

# Fan Lab Safety

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# Lab Safety Guideline

- Training
- Personal protective equipment
- Transport of biohazards
- Proper handling of hazardous chemicals
- Emergency Procedures

# Training

## Required

- Biosafety training
- Lab chemical safety training

## Optional

- Bloodborne disease training (if working with human cell lines)
- Hazardous chemical waste training

## Training

- <http://www.yale.edu/training/>

## Hazardous chemical waste

- <http://www.yale.edu/ehs/trainings/chemicalwaste/chemicalwaste.htm>



# PPE

## Personal Protective Equipment Requirements:

- Closed-toe, solid top shoes
- Clothing that covers the legs
- Safety glasses or prescription glasses
- Gloves if touching potentially contaminated equipment



### **Laminar Flow Hood**

- Wear gloves and long-sleeved lab coat
- Spray all things that will enter the hood with ethonal
- Turn off the vacuum when you are done
- Leave a note if performing a long-time experiment in the hood

### **Waste**

- NO LIQUIDS
- Non-contaminated wraps for flasks and pipettes should be put in general trash.
- Only regulated biomedical waste should be disposed of in biomedical waste containers.



# Emergency Shower

- Found outside main lab door
  - Remove contaminated clothing under shower.
  - Flush for at least 15 mins (ANSI Z358.1-2009)





# Emergency Eye Wash

- Found next to sink(s)  
In Main lab  
In Microscope room
- Flush eyes for 15 mins (ANSI Z358.1-2009)

# Transport of Hazards

On Campus Transport (between labs or buildings):

- Must have two leak proof containers, including the following:
  - a sealed primary container
  - a sealed secondary container
  - absorbent (paper towels) between the primary and secondary containers suitable for the volume transported
  - a biohazard sticker on outside of the secondary container with agent name, lab address and phone number
- Utilize plastic containers whenever feasible, avoid glass.
- If glass primary containers must be used, place containers within a sealed rigid plastic container with absorbent and padding to cushion vials during transport.



# Proper handling of chemical waste

- Label: complete chemical name, date, personelle  
Chemical abbreviations or formulas ARE NOT ACCEPTABLE, nor are generalizations such as “halogenated waste”.
- Container  
Store chemical waste in containers that are compatible with the material they contain  
Containers must be in good condition with no rust or leaks  
Always keep hazardous waste containers capped and closed
- Empty bottles  
Rinse the bottle with DI water at least 3 times  
Deface the label of the bottle (peel off the label if possible), cross out the chemical name  
Write “Rinsed 3X” on the bottle with a permanent marker  
Place the bottle in the chemical waste cabinet to be reused



# Biosafety Level 2 (BSL2) Spill

- Avoid inhaling airborne material, while quickly leaving the room. Notify others to leave. Close door, and post with a warning sign.
- Remove contaminated clothing, turn exposed areas inward and place in a biohazard bag.
- Wash all exposed skin with disinfectant.
- Inform Supervisor, and if assistance is needed, consult EHS Biosafety at 203-785-3550.



# Bio Spill Kit

- Found in storage cabinets
- Use when there is bio spill using appropriate cleanup procedures
  - Proper PPE
  - Containing the spill
  - Decontamination
  - Etc.

# Spill Kit in Lab



# If you have a minor chemical spill, you should:

- Alert people in immediate area of spill
- Increase ventilation in area of spill (open window, turn on hood)
- Wear protective equipment, including safety goggles or face shield, gloves and long-sleeve lab coat.
- Avoid breathing vapors from spill.
- Confine spill to small area with adsorbent materials.
- Use appropriate kit to neutralize and adsorb inorganic acids and bases. For other chemicals, use appropriate kit or adsorb spill with vermiculite, dry sand, diatomaceous earth or paper towels. Collect residue, place in container, label container, and call the Environmental Affairs Section (432-6545) for disposal information.
- Clean spill area with soap and water.

# Major chemical spill or spill of extremely hazardous substance

- Some spills are large (> 1 liter) or involve very hazardous or unknown substances. You should not clean them up by yourself!  
Example: bromine, hydrazine, cyanides, Class 1 A flammable solvents, alkali metals and white phosphorus. If you have a major spill you should:
- Immediately call **Emergency Response 785-3555** or the University Police 911.
- Alert people in the surrounding area to evacuate.
- Attend to injured or contaminated persons and remove them from exposure. In case of personal contamination, remove affected clothing and flush contaminated skin with water for at least fifteen minutes. Seek medical attention immediately.
- If it will not place your health or safety at risk, turn off ignition and heat sources, maintain fume hood ventilation and open windows to increase ventilation.
- Close doors to affected areas as you leave.