

Lab Safety
Chem184, Spring 2007
Altman, Elrad, Kool, Zare

General Safety Rules

1. Read all protocols prior to the lab and ask an instructor if you are unsure of any procedure. Lack of pre-lab preparation is the main threat to lab safety.
2. Learn the location and proper usage of the eyewash fountain, fire extinguisher, safety shower, fire alarm box, and first aid kit.
3. Use equipment only as directed.
4. Food, drink, and gum are prohibited in the lab.
5. Never smell or taste anything in the lab.
6. Wear safety glasses and gloves when appropriate.
7. Dress appropriately and tie back long hair. Open sandals are not permitted in the lab due to the dangers of broken glass and corrosive liquid spills.
8. Use toxic or flammable solvents only in the fume hood.

Lab Station Clean-Up:

1. Clean-up is important for the safety of others and for the preservation of equipment; keep your work area clean.
2. Never put unused chemicals back into their original container.
3. Return chemicals and equipment to their proper places after use.
4. Dispose of all transgenic organisms in the red BIOHAZARD bags.
5. Dispose of razor blades in a red sharps container.

In case of accidents:

