

CHEMISTRY LABORATORY

Do's and Don'ts

The chemistry laboratory must be a safe place in which to work and learn about chemistry. Most of these involve just using common sense.

- When entering the lab / classroom do not touch any equipment, chemicals, or other materials without being instructed to do so. Perform only those experiments authorized by the instructor.
- Wear shoes that adequately cover the whole foot; low-heeled shoes with nonslip soles are preferable. Do not wear sandals, open-toed shoes, open backed shoes, or high-heeled shoes in the laboratory.
- Avoid wearing shirts exposing the torso, shorts, or short skirts; long pants that completely cover the legs are preferable.
- Secure long hair and loose clothing (especially loose long sleeves, neck ties or scarves)
- Remove jewelry (especially dangling jewelry)
- Be familiar with your lab assignment before you come to lab. Follow all written and verbal instructions carefully. Observe the safety alerts in the laboratory directions. If you do not understand a direction or part of a procedure, ask the teacher before proceeding.
- No student may work in the laboratory without an instructor present. Work only with your lab partner(s). Do not venture to other lab stations for any reason.
- Never eat or drink in the laboratory. Don't chew on the end of a pen which was lying on the lab bench.
- Use equipment (glassware, Bunsen burner, etc) in the correct way, as indicated by the teacher.
- Wash acid, base or any chemical spill off of yourself immediately with large amounts of water.

- If chemical substances get in your eye, wash the eye out for 15 minutes. Hold your eye open with your fingers while washing it out.
- If you take more of a chemical substance from a container than you need, you should not return the excess to the container. This might cause contamination of the substance remaining. Dispose of the excess as your teacher directs.
- Never smell anything in the laboratory unless your teacher tells you it is safe. Do not smell a substance by putting your nose directly over the container and inhaling. Instead, waft the vapors toward your nose by gently fanning the vapors toward yourself.
- Do not directly touch any chemical with your hands. Never taste Materials in the laboratory.
- If you burn yourself on a hot object, immediately hold the burned area under cold water for 15 minutes. Inform your teacher.
- Observe good housekeeping practices. Work areas should be kept clean and tidy at all times.
- Only lab notebooks or lab hand-outs should be out on the table while performing an experiment. Books and book bags should not be on the lab table. Passageways need to be clear at all times.
- Always replace lids or caps on bottles and jars.
- If your Bunsen burner goes out, turn the gas off immediately.
- Always add acid to water and stir the solution while adding the acid. Never add water to an acid.
- Absolutely no running, practical jokes, or horseplay is allowed in the laboratory.
- Thoroughly clean your laboratory work space at the end of the laboratory session. Make sure that all equipment is clean and returned to its original place.

SAFETY LABEL & PRECAUTIONS

SYMBOL	TYPE OF HAZARD	PRECAUTION
	TOXIC	<p>Hazard : This substances are very hazardous to health when breathed, swallowed or in contact with the skin and may even lead to death.</p> <p>Caution : Avoid contact with the human body and immediately consult a doctor in cases of malaise.</p>
	FLAMMABLE	<p>Hazard : 1. Spontaneously flammable substances. 2. Highly flammable gases 3. Substances sensitive to moisture 4. Flammable liquids (with flash point below 21 C)</p> <p>Caution : Store in cool places. Keep away from open flame, source of heat and sparks.</p>
	CORROSIVE	<p>Hazard : Living tissues as well as equipment are destroyed on contact with these chemicals.</p> <p>Caution : Do not breathe vapours and avoid contact with body and clothing.</p>
	EXPLOSIVE	<p>Hazard : This Symbol designates substances which may explode under definite conditions.</p> <p>Caution : Avoid shock, friction, sparks and heat.</p>
	IRRITANT	<p>Hazard : This Symbol designates substances which may have an irritant effect on skin, eyes and respiratory organs.</p> <p>Caution : Avoid inhalation and direct contact with the body.</p>
	OXIDISING	<p>Hazard : Oxidising substances can ignite combustible material or worsen existing fires and thus make fire-fighting more difficult.</p> <p>Caution : Keep away from air and moisture.</p>
	HARMFUL	<p>Hazard : Inhalation, ingestion and continuous exposure of skin by these chemicals is harmful.</p> <p>Caution : Avoid inhalation and direct contact with human body.</p>
	DANGEROUS FOR THE ENVIRONMENT	<p>Hazard : Certain substances which liberates in to various aquatic and non-aquatic environment causing damage to one or more components of atmosphere.</p> <p>Caution : Depending on the risk potential do not allow to enter sewerage systems, soil, or environment, Observe special disposal regulation.</p>



