ISSUE 7

Safety first

BRINGING A SAFETY WORKPLACE TO ALL MEMBERS OF THE CHEMISTRY BUILDING

Emergency Reporting

I wanted to take a moment to go over the reporting procedure for incidents that take place in the Chemistry Building. Although we have great responses to incidents by our labs we have had multiple incidents in recent months that were not reported until hours or even days later.

ALL incidents, including minor ones, should be reported to **BOTH** Tracy and Chris via phone or email immediately. If you do not reach us, please leave a voicemail.

If the incident is after hours or serious enough to call 911, both Tracy and Chris must still be notified as soon as it is safe to do so.

If there is ANY unexpected fire in your lab, even if you put it out immediately or it is just momentary, it must be reported to DPSS (911 or 3-1131) **as well as Chris and Tracy ASAP.**

If there is an after hours maintenance issue, such as a flood in the lab, please call Facilities Service Center directly at 647-2059. They will be able to send the on-call maintenance staff to repair the issue immediately.

Emergency Alert Signup

If you have not done so already, please take a moment to sign up for U of M Emergency Alerts. These alerts will send you phone calls and text messages in the case of emergencies such as severe weather, tornado warning, or an active shooter.

To sign up for these alerts please go to Wolverine Access and put your information in under the UM Emergency Alerts tab in the Campus Personal Information section.

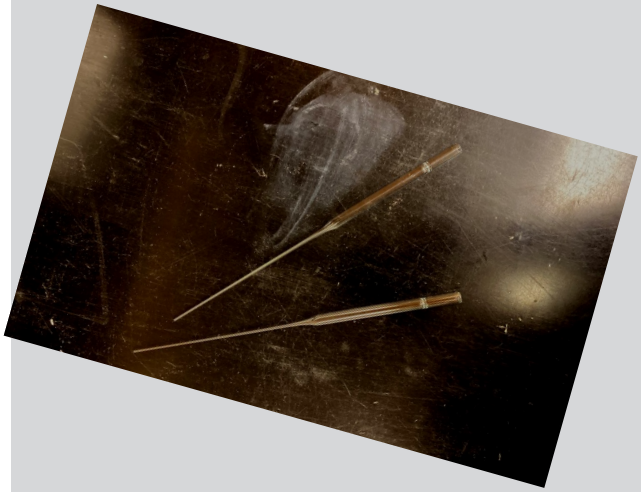
Lessons Learned

Nitric Acid Spill from Broken Bottle

There was a small spill and a minor chemical exposure during one of the summer camps this year. The incident was caused due to 5M nitric acid being stored for years in a Nalgene bottle. Over this period of time, the bottle became discolored and brittle. When the student helper attempted to dispense the solution, they squeezed the bottle causing it to break apart which exposed the student helper to several drops of the acid and spilled much of the bottle on the counter in the hood.

The student helper rinsed the drops of acid that got on their arm and glove and did not have any serious injuries. The remaining acid was cleaned up and disposed of properly without further incident and all of the remaining Nalgene bottles were checked and replaced.

This incident shows us the importance of keeping chemicals in compatible materials and checking chemicals regularly for degradation or other issues such as gas/pressure buildup.



