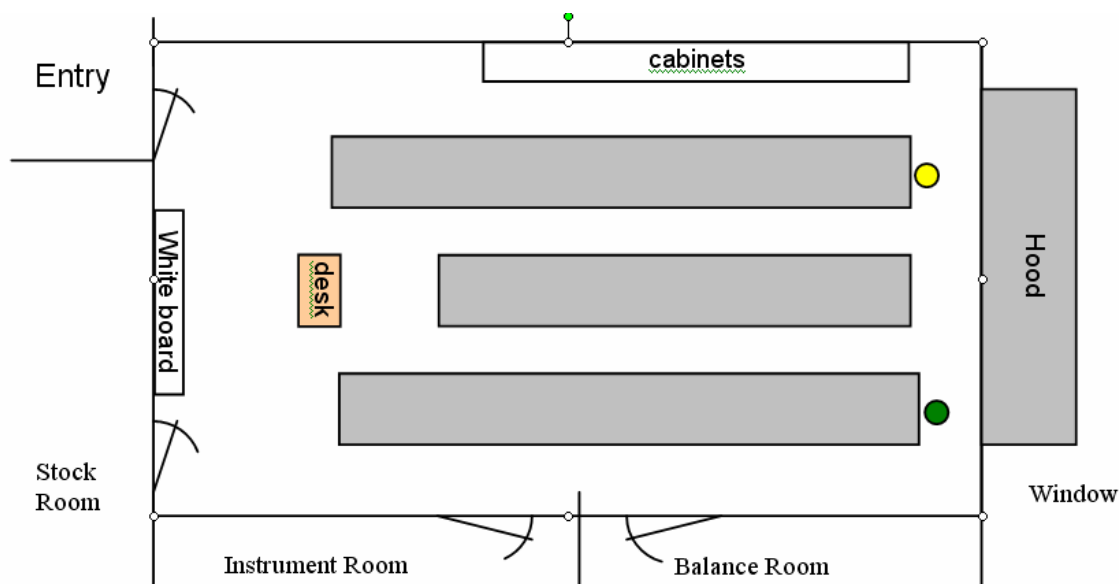


Chem 226 **Lab Safety, Material Safety Data Sheets, & Waste Disposal**

1. Who is ultimately responsible for laboratory safety?
2. At what times must safety glasses or goggles be worn in the lab?
3. Complete the following sketch of the lab by writing in the letter corresponding to the listed safety equipment.
 - a) Fire extinguisher (s)
 - b) Emergency eye washes
 - c) Emergency shower
 - d) Power switch for fume hood
 - e) Power switch for bench hoods
 - f) Flammable or hazardous reagents
 - g) Halogenated organic waste bottle
 - h) Non-halogenated waste bottle
 - i) Acid & base tray
 - J) Balances
 - K) Solid waste disposal



4. What is the proper procedure for determining the odor of a chemical?
5. What is the proper procedure for heating chemicals in glassware?

Before finishing this worksheet, read carefully pages 4 to 20 of Pavia. As you attempt each questions re-read key passages as needed.

6. Our bench sinks empty into a trough that runs the length of the lab bench to a common drain. Why should flammable liquids NEVER be poured down the sink?
7. What should you do if your clothing should catch on fire?
8. A hydrocarbon is an molecular organic compound composed of carbon and hydrogen. Methane, CH_4 is the simplest hydrocarbon. A halocarbon is a hydrocarbon bbin which one or more of the hydrogen atoms have been substituted for halogen atoms. Why is contact with halocarbon solvents such as dichloromethane, $\text{CH}_2\text{C l}_2$ (a.k.a. methylene chloride) especially hazardous to your health?
9. What should you consider regarding O-chem lab if you are pregnant?
10. Whether you are pregnant or not, what should be done with respect to all solvents?
11. What type of gloves offer the most protection?
12. Where should you NEVER dispose of organic liquid or solid waste?
13. What is the difference in the manner of disposal between halogenated and non-halogenated solvents?
14. How should strong, concentrated inorganic acids and bases be disposed?
15. How should you dispose of broken glass?
16. Where should you dispose of broken thermometers?
17. What should you check before lighting a flame?
18. What should you NEVER do with excess reagents?
19. What should lab-workers do if they have shoulder-length hair before starting lab work?
When is this most important?
20. What degree of injury necessitates an immediate report to your instructor?
21. What is the recommended immediate treatment for any chemical entering the eye?

22. Under the Right-to-know Laws, what right do students have with respect to chemicals encountered in the lab?
23. What is the meaning of each of the following terms? Be brief.
- MSDS
 - Odor threshold
 - CAS#
 - TLV
 - PEL
 - LD₅₀
- Which of the above are essentially the same?
24. Which of the solvents listed on pages 18 to 19 can form explosive peroxides and therefore should **never** be distilled to dryness?
25. Which of the listed solvents are not flammable?
26. Which of the listed solvents are suspect carcinogens?
27. Pavia, et. al. suggest that neither PEL's or TLV's may be particularly applicable for students of organic chemistry. Why is this so?
28. What *health information* regarding common organic solvents is found on the back cover of your laboratory textbook?
29. Give two web-site addresses where useful MSDS information may be found.