Bromine	Hydrofluoric Acid	Methylene Chloride
Acrylonitrile	Chloroform	Hydrogen Sulfide	(Dichloromethane)
Benzene	Formaldehyde	Nickel Compounds	

Remember that when a lab uses a PHS, it must prepare an SOP for the use, including identifying protective equipment, ventilation, and waste disposal techniques. For a list of PHS materials and the standard SOP form, please go to <http://ehs-alert.fms.bap.cmu.edu/EHSWebSite/pdf/cmuphstable.pdf> and <http://ehs-alert.fms.bap.cmu.edu/EHSWebSite/LaboratorySafety/PHSformblank.xls> respectively

### *Environmental Subject of the Month: Sink Disposal*

Especially with incoming personnel, there are often questions regarding what sorts of materials may be disposed of in the lab drain and which are prohibited. Here is a summary of our requirements:

First of all, no Hazardous Wastes—no flammables, acids or bases, corrosives, reactives, poisons, or heavy metals. De minimus levels of very dilute acids are acceptable, provided copious amounts of water are used for flushing immediately after. Also, nothing malodorous (our biggest problem!), nothing lachrymatory or irritating, nothing that might obstruct the system or cause biological materials used for treatment to die.

Well, that pretty much leaves water.

All the better; we would rather collect your waste and dispose of it properly than to deal afterward with a possible environmental problem. If you have any questions as to whether a particular waste can be disposed of in the drain, please contact EH&S at 8-8182.

By the way, did you know that we do NOT have any waste water treatment processes here on campus? Many people think we have operating acid/base neutralizing systems for our drains, but we do not!

<b>Hazardous Waste Pick-up Schedule</b>		
<b>Mellon Institute</b>	Feb 12&26, Mar 11&25	9:30 AM to 11:30 AM
<b>Wean and Doherty Halls</b>	Feb 12&26, Mar 11&25	12:30 PM to 3:30 PM
<b>All other main campus locations</b>	Feb 13, Mar 12	9:30 AM to 11:30 AM
<b>PTC</b>	Feb 13, Mar 12	12:30 PM to 3:30 PM
<b>Penn Ave., Robotics Consortium</b>	Feb 27	
<b>Computers</b>	Feb 7, Mar 6	
To request a waste pick-up or receive waste labels or tags, go to: <a href="http://ehs-alert.fms.bap.cmu.edu/EHSWebSite/Waste_Recycling/HazardousWaste.htm">http://ehs-alert.fms.bap.cmu.edu/EHSWebSite/Waste_Recycling/HazardousWaste.htm</a>		