

The Waste-Paper

“A waste is a terrible thing to mind”

Volume 12 Issue 6

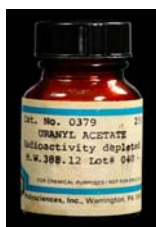
June 2009

Are you sure you don't have any Radioactive Materials...

The answer may surprise you. Radioactive materials or “RAM” have a wide variety of laboratory applications, and some uses of RAM may not be obvious. Licensed RAM is used routinely in laboratory research as a ‘marker’ to label compounds and measure various biological and non-biological systems, but radioactive material is also found in many consumer products and devices readily available for sale to the general public. These so called “generally licensed devices”, or GLDs, are all around us. Examples of such devices, for which no special license is required for purchase, include:



- Self-Illuminated Exit Signs
- Static Eliminators
- Gas Chromatograph Ion Sources
- Smoke Detectors
- Internal Standards in Liquid Scintillation Counters
- Chemical compounds containing natural uranium or thorium such as uranyl acetate and thorium nitrate



All radioactive material, including GLD items, must be managed and disposed of in compliance with federal, state and local laws. EHS makes every effort to document all radioactive devices on campus, and your assistance in this effort is appreciated.

If you suspect that your lab possesses any of the devices mentioned in this article, contact EHS Radiation Safety Staff for assistance: Sue Dupre (dupre@princeton.edu) at 8-6252 or Steve Elwood, (selwood@princeton.edu) at 8-6271.

EHS HAZARDOUS WASTE CONTACTS

Main Office	8-5294
Jim Boehlert (Chemical Waste)	8-7882
Steve Elwood (Radioactive Waste)	8-6271
Tonya Gruchacz (Waste-Paper)	8-6255
Don Robasser (Biohazardous Waste)	8-6256
EHS Web Page	http://www.princeton.edu/ehs

Chemical Exposure Supplies

In most cases, when a chemical comes in contact with skin, first aid consists of flushing the affected area with copious amounts of water. However, for fluoride-generating reagents (HF, NH₄F) and phenol, alternative decontamination methods are highly recommended.

Skin exposure to **hydrofluoric acid (HF)** can cause deep, penetrating burns that may not be painful or visible for several hours. Proper handling is essential to prevent contact. Impervious labcoats, poly vinyl chloride (PVC) or poly chloroprene (neoprene) gloves and faceshields are recommended for most situations involving HF. In the event of skin exposure, the proper first aid is to rinse with water for five minutes and immediately apply 2.5% calcium gluconate gel. Calcium gluconate gel in 25 gram tubes is available through EHS and can be purchased for \$24 using your lab grant number. The gel is good for up to two years.

Phenol is an aggressive organic acid that can exhibit significant toxicity via skin exposure. Neoprene gloves, labcoats and chemical splash goggles should be used for typical research involving phenol.

EHS is introducing a new exposure kit for labs that use phenol. It is available for \$40, charged to your lab grant number and has a five year shelf life. It includes a bucket with neoprene gloves in medium and large sizes (small upon request), decontamination instructions, 1 Liter of poly ethylene glycol 400 MW solution, paper towels, bags for contaminated clothing, and a Tyvek suit to wear in place of contaminated clothing.



Contact Jim Boehlert at 258-7882 to order a phenol exposure kit or calcium gluconate gel.

This Month's Waste Disposal Drop Off: Wednesday, June 25, 2008

Lewis Thomas loading dock

1:00 - 4:30 PM. Coordinators: [Michael Fredericks](mailto:Michael.Fredericks@princeton.edu) (8-1351) or [Mary Zikos](mailto:Mary.Zikos@princeton.edu) (8-4095)

Jadwin Hall (Physics only)

E-mail selwood@princeton.edu with the chemicals, quantity, location, contact person.

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

2:00 - 3:00 PM Coordinators: [Joe Laskow](mailto:Joe.Laskow@princeton.edu) (8-4739) or [Joe Palmer](mailto:Joe.Palmer@princeton.edu)

Frick loading dock (Chemistry, Psychology, Vis Arts)

1:00 - 2:00 PM Coordinator: [Phil Fairall](mailto:Phil.Fairall@princeton.edu) (8-3913)

Summer Newbies In Your Lab

Summer research is in full swing and of new researchers are about in labs. Do any of your new lab members get that “deer in the headlights” look when you ask them to start a new chemical waste container? Are they haphazardly storing chemicals in your work area? Evaluate their chemical stewardship IQ (and yours) by taking the following quiz on chemical storage issues:



One point for each checked box

Chemical Waste Management

- Have you identified which chemicals need to be managed as hazardous waste?
 - Do you avoid pouring hazardous wastes, including toluene and acetone in any amount, down the drain?
 - Are all chemical wastes labeled with the words *Hazardous Waste*, preferably using the yellow waste labels?
 - Are all chemical wastes labeled with the contents using full chemical names in English, not diagrams, abbreviations or trade names?
 - Are all chemical waste containers sealed except when filling, with no funnels left in open containers?
 - Are you using secondary containment for wastes stored near sinks or drains or on the floor?
- One point for each checked box (6 points)**

Storage Areas

Space is at a premium on our campus.

- Are your chemicals stored on sturdy shelves appropriate to the weight?
- Are corrosives stored below eye level?
- Are temperature sensitive chemicals in refrigerators or freezers with *Chemical Storage Only* labels?
- Have you minimized storage of chemicals and other items inside the working area of your fume hoods?
- Do you have less than a combined total of 10 gallons of flammable liquids stored outside of flammable liquid storage cabinets?
- Do you routinely evaluate your chemical stock and take advantage of the monthly waste pickups?

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Chemical Segregation

Storing chemicals alphabetically, without regard to compatibility, can increase the risk of a hazardous reaction, especially in the event of container breakage.

- Are dry reagents stored separately from liquids?
- For dry reagents, are oxidizers, flammables and water-reactives stored separately?
- For liquids, are acids and bases, oxidizers and flammable liquids segregated from each other?
- Are mineral acids (hydrochloric, sulfuric) separated from organic acids (picric, acetic)?

Chemical Shelf-life

- Have you identified chemicals with a limited shelf-life?
- Have you labeled these chemicals with the date received and date opened?
- Do you order only the amount you need?
- Do you remove old/expired materials before getting new stock?
- Do you store these materials in a manner that avoids direct or prolonged exposure to sunlight (through a window) and excessive heat?
- Are the lids/caps secure?

Your Score

Add up all points and compare:

22 points: You are at the top of the class. Interested in a job in EHS? Excellent chemical stewardship!

15-21 points: You paid attention in class. A little more attention to detail and you'll be on the dean's list in no time.

8-14 points: Academic probation may be in your future. Study the Chemical Storage and Waste sections of the Lab Safety Manual and re-test later.

0-7 points: An accident waiting to happen. Looks like you fell asleep in safety training. Review the Lab Safety Manual and contact EHS if you would like some guidance.

Increase Your Chemical Storage IQ

Review the *Safe Work Practices* section of the Lab [Safety Manual](#) at and the [Chemical Waste Disposal](#) page at for guidance or contact EHS.