Pipette Incident

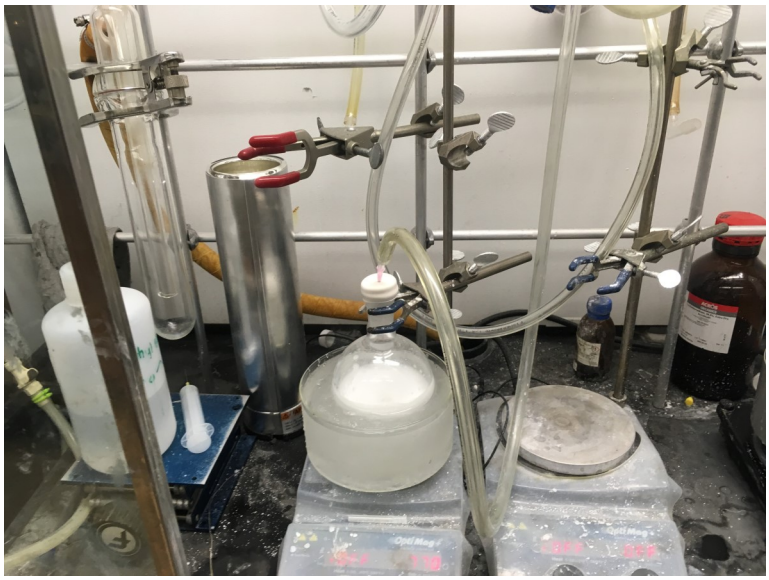
A graduate student was taking their samples and glassware out of a glovebox when the tip of the glass pipette got stuck in the antechamber and snapped causing a small piece of glass to fly into the student's right eye. The student was not wearing safety glasses at the time of the incident.

The student immediately rinsed the eye in a nearby eyewash. After rinsing, the student went to the UM ER to make sure they did not have any glass left in their eye. The ER did not find any glass but they did find what they believes was a small cut on the eye which was treated. Luckily, the student did not have any vision issues from the incident.

This incident shows how important it is to wear proper PPE whenever when working in a lab. In this case the student was just moving glassware and not doing anything normally considered hazardous but this accident could have been avoided if a pair of safety glasses were worn.

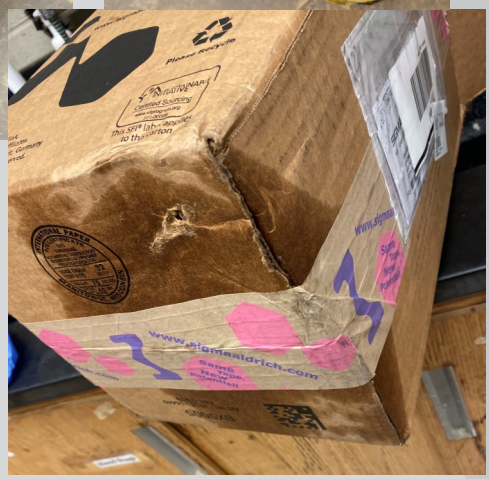
Lessons Learned

Lithium Aluminum Hydride Fire



There was a minor fire in a graduate research lab. At approximately 10pm, a graduate student was running a reduction reaction using 15g lithium aluminum hydride, ~250ml of ether and their substrate in a waterbath. The student had never done this reaction on this large of a scale and since it was late at night, and they were in a hurry, the materials were added to the flask too quickly and they reacted together causing some of the liquid to overflow from the flask into the waterbath. The remaining lithium in the solution reacted with the water and caused a small fire on the waterbath. This was immediately put out with a container of sand that is kept in the hood whenever lithium compounds are being used.

The takeaway from this incident is to always discuss with your PI when increasing the scale of an experiment and to look into any literature on the subject. Additionally, experiments with dangerous chemicals should always be done with the utmost care and never hurried.



Delivery Incidents

In the month of October 2019, the Chemistry building received two different packages that contained broken chemical bottles inside. Although this has happened once or twice in the past, two in one month shows a significant uptick.

The first incident was with a box that contained 1L of 1-Pentanol. The box seemed to be in good shape but had a stain on the bottom of the box. This appears to have been caused by the bottle not being packed correctly and loosely rolling around in a metal can, causing it to break.

