EHS ENVIRONMENTAL HEALTH AND SAFETY

Lab Chatter

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UNE UNIVERSITY OF NEW ENGLAND

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The OSHA Laboratory Standard

By Peter Nagle

Hazardous chemicals present physical and health hazards to employees in the workplace. For this reason, OSHA has developed standards for employers to deal with toxic and hazardous substances. However, OSHA recognizes that these standards were written for industrial settings and are not necessarily applicable to laboratories. Since chemicals are used in small amounts for short durations in laboratories, it would be impractical to follow the provisions in many of the standards. OSHA laboratory standard 29 CFR 1910.1450 specifically addresses chemicals in laboratories. The standard provides flexibility for organizations to assess chemical hazards in their laboratories and devise a plan to mitigate them, provided that their plans address the required criteria set by OSHA. To achieve this, each workplace that uses chemicals in a lab must develop a Chemical Hygiene Plan that addresses the following:

1. Chemical fume hood evaluations
2. Hazard Assessments and Standard Operating Procedures (SOPs)
3. Employee exposure assessments and medical consultation provisions
4. Provisions for additional protection for work with high hazard chemicals
5. Employee training
6. Management of Safety Data Sheets (SDS)
7. Assignment of Chemical Hygiene Officers

The Chemical Hygiene Plan must be readily available to all lab workers. The UNE Chemical Hygiene Plan can be found in: V:\UNEDocs\Safety Manual\Chemical Hygiene Plan. The UNE Safety Manual can be found on the EH&S website and The Chemical Hygiene Plan will be on our website in the near future.

Good Housekeeping for Labs

By Jessica Tyre

The following is a list of good housekeeping practices which should be implemented routinely in the lab. These recommendations are designed for accident prevention:

- Lab areas will be kept neat and clean at all times.
- Reagents and equipment items must be returned to their proper place after use. (This also applies to samples in process.)
- Contaminated or dirty glassware must be placed in specific cleaning areas and *not allowed to accumulate*.
- Reagents, solutions, glassware, or other apparatuses will not be stored in hoods. (Such storage interferes with the proper air flow pattern, reducing the effectiveness of the hood as a safety device).
- Counter tops will be kept neat and clean.
- Bench tops and fume hoods will not be used for long-term chemical storage.
- Stored items, equipment, and glass tubing will not project beyond the front of shelf or counter limits.
- Stored items or equipment will not block access to the fire extinguisher or safety equipment.
- Stairways, hallways, passageways/aisles and access to exits must be kept dry and unobstructed.
- All containers will be dated and labeled with at least the identity of the contents and the hazards those chemicals present to users.
- No material will be stored upon or hung from suspended ceilings. No ceiling tiles will be removed.

For more information on lab safety, please see Chapter 16 of the Safety Manual.

"Know Safety-

No Injury.

No Safety-

Know Injury."

Safety Spotlight

Our October Safety Spotlight is on UNE Fire Emergency Protocols. You can find more information on this topic and specific evacuation muster points for each building on both campuses in the annual Safety and Security report in the Safety and Security portion of the UNE website.

University-Wide Protocol for Fire Emergency

The following procedure is the university-wide protocol in cases of fire emergency:

1. Pull the fire alarm as you exit the building.
2. Dial 911 from a safe location.
3. State that you are calling from UNE.
4. Provide the proper name of the building, floor and room numbers.
5. Specify fire type (chemical, paper, wood, electrical, etc.).
6. Direct fire/emergency personnel to location.
7. Notify Department of Safety and Security at extension 366.
8. Proceed to your designated muster location (see card posted in offices throughout both campuses).
9. If you are unable to use the stairs for any reason, wait for rescue in the nearest stairwell. Stairwells are designated "areas of refuge."

Do not attempt to extinguish a fire unless trained and in a controlled environment with proper equipment available.

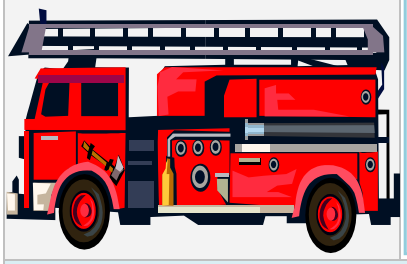
All fires, even if extinguished, must be reported to the Biddeford Fire Department for the Biddeford Campus and Portland Fire Department for the Portland Campus. Additionally, the Department of Safety and Security on your respective campus must be notified.

Fire Drills

Whenever a fire alarm sounds, day or night, the residence halls or other buildings are to be evacuated immediately. Everyone should particularly note the available exit routes. Fire drills will be held periodically throughout the year in all of the residence halls and administrative classroom buildings. Evacuation is mandatory.

Fire Equipment

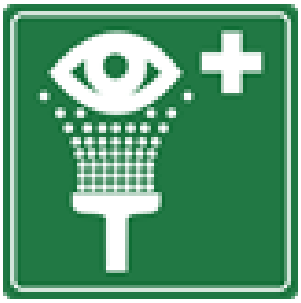
Fire extinguishers, smoke detectors, heat detectors and other related fire protection equipment are provided to protect life in the event of a fire. Any tampering with this equipment, including false alarms, will result in a minimum assessment of one hundred dollars ($100.00) per incident being levied against the individual in addition to other disciplinary sanctions. Tampering with fire alarms or sending false communication of a fire is a felony. Criminal charges may be brought against the violator(s).



