

Working with Limited Chemical Storage Space: Corrosives

In this multi-part series, we will discuss common problems with storage of chemicals in Emory research labs, and some practical solutions.

Background

Through the lab safety self inspection process, we have encouraged lab personnel to use secondary containers for corrosives and we now find acids and bases are stored this way. However, follow up lab safety inspections indicate that corrosives are stored in spaces not intended for corrosives, and are not stored by compatibility (Image 1).

Identifying what you have...

There are numerous resources available online to help you identify what types of corrosives you have in the lab, and their known incompatibilities.

- A chemical compatibility list is also available from the Emory EHSO by request.
- A useful external source from the University of California, San Diego (UCSD) has an extensive chemical compatibility guide that defines different corrosives types and describes acceptable storage practices (see blue box).
- Chemical manufacturers and suppliers have guidance material as well as safety data sheets (SDSs).



Image 1. Damage to the chemical containers and the cabinet due to incompatibilities.

Visit http://blink.ucsd. edu/safety/researchlab/chemical/storage/ compatibility.html, or Google "UCSD chemical compatibility" for access to this resource.

...and where to put it

- It is best not to store acids in the flammables cabinet. Acids will corrode the metal in the flammables cabinet. The corrosives cabinet under your chemical fume hood *is the best place to store acids*. It is either lined with low density polyethylene (LDPE) or with particle board and epoxy resin.
- Use secondary containers to store your corrosives.
- Separate incompatible acids into individual secondary containers.
- Bases are placed in secondary containers and stored in a dedicated wooden cabinet, or in an corrosives cabinet. Acids and bases should not be stored in the same corrosives cabinet, even if separated by secondary containers. A salt will form on the outside of the containers when stored together.

Further Recommendations (in order of increasing feasibility)

- Obtain stand-alone corrosive cabinets for each category of corrosives in the lab.
- Purchase low (dilute) concentrations of corrosives whenever possible, or purchase the minimum amount of concentrated corrosives needed.
- Work with neighboring labs with corrosives cabinets to combine and store compatible corrosives across multiple spaces.



Environmental Health and Safety Office

Research Administration

Training

Access online training courses at

ehso.emory.edu/training

Regulated Waste

Send an email to

chemwaste@emory.edu

for chemical waste pickups and to request new waste containers.

Radioactive waste pick ups should be requested via EHS Assist pick-up.

A **Chemical** waste disposal inventory form and/or **radioactive** waste inventory form should accompany all waste containers at the time of pickup.

PPE

Choice to be based on potential exposures involved:

Eye: Glasses, goggles & face shields.

Gloves: Appropriate for the type of procedure. Clothing: Gowns, lab coats, aprons, coveralls. Respirators: Appropriate

for the type of procedure.

Eye Wash Testing

Lab personnel should test and document eye wash stations once a month.

Certifications

Biosafety Cabinets, Geiger Meters and Chemical Fume Hoods require annual certification. • For proper storage of corrosives, you may need to visit and cross-reference several resources to get the best answer. As always, EHSO can help you along the way, so please ask us!

What can I Place into a Broken Glass Disposal Box?

A short article on the proper use of the broken glass disposal box.

The purpose of the broken glass box (Image 2) is to safely store and dispose of any decontaminated/clean broken glassware and non-infectious slides.

- Sharps are disposed of in a sharps container (Image 3).
- UV lamps, microscope bulbs, and broken mercury thermometers are disposed of as regulated waste and not in the broken glass disposal box.

It is important to remember that the broken glass box is considered regular trash. This means that housekeeping is responsible for removing these containers from the lab. The broken glass box should not be filled to capacity. You should never smash or compress glass inside the box as an effort to increase the volume inside the container. Waste should be added to the container until it is three-fourths full. It should then be taped closed, labeled with the word "trash", and placed in the hallway.



Image 2.

Remember: A broken glass disposal box is for clean, broken glass.

If not into a Broken Glass Disposal Box, then Where? All non-P-listed empty, triple-Razor blades, syringes, UV lamps, microscope needles, contaminated rinsed & defaced chemical bulbs & broken culture tubes & Pasteur containers mercury thermometers pipettes Collect as "regulated waste"; See the sidebar on the previous page for more information. Image 3.

Please Read—

Signature indicates: I have read and I understand the information in this issue of Lab Rat Newsletter. Use an additional sheet of paper for more signatures, if needed and attach to this document.

- This newsletter is a tool to help fulfill a legal requirement for ongoing safety training.
- Supervisors are responsible for ensuring that individuals in their area have read and understood the information that applies to their area.
- The signed newsletter should be placed into the PI's EHSO Lab Safety Binder.

Fire Extinguishers

Visual inspections of your fire extinguishers are conducted monthly:
A. Is it present and mounted in its proper location?
B. Is it readily accessible?

C. Initial and date attached tag.

If it appears to need servicing contact

Campus Services at 7-7463

Want to Share Feedback?

Send comments to biosafe@emory.edu.

We look forward to reading your ideas and comments!

Building Liaisons

Radiation and Research liaisons can be found at http://ehso.emory.edu/about/

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