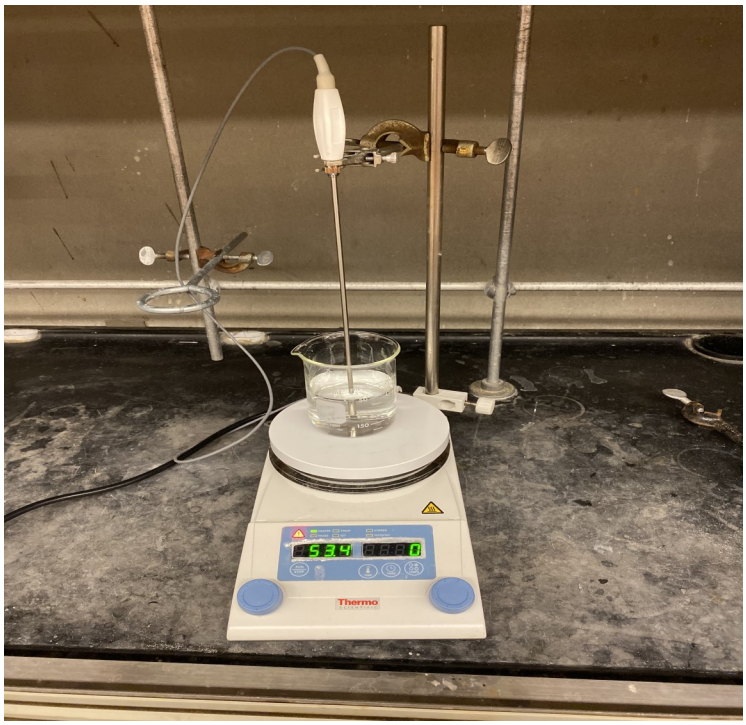
The second incident was with a box that contained Thionyl Chloride. This chemical had a box that had been heavily crushed during transport so it was caught by Hawaii when it arrived. The box was opened in a hood and the bottle and can were found to be broken.

The takeaway from this is to take notice when new chemicals come into your lab and only open the boxes with proper PPE on in case of damage. If you find broken or damaged bottles, please contact Christopher Peters (chrpeter@umich.edu) immediately.

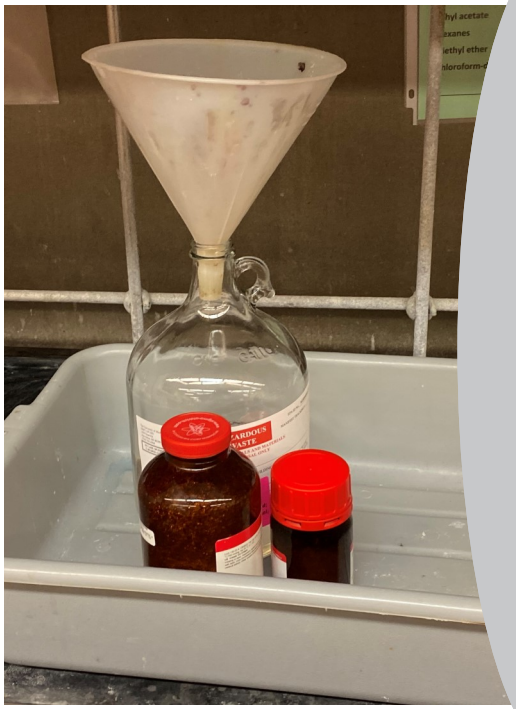
Safety Tips

Temperature Probes on Hotplates

In the past, we have mentioned incidents in research labs all over the country involving “runaway hotplates” that heat up even when they are in the off position.
There is also a far more common cause of incidents and near misses with hotplates. Many hotplates are set up with temperature probes that regulate the temperature of a solution. These only work correctly when the probe is in the solution before turning on. There have been situations in the building where someone has forgotten to put the probe into the solution causing the hotplate to think it’s at room temperature and keep heating far past the temperature it was supposed to stay at.



Runaway Hotplate Reminder
If you have not done so already, please check the hotplates in your lab against the list of ones that are prone to “Running Away” and heating up even when in the off position. This can be found at: http://ehs.umich.edu/wp-content/uploads/2019/03/Hot-plates.pdf



Quenching Chemicals

Quenching reactive material can be an extremely dangerous procedure that should be done with the utmost care. If there are ever large quantities of materials that need to be quenched please contact the Chemistry waste coordinator, Laurie MacDonald at 4-7325 and she will take care of it for you. Additionally, never try to quench something if you are not comfortable doing so. Please contact the waste coordinator instead.

