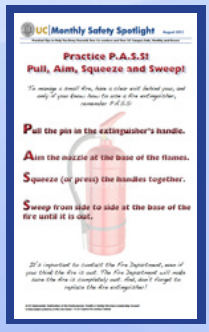
August 2013

Lab Safety

Poster of the Month

Practice P.A.S.S!



To manage a small fire, have a clear exit behind you, and only if you know how to use a fire extinguisher, remember P.A.S.S.

Download Poster

Links and Resources

UCSD Flash Chromotography 101

To Be (Safe) Or Not To Be

Splash Zone

Proper Use of a Fume Hood

Pipette Safety and Ergonomics

A Day in the Lab

UC Berkeley Emergency Eyewash Video

UCANR Fire Extinguisher Video

UC Safety Spotlight

A UC System-Wide Publication of the Environment, Health & Safety Leadership Council

PPE Distribution Events

President Yudof's communication to the Chancellors on June 12, 2013, informed the campuses of three important new policies: ***Laboratory Safety Training, Minors in Laboratories & Shops and Personal Protective Equipment (PPE)****. The PPE Policy is referenced in both of the other two new policies: requiring that PPE be covered in training, that a lab-specific safety training include the use of PPE and that minors are also required to follow the new PPE policy. PIs or activity sponsors are required to provide appropriate PPE to minors who are participating in research activities.*

Who

- A worker is defined by the new PPE policy as one "who actively performs work functions with hazardous materials or equipment in a laboratory/technical area. A 'worker' may be faculty, staff, student volunteer assisting in a non-academic class, or visitor/visiting scholar." This policy "excludes individuals who only passively participate in tours, lectures, conference, etc."

What

- Prior to selecting PPE, a worker needs to first understand what type of PPE is required. This will be accomplished with a hazard assessment tool specific to your campus.
- The initial roll-out of the UCOP PPE Program will include almost 10,000 face shields, over 115,000 lab coats and nearly 135,000 pairs of protective eyewear. Most workers will receive two lab coats and two pairs of protective eyewear. Lab coat styles have been ordered in both a male and female cut version and will include a traditional poplin lab coat, a knit-cuffed barrier lab coat and a flame-resistant lab coat will be available. The coats will be offered in sizes that range from double-extra-small to triple-extra-large. A small selection of tall sizes will be offered as well. Mission Linen has the system-wide contract for supplying these garments, and will also offer laundry service starting

Identify Hazardous Chemical Waste

Rule of Thumb:

If the material has a Safety Data Sheet, and you would be reluctant to eat, drink or wear the material, it is probably a hazardous waste. If it is corrosive, flammable, reactive, toxic or if it appears on federal or state lists of hazardous waste. Consult your campus EH&S hazardous waste program for more information.

Anything that meets the following criteria is also hazardous waste and must be handled according to applicable local, state and federal regulations. Regularly check chemicals inventories for materials that are:

- Unwanted and intended to be discarded
- Spent material
- Abandoned or unlabeled and has been unlabeled for more than ten days
- Unusable because it does not meet its required specifications
- Past its expiration date

late in 2013. Further details regarding the laundry program will be announced at a later date. The protective eyewear distribution will include a diverse selection of ANSI Z-87 standard-approved impact resistant safety glasses and chemical splash goggles. Both of these styles will also be offered in a selection of "over-the-glasses" versions designed to fit over a person's prescription glasses (which are NOT designed to protect your eyesight from impact or splash hazards.) People requiring the use of bi-focal lenses will be offered reader-style ANSI Z-87 safety glasses ranging in magnification from 1.0 to 3.0. In addition, UCOP will supply a small number of ANSI Z-87 face shields to any lab that needs this specialized PPE. Fisher Scientific has the system-wide contract for the protective eyewear and face shields that are offered as part of this program.

When & How

- Obtaining the PPE requres patience, the manufacturers need time to acquire the supplies needed to fill an order of this magnitude. The current estimate for receipt of these orders starts mid-November 2013 through February 2014. Campus distribution events can begin once the equipment becomes available.

Dates to Remember:

- Laboratory Hazard Assessment Tool (LHAT) (Online): Late Summer 2013
- Video Training: Early August
- Distribution Event Range: Expected to be late Fall 2013 through early Winter 2014
- Marketing and Communication Package: Early Fall 2013
- On-Site Laundry Facilities: TBD

Safety Glasses: Can One Size Fit All?

Many eye injuries occur because of inadequate side protection or improper fit

A "one size fit all" approach may work for some things, but not when it comes to safety equipment and safety glasses. The CDC reports that 2,000 eye injuries occur every day at work in the United States. When the diversity of the population is taken into account, with all different sizes and shapes of heads, faces and noses it's clear that properly fitted safety glasses are necessary and provide the highest level of protection and comfort. Safety eyewear manufacturers offer hundreds of different varieties and styles, and they have designed safety glasses specifically to fit the diversity of noses and faces. Safety managers, PIs and supervisors should acquire properly fitting safety glasses for all employees who need safety eyewear. This may involve ordering several different sizes and styles of glasses and even specifically fitting certain employees. Not only will the employees feel better about wearing them, but the safety factor will increase, as the eyewear will fit better.

