MCDB4101: LABORATORY SAFETY GUIDELINES

Dress code for the lab session
Exposed skin is a risk for contact with hazardous materials. For your protection, you must dress properly for each laboratory session.
No open toed shoes. Wear closed-toed shoes.
Confine long hair, loose clothing and jewelry.
Ideally wear long sleeves and long pants or long skirts covering down to ankles and not shorts or short skirts. A properly sized and styled lab coat will reduce these clothing restrictions.

You will be wearing Personal Protective Equipment (PPE): a lab coat and nitrile gloves. These serve to:
a) protect you from hazardous factors.
b) protect your samples from you (e.g. your skin and secretions have RNases and microbes).
c) protect the environment from contamination (by discarding the gloves, leaving the lab coat and everything else that may be contaminated in the lab).

Absolutely, NO food or drinks in the lab. No chewing gum or putting on cosmetics. These rules aim to prevent accidental ingestion of hazardous material.
Keep your hands away from your face and mouth. Wash your hands often. No mouth pipetting.
No use of cell phones or headsets in the lab.
Do not touch personal or other non-experimental items until you remove your gloves.
Keep your bench clean and tidy. Always clean up the bench before you start your experiments and after you finish.
Dispose of all waste properly. Do not place hazardous materials in the regular trash or sink.
Report any accident and injury to Dr. Bilge Birsoy.
Wash your hands before leaving the lab.

Know what to do in case of an emergency.

In case of a spill of large amounts of highly hazardous material
Life safety first
Evacuate immediate area
Pull Fire alarm
Execute 911 call from safe location
Remain available for Emergency Personnel

In case of a small spill on the bench or floor
Notify instructors immediately.
Make sure you are wearing PPE when you soak up the spill using paper towels.
Dispose of the paper towels appropriately.
If there is broken glass, do not touch the glass. Use broom and dust pan to collect the pieces and discard them into the “glass waste” container.
Discard gloves.
Wash hands thoroughly.

In case of a spill on clothing or contact with eyes, mouth or skin.
Notify instructors immediately.
Remove your lab coat.
Discard your gloves.
Wash affected area with soap and water for at least 15 minutes. Eyes must be washed in the eye wash by keeping your eyelids open for at least 15 minutes.

Clean the spill after contact exposure has been completely removed.
Seek medical care as necessary.
Report to Biosafety Officer with an accident report.

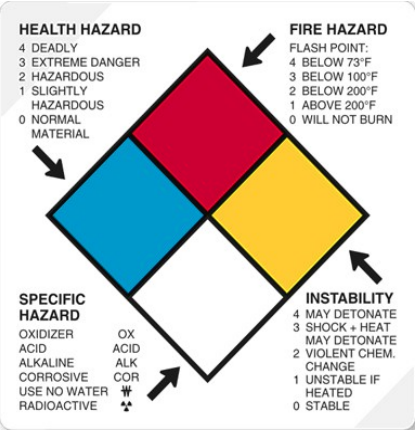
In case of a cut or skin puncture with sharps (e.g. broken glass, glass capillaries, needles, etc)
Notify instructors immediately.
Remove your lab coat.
Discard your gloves.
Wash affected area with soap and water thoroughly.
Apply first-aid as necessary.
Report to Biosafety Officer with an accident report.

Location of the eye wash station in MUEN E0040

There are two sinks in the lab but only one eye wash station.
After entering the lab through the main door, if you turn right and face the far end of the lab,you will see the second sink that has the eye wash station (covered with red plastic covers).
In case of an chemical splash to the eyes, ask for assistance to get to the eye wash station.
Turn on the faucet and then push the nob at the center of the eye wash to get the water running with pressure through the eye wash. Let the water run for 1 minute before starting to wash eyes. This will get rid of particulates that may have accumulated in the faucet and pipes.
Keep both eyes open with each hand and wash and rinse with running water for 15 minutes.
Report to your instructors.

Location of the shower in MUEN E0040
If you need to use the shower in case of a serious spill, you will need to go to the far end of the lab (close to the locked doors). Pull the lever to start running water.
Report to your instructors.

Hazardous materials and other potential hazards in the lab:
Biological: non-pathogenic *E. coli* (BSL-1: no known health risk)
Read about the biological and environmental characteristics of *E. coli* on Google or Wiki.



Chemical:
Recombinant or synthetic Nucleic Acids (rsNA)
Ethidium Bromide (EtBr), we will use SybrSafe, a safer alternative
Formaldehyde (FA)
Methanol (MeOH)
Ethanol (EtOH)
Phenol
Chloroform
Hydrogen peroxide (H_2O_2)

Physical: Sharps, Fire (bunsen burner), Electrical (electrophoresis), High pressure gas cylinder, Aerosol and splash risks with centrifuges and pipetman

For all the hazardous chemicals, we will go over their Material Safety DataSheets (MSDS)
https://www.osha.gov/chemicaldata/

Waste Disposal
Always read the label on the waste container and dispose of waste accordingly.

Gloves contaminated with bacteria go into biohazardous solid waste container.
Gloves contaminated with hazardous chemicals are discarded depending on the type of hazardous material. Follow labels.

Glass uncontaminated with any hazardous materials: Uncontaminated Glass trash
Glass contaminated with hazardous materials: Contaminated glass containers

Serological pipettes and micropipette tips are considered sharps. They will be disposed of into puncture proof cardboard boxes depending on the type of hazardous material. Follow labels.

The following hazardous chemicals will be collected according to physical state of the contaminated item (e.g. solid, liquid, gel). Follow labels and ask your instructors when in doubt.
Ethidium bromide
Ethanol
Methanol
Phenol
Chloroform

Never mix different hazardous materials together.

Abbreviated Lab Rules

Good Lab Practices ensure the uniformity, consistency, reliability, reproducibility, quality, and integrity of your experiments and safety of you, your friends and your things.

A) **STOP** and **ASK** if you are uncertain of ANYTHING.
B) **NO FOOD or DRINKS** in the lab.
C) Follow the **dress code** and all **safety** rules and guidelines.
D) Keep your **bench clean and tidy**.
E) **Wash hands** frequently.
F) **STOP** and **ASK** if you are uncertain of ANYTHING.

Before each lab session, you will

1) Receive your lab notebook from your instructor. Lab notebooks kept in the lowest drawer in the personal items isle at the end of the lab (across from the fume hood).
2) Using a pen, write down what you will be doing in the lab session in your lab notebook.

At the beginning of each lab session, you will

1) Put away any food, drinks, cell phones and mobile devices, backpacks in the designated area. You will need to leave the lab to access these or wait until the end of the lab session.
2) Wash and dry your hands.
3) Put on a pair of gloves.
4) Put on a lab coat.
5) Clean your bench.
6) Get lab reagents and supplies ready.
7) Follow instructions and carry out your experiments.

At the end of each lab session, you will

1) Put away all your reagents in the appropriate location (freezer, refrigerator or incubator, etc).
2) Discard of any waste appropriately.
3) Turn off the burner and any non-essential equipment.
4) Clean your bench.
5) Go over notes in your lab notebook, make necessary modifications and return your lab notebook to your instructor.
6) Take off your lab coat.
7) Discard your gloves.
8) Wash and dry your hands.
9) Take all personal belongings with you.

If you need to leave the lab during a lab session for any reason, you must

1) Let your instructor know that you need to leave
2) Take off your lab coat.
3) Discard your gloves.
4) Wash and dry your hands.