

Science Lab Safety Notes

(Internet sites where additional notes and advice can be found)
http://www.sanbenito.k12.tx.us/teachers/Science_safety/Science_Safety.html
<http://homepages.ius.edu/DSPURLOC/c121/week1.htm>
<http://www.epcc.edu/faculty/victors/safety.htm>
http://www.chemistryclasses.com/Lab/lab_safety.htm
http://www.isd196.k12.mn.us/schools/evhs/people/fruincfWeb/lab_safety.html



Before beginning any activity

Know what is expected

Prepare a clear work environment

Wait for permission to start

Whenever special attention is needed in a Lab activity you will see the word **Caution**

(This means that special care must be taken when proceeding with this activity)

General Safety Precautions

- Inform your supervisor of health-related problems, allergies
- Never eat or drink In the Lab area
- Do not attempt Lab activities at home unless told to do so by your teacher, and only under the direct supervision of an adult
- Touch substances only when told to do so
- Smell substances using the proper technique - **wafting** fumes toward you. Chemicals should always be smelled by holding the container in front of your face and slowly (in a circular motion) wafting the vapors toward your nose. Never place the chemical right at your nose and inhale.
- Pour substances properly and safely
- Rinse off substances immediately that come into contact with skin or clothing
- Wash hands after handling substances and before leaving the Lab
- Clean up all spills Immediately
- Dispose of harmful substances by following teacher's directions
- Work quietly and carefully
- Never work alone
- Wear appropriate clothing
- Wear safety equipment



Handling a Heat Source

- Use hot plates that have thermostatic controls.
- Use a beaker of water on a hot plate to heat substances In test tubes.
- Use heat-resistant glass (**Pyrex** or **Kimax**) - **never** use cracked glass.
- Always keep the open end of the test tube pointed away from everyone.
- Never allow any container to boil dry. Use tongs or gloves to pick up hot objects.
- Turn off hot plate when not In use.
- Unplug cords by pulling on the plug, not the cord.
- Report and replace equipment that has frayed or damaged cords.
- Make sure electrical cords are placed properly where no one will trip over them.



Treat burns using **cold water** or **ice**

Handling an Open Flame

- Locate fire safety equipment before using any open flame (fire blanket, fire extinguishers, fire alarm, first-aid kit)
- Remove all flammable substances from the room before lighting a flame

Know the proper procedures for lighting a **bunsen burner** In the Lab

- Make sure the rubber hoses are firmly attached, both at the gas outlet and at the burner, otherwise, the flame may "strike-back".
- Turn up the gas flow until you hear a gentle flow of gas.
- Light the burner by bringing the match UP from the base toward the burner nozzle.



Follow the proper procedures for heating a substance over an open flame



- Use a test tube holder if the test tube is being heated in an open flame
- Point the open end away from yourself and others
- Gently move the test tube back and forth over the flame so that it is heated evenly

Other Recommendations

Dispose of broken glassware as instructed by your teacher, report broken or damaged equipment immediately (DO NOT USE IT), clean up work area completely when you are finished, wash all glassware thoroughly and place in drying racks, report all accidents to the teacher immediately (no matter how minor)

Workplace Hazardous Materials Information System



Compressed Gas

This symbol is in class A and is used to inform people of compressed gas. This category includes such things such as propane bottles, butane bottles, and acetylene bottles.



Poisonous and Infectious

This symbol belongs to class D-1 and is one of the most commonly found symbols in homes across North America. This symbol represents materials that are toxic when ingested. This category includes such common products as bleach, Mr. Clean, and Tide. Most household chemicals and cleaners contain this symbol and has become known as the symbol for poison.



Oxidizing

This symbol informs people that this substance produces oxygen when burned. This specific reaction creates a high problem for combustion and has to be stored in special containers and must be transported with extreme care.



Dangerously Reactive

This symbol is found on some household products and on a large number of lab chemicals. It means that when certain chemicals are mixed they will react and produce a harmful side effect. Some chemicals that should not be mixed are bleach, drain cleaner, and ammonia because, when combined, they will form a toxic gas.



Flammable and Combustible

This symbol is the Flammable and combustible material symbol, which is in class B and tells a person that a certain substance will react with a flame and burn. Some materials that fit into this category are gas and oil. These substances are highly flammable and ignite with little effort.



Corrosive

This symbol is the second most common symbol found in homes across North America. This symbol is most commonly found on products such as bleach and battery acid, which are highly corrosive and are able to burn organic matter.



Toxic / Infectious

This symbol belongs to class D-2 and is one of the less common symbols found in homes. It is more commonly found in Chemistry Labs. This symbol is somewhat similar to the fourth symbol, but chemicals that fit into this category cause slower effects to the body. Some examples of this are arsenic and nicotine.



Biohazardous

This symbol is often found in hospitals and is put on products that have materials that are harmful, such as viruses or bacteria. Examples of bacteria that fall into this category are ebola and the flesh eating disease.

If you think you are ready - Take the [Safety Test @ Edquest.ca](https://www.edquest.ca)