
ENVIRONMENTAL HEALTH AND SAFETY

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Artists to Reduce Hazardous Waste, Again

The Art Department has long been a leader in recycling process wastes rather than shipping them off for disposal as hazardous waste. As a result of work by the Art Department's David Horan and EH&S' Erik Tyge, artists will soon move beyond processes like recovering silver from spent photographic solutions to begin recycling solvents used for cleaning artists' brushes and similar tools.

Upon installation of a new parts washer, a contractor will begin recovering spent solvent for reuse. This process will eliminate many gallons of hazardous waste annually, reducing costs and headaches associated with managing hazardous waste.

Follow the lead of our artists and chemists: reduce, reuse, and recycle.



Amanda Philpot and Adam Ramsey scan a Chematix barcode in Dr. Jennifer Mandel's lab

Fume Hoods Give Reliable Protection

Results of annual laboratory fume hood testing by EH&S show continued protection for lab workers. Test results from 2013 showed over 98% of tested fume hoods met or exceeded specifications, a testament to preventive maintenance work by the fume hood contractor and the reliability of current systems. We expect similar results in 2014. Your fume hood takes good care of you; return the favor by taking care of your fume hood and using it properly.

See our on-line tutorial to learn more about proper use and operation of your fume hood.

Chemical Inventory at the Speed of Light

If you use Chematix, there is now an easy way to inventory your chemicals: just push a button to scan the barcode on each container, upload the data, reconcile the inventory, and you're finished.

EH&S will happily lend you a barcode scanner; we'll even help you upload the data and reconcile the inventory. Contact Erik Tyge for assistance.

Keep your lab chemical inventory accurate by deleting containers as they are emptied and adding chemicals as soon as they arrive.

Lab Safety Seminar August 28

The Laboratory Health and Safety Seminar will be presented in the University Center Theatre from 1:15 p.m. until 4:15 p.m. on Thursday, August 28.

We will continue the tried and proven (e.g., cookies and door prizes) while incorporating your suggestions to improve the seminar. Come have some fun and learn more about working safely in the lab.

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Shining Light on Waste Lamps

If you've ever placed a burned-out fluorescent light bulb (more properly called a lamp, not a bulb) in the trash or simply stashed it in the corner, then your name may be on the naughty list.

Many kinds of lamps contain mercury, an element known for its toxicity and persistence in the environment. If we are to reduce the amount of mercury entering the environment, it is critical that we manage waste lamps properly – and that means not placing them in the trash or leaving them lying around to be broken.

Mercury containing lamps typically include the following types of lamps: fluorescent; ultraviolet; and high-intensity discharge, including mercury vapor (bet you would have gotten that one on your own), metal halide, and high pressure sodium. Those squiggly fluorescent lamps from your home can easily be recycled by dropping them off at Batteries Plus, Home Depot, Lowes, other participating retailers, or the Shelby County Household Hazardous Waste Facility (Shelby County residents only).

The recycling process for U of M is more complicated due to U.S. Environmental Protection Agency regulations. Those regulations and internal procedures require that we store waste mercury-containing lamps in structurally sound containers that are 1) clearly marked with the words Waste Lamps, or Used Lamps, or Universal Waste - Lamps; 2) marked with the date when a lamp was first placed in the container; 3) stored in a dry location that provides protection from crushing and impacts; 4) kept securely closed except when adding lamps to the container; and 5) transferred to Physical Plant's universal waste storage area when filled.

For more illuminating information about waste lamps, see our on-line guide and watch this video from Cornell University EH&S.

UCLA Professor Avoids Prison – for Now

Dr. Patrick Harran, the UCLA professor charged with four felonies after 23 year old Sheri Sangji received severe burns in his lab and later died, reached a court-approved agreement with the Los Angeles District Attorney. If Dr. Harran complies with all the agreement's conditions over the next five years, the charges will be dropped. The University of California Regents reached a deal with prosecutors in 2012, resolving felony charges against them.

Some of the conditions that Dr. Harran must meet over the next five years include, paying \$10,000 to the Grossman Burn Center, performing 800 hours of non-teaching service at the UCLA hospital, not violating the California labor code, and not publicly denying responsibility for conditions in his lab at the time of the tragic accident.



Answer: Container is not structurally sound, not labeled with words "Waste Lamps," not dated, not stored in a dry location and protected from breakage, and not sealed.

Can you find the problems here?

Safe Science Report Issued by National Research Council

As an outgrowth of several high profile laboratory accidents at other institutions that resulted in serious injuries and deaths, the National Research Council just issued *Safe Science: Promoting a Culture of Safety in Academic Chemical Research*. The draft report, free for download, emphasizes the need to make safety an integral part of research, listing recommendations for everyone from an institution's president to lab workers – all of whom play a vital role in promoting a safe and healthful workplace.

Among the recommendations for researchers and principal investigators is to incorporate hazard analysis into the research process and ensure that it is specific to the laboratory and the area of research.

Please take time to perform a hazard analysis before you start a process. See the EH&S web site for useful forms and checklists to help with this process.

