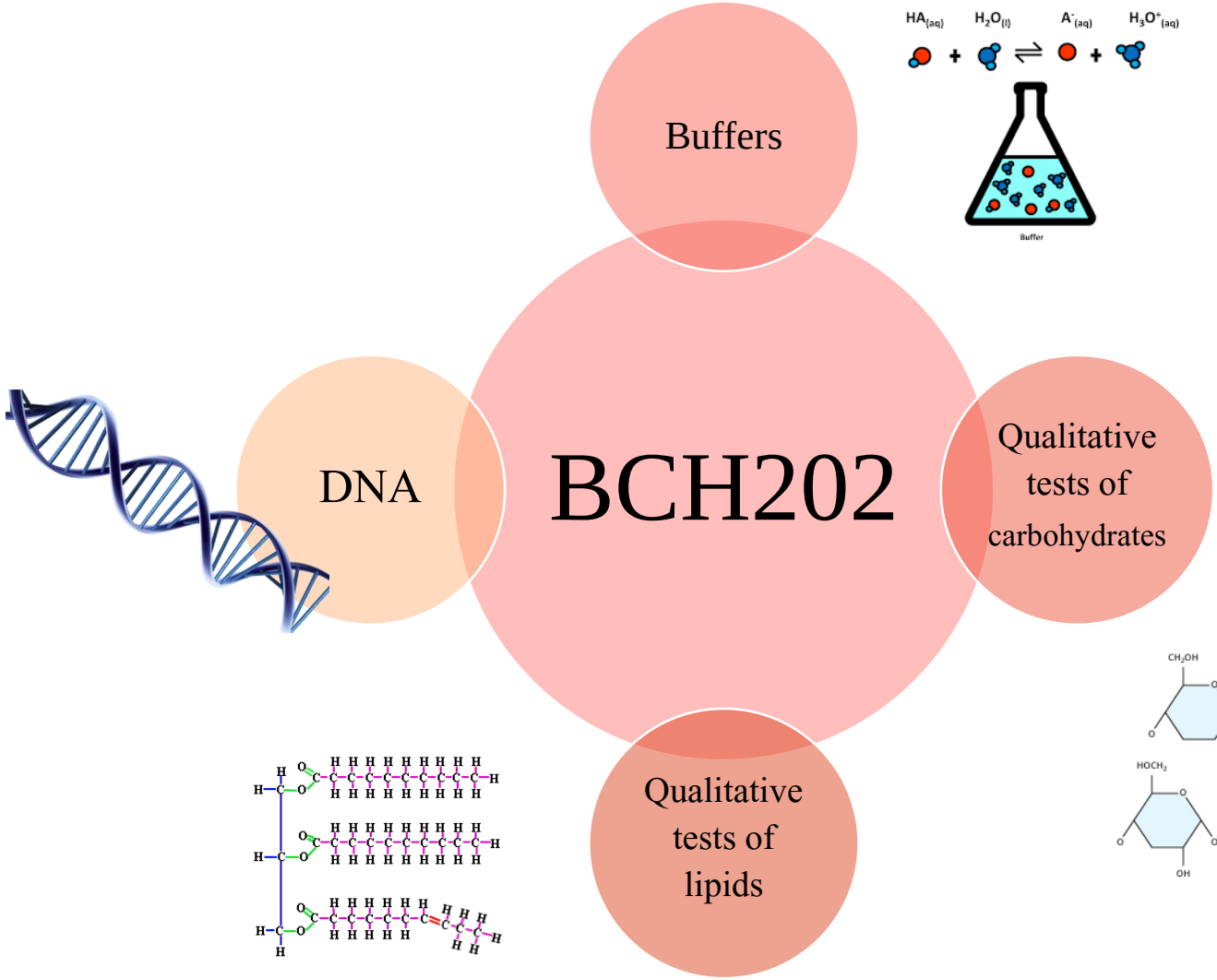
Introduction and lab safety

Outline:

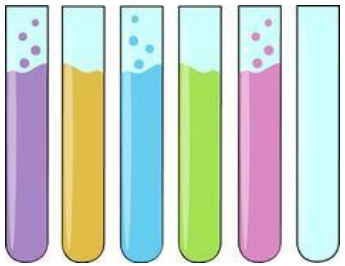

Buffers
DNA
BCH202
Qualitative tests of carbohydrates
Qualitative tests of lipids

Types of assay:

Assays

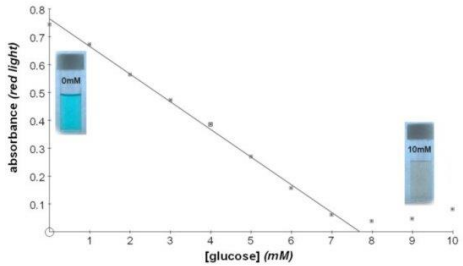
Qualitative assays

Determine if specific substance is there or not, by color or some other quality.



