ISSUE 13

Safety first

BRINGING A SAFETY WORKPLACE TO ALL MEMBERS OF THE CHEMISTRY BUILDING

Flammable Storage Tips

Here are simple tips to keep your lab in compliance with fire codes:

- Flammable chemicals must be put away as soon as possible after they are delivered to your lab. Five gallon flammable drums or other containers should never be left on the floor and not put away more than a few hours.
- Do not overload your flammable cabinets, each cabinet has a maximum amount (in gallons) of flammables that can be stored in them. This can easily be gone over if you store both 5 gallon drums and smaller bottles in the same cabinet.

Waste Concerns

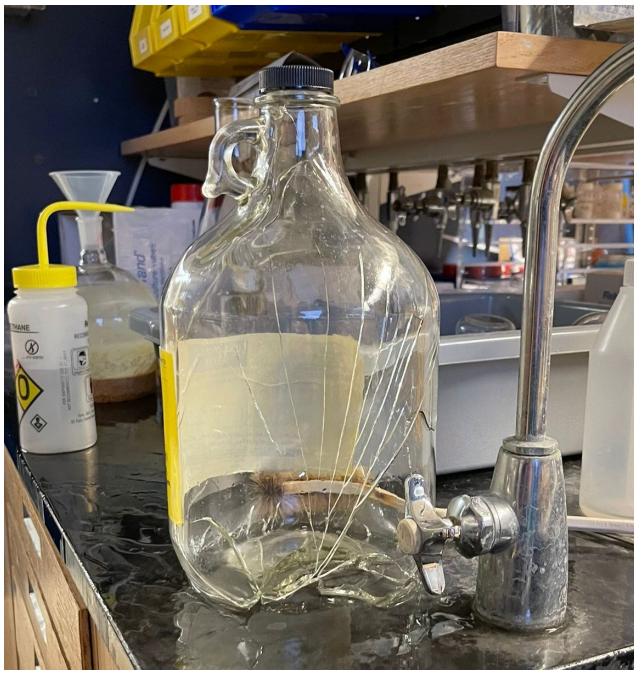
We have been having a lot of issues with vials of liquid being disposed of in solids waste pails. The solid waste containers are only designed for solid material and cannot be used to dispose of liquid waste even in vials/bottle. This is a serious issue and something that would be cited on state and federal inspections with hefty fines imposed for each vial.

Please remember to pour liquid vials into appropriate/compatible liquid waste container before disposing of the empty vials into the solid waste pail.

Lessons Learned

Waste Bottle Over-pressurizing

We had an incident with a waste bottle over-pressurizing and breaking. Unfortunately in this case the waste container was on a benchtop and not in a secondary containment so the liquid went all over the counter and floor. Thankfully no one was injured and the spill was contained and quickly cleaned up.



There are a few major takeaways from this incident. The first one is a reminder that liquid waste bottles should always be stored in secondary containment to contain spills in case of breaking.

Liquid bottles should not be filled past 3/4 full when collecting volatile liquids to give enough headspace for vapor expansion. As a rule of thumb, never fill a bottle above the shoulder of that bottle. In every case of over-pressurizing we have had in the building, the bottle had been filled until nearly overflowing.

The final takeaway is that bottles should be allowed to finish reacting before tightly capping the bottle. In this case the solvent was from a rotovap and was extremely cold so after capping the bottle the solvent off-gassed and caused the pressure buildup when coming to room temperature.

Although not involved with this incident it is good to remember that special care must be taken for piranha waste as that solution can build up pressure and react for a long time. You can get special off-gassing caps for these waste solutions that will minimize the pressure buildup. You can get the caps by contacting Kacey Vaughn at vkacey@umich.edu.

Lessons Learned

Small Fire

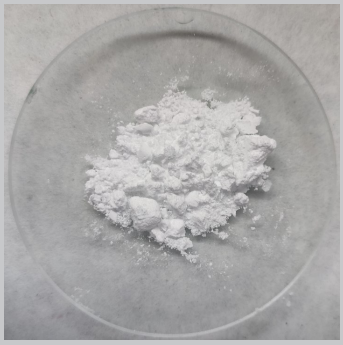
A graduate student was using lithium aluminum hydride in their hood when a small amount of the material spilled on the inside of the hood. The student then attempted to quench the spilled material using ethyl acetate but this caused the remaining lithium aluminum hydride to immediately erupt into flame. The fire burned for approximately 10 seconds before self extinguishing and the remaining material was quenched with water and properly collected for disposal. No one was hurt in this incident and there was no permanent damage.

When working with pyrophoric materials proper planning is necessary. You should always have a plan in place to safely clean up any spilled material and you should have a plan to deal with a fire if needed. A Class D fire extinguisher is designed for the material you are using should be kept close to you when doing these type of experiments. Remember that Class D fire extinguishers are material specific and will not work on all pyrophoric materials.

I asked for AI art for a small lab fire in a hood and this is what I got

As a reminder, **all fires, even minor ones that self extinguish need to be reported to DPSS immediately** for state reporting. An officer or fire marshal may come out to take a look and get a statement but there is no punitive action for accidents. You can contact DPSS by calling 911 or their nonemergency number –(734) 763-1131.

Dow Chemical partnered up with the University of Minnesota and created a number of safety videos. Among these videos is a really informative one about using pyrophoric materials. https://corporate.dow.com/en-us/science-and-sustainability/innovation/safety-at-dow/specialized-topics.html



Secondary Containment

Secondary containment is an important piece of safety equipment. The purpose of secondary containment is to protect people and the environment from spills from leaks or breaks.

- Secondary containment should be made out of plastic of other difficult to break material and compatible with the chemicals you are using chemicals.

Secondary containment is **REQUIRED** for the following:

- All liquid waste in your lab both when being filled in your lab and in your waste pickup area.
- Whenever transporting liquid materials in public spaces (including transporting agar solutions to the autoclave).

Upcoming Inspection

Always Be Ready!

Campus recently had another EGLE (formerly DEQ) Inspection looking at waste. We were not part of the inspection this time but we are due for another one in the near future. We also have many other agencies (DEA, MiOSHA, EPA, etc) that may inspect our labs with little or no notice. Always keep your lab clean and safe.

Welcome Christopher Bluteau -

As many of you know, our chemical inventory specialist left the university several months ago.

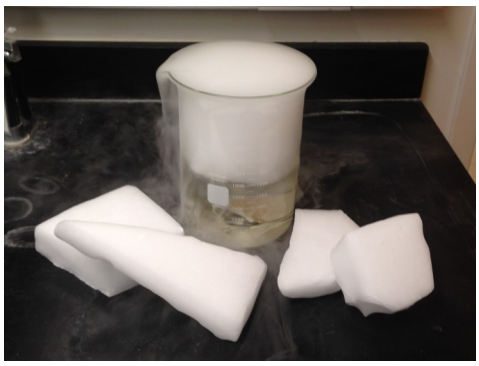
We are excited to welcome our new person, Christopher Bluteau, to the department. Chris comes to us from Eastern Michigan University where he has been studying supply chain management.
To contact Chris please email him at chrisblu@umich.edu.

Dry Ice/LN2

Dry Ice
Dry ice is available everyday from the cooler outside of room A602 in the basement.

Liquid Nitrogen
Department dewars are accessible 24 hours a day outside of room A602 for small (under 15L) liquid nitrogen quantities.

Large dewars of liquid nitrogen can be ordered by emailing chrpeter@umich.edu by noon one business day before its needed.



Contact Information

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Maintenance Requests
Routine Work Request Form on Chemistry Intranet

Baby Henry Wants You To Be Safe