Safety Inspection Results and Reminders – June 2018

This document summarizes the most frequent safety issues identified during the safety inspections of ChE laboratories/offices, conducted by members of the ChE Safety Committee during June 11 – June 14, 2018, in preparation for the upcoming recertification meeting with REM.

Documentation required by OSHA and REM (please make sure they are up-to-date and dated within the last 6 months):

- **SDS Binders or SDS digital copies –** are required for every lab. SDSs should be organized so that they are easy to locate. Keeping the SDSs saved electronically in a location easily accessible for all group members is an acceptable alternative to keeping paper copies, as long as they are updated regularly. Please review the guidelines in the "Guidelines for maintaining electronic copies of SDSs" document available on our safety website: https://engineering.purdue.edu/ChE/aboutus/safety/documents/Guidelines%20for%20storage%20of%20electronic%20copies%20of%20SDSs%20(11-2016).pdf . **All SDSs (regardless of whether they are stored digitally or as printed copies) must be no older than 5 years.** SDSs are required for chemicals, catalysts, gases, biological materials, etc. – essentially everything that we work with in our labs – both hazardous and non-hazardous. Please update the SDS records for your labs and note on the Lab Door Post the location of the SDS Binder (or how can one access the digital copies).
- **Hazard Assessment Certification** – must be dated within the last 6 months, signed by PI and posted inside the lab, near the entrance. The hazard assessment should be updated whenever a new hazard type is introduced to the lab. The hazard assessment for FRNY offices is kept with the safety records for the School, in FRNY G041D.
- **Chemical Inventory (HCP-4)** - should coincide with the items in the SDS book and must be up to date. Please add new chemicals to this list as soon as you receive them.
- **Employee Exposure Record (HCP-5)** – is intended to list the people exposed to the chemicals in a lab. It should be updated whenever a new person starts working in that lab.
- **Chemical Hygiene Plan (CHP)** – Each laboratory must have a lab specific CHP, to include lab specific hazard assessments, SOPs and any other specific safety rules. You can use the Purdue CHP template posted on our safety website to develop your lab specific CHP. The printed lab specific CHP should be kept with the SDS Binder and other safety records for the lab, near the lab entrance. The CHP should be reviewed and updated whenever necessary, but at least annually (minimum required is to update the first page with lab information and date).

PPE (PPE training needs to be documented; please keep training documentation with the safety records for your labs)

- **Safety Glasses** – Safety glasses must be worn when you are in a ChE laboratory. Get in the good habit of putting your safety glasses on before or immediately after you enter a laboratory, and taking them off only when you leave. Prescription glasses must be safety glasses (have shatter proof lenses) and have side shields.

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- **Safety Gloves** – Chemical resistant gloves are allowed on the corridors **only** in designated areas, marked with the sign "One Glove Policy Area".
- **Dust Masks and Respirators** – Inhalation hazards are spelled out on SDSs. Labs with inhalation hazards must have a Respiratory Protection Plan and the hazard and PPE requirement should be documented on the Hazard Assessment. To be effective, respirator cartridges need to be replaced regularly, according to a pre-set schedule, or when the cartridge indicator (where applicable) shows they need to be replaced. Please contact REM, to determine when your cartridges need to be replaced.
- **Lab Coats** – Lab coats should **not** be laundered at home or at a commercial laundromat. Lab coats grossly contaminated with hazardous chemicals should be disposed of with REM (double bagged and with an orange sticker attached), and new lab coats should be purchased. Dirty lab coats that are not necessarily contaminated with hazardous chemicals should be disposed of by placing them in plastic zip-bags (double bag), labeling them as non-hazardous waste and placing the bag in the trash bin. If you work with flammables, your lab coat must be rated as fire resistant.
- **Long pants (or equivalent), and closed toe shoes** are a **must** in all ChE laboratories.

Safety issues found and reminder of some safety rules and policies:

1. **Laboratories:**

- Food and drinks are not allowed in labs at any times.
- Bags/backpacks are not allowed in the labs. Undergraduate students working in our labs should contact Melissa Schwartz in FRNY G027 and request a locker.
- Chemicals should be segregated by class and flammables should be kept in a hood or cabinet designed for flammable storage. Hazardous chemicals should not be stored above eye level. Store incompatible chemicals separately; if you are limited by space and need to store incompatible chemicals in the same cabinet, use secondary containment. The capacity of the secondary containment should be at least 1.5 times the volume of the chemical stored in the primary container(s).
- All chemical containers must be labeled (including beakers, vials, waste containers). Labeling only the caps/lids is not acceptable; the label should be placed on the container. If acronyms are used on labels, a list of acronyms used must be available in the lab. Do not use acronyms on labels for hazardous waste.
- Open chemical containers are not allowed in the labs (OSHA issues high fines if they find open containers during a site inspection). Sealing with parafilm, duct tape, paper towels or aluminum foil is not acceptable.
- Broken glass should be collected in a sturdy cardboard box, separately from razor blades and needles. The collection box should not contain any other items than clean, broken glass.
- If you have contaminated glass for disposal, the container (box or bucket) needs to be closed at all times apart from the time you add new sharps, and a hazardous waste label needs to be placed on the collection container. Again, you should not place any other items (gloves, tissues, debris, razorblades or needles) in these boxes.
- Flammables that need to be stored in a fridge should only be stored in explosion proof refrigerators. Contact the safety committee if you are unsure if your refrigerator is explosion proof.

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- Avoid using outlets near a water source. As most labs are not equipped with GFCIs, child proof outlet plugs should be installed in outlets that are located near sinks. We tried to address this problem during the safety inspections; if you still find outlets that need a child proof plug, please contact Jeff Valley.
- Gas cylinders: please use the gas cylinder storage area outside FRNY to store gas cylinders not in use. The inventory of flammable and hazardous gases in the labs should be minimized. Flammable gases (i.e. hydrogen) should be stored at least 20 feet away from oxidizing gases (i.e. oxygen).
- Gas cylinders in use must be secured individually. Securing multiple cylinders with the same chain or strap is not permitted. All labs should keep a gas cylinder inventory in the lab and if flammable gases are used, an inventory for them is also required. Make sure that if cylinders are not in use, they have a cap on and are secured during storage.

2. <u>Offices:</u>

- Chemicals and samples are not allowed in offices.
- If you have a fridge in the office, this must be labeled as "Food only". If you have a coffee machine/kettle in your office, this should be placed on a ceramic tile. We inspected all offices and identified the ones needing a ceramic tile or fridge sign, and we will provide you with these items as soon as possible. However, if you don't receive one, please contact Jeff Valley.
- Emergency phone numbers: All offices and labs should have the emergency numbers posted clearly, somewhere near the phone. We identified the labs and offices that require a new card with the emergency numbers and will provide them shortly. As a reminder, in case of an emergency, call 911. Calling 911 on whatever phone on campus will put you through the Purdue emergency responders.

<u>Emergency Preparedness</u>

- The Building Emergency Plan (BEP) for Forney is posted on the ChE Safety website (https://engineering.purdue.edu/ChE/aboutus/safety), under the Emergency Preparedness section. The updated version will be posted as soon as the BEP is updated. If you work in Potter Building, contact the Building Deputy, Phil Qualio, to access the POTR BEP. The BEP describes the procedures to follow in the event of a building evacuation or shelter-in-place emergency.

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