Quantitative assays

Determine the concentration of a substance.



Writing a Report:

1. **Cover page:** Title, course code, student name.
2. **Introduction:** In this part you a background that will help to understand your topic.
3. **Objectives:** you will write it by your own words.
4. **Materials and method:** As in the lab sheet.
5. **Results:** You should report all your results that you got from your experiments. Any tables, figures or calculation.
6. **Discussion:** You must write a description and reasons for why you got your results.
7. **References.**

References:

Example:

The disease begins as a benign adenomatous polyp, which develops into an advanced adenoma with high-grade dysplasia and then progresses to an invasive cancer [(1)].

Like other cancers, colorectal cancers arise through a multistep process in which genetic and epigenetic alterations accumulate in a sequential order [(2)].

References:

1. Markowitz SD, Bertagnolli MM. Molecular origins of cancer: Molecular basis of colorectal cancer. N Engl J Med 2009;361: 2449-60.

2. Pancione M, Remo A, Colantuoni V. Genetic and epigenetic events generate multiple pathways in colorectal cancer progression. Patholog Res Int 2012; 509348:11.

Legend of tables and figures:

Table number

Table legend

Table 2. Effects of Lipofundin 20% on hepatic lipid peroxidation biomarkers.

Biomarkers	Control group	Lipofundin group
MDA (µmol/L/mgPr)	3.89 ± 0.75	7.63 ± 0.31*
TH (µmol/L/mgPr)	35.27 ± 4.22	67.32 ± 5.89*
PP (µmol/L of MDA/mg Pr)	5.06 ± 0.48	9.74 ± 0.42*

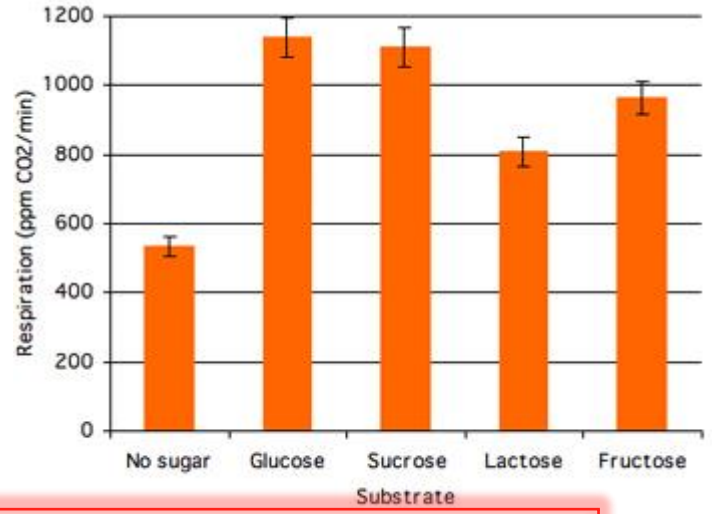


Figure 1. The Effect of Substrate on Yeast Respiration.

Figure number

Figure legend

Justify the text:

Example:

It’s consist of glass electrode which contain a very thin bulb, blown onto a hard glass tube which is sensitive to pH.The bulb contains a solution of hydrochloric acid and is connected to a platinum lead via silver -silver chloride electrode which is reversible with respect to hydrogen ions.

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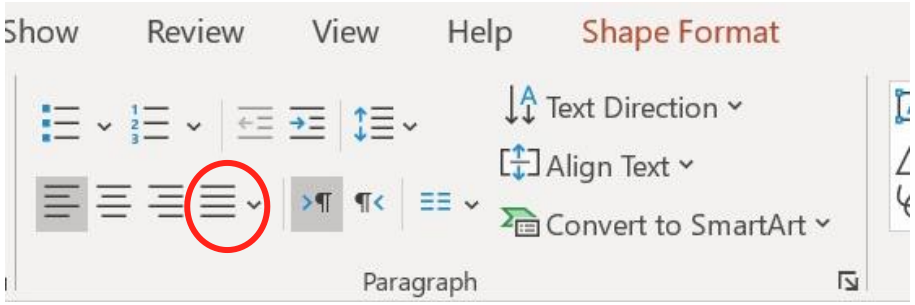
How?



