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## Department of Homeland Security Mandates Chemical Inventory Reporting from every Columbia Lab:

### IMMEDIATE ACTION REQUIRED!

The Department of Homeland Security (DHS) has issued Chemical Facility Anti-Terrorism Standards (CFATS) for all facilities that manufacture, use, store, or distribute certain chemicals above a specified quantity. The federal government has recognized that research universities may have chemicals of interest (COIs) to terrorists, and the legislation requires detailed chemical inventory reporting. As a result, CU must collect inventory information from all labs by **February 1, 2008**.

The compliance need for with this initiative is two-fold. Some chemicals used for research may be subject to theft or sabotage for use in a terrorist action and, the legislation calls for fines of up to \$25,000 per day for unreported chemicals. For instructions on complying with this time sensitive federal initiative, please visit <http://www.ehrs.columbia.edu/dhs.html>. Questions regarding this process should be addressed to Steven Berman, Senior Laboratory Safety Officer, (212)342-1211 or [sb2412@columbia.edu](mailto:sb2412@columbia.edu).

## Safely Managing Laboratory Waste Streams: Not all bags are created equal

You may think that all bags are created equal and a bag is a bag. Well, this is not the case. Recently, a drum of discarded ethidium bromide gel waste was rejected from the processing facility due to the presence of a red, Regulated Medical Waste (RMW) bag inside it. Hazardous (chemical) waste processing facilities are not permitted to receive or process RMW. These wastes are immediately rejected, resulting in expensive additional handling and processing fees. For disposing ethidium bromide gels and other chemical waste, please follow these procedures:

- When collecting ethidium bromide gels, line the pail with a clear plastic bag, not a red bag.
- Complete the chemical/hazardous waste label including the building, room number and phone extension; affix it to the collection container.
- Immediately replace the lid on the pail after adding gel waste.
- BEFORE the container is full, submit a chemical/hazardous waste pickup request (for Morningside campus, <http://www.ehrs.columbia.edu/ChemicalWastePickupForm.html>; Medical Center, <http://www.cumc.columbia.edu/dept/ehs/chmwstfrm.html>) to prevent overfilling and spillage.
- Do not place sharps (pipette tips, razor blades, glass Pasteur pipettes) inside bags as they can puncture the bag; even micropipette tips can puncture a person's skin.
- Pipette tips that contain a hazardous waste (such as phenol/chloroform tips) must be collected in a rigid container labeled using a chemical/hazardous waste label and stored closed when not actively used. EH&RS/EH&S can supply 5-gallon pails for these wastes or labs can recycle previously used chemical bottles (glass or plastic).
- For containing spill debris, use only clear bags, not red bags. Spill debris must be closed/sealed and labeled with a chemical/hazardous waste label.

## Winter Safety Tips

### Home Heating

With the high cost of home heating fuels and utilities, many homeowners are turning to alternate sources of fuel for heating their homes. These alternate methods include space heaters, and wood burning stoves. Following these simple fire safety tips can help maintain a fire safe home this winter. **Remember, in New York City, propane or kerosene space heaters are illegal.** If you choose to use electric space heaters:

- Use units that are UL rated.
- Move all combustibles including furniture three feet away from heater.
- Do not run cords under rugs or furniture.
- Do not use an extension cord.
- Make sure heater has a tip-over switch that will automatically shut off the device.
- Do not use in bathrooms or other moist areas.
- Always use heaters on the floor, never on furniture.
- Always turn off space heaters when leaving the home, or sleeping.

### Carbon Monoxide

What is Carbon Monoxide? It is an odorless, colorless, tasteless toxic gas produced from incomplete burning of any fuel. Many times the symptoms of carbon monoxide exposure mimic the flu-headaches, dizziness, nausea, and fatigue. At very high concentrations, it can quickly cause death. Many appliances found in the home can produce carbon monoxide if not properly maintained. Gas stoves, fireplaces, heating equipment, gas dryers, hot water heaters and even your car can produce carbon monoxide.

