JOINT SAFETY TEAM

Lab Safety Training

Personal Protective Equipment (PPE):

- No shorts, closed toed shoes, hair tied back.
- Always wear eye protection in lab.
- No food in lab or offices.
- Lab coats, none in clean spaces (offices, NMR room, kitchen, group rooms, bathroom…)
- Gloves (*only one glove in hallways*).
- Mask for Silica exposure.

Waste Management: *Waste must always be capped tightly when not in use.*

- Use individual or mixed waste labels appropriately. Spell out waste being disposed and solvent it is in; no abbreviations.
- Designates a secondary waste disposal site for pickup.
- Secondary containers: All waste must be stored in a clean secondary container. No liquids, solids or signs of a spill.
- General waste: Must have a mixed waste label on bottle always. For inert, odorless, non-toxic materials like acetone from cleaning.
- Hazardous waste: Individual wastes for **p-listed** materials (restricted acute toxins/carcinogens; *see lists*), heavy metals, aqua regia, acids, peroxides.
- Solid waste: Silica, Celite, $MgSO_4$, etc. *No organometallics.*
- 20 L carboys: Only for solvents and aqueous solutions. No hazardous or reactive materials
- Glass waste: Broken glass, pipettes, test tubes, TLC plates…. no waste or solvents.
- Sharps: All syringes must be empty and quenched in syringe box, do not overfill. Must have a lid at all times. Keep your area clear of used needles.
- Empty Reagent Bottles:
    - Non-hazardous bottles: scratch out name, rinse and dispose in glass waste or lab recycling. Do not let pile up on floors blocking exits.
    - **P-listed waste**- acute toxins/carcinogens as well as pyrophorics, peroxides, heavy metals. Individual waste label.

Chemical Storage: *Keep doors closed all the way.*

- Flammable cabinets: Chemicals that are hazardous and/or flammable.
- Corrosive cabinets: Acids, bases, waste must be in separate cabinets.
- Solvents: No more than 40 L (10 gal) of flammable solvents out per room (*includes waste*). Put solvents away and keep off floors and windowsills.

- Peroxide formers: (See lists) Date after opening, test every year with peroxide strips and date bottle. Dispose as hazardous waste if peroxides are found. (*test strips commercial*).
- Gas Cylinders: Use gas cylinder tags *(full, empty, in-use*; *get trained*).

Chemical Transportation: *Carriers when in doubt, use one.*

- Pyrophoric chemicals need a carrier both inside and outside lab. (*get trained*)
- Liquid and solid bottles outside the lab need a carrier
- Use a carrier for transporting experiments/solvent for scale up.
- Use stoppers for needles and cannulas especially when traveling.

Fume hoods:

- Sashes and Panels: Cannot raise sash and open panels at once. If air flow is low contact EHS/facilities.
- Vent obstruction**:** Limit things located in the back of hood.
- Emergency Flow: Use if spill occurs or fuming reagent/reaction.

Eye Wash, Hoses, and Showers

- Know closest locations in your area, drench hoses in sinks, bathroom safety showers, and protocols for using one.
- Must remove all contaminated clothing and rinse affected areas for 15 minutes.
- Flush eyes with water for 15 minutes holding eyelids open.

Fire Safety:

- Fire Extinguisher Training:
  - Class A/B/C: Red extinguishers for basic paper, solvent, oil, electrical type fires.
  - Class D: Large Yellow extinguishers in hall for pyrophoric metal fires.
- Protocols for Power Outages: Stabilize experiments, turn off unnecessary equipment, close hoods.
- Keep sand handy to smother a small fire.

Spill Kits and Neutralizers:

- Spill pads and adsorbents
- Dispose of waste from spill cleanup in solid waste drums.
- Contact EHS for large spills, block off location.
- Calgonate gel (*commercial*) for HF use, secondary containers for HF reagents