Chemistry Safety Notes

Volume 4, Issue 2 **Mar/April 2016**

"Chemistry Safety Notes" is published by the Chemistry Dept. Safety Committee, written & edited by Debbie Decker, Safety Mgr.

Corrective Actions from Self/Peer Inspections—Status

As of April 13, twenty four of thirty six laboratories have completed their corrective actions. Thanks very much! To the remaining, please complete those corrective actions by May 1. If you need information or are unsure whether or not this has been accomplished, please contact me. Please make sure you have your corrective actions documented by the end of April and you have transitioned from the old Chemical Hygiene Plan to the new Laboratory Safety Plan template. One group emerged with no corrective actions: General Chemistry Dispensary at SLB. Congratulations to William, Theo and their team! Excellent work!

Document Updates

The Department Injury and Illness Prevention Program (IIPP) and Emergency Action Plan (EAP) have been reviewed, updated and posted to the website. The Medical Waste Management Plan has also been updated and posted.

Please be sure everyone in the workplace has training on the new versions. You don't have to print out hard copy—pointing to the website is fine.

Picnic Day—Here We Come!

The Education and Outreach Committee and the Chemistry Club have been working very hard to create an amazing Picnic Day (It's Not Magic—It's Chemistry!) Magic Show. There will be demonstrations and hands-on science in the courtyard, to go along with the show in Rock Hall.

Hazardous Waste—Still Free—For Now!

Now's the time! Get that unused/unusable inventory, cruddy containers, and legacy stuff from generations of graduate students out of your lab. (See page 3) What will happen with hazardous waste costs when this current initiative runs out at the end of the fiscal year is unknown. So take advantage now!.

New in the Storeroom

Henry has conical tubes available with the GHS pictogram screen printed on the vial. How cool is that?!?

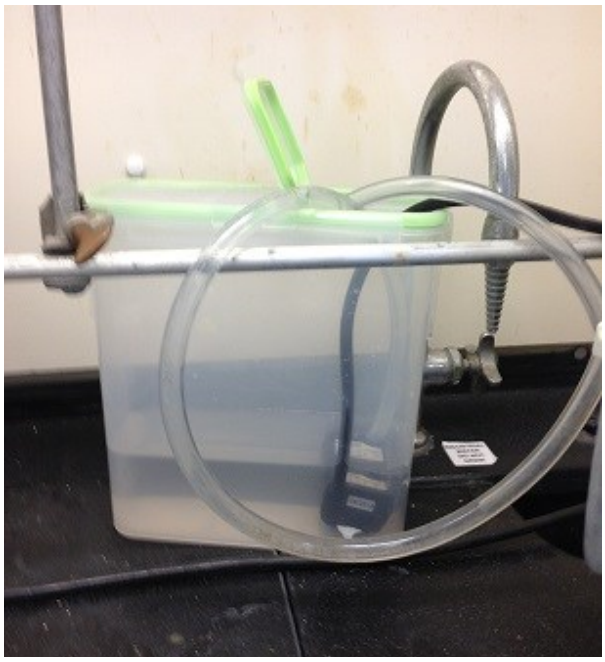
FR Gloves—A Heads' Up

We're under a new Cal/OSHA mandate to implement their requirement for flame resistant gloves when using pyrophoric materials outside of a glove box. The pyrophoric materials SOP template has been updated and Safety Net #135 is in process. The gloves will be distributed as soon as our entire order has been received. Stay tuned.

Cooling Water—a cool idea

One-pass cooling water is not responsible behavior in our continuing drought and not safe due to risk of flooding. In my travels, I discovered an elegant and cheap way to accomplish cooling without these risks.

Using a simple aquarium-type pump and some Tupperware®, the Shaw lab created a narrow profile recirculating cooling water apparatus. A very clever solution. The whole assembly tucks behind the "monkey bars" in the fume hood and connects from the pump to the condenser (or similar) for cooling. If additional cooling is needed, ice can be added to the water.



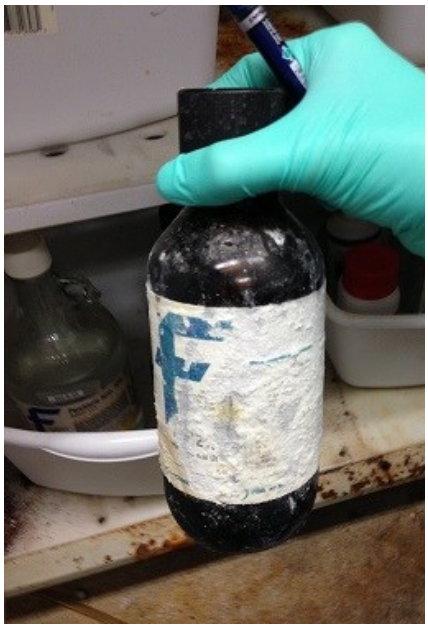
Fire Code Compliance Inspections

Paige McKibbin, Hazardous Materials Specialist, is engaged in our annual audit for compliance with the Fire Code, focusing primarily on the provisions in the Code for chemical storage and management. Once I receive her report, I will forward corrective actions to the respective groups for disposition. In the meantime, Paige has pointed out some areas of concern we need to work on.

Segregation of acids: Mineral acids (hydrochloric, sulfuric, etc.), oxidizing acids (nitric, perchloric, etc.), and organic acids (glacial acetic, trifluoroacetic, etc.) need to be segregated from each other in secondary containment.

Chemical management: Acetic anhydride, which is corrosive and flammable and toxic, needs to be stored with flammable liquids in a secondary container. No flammable liquids in a standard refrigerator.

Please have a critical look at the inventory for cruddy containers. Disposal of containers which have been compromised, are in poor shape, or where the label is damaged beyond comprehension will be required. See the images for examples of the containers of concern.



THE SAFETYZONE by c&en

Omission of experimental step was cause of explosion at Texas Tech

By Jyllian Kemsley

An undergraduate researcher was injured at Texas Tech University on March 10, when a "vial exploded while the student was collecting a dry precipitate powder with a metal spatula," according to the Texas Tech "lessons learned" report about the incident.

The student and others in the lab were all wearing appropriate personal protective equipment, and the student suffered only superficial injuries, the report says.

"The cause of the accident is believed to be an omission of a hydrochloric acid precipitation step during the recreation of a synthesis reaction taken from literature," the report says. "This allowed the unintentional formation of a diazonium salt that exploded during collection for further analysis."

Texas Tech's recommended actions to prevent something similar from happening in the future:

- Researchers working on synthesis reactions with anticipated energetic products or intermediates need to be cautious of products created during the reaction series. As part of a regular hazard analysis conducted at the outset of experimental work, researchers should review and update their Standard Operating Procedures (SOPs) to incorporate the possible hazard(s) of intermediate products. In this case, the intermediate product should have been identified as energetic on the basis of the reaction series being run.
- All work with potentially energetic materials should be performed with plastic tools to reduce the possibility of friction and static discharge creating an initiating spark.

The University of California, Berkeley, also had a metal spatula versus diazonium compound explosion last year, although in that case the graduate student involved in the incident knew he was working with a diazonium perchlorate. He was also not wearing appropriate eye protection, and porcelain funnel fragments lacerated one of his corneas.

Jyllian Kemsley | April 13, 2016 at 7:30 am |