Font and size text:

Font: Times New Roman.

Size:

-Subtitle: 14 pt.

-Body: 12 pt.

Color: Black

General Laboratory Safety

Safe working protects:

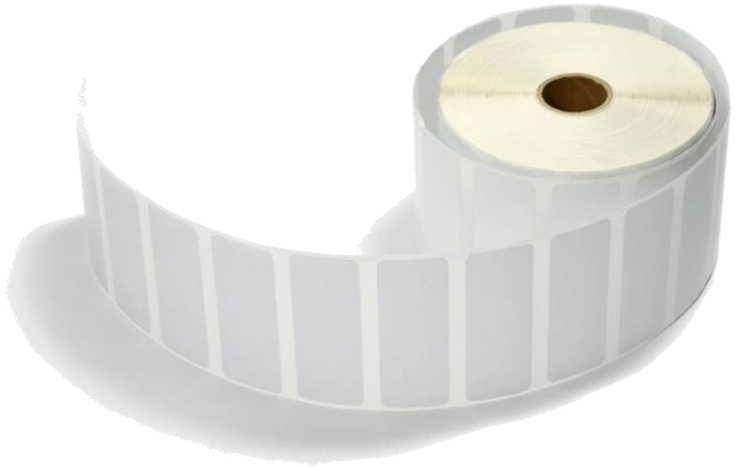
- You.
- Other lab workers and visitors.
- Your work.

General consideration:

- Never eat, drink or chew gum in the lab.
- Do not taste , smell or touch any chemical.
- Tell your instructor about any accident .
- Tie your hair before doing an experiment.
- Closed-toed shoes should be worn at all times.
- Wash your **hands** with soap after an experiment.
- You must know all exits in your lab, eye washer, and fire extinguisher, first aid kit.
- Do not touch any electrical sources .

Before starting :

- Before start working, be sure to **label** the glassware.
- Glassware should be **clean** before using.



After work:

- After finishing the experiment turn off all the equipment, clean your work bench.
- **Glassware must be cleaned and kept back at the proper place.**

Personal Protective Equipment :

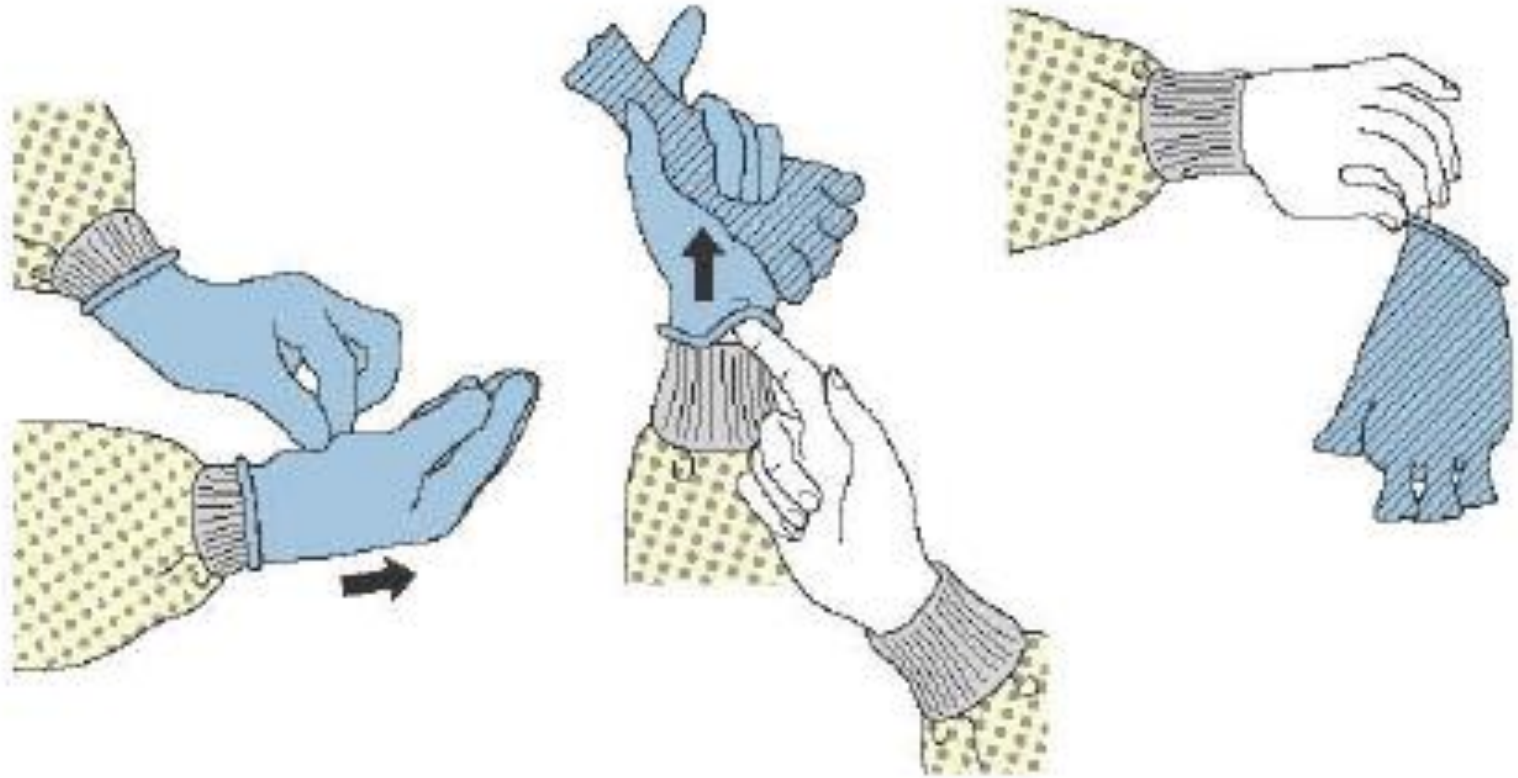
Place your bag in the correct area.

