

General Laboratory Safety

Learning Objectives Today

Part I

How to dress appropriately for laboratory investigations

Identify safe and unsafe laboratory conditions and behaviors

Follow the best practices in handling of chemicals and equipment in order to minimize exposure to chemicals

In your random groups please write out as many lab safety rules as you can (you should at least have 10) and then you should rank them in importance from most important being 1 to least important being 3

Why does it matter?



- You may have experience a class prior where you talked about safety once and then
- Not here! We will discuss safety every time we complete an activity
- I will limit activities for classes if safety procedures are not followed
- RESPECT – remember this is a learning environment for you and your classmates

How to do a Risk Assessment?

1. Before any experiment we will determine **hazards** and evaluate **risks**
2. We will use all relevant **available data such as SDS sheets**
3. We will determine **controls** needed to minimise those risks
4. **We will Document** the assessment in your pre-lab.
5. We will then **Use** those control measures during the lab



Protecting yourself



- Wear the clothing and protective wear identified in your risk assessment
- Aprons must be worn
- Don't wear sandals or open shoes
- Long hair must be tied back
- **NO CONTACTS**

Protecting yourself - gloves

- There are many different types of protective gloves.
 - I choose the type of gloves we use based on the materials and/or substances with which you will be working with
 - If you have an allergy to Latex – DO NOT HANDLE THE LATEX GLOVES – all members of your group with wear non latex gloves.
 - **I am allergic to latex and vinyl so we will not use either in this lab**
- Do not remove gloves until the lab is over and you have cleaned up.
- Safe disposal of gloves
- Remove your gloves then wash your hands with soap and water.



Laboratory hygiene

- Never eat or drink in a laboratory (**even when lab is not taking place**) – **if you bring food into the lab you must throw it away**
- **Never** apply cosmetics (even when lab is not taking place)
- **Never** touch your face, mouth or eyes
- **Never** suck pens or chew pencils or chew gum
- **Always** wash your hands before you leave
 - Soap and water



What are the general hazards in a laboratory?

- Fire
- Breakage of glassware
- Sharps
- Spillages
- Pressure equipment & gas cylinders
- Extremes of heat & cold
- Chemical hazards
- Biological hazards



And many more!

Minimise fire damage

- Make sure corridor fire doors and laboratory doors are kept shut at all times



Fire Safety



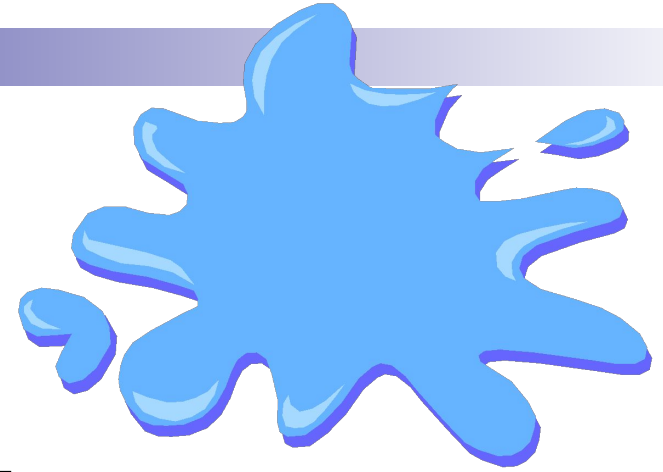
- Make sure that you know what to do:
 - If you have a fire
 - If you hear a fire alarm

Glassware

- Dispose of chipped or broken glassware – it is a risk to you and others
- Always dispose of broken glass in a glass bin or sharps bin and not in a general waste bin



Spillages



- Not matter how small tell me when any spills occur

Electrical Equipment

- Always do a visual check on electrical equipment before use, looking for obvious wear or defects
- **NEVER** use defective equipment





Laboratory Equipment

- Never use any laboratory equipment unless you are trained & have been authorised to do so
- As well as injuring yourself you may cause very costly damage
- Follow directions exactly

First Aid

- Prevention is key – remember safety first always
- Report any injury or spill no matter how small immediately
- If there is any injury you will be sent to the nurse
- For **ALL** chemical splashes, wash with plenty of water for 10 minutes
- Control bleeding with direct pressure, avoiding any foreign bodies such as glass
- All injuries must go to the nurse

Protecting your health



- If you have an allergy to lab materials or suffer from a medical condition which may affect you in the laboratory tell me immediately



Waste Materials

- lab wastes must be disposed of safely
- Do not put materials down the drain or in with normal waste unless authorised to do so

When in doubt – ASK!!!

- Do not carry out a new or unfamiliar procedure until you have been fully trained & understand the precautions necessary for safe working
- **DO NOT GUESS!!!!**



POGIL – Safety First