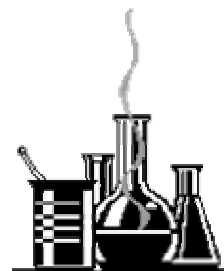


Integrated Physics and Chemistry Safety Guide



To the student:

The following rules and regulations are very important for your safety in the science laboratory. Your teacher is going to explain these rules to you and you are to learn them. You will be given a safety test soon, and it will be necessary for you to answer all questions correctly. Please study the rules very carefully and ask the teacher to explain anything that you do not understand.

General Guidelines

1. Listen to all instructions given by your teacher and follow them carefully.
2. Read your lab assignments before coming to class, when instructed to do so.
3. When entering a science room, do not touch any equipment, chemicals, or other materials in the lab area until you are instructed to do so.
4. Perform only those experiments on which you have been instructed.
5. Your behavior and attitude in lab should be excellent; both your safety and the safety of others depend upon it. There should not be any loud talking or horseplay.
6. Do not eat food, drink beverages, or chew gum in the laboratory.
7. It is your responsibility to take care of lab equipment. Use it only as instructed and report any damages to your teacher.
8. If you are in doubt about any procedure, ask your teacher.
9. Know the location and use of all safety and emergency equipment (goggles, aprons, eye wash, fire blanket, fire extinguishers, lab shower, safety charts, MSDS sheets, etc.)
10. Know what to do if there is a fire drill during a laboratory period. Containers must be closed, and the following should be turned off: gas valves, fume hoods, and any electrical equipment.
11. Set up apparatus as far back on the lab table as conveniently possible so it will not tip onto the floor.
12. Apparatus that can roll such as thermometers, etc. should be placed on the table at right angles to the edge to keep them from rolling off onto the floor.
13. When using knives and other sharp instruments, always carry them with the tips and points pointing down and away. Always cut away from your body.

14. Wash your hands after each lab experiment.
15. Clean and dry your work area at the close of the lab period.
16. After each experiment, clean up your area as instructed by the teacher.
Check the sinks to be sure liquids have been flushed down the drain and that NO solids remain in the sink.

Clothing

17. Wear safety goggles when:
 - a. working with heat.
 - b. doing any type of grinding, cutting, soldering, etc.
 - c. working with chemicals.
 - d. instructed to do so by your teacher.
18. Tie back long hair to prevent injury.
19. Wear your lab apron when instructed to by the teacher.
20. Baggy clothing and dangling jewelry are a hazard and must be tied back and secured.
21. Shoes must completely cover the foot. No sandals are allowed.

Accidents and Injuries

22. Report all accidents to the teacher, even if they are minor ones.
23. If a chemical should splash in your eye(s) or on your skin, immediately flush the affected area with running water from the eyewash station or safety shower for at least 20 minutes.
24. If mercury thermometers are broken, mercury must not be touched. Notify the teacher immediately.
25. If you smell the odor of natural gas in the lab room, notify your teacher immediately.

Handling Chemicals

26. Never taste or touch any chemical unless instructed to do so. The proper technique for smelling chemical fumes will be demonstrated to you.
27. Carefully read the label twice on any bottle prior to using it. Many formulas and chemical names look very much alike but confusing them could be dangerous.

28. When diluting acids, always pour the acid slowly into the water and stir continuously. Acids are more dense than water and a great deal of heat is released during mixing. Mixing acid and water in this way allows the heat to be spread throughout the entire solution.
29. Never return unused chemicals to their original container.
30. Never use mouth suction to fill a pipette. Use a rubber bulb or pipette pump.
31. Never remove chemicals or other materials from the laboratory area.

Handling Glassware and Equipment

32. Examine glassware before each use. Chipped or broken glassware should be disposed of in the proper place. Never use dirty glassware.
33. Lubricate glass tubing or thermometers with glycerin or water before inserting them into rubber stoppers. Use a cloth towel and grasp the tubing close to the stopper to remove the glass.
34. Do not immerse hot glassware in cold water because it may shatter.
35. Never handle broken glass with your bare hands. Use a brush and dustpan to clean up broken glass. Place broken or waste glassware in the designated glass disposal container.
36. Be very careful when operating electrical equipment.
 - a. Check all cords and plugs to be sure they are in good condition. Do not use damaged electrical equipment. Report damaged electrical equipment immediately.
 - b. When removing an electrical plug from the socket, grasp the plug not the electrical cord.
 - c. Lab working surface, equipment, and your hands should be dry.

Heating Substances

37. Never reach across a flame.
38. When heating material in a test tube, keep the tube in constant motion and do not point the mouth of the tube at anyone.
39. Never leave anything that is being heated unattended. Always turn the hot plate burner off when unattended.
40. Use tongs or heat protected gloves when handling any hot glassware or heated metal.
41. Never look directly into a container that is being heated.

Emergency Equipment

Eye Wash Station – These stations are used to flood eyes with liquid to remove foreign materials and to dilute any harmful chemical. Know how to use them.

Fire Blankets – These fire retardant blankets are used to smother out a fire such as a table surface fire or a fire in a waste basket. They can also be used to wrap around an individual.

Fire Extinguishers – These are used to put out small chemical or paper fires. In case of major fires, signal the alarm and evacuate the building using fire drill procedures.

Lab Showers – These are found in chemistry labs and are operated by pulling a release chain. Their purpose is to flood an individual's body in order to dilute a chemical spill or to extinguish a clothing or hair fire.

Safety Goggles – These are provided for each student and can be the most important piece of safety equipment you use. Safety goggles are vital to your safety and vision.

Material Safety Data Sheets (MSDS) – These sheets contain important information about the chemicals you use in the lab. MSDS sheets are organized and kept in a binder for anyone to use.

Safety Charts – These charts will remind you of important lab procedures and safety precautions.

Aprons – These cover everyday clothing and are worn on the front of the body to protect against chemical spills.

Know the location of each
piece of emergency
equipment in your classroom.