PPE for Specific Hazards

What are the primary hazards for which you use safety glasses? Safety glasses typically are worn to protect against impact and optical radiation.

When are you required to have "side protection" or "side shields" on your safety glasses? This is required whenever there are hazards from flying particles or objects.

When should you wear goggles? Use goggles for higher impact protection, greater particle protection, chemical splashes and welding light protection and during tasks such as sawing, chipping, grinding, masonry work, using a nail gun, pouring cement and working with chemicals. Goggles must be indirectly vented.

When should you use a faceshield? Use faceshields for even higher impact hazards and to protect the wearer's face in addition to the eyes, and for tasks including work with cryogenic liquids (liquid nitrogen) spraying, chipping and grinding. Faceshields must always be used over safety glasses or goggles; be aware that particles or chemicals easily go around a faceshield, and the faceshield's curve can direct them into the eye.

UCSD's Splash Zone Video

*Occupational Health & Safety, 2010, http://ohsonline.com

Chemical Labeling

The CalOSHA regulation Title 8 CCR Section 5191 specifies that chemical labels contain specific information. High hazard materials require additional information. Follow these steps for proper labeling:

Accurately label chemicals transferred from their original containers. They must be labeled with the following required information, written legibly:

- Chemical name (in English – chemical structures are discouraged)
- Concentration, if applicable
- Hazard warning (flammable, corrosive, toxic, reactive – using the GHS pictograms is encouraged)

Include the following information required for chemicals which are time-sensitive materials, peroxide formers or air/water reactives:

- Date received
- Date opened
- Expiration/Retest Date

Prominently post a chemical abbreviation sheet in the lab when abbreviations are commonly used on labels. Flammable Materials Storage Refrigerators are labeled by the manufacturer. Flammable Materials may only be stored in a refrigerator or freezer per the label by the manufacturer.

Eight Tips to Get a Grip on Your Chemical Inventory

Be detailed – include the entire product name, manufacturer, product code, container, physical form and quantities.

An accurate chemical inventory is the foundation for your overall chemical management initiatives and GHS (Globally Harmonized System) compliance.

Rewards:

Establish a solid baseline for creating chemical approval and control procedures, ensure SDS compliance and automate regulatory reporting.

Here are some things to consider before beginning an inventory.

1. Tidy up. For safety and efficiency purposes, do a little "spring cleaning" on the areas that you are going to inventory. Dispose of unused or outdated chemicals before beginning.

2. Label and/or bar-code materials. Make sure all chemicals are labeled or use bar codes, if they're available from your SDS or inventory management system. Labeled materials will speed up the inventory process and allow for the least disruptions of research activity.

3. Plan the work, work the plan. Set the date early and educate employees about the inventory process. Have a map of the facility and, if employing multiple teams to inventory, assign areas up front so there is no overlap or redundancy in effort.

4. Create chemical areas. Organize the inventory by chemical areas, which is either the physical location or logical grouping of materials. Typically, this is by physical location, but sometimes it is also by a logical department. Organize by hazard class.

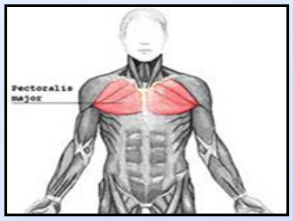
5. Be thorough. Do not skip chemical areas, cabinets, etc. and proceed in a planned, organized fashion. Be detailed – include the entire product name, manufacturer, product code, container, physical form and quantities. Furthermore, don't move misplaced material during the inventory. Make a note and move them to their proper location later.

6. Audit the inventory as you go. Have other individuals or separate teams perform spot checks throughout the day, rather than after you're done. This way, any issue in the inventory process or counts can be addressed while the chemical inventory teams are present.

7. Develop a routine inventory schedule. Finally, make the chemical inventory process a routine event, perhaps annually.

Getting a handle on your chemical inventory is the cornerstone of preparing for Cal/OSHA's transition towards incorporating provisions of the Globally Harmonized System (GHS) into the U.S. Hazard Communication Standard. The new Hazard Communication regulations require GHS-compliant Safety Data Sheets to be provided by chemical manufacturers. These updated SDS' explain the new hazard and precautionary statements, as well as pictograms that will be present on all new GHS labels. A careful inventory, a review of chemical storage and incorporating the new SDS' into your hazard communication training helps ensure your compliance under the new regulation.

The Doorway Stretch - Pectoralis Muscles



What is the pectoralis?

It is a large muscle of the upper chest wall that helps to move the shoulder joint. Thick and fan-shaped, the muscle originates from the clavicle and sternum. . It serves to raise the arm in front, move the arm across your body and rotate it inward. This muscle can often shorten over time with extensive computer use or work at the lab bench. Chronic shortening of this muscle can lead to rounded shoulders and slumped posture.