New York City requires a carbon monoxide detector be installed in all residential occupancies. Detectors should be placed on each level of the home, near the sleeping areas, and at least 5 feet away from any fuel-burning appliance such as a furnace, or hot water heater. If your carbon monoxide detector sounds, evacuate every one from the house, open windows and call the fire department. Test your detector monthly, and change the batteries twice a year when changing your clocks.

- Install and **properly maintain** (change batteries when you reset the clocks) smoke and CO detectors.
- Have your home heating system checked annually.
- Frozen pipes? Never use a torch or other open flame-use a UL listed hair dryer.
- Never use propane or charcoal grills indoors.
- Never leave a car running in a garage.
- Never use your oven or gas stove to heat the home.

## Have you checked the dates on your compressed air tanks?

Both the U.S. Department of Transportation (DOT) and the NYC Fire Department (FDNY) require CO2 cylinders be pressure tested (by the vendor) every 5 years, and every 10 years for all other compressed gases. The Fire Department performs weekly inspections of our laboratories, and your lab may receive a violation notice if cylinders are present beyond their expiration date.

Recently EH&RS/EH&S, along with *TechAir*, performed an audit of all compressed gas cylinders on the Medical Center and Morningside campuses, and identified outdated *TechAir* cylinders. Labs that have compressed gas cylinders from other vendors should check the expiration dates to ensure their cylinders are not overdue for testing. The test date is engraved on top on the cylinder next to the valve. Please call EH&RS/EH&S if you have questions

## Improper Storage Results in Costly Spill

Improper storage of chemicals can pose many different hazards. Recently, EH&RS/EH&S responded to a report of an acid spill in a storage room. Users of the room had stockpiled over 30 gallons (a year's supply!) of chromic-sulfuric acid glassware cleaning agent. To save space, the bottles, inside their Styrofoam-lined cardboard boxes, were stacked on top of one another lying on their sides. The highly corrosive material ate through the caps of several of the bottles, causing the contents to leak out. The resulting contamination rendered the entire (\$4,000) stock of acid unusable, generated 1,100 pounds of chemical waste (removal cost, \$2,700), and caused significant damage to the floor of the room.

A few lessons learned to prevent future incidents of this type:

- segregate chemicals by compatibility groups and/or hazard class;
- always store containers in an upright position;
- ensure that chemicals are compatible with their storage container and the cabinet in which they are stored;
- always use sturdy cabinets and shelving for storage, never store chemicals on the floor; and
- **while bulk purchasing may yield a quantity discount, this example amply illustrates the increased liability associated with storing large volumes of hazardous materials.**

Finally, consider safer alternatives to hazardous products. In many cases, enzymatic detergents can be substituted for acid-based cleansers to ensure ultra-clean glassware. For more information on safe chemical storage, please visit: <http://www.ehrs.columbia.edu/ChemStorage.html>.

## Hazardous Waste Tidbits – Did you know?

Hazardous waste pickup requests are available via the EH&RS/EH&S website at:

<http://www.ehrs.columbia.edu/indexMC.html> just click on your campus and then select the “Forms” menu. For the LDEO campus, please submit and email [hazwaste@admin.ldeo.columbia.edu](mailto:hazwaste@admin.ldeo.columbia.edu). For the Nevis campus, please contact the Morningside EH&RS/EH&S office at 212-854-8749.

- Protective, plastic sleeves are available for chemical/hazardous waste labels to protect them from incidental damage such as the occasional drip. Please remember, waste belongs in the container and not on it.
- Although not a regulatory requirement, for non-hazardous constituents such as buffers or water, it is recommended that the ‘balance’ of materials in a chemical waste container be specified on hazardous waste labels. For example, *sodium azide solution 0.1%, in water*.
- EH&RS/EH&S staff conduct routine inspections of the satellite accumulation areas (SAAs) for hazardous waste in laboratories.

