

A Brief Explanation of The Most Important Laboratory Safety Rules That Must Be Followed

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INTRODUCTION

- ▶ The chemistry laboratory can be a place of discovery and learning. However, by the very nature of laboratory work, it can be a place of danger if proper common sense precautions aren't taken.
- ▶ While every effort has been made to eliminate the use of explosive, highly toxic, and carcinogenic substances from the experiments which you will perform, there is a certain unavoidable hazard associated with the use of a variety of chemicals and glassware.
- ▶ You are expected to learn and adhere to the following general safety guidelines to ensure a safe laboratory environment for both yourself and the people you may be working near

Science Lab Safety Rules



- ▶ 1- Eating, drinking, chewing gum and smoking are strictly prohibited in the laboratory at all times. Keep all food and drinks in your backpack or purse, to avoid possible contamination.

Do not apply cosmetics, eat, or drink in the lab

- These activities are ways by which you can accidentally ingest harmful chemicals

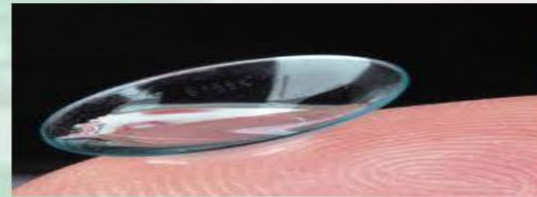


- ▶ 2- If chemicals come in contact with your skin or eyes, wash immediately with large amounts of water, then consult with your laboratory instructor.
- ▶ 3- Contact lenses are not allowed. Even when worn under safety goggles, various fumes may accumulate under the lens and cause serious injuries or blindness.

First: Genral safety for chemistry lab

Clothing:

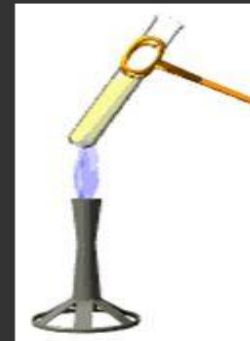
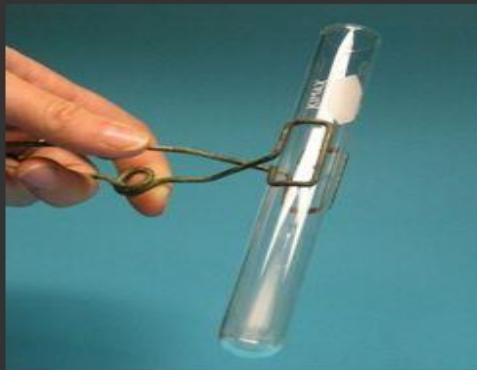
- Contact lenses are not allowed.



- ▶ 4-Do not work with chemicals near your face. And develop the habit of keeping your hands away from your mouth, nose, and eyes. This will reduce the possibility of contamination.

Test Tube Holder

- To hold a test tube (especially hot test tubes)



- Never heat a closed container
- Do not fill test tube to the top
- Always tilt the test tube opening away from your body and face
- Always heat the test tube at an angle



- ▶ 5- Any reactions involving dangerous chemicals or unpleasant odors are to be performed in a fume hood, and Never taste anything. Never directly smell the source of any vapor or gas; instead by means of your cupped hand, waft a small sample to your nose. Do not inhale these vapors but take in only enough to detect an odor if one exists



NEVER TASTE CHEMICALS
OR TOUCH THEM WITH
YOUR BARE HANDS.




Safety Rules

- Never smell a chemical directly from the container. Wave your hand over the opening of the container and “waft” the fumes towards your nose.



- ▶ 6- Coats, backpacks, etc., should not be left on the lab benches and stool
- ▶ 7- Learn where the safety and first-aid equipment is located. This includes fire extinguishers, fire blankets, and eye-wash stations.