Formaldehyde is a Human Carcinogen

The National Toxicology Program (NTP) classified formaldehyde as a known human carcinogen in 2011. The National Research Council (NRC), acting at the request of Congress in response to industry criticism of the NTP classification, independently reviewed toxicological studies of formaldehyde and concluded that sufficient data exist to support the association between formaldehyde exposure and human cancers.

OSHA already sets the airborne occupational exposure limit for formaldehyde to two parts per million (ppm) over a 15 minute period and 0.75 ppm over an eight hour period. So, the NTP and NRC reports are just more reasons to not use formaldehyde outside a fume hood.

Avoid working with formaldehyde outside a fume hood unless you know that the airborne concentration is within acceptable limits.

Biosafety and Security Woes at CDC

Recent safety lapses at the U.S. Centers for Disease Control and Prevention (CDC) tarnished the image of the Centers, led to temporarily halting shipments of biological agents from high-hazard (BSL3 and BSL4) facilities, caused the temporary shutdown of two labs, and the implementation of other corrective actions. Although no adverse health effects resulted from any of the incidents, the potential ramifications were very serious.

The incidents included discovery of six undocumented vials labeled “*variola*” (smallpox virus); unintentional shipment of a sample contaminated with highly pathogenic H5N1 influenza virus; and transfer of potentially viable anthrax bacteria (*Bacillus anthracis*) between labs. Poor inventory control and failure to follow proper scientific protocol were reflected in these potentially serious safety lapses.

See why we keep harping on managing your inventory and following SOPs written specifically for your processes?

Burkey Lab Gets Chemical Storage Right

Personnel in Dr. Theodore Burkey’s lab recently updated their chemical storage, segregating chemicals by hazard class, placing them in secondary containment, and more efficiently organizing them.



Chemicals in the Burkey Lab are grouped by compatibility, arranged in easily removable secondary containment, and secured behind closable doors

This process improved safety by organizing compatible chemicals into trays that make it easier to find what is needed while containing potential leaks. The trays were then stored in cabinets with sliding doors to ensure that nothing inadvertently falls off the shelves to create a dangerous situation.

Another great benefit of this process is that the contents of each shelf and each tray can be cataloged into Chematix to help lab personnel quickly locate a specific container with a few clicks of the mouse.

Let us help organize your chemicals for optimum safety and efficiency.

Sources of Assistance

Director, EH&S	678-4672
Radiation Safety Officer	678-4672
Hazardous Materials Specialist	678-2044
Laboratory Safety Specialist	678-2740
Fax	678-4673
Emergency (Fire, Police, Ambulance, after hours Chemical/Radiological)	678-4357
EH&S Web Page ...	http://ehs.memphis.edu

How About Some BBP Training?

If you may be exposed to human blood or other potentially infectious materials, state and federal regulations require you to receive annual training. Contact Katherine Shorter to schedule an in-person or on-line bloodborne pathogens class.

Explosion Injures Minnesota Grad Student

Synthesis of trimethylsilyl azide in a University of Minnesota (UMN) chemistry lab resulted in a June 17 explosion that injured graduate student Walter Partlo. “The Safety Zone” stated that Partlo’s injuries included “second degree burns and glass injuries to his arm and side.” His eardrum was also injured by the blast.

The synthesis was being performed according to published methods – with some modifications – and had apparently been performed several times by members of the UMN research group.

Two of the most likely causes of the accident were identified as “either formation and detonation of hydrazoic acid or overheating of sodium azide.”

UMN advises researchers to update risk assessment procedures, avoid assuming that published procedures contain complete information on risks, and performing “complete risk assessments on potentially hazardous experiments.” More information on risk assessment is available in the American Chemical Society’s *Identifying and Evaluating Chemical Hazards in the Research Lab*.

Are you fully assessing the risks of your processes and taking appropriate protective measures?

The Ups and Downs of Ladders

Hundreds of workers are killed, and thousands seriously injured, each year as a result of falls, and falls from ladders make up a significant percentage of those statistics. Most ladder falls are associated with slippery, cluttered, or unstable surfaces; unprotected edges; floor holes and wall openings; and unsafe positioning of ladders.

The National Institute for Occupational Safety and Health (NIOSH) has a safety app that will help you with selection, inspection, positioning, accessorizing, and safe use of extension ladders. Information on stepladder safety is available from OSHA.

Take time to learn about ladder safety, and then use your ladders safely.

Funny, Timeless Safety Videos

In less than 2 minutes you can have a few laughs and see some timeless safety reminders in “Unforgettable Workplace Safety Videos” at boston.com. Take time to watch, it’ll remind you just how quickly and innocently a workplace accident can happen.

“Be careful out there!”



Click on the image above to see a short fire safety video from Iowa State University

Environmental Health & Safety Staff

Alton Simpson, Director
Katherine Shorter, Laboratory Safety Specialist
Erik Tyge, Hazardous Materials Specialist
Ann Marie Cowles, Senior Admin. Secretary

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MEMPHIS

Environmental Health and Safety
216 Browning Hall
Memphis, TN 38152-3340