Lab coat should be worn all the time in the lab.

Protective gloves should be worn when handling hazardous materials.

Protective glasses should be worn when using hazard chemicals.

How to remove gloves?

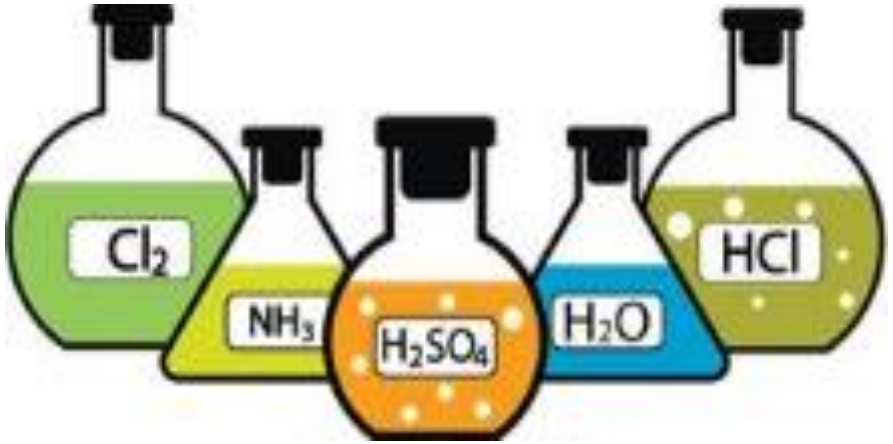


Dealing with chemicals:

- Consider <u>all chemicals to be hazardous.</u>
- Know what chemicals you are using and notice the **hazard symbols**.
- Carefully **read the label** twice before taking anything from a bottle.
- **Never point** a test tube that you are heating at yourself or your neighbour.
- You must work at the **hood** when dealing with a chemical with fumes.
- If chemicals come into **contact with your skin** or eyes, **flush** immediately with water and consult with your instructor.

Dealing with chemicals cont':

- Always pour acids into water. If you pour water into acid, the heat of reaction will cause the water to explode into steam.
- Do not forget to **label your tubes** before starting the lab.
- **Close** all chemical bottles after finishing
- Dispose chemicals properly.
- **Don't use the same pipette for different chemicals without washing them.**



Hazard symbols

Information about chemicals:

- **Material Safety Data Sheet (MSDS)** is a document that contains **information** on the potential hazards (health, fire, reactivity and environmental) and **how to work** safely with the chemical product. It also contains information on **the use, storage, handling** and **emergency** procedures all related to the hazards of the material.