Eyewashes and Safety Showers: What you should know

By Jessica Tyre

Eyewashes and safety showers are important pieces of safety equipment in a lab space. Eyewashes are designed to flush hazardous chemicals and debris out of your eyes in an emergency. There are two types of eyewashes: Sink mounted/plumbed eyewashes and Bottle Eyewashes. Sink Mounted eyewashes or free standing eyewashes are hooked into a building's water supply through plumbing connections and offer a continuous flow of water. These eyewashes need to be run and inspected on a weekly basis to ensure that the plumbing is functioning properly and that there is no sediment on the eyewash or in the water supply. After they are inspected, the eyewash tag should be filled out with the inspector's initials and the full date.



During the eyewash inspection you should be looking for the following items:

1. **Is the eyewash location marked with a sign?**
2. **Is the eyewash control device readily accessible and highly visible?**
3. **Are the caps in place over the water nozzles to protect them from contaminants?**
4. **Is the area around the nozzles clear from obstructions and sharp objects?**
5. **Do the nozzle covers come off when the eyewash is activated?**
6. **Does water flow from the eyewash within one second of activation?**
7. **When the water is running: Is the water clear? Are the jets working properly? Is the unit leaking?**

In an emergency, when using the eyewash, you need to let it run in the affected eye (s) for at least 15 minutes. The mistake many people make when using an eyewash station is not letting it run for the full recommended duration. A nearby staff member should clean up any excess water on the floor after the emergency is under control to prevent any slips or falls.

Bottle Eyewashes have expiration dates and should be checked on a monthly basis to see if the bottles need to be replaced. When using the bottle eyewash, you should use the entire contents of the bottle of solution to rinse the eyes. After the unit has been used, you will need to order new bottles for the station to replace what is missing as soon as possible. Bottle eyewashes are ideal in situations where plumbed eyewashes are not feasible. Some first aid kits also contain small bottles of eyewash solution and will need to be checked for expiration dates as well.

Safety showers are tested every semester by the EHS department. They have a special curtain designed to control the spray that the shower emits during testing. If you need your safety shower tested, please email: pnagle@une.edu. Never remove an eyewash or safety shower from your area without prior approval from EHS.

Proper use of flexible power cords

By Ronnie Souza

Improper use of easily overloaded, unapproved extension cords can present a serious fire safety hazard in the workplace.

According to the National Fire Protection Association, electrical distribution equipment, such as extension cords, was the second leading cause of fire deaths in the U.S. between 2004 and 2008.

The most common cause of fires from extension cords is due to improper use and/or overloading, especially when cords have multiple outlets. Most extension cords are only rated for a maximum of ten amps or 1200 Watts. Overloading can occur when multiple devices are plugged into one cord or when cords are "daisy chained" (plugging multiple extension cords together).

The use of unapproved extension cords is a violation of both the OSHA and National Fire Protection Association codes. OSHA Code of Federal Regulations 29CFR1910.303 (a) states that conductors and equipment are acceptable for use only if they are approved by recognized laboratories (such as Underwriters Laboratory, Factory Mutual, etc.).

Hazardous Waste Management

By Peter Nagle

Those of you who have worked in labs on both campuses have probably noticed a difference in the way hazardous waste is managed. For example, weekly inspections must be logged in Biddeford, while labs in Portland are not required to keep a log. The reason for this lies in the state regulations. Portland is a Small Quantity Generator (SQG), while Biddeford is a Large Quantity Generator (LQG). While there are similarities in the regulations for each, there are also many differences. The satellite accumulation area exception is the main culprit for the differences. According to the regulations, a Large Quantity Generator must ship hazardous waste within 90 days of first accumulating it. In other words, a Large Quantity Generator has only 90 days to accumulate hazardous waste on site until it must be shipped. The satellite accumulation exemption provides relief from this. It allows LQGs to generate hazardous waste in small but continual amounts until the container becomes full. Once the container becomes full, the date is recorded on the label and that date becomes the accumulation start date.

The regulations for Small Quantity Generators are a little different; they have 180 days from the container full date to ship their waste off site. Since a SQG is allowed to accumulate hazardous waste on site indefinitely, the satellite accumulation exemption is not needed nor does it apply. In Portland we call the areas where hazardous waste is accumulated, Waste Accumulation Areas, so as to distinguish them, in a regulatory sense, from Satellite Accumulation Areas. Using the term Satellite Accumulation Area in Portland might unnecessarily subject the campus to Large Quantity Generator regulations. Welcome to the world of hazardous waste regulations!

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General Spill Clean Up Procedures

By Ronnie Souza

Chemical spills need to be minimized as much as possible. If a chemical spill should occur, a quick response will help minimize potential harm to personnel, equipment and laboratory space.

First decide if you are trained, knowledgeable and equipped to handle the chemical(s) involved in the incident. Laboratory workers who have had the proper training and possess the appropriate equipment can safely and effectively handle the majority of chemical spills that occur in the laboratory. Never proceed to clean up a spill if you do not know the hazards associated with the chemical or if you are unsure of how to clean up the spill.

Immediately alert others in the laboratory of the spill, evacuate to a safe location, and notify Safety & Security at #366 and request assistance from Environmental Health & Safety. Alert Safety & Security if you or another person is injured or contaminated and immediately begin decontamination measures or first aid, if trained.

Remember all clean-up materials contaminated with the chemical must now be collected and disposed of as hazardous waste. Never dispose of these materials as regular lab trash.

UNE Chemical Sharing Listing

The UNE Chemical Sharing Program is a great way to reduce hazardous waste, reduce costs for your department, and have a positive environmental impact on campus.

If you have any commonly used lab chemicals you are thinking of disposing of, please contact EHS so they can be listed in the next issues of EHS Lab Chatter as available for the UNE Chemical Sharing Program.

Chemicals currently available: