HW 7.1: Lab Safety Rules

Directions: Read all rules listed below. Highlight any rules that you think are most important. Mark any rule that is unclear (we will discuss in class). (10 pts)

General Safety Rules
The following are rules that relate to almost every laboratory and should be included in most safety policies. They cover what you should know in the event of an emergency, proper signage, safety equipment, safely using laboratory equipment, and basic common-sense rules.

1. Prepare for the lab by reading the instructions and safety information ahead of time.
2. Be sure to read all fire alarm and safety signs and follow the instructions in the event of an accident or emergency.
3. Ensure you are fully aware of your facility's/building's evacuation procedures.
4. Make sure you know where your lab's safety equipment—including first aid kit(s), fire extinguishers, eye wash stations, and safety showers—is located and how to properly use it.
5. Know emergency phone numbers to use to call for help in case of an emergency.
6. Lab areas containing carcinogens, radioisotopes, biohazards, and lasers should be properly marked with the appropriate warning signs.
7. Open flames should never be used in the laboratory unless you have permission from a qualified supervisor.
8. Make sure you are aware of where your lab's exits and fire alarms are located.
9. If there is a fire drill, be sure to turn off all electrical equipment and close all containers.
10. Always work in properly-ventilated areas.
11. Wash hands thoroughly with soap and water after handling any laboratory materials.
12. Do not chew gum, drink, or eat while working in the lab.
13. Laboratory glassware should never be utilized as food or beverage containers.
14. Each time you use glassware, be sure to check it for chips and cracks. Notify your lab supervisor of any damaged glassware so it can be properly disposed of.
15. Never use lab equipment that you are not approved or trained by your supervisor to operate.
16. If an instrument or piece of equipment fails during use, or isn't operating properly, report the issue to a technician right away. Never try to repair an equipment problem on your own.
17. If you are the last person to leave the lab, make sure to lock all the doors and turn off all ignition sources.
18. Never leave an ongoing experiment unattended.
19. Never lift any glassware, solutions, or other types of apparatus above eye level.
20. Never smell or taste chemicals.
21. Do not pipette by mouth.
22. Make sure you always follow the proper procedures for disposing lab waste.
23. Report all injuries, accidents, and broken equipment or glass right away, even if the incident seems small or unimportant.
24. If you have been injured, yell out immediately and as loud as you can to ensure you get help.
25. In the event of a chemical splashing into your eye(s) or on your skin, immediately flush the affected area(s) with running water for at least 20 minutes.
26. If you notice any unsafe conditions in the lab, let your supervisor know as soon as possible.
27. Do not handle broken glass with bare hands. Use a brush and dustpan to clean up broken glass and place in a designated glass disposal container.

**Housekeeping Rules**
Laboratory housekeeping rules also apply to most facilities and deal with the basic upkeep, tidiness, and maintenance of a safe laboratory.

1. Always keep your work area(s) tidy and clean.
2. Make sure that all eye wash stations, emergency showers, fire extinguishers, and exits are always unobstructed and accessible.
3. Only materials you require for your work should be kept in your work area. Everything else should be stored safely out of the way.
4. Only lightweight items should be stored on top of cabinets; heavier items should always be kept at the bottom.
5. Solids should always be kept out of the laboratory sink.
6. Any equipment that requires air flow or ventilation to prevent overheating should always be kept clear.

**Dress Code Rules**
As you’d expect, laboratory dress codes set a clear policy for the clothing employees should avoid wearing in order to prevent accidents or injuries in the lab. For example skirts and shorts might be nice for enjoying the warm weather outside, but quickly become a liability in the lab where skin can be exposed to heat or dangerous chemicals.

1. Always tie back hair that is chin-length or longer.
2. Make sure that loose clothing or dangling jewelry is secured, or avoid wearing it in the first place.
3. Never wear sandals or other open-toed shoes in the lab. Footwear should always cover the foot completely.
4. Never wear shorts or skirts in the lab.
5. When working with Bunsen burners, lighted splints, matches, etc., acrylic nails are not allowed.

**Personal Protective Equipment (PPE):**
Unlike laboratory dress code policies, rules for personal protection cover what employees should be wearing in the lab in order to protect themselves from various hazards, as well as basic hygiene rules to follow to avoid any sort of contamination.

1. When working with equipment, hazardous materials, glassware, heat, and/or chemicals, always wear face shields or safety glasses.
2. When handling any toxic or hazardous agent, always wear the appropriate gloves.
3. When performing laboratory experiments, you should always wear a smock or lab coat.
4. Before leaving the lab or eating, always wash your hands.
5. After performing an experiment, you should always wash your hands with soap and water.
6. When using lab equipment and chemicals, be sure to keep your hands away from your body, mouth, eyes, and face.
Chemical Safety Rules:
Since almost every lab uses chemicals of some sort, chemical safety rules are a must. Following these policies helps employees avoid spills and other accidents, as well as damage to the environment outside of the lab. These rules also set a clear procedure for employees to follow in the event that a spill does occur, in order to ensure it is cleaned up properly and injuries are avoided.

1. To identify an odor, waft the odor toward your nose.
2. Every chemical should be treated as though it were dangerous.
3. Do not allow any solvent to come into contact with your skin.
4. All chemicals should always be clearly labeled with the name of the substance, its concentration, the date it was received, and the name of the person responsible for it.
5. Before removing any of the contents from a chemical bottle, read the label twice.
6. Never take more chemicals from a bottle than you need for your work.
7. Do not put unused chemicals back into their original container.
8. Chemicals or other materials should never be taken out of the laboratory.
9. Chemicals should never be mixed in sink drains.
10. Flammable and volatile chemicals should only be used in a fume hood.
11. If a chemical spill occurs, clean it up right away.
12. Ensure that all chemical waste is disposed of properly, only as directed by the instructor.

Chemistry Lab Safety Rules:
As chemistry labs are one of the most common types, these basic chemistry lab safety rules are relevant to many scientists, dealing with the safe performance of common activities and tasks in the average chemistry lab:

1. Before you start an experiment, make sure you are fully aware of the hazards of the materials you'll be using.
2. Do NOT use a thermometer as a stirring rod.
3. Always pour chemicals from large containers to smaller ones.
4. Never pour chemicals that have been used back into the stock container.
5. Chemicals should never be mixed, measured, or heated in front of your face.
6. Water should not be poured into concentrated acid. Instead, pour acid slowly into water while stirring constantly. In many cases, mixing acid with water is exothermic (releases heat).

Do you have any allergies or conditions that the instructor should be aware of? □ yes □ no
If yes, please explain. ________________________________________________________________
__________________________________________________________________________________

I have read and fully understand the rules, safety practices, and regulations governing my conduct in the science laboratory. I will abide by these rules to ensure my safety and the safety of all laboratory participants. I will follow all written and verbal instructions given by the instructor and ask questions if I do not understand a direction or procedure. I understand that violation of these rules may result in removal from the laboratory, removal from the science class, a lowered grade, or other consequences as determined by the instructor.

Student signature: _____________________________________________________________ Date: ______________