How can I stretch this muscle at work?

This easy stretch requires no special equipment, just the use of a standard doorway. Stand in the middle of the doorway with both hands firmly on either side of the door frame, with elbows at or around shoulder height. Step forward with one foot and bend at the knee, keeping your hands firmly in place. You should feel a stretch across your chest. Hold this stretch at a comfortable position for 10 to 15 seconds, then rest and repeat as needed. As with any exercise, a mild stretch should be felt; you should not exercise in pain. If you do experience pain, stop the stretch. Consider consulting a health care professional about your pain.

Foundations of Eyewash/Safety Shower Protection

Do workers know what to do in case of a chemical exposure emergency? Are procedures in place to take care of the injured employee immediately?

An emergency eyewash – for chemical exposures to the eye or face – and an emergency eyewash/safety shower combination – for larger chemical exposures to the body – are the first line of defense in managing chemical exposure.

Do whatever is needed to ensure a clear pathway to the emergency eyewash/safety shower unit. Ensure access to the unit within ten seconds of the hazard. No stacks of junk, excess storage or trash bins should interfere. At least 34-inches of clearance must be maintained around the eyewash/safety shower.

Do your employees know what to do in a crisis? What about your management? Are processes in place to take care of the injured employee immediately? Installing a simple plumbed eyewash or combination eyewash/shower can save countless dollars in lost work time, physical injuries, OSHA citations, insurance costs and training temporary or replacement employees. Do you know the regulations, including federal 29 CFR 1910.151(c) and California 8CCR§5162? Check out http://www.dir.ca.gov/dosh/dosh1.html for targeted information and some great training guides.

The Evaluation

The following are a few items to consider the next time your facility considers installing eyewashes or safety showers, such as during renovation activities or when work in a space changes significantly to include quantities of corrosives or other materials injurious to the eye.

- Emergency eyewashes should be placed in areas where there is a risk of chemical splash to the eyes. A good rule of thumb is that if there's a fume hood in the space, an eyewash is indicated. An emergency eyewash may be supplemented and supported by a drench hose but a drench hose alone is not considered a compliant eyewash. Everyone must know where the closest eyewash station is and how to get there with restricted vision. Don't forget employees must know how to get help, because time matters in an emergency – particularly in a chemical eye exposure situation.

- Emergency eyewash/shower units should be placed in areas where there is a significant risk of chemical splash to the body. If there are large quantities (2.5 liters or more) of corrosives or organic solvents in use, then an eyewash/shower is indicated. A combination eyewash/shower is required – a stand-alone safety shower is not permitted.

- Train all employees on the specifics of the eyewash/safety shower equipment, locations within the facility, why it is there, how to use it and that it is OK to use it. Document training. Often employees are afraid to use the eyewash or shower, for fear of making a mess.

- Make sure there is a fully integrated weekly testing (ANSI/ISEA Z358.1-2009) activated and documentation program in place. Ensure weekly testing is done as required and that the tests are performed properly.

- Do whatever is needed to ensure a clear pathway to the eyewash/shower unit. No stacks of junk, excess storage or trash bins should interfere. Maintain at least 34-inch clearance around the eyewash/shower and mark the area with a prominent sign.

Careless Chris

Careless Chris Drops a Bomb... an Imaginary Scenario

The mid-afternoon doldrums had struck, and lab manager Careless Chris jerked his head back up, trying very hard to look alert and attentive despite the lack of interesting activities taking place at the moment. Barely minutes later, he felt that warm, fuzzy, lethargic stupor stealing back over his brain and his eyes began drooping closed again...

Read the story

Feedback, Please

Send an email to safetyspotlight@ucdavis.edu to submit your comments on the August 2013 issue or to suggest content ideas for future issues. We look forward to hearing from you!

COMING SOON!

Fleet/Traffic Safety

Check out our September 2013 issue to learn the importance of fleet and traffic safety!

connect

Know where to turn on your UC campus for the information you need to keep yourself, your workplace and your environment safe and secure. Click on the campus links below to connect to local program, educational and informational resources.

UC Berkeley	UC Riverside	UCOP
UC Davis	UC San Diego	UC ANR
UC Irvine	UC San Francisco	
UCLA	UC Santa Barbara	
UC Merced	UC Santa Cruz	

2013 CHEMA Award Winners

Congratulations to the UC team! At this year's CSHEMA (Campus Safety Health and Environmental Management Association) awards dinner, the following campuses were recognized: ANR, UCB, UCI, UCLA and the UC system.

Irvine earned two awards, Perks for Peers, for the reduction of false fire alarms through partnership with the responding fire department and for Integrating Safety and Reducing Injuries in a Large Research University. Los Angeles was recognized for the Standard Operating Procedure Template Library. Agriculture and Natural Resources was recognized for their 4H Camp Safety Program and Berkeley was awarded for their Contractor Safety Manual. Finally, the University of California System was recognized with the Lab Safety Fundamentals award!

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