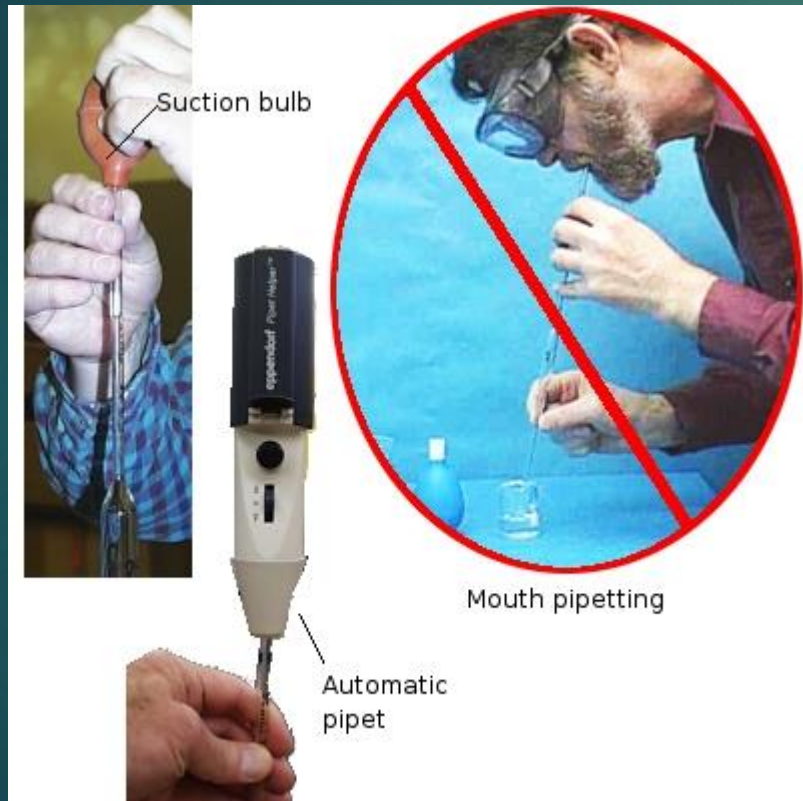


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- ▶ 8-Notify the instructor immediately in case of an accident.
 - ▶ 9- Excess reagents are never to be returned to stock bottles. If you take too much, dispose of the excess.
 - ▶ 10- Clean up any spilled chemicals immediately.
Consult with your laboratory instructor if you are not sure what to do.
 - ▶ 11-Do not work under any condition that you believe to be unsafe for you or others.

- ▶ 12- Always switch off electrical apparatus at the main when not on use . Switching off the apparatus by its own switch is not satisfactory
- ▶ 13-Each lab has a master valve which shuts off the gas supply to the entire lab. If you cannot locate this valve, ask your instructor to point it out to you. This valve is especially useful in case of a fire in the lab. In case of a fire, students as well as instructors are authorized to shut off the room's gas supply.



- ▶ 14-Never pipet by mouth.
- ▶ 15 -pipet directly from a reagent bottle.
- ▶ 16-Many chemicals are toxic and/or corrosive



- ▶ 17-Many common reagents, for example, alcohols and acetone, are highly flammable. Do not use them anywhere near open flames.



- ▶ 18-Always pour acids into water. If you pour water into acid, the heat of reaction will cause the water to explode into steam, sometimes violently, and the acid will splatter. Do not add water to a concentrated reagent, especially concentrated sulfuric acid.



▶ 19-Never leave burners unattended. Turn them off whenever you leave your workstation. Be sure that the gas is shut off at the bench rack when you leave the lab.

▶ 20-Beware of hot glass--it looks exactly like cold glass.

▶ 21-Clean your work bench with a damp sponge. Neutralize all acid spills with sodium bicarbonate and wash with a wet sponge.

Shut gas jets completely.

22-Do not take any chemical out of the laboratory for any reason

It is illegal!

▶ 23-Always wash your hands before leaving lab.



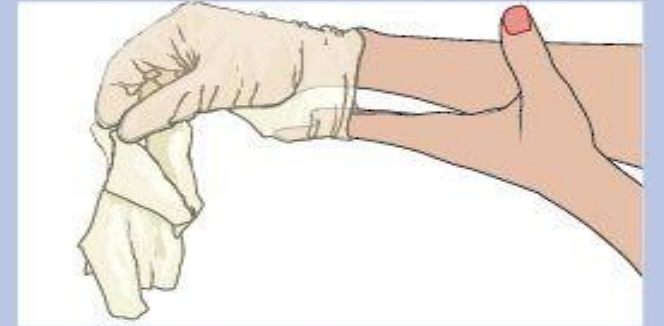
Safe Glove Removal

- ▶ To protect yourself, use the following steps to take off your gloves after use.
- ▶ If your lab coat or glove cuffs are noticeably contaminated use the “Beaking” method of glove removal.

Fig 2. Removing gloves



2a. Hold the glove at the wrist and peel away from the hand



2b. Turn the second glove inside out, with the first glove inside



2c. Dispose of the gloves



Thank
you