## Empty chemical container disposal at Morningside campus

To reduce disposal cost and reduce the need for new landfill sites, we recycle **unbroken, empty, and clean** chemical containers. Containers must be rinsed and their labels defaced before deposit in the yellow bins. Otherwise, the Department of Sanitation will not collect them. **Containers that held highly toxic, water reactive or pyrophoric materials can not be recycled and must be disposed through EH&RS/EH&S; the same restriction applies to any extremely malodorous materials.** Remember, every little effort is part of the bigger overall picture.

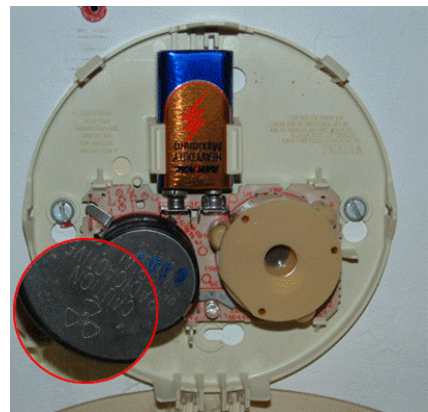
## Respirators

The best protection from respiratory hazards is through elimination of personal exposure by use of engineering controls (fume hoods, biological safety cabinets) and appropriate work practices. Respirators, like any other item of personnel protective equipment are considered a 'last line of defense', and their use is only allowed when the other control methods may not be effective.

OSHA requires that any institution issuing respirators to its employees develop a comprehensive Respiratory Protection Plan that includes hazard assessment, medical clearance, criteria for selection among the different types of respirators, and training and fit testing for users. The vast majority of airborne hazards in laboratories and other Columbia settings **can** safely be managed through engineering controls and other practices; if you have reason to believe that this is not the case for your activities, contact EH&RS/EH&S; **do not** take it upon yourself to select and use a respirator.

## Safe Disposal of Smoke Detectors

Ionization smoke detectors are more sensitive than the conventional photoelectric detectors sold for use in the home. They emit a stream of alpha particles from Americium-241 into the space between oppositely charged circular metal plates. Under normal conditions, the alpha particles ionize the air between the plates, creating a steady electric current. The alarm will sound when smoke reaches the space and lowers the current. The amount of Americium-241 in each detector is small (1-5 microcuries) and the external exposure is of no health concern; however contamination may occur if the source is tampered with. Therefore, it is important that you contact the radiation safety office immediately if you need to dispose of such a smoke detector. EH&RS/EH&S will facilitate the return of the detector to the manufacturer for recycling or disposal.



## It's not too late for Influenza Immunization

This season's influenza incidence is expected to peak in February, leaving ample time for vaccination if you have not already done so. **Immunizations are available at no cost to:**

- **Medical Center Faculty & Staff** may visit the Occupational Health Service, Harkness Pavilion 1 South. Flu Shots are available Monday-Wednesday and on Friday, 8:00 am - 4:00 pm; Thursday from 8 am-2 pm. Bring your medical center ID badge with you.
- **Medical Center Students**, enrolled in the Student Health Services Program, can go to SHS at 60 Haven, Monday-Thursday, 8AM-7PM.
- **Morningside Students, Faculty and Staff**, may visit the Student Health Services, can go to John Jay Hall. The vaccine will be available at a number of different sites, for the schedule, access [http://www.health.columbia.edu/docs/services/immunizations/flu\\_shot.html](http://www.health.columbia.edu/docs/services/immunizations/flu_shot.html).

## EH&RS/EH&S Welcomes Kevin McGhee

EH&RS/EH&S welcome Kevin McGhee, Laboratory Safety Officer, to the team. Kevin worked in the Department of Surgery at the Medical Center campus overseeing laboratory safety for the Division of Surgical Science within the department of Surgery. He will be addressing safety issues at the Morningside campus in Biological Science and SEAS laboratories. Kevin can be reached at [km2323@columbia.edu](mailto:km2323@columbia.edu); or direct phone number, 212-854-1687.