FIRST AID

BURNS CAUSED BY BROMINE

Wash the burnt part with either Alcohol or Petrol and then apply Olive oil.

BURNS CAUSED DUE TO FIRE

Apply either Petroleum jelly or Burnol on the burnt part.

ACCIDENTS CAUSED DUE TO ACIDS

BODY BURNS

Wash with plenty of water first and then with Sodium bicarbonate solution. After the wash apply a paste of Sodium bicarbonate - Petroleum jelly mixture on the burnt part for 10-15 minutes. Again wash with plenty of water apply Carron Oil (An equal of Lime water and Linseed oil)

SPILLAGE IN THE EYES

Wash with plenty of water first and then with 2% Sodium bicarbonate solution followed by water again. Wipe out the water from your eyes and then put 2-3 drops of olive oil.

SPILLAGE ON CLOTHES

Use dilute Ammonia Solution to neutralise the acid. Then wash with plenty of water.

ORAL INTAKE

Gargle with water first and then drink atleast 1 litre of milk or water followed by lime juice.

ACCIDENTS CAUSED DUE TO ALKALI

BODY BURNS

Wash with plenty of water first and then with Boric acid Solution. Make a paste of Boric acid, apply on the burnt part and after 10-15 minutes wash it off.

SPILLAGE IN THE EYES

Keep open the eyelids and wash with plenty of water first and then with dilute Boric acid solution (0.5%) Again clean your eyes with water. Wipe out the water and then put 2-3 drops of Olive oil.

SPILLAGE ON CLOTHES

Neutralise the alkali with dilute Acetic acid solution (3%). Then wash with plenty of water.

ORAL INTAKE

Gargle with water first and then drink atleast 1 litre of milk or water. Eat Oranges.

WOUNDS

First remove any foreign particle (like glass piece etc.) From the wound. Clean well with water and apply Tincture iodine. Put a bandage and seek medical attention.

GENERAL ADVICE

For severe burns caused due to acid keep the burnt part in Sodium bicarbonate-Petroleum jelly mixture and for those burns caused due to alkali, keep in the Boric acid solution for atleast half an hour.

While packing compounds of Cobalt, Chromium, Cadmium, Bismuth, Barium, Lead, Tin etc., It is necessary to wear the respective safety equipments / guards (like gloves, goggles, face mask etc.) In case these chemicals are accidentally consumed, try to spit it out even by vomiting. While packing Formaldehyde or Hydrogen peroxide, if it falls on the body or clothes, wash with plenty of water. If Copper sulphate is consumed accidentally, drink a cup warm water containing a spoon of sodium chloride or Zinc sulphate.

It is the duty of everyone to ensure that chemicals do not come into contact with the body through their mouth, eyes ears & nose. Also ensure that the necessary safety equipments are used.

After providing first aid, seek medical attention, if necessary.

FIRE

Do not use water to extinguish an electric fire as it could give you a shock. Use dry powder fire extinguishers, if solvents lighter than water (like Xylene, Benzene, Acetone, I.P.A., Methanol, Petroleum ether, Diethyl ether etc.) Catch fire, use wet blanket to cover the fire or use a suitable fire extinguisher, Splashing water on such fires could spread the flame. Be familiar with the usage of various types of fire extinguishers.