ScienceLab.com
Chemicals & Laboratory Equipment

Health	2
Fire	3
Reactivity	0
Personal Protection	E

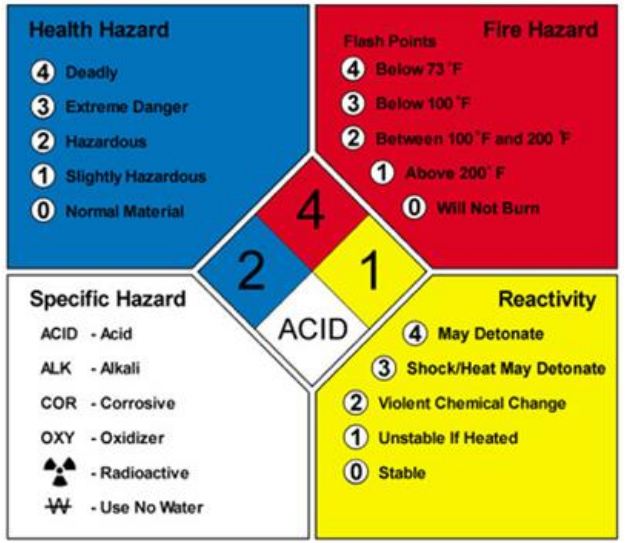
Material Safety Data Sheet
Ethyl alcohol 200 Proof MSDS

Section 1: Chemical Product and Company Identification

Product Name: Ethyl alcohol 200 Proof
Catalog Codes: SLE2248, SLE1357
CAS#: 64-17-5
RTECS: KQ6300000
TSCA: TSCA 8(b) inventory: Ethyl alcohol 200 Proof
CI#: Not applicable.
Synonym: Ethanol; Absolute Ethanol; Alcohol; Ethanol 200 proof; Ethyl Alcohol, Anhydrous; Ethanol, undenatured; Dehydrated Alcohol; Alcohol
Chemical Name: Ethyl Alcohol

Contact Information:
Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396
US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**
Order Online: ScienceLab.com

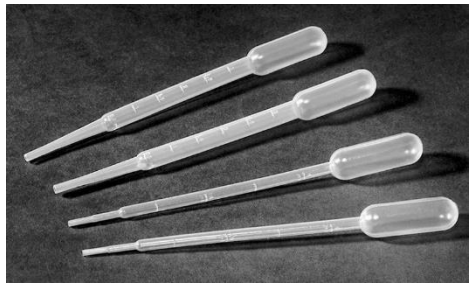
CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300
International CHEMTREC, call: 1-703-527-3887
For non-emergency assistance, call: 1-281-441-4400



(HMIS)

General glassware and instrument

Glassware:

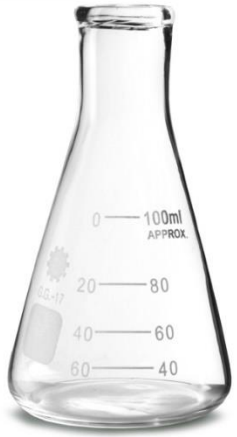


Pasteur pipette

Test tubes

Pipette

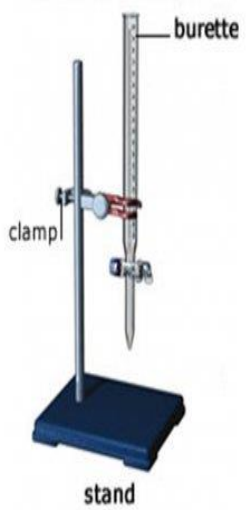
Pipette pump



Conical flask

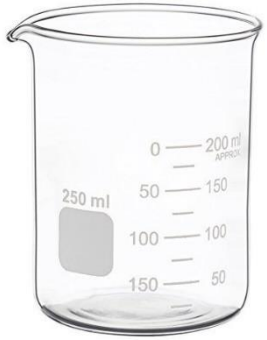
Cuvette

Glassware:



Burette

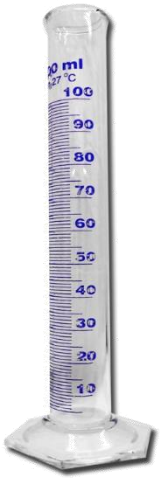
Reagent bottle



Beaker

Wash bottle

Volumetric flask



Measuring cylinder

instruments:

Water bath

Spectrophotometer

Electronic balance

pH meter

Homework:

Search for MSDS of H_2SO_4:

- What you will do in case of eye contact?
- What you will do in case of skin contact ?
- Is it flammable?
- Health Management Information Systems (HMIS).