
The Waste-Paper

The Hazardous Waste Disposal Monthly Update

Volume 8 Issue 4

April 2005



Waste Minimization Tip:

Mercury Alternatives

One year ago, in the May's issue of the Waste Paper, EHS was boasting of the successes attributed to our mercury exchange program. At that time the McCosh Health Center was declared a "mercury-free" facility and it seemed as if the rest of campus was following suit. Alas, we recently discovered that mercury-containing pressure and temperature measurement devices are making a comeback. We would like to remind the campus community of the various alternatives to devices containing mercury.

Differential manometers

Some manometers use water or calibrated oils instead of mercury. Pressure transducers or electronic pressure gauges may also work as an alternative to a conventional manometer.

Thermometers

There are a wide selection of mercury-free thermometers available. Non-mercury liquid alternatives include spirit thermometers (filled with petroleum-based mineral spirits) and alcohol-based thermometers. Their temperature ranges may be more limited than a mercury thermometer and, in some cases, the thread breaks a bit more easily than a mercury thermometer, but their accuracy is comparable. (If the thread breaks on a spirit or alcohol thermometer, the simplest method for repair is to use a centrifuge to force the liquid down the cavity.)

When using thermometers to measure the temperature of liquids, it is important to choose one with the correct temperature range and depth. Their accuracy depends on being the correct depth (e.g., total immersion vs. partial immersion) as opposed to mercury, which has better thermal conductivity).



In addition to thermometers with mercury-alternative liquids, long stem digital thermometers are available with probes resistant to acids, bases, solvents and most laboratory chemicals and provide a certificate indicating traceability to NIST standards. They read in both °F and °C, with ranges from -58 to 302°F and -50 to 150°C. Digital thermometers have excellent accuracy.

Where a mercury thermometer is the only option, armor cases (pictured at left), which protect against breakage without affecting accuracy, or



Teflon-coated mercury thermometers are recommended. These are particularly useful in high temperature ovens, oil baths and autoclaves, where cleaning up a mercury spill can be challenging.

Thermometer Exchange

EHS will exchange most mercury thermometers with comparable non-mercury alternatives at no cost. If interested, send an e-mail to Steve

Elwood at selwood@princeton.edu with the specification of the thermometer(s) for replacement. EHS will send your mercury thermometer for reclamation.

Leaving So Soon?

Planning to graduate or leave Princeton for greener pastures (not that we know of any)? Before you go, be sure that all of the chemicals that you have been using are either disposed of or formally assigned to another person in your lab. Do not just leave your chemicals behind assuming that someone else will use or take care of them – that is how unknown chemicals and excessive chemical storage often begins.

Before you leave...

- Go through your lab with your PI or another lab worker. Look at every chemical container and be sure they are labeled correctly.
- Determine which chemicals are needed for future projects and which are not.
- Dispose of unneeded chemicals. If there are materials for disposal after May 26th, make arrangements for someone else to get rid of them at the next pickup.

If you have a whole lab's worth of chemicals to dispose of, we may be able to arrange for help from our waste contractor. Contact EHS at 8-5294 if you have any questions.

This Month's Waste Disposal Drop-Off: Wednesday, April 27, 2005

Lewis Thomas loading dock

- Wednesday from 1:00 - 4:30 PM
- Thursday from 8:15 – 9:00 AM
- Coordinators: [Michael Fredericks](#) (8-1351) or [Mary Zikos](#) (x8-4095)

Jadwin Hall room 124 (Physics only)

- Do not drop off waste before Wednesday
- Coordinator: [Joe Horvath](#) (x8-4364)

E-Quad room 7 (E-Quad and Bowen)

- collection room open from 2:00 - 3:00 PM
- Coordinators: [Joe Laskow](#) (8-4739) and [Joe Palmer](#)

Frick loading dock (Chemistry, Psychology, Visual Arts)

- collection room open from 1:00 - 2:00 PM
- Coordinator: [Kevin Wilkes](#) (x8-3920)

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Joan's Pet Peeve



Yes, folks, some of you have stirred up Joan's pet peeves again. For those of you who don't know, Joan Hutzly is a technical specialist for Environmental Health and Safety who is involved in the chemical waste program.

For those of you who continue to manage disposal of medical waste correctly, Joan thanks you. But...in numerous labs Joan has noticed quite a bit of material in the medical waste boxes that is not "medical waste". Joan has noted such items as product packaging and wrappers, paper towels, and even soda cans and water bottles. Disposal of medical waste is quite costly and obviously we like to keep costs down. Also, with the added time needed to label, seal, and handle the disposal of medical waste boxes, it would certainly benefit the lab to keep the volume of material placed in the boxes to a minimum. For detailed information on medical waste disposal, please refer to the EHS web page <http://web.princeton.edu/sites/ehs/biosafety/biowaste.htm>. For question, please contact Don Robasser 8-6256.

EHS HAZARDOUS WASTE CONTACTS

Main Office	8-5294
Steve Elwood (Chemical & Radioactive Waste)	8-6271
Marcia Leach (Waste-Paper)	8-5296
Don Robasser (Biohazardous Waste)	8-6256
EHS Web Page http://www.princeton.edu/ehs	