Liquid Nitrogen Dewar Use

The Chemistry Building has two departmental dewars in the basement outside of room A602 (near the freight elevator). These dewars can be used by any lab in the department but a few safety steps should always be taken. In addition to lab appropriate attire (no shorts or open toed shoes), proper PPE should be worn whenever using liquid nitrogen. This PPE includes:

- Safety Glasses / Splash Shield
- Labcoat
- Cryogenic Gloves

After filling please use the nearby computer to input your information and shortcode to pay for the liquid nitrogen you use. The current cost is $0.60/Liter.

The spout on the dewar is designed to be easily switched between the two dewars when one becomes empty. Please follow this procedure to change it out.

1) Unscrew clamp (if frozen allow it to warm up before doing this to prevent breakage).

2) Remove Teflon spacer and spout from the flange of the old dewar.

3) Put Teflon spacer and spout on the flange of the new, full dewar.

4) Attach the flanges and spacer with clamp and hand tighten. DO NOT OVERTIGHTEN, overtightening the clamp, especially when cold can break both the clamp and spacer and cause liquid nitrogen to leak from the connection.

If both dewars are empty or if you have any questions or concerns please see Hawaii Maliga at the dock or call him at 5-5034.

If you find the dewar to be leaking when you use it, immediately discontinue use and contact Christopher Peters at 3-4527.

Report Suspicious Behavior

The University of Michigan is an open campus and most buildings are kept unlocked during the day. This sometimes allows people to wander in to the building. In many cases these people enter a building to steal any computers or valuables found in unlocked rooms.

There have also been instances on campus with people entering buildings to use meth or other drugs.

If you see anyone or anything that seems suspicious never hesitate to contact DPSS to have them check it out. They can be contacted by calling 911 or their nonemergency number at 3-1131.

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In a recent incident, a suspicious person was discovered in Chemistry to be sleeping both in the Reflection room, in the atrium and later in the Lactation room on the 4th floor. Luckily, this person was just looking for a place to sleep and did not have any nefarious purposes but it could have been much worse.

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Upcoming Inspection

Always Be Ready!

The Chemistry Building is due for a MDEQ inspection in the near future. Although MDEQ inspections primarily focuses on issues with chemical waste, we also must be prepared for MiOSHA and other regulatory agencies at any time. Please make sure your lab is always in compliance with health and safety regulations.

Events

Classes begin ..... Sept 3, Tues

Fall Study Break .....Oct 14-15, Mon-Tues

Thanksgiving Recess ..... …...Nov 27, Wed

Classes End ..... Dec 11, Wed

Study Days..... Dec 12, Thur/ Dec 14-15, Sat-Sun

Examinations ..... Dec 13, Fri/ Dec 16-20, Mon-Fri

Commencement……..Dec 15, Sun

Dry Ice/LN2

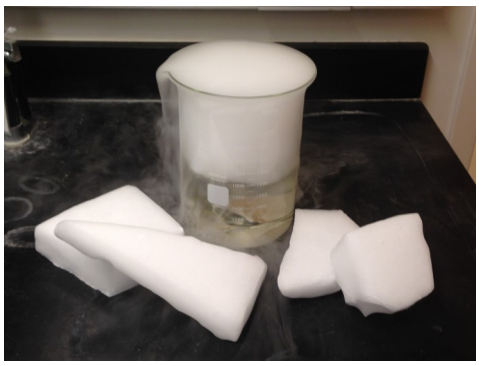
Dry Ice

Dry ice is available from 10:00am-11:00am and from 2:00pm-3:00pm Monday-Friday in room A601

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

Package Shipping
Hawaii Maliga — hmaliga@umich.edu
Phone—615-5034

Waste Issues
Laurie MacDonald—lanald@umich.edu
Phone 764-7325

Safety Issues/Concerns
Christopher Peters—chrpeter@umich.edu
Phone—763-4527
Tracy Stevenson—steventi@umich.edu
Phone—764-7316

Chemical Inventory Questions
Anson Pesek—ahpesek@umich.edu
Phone—647-8932

Maintenance Requests
Routine Work Request Form on Chemistry Intranet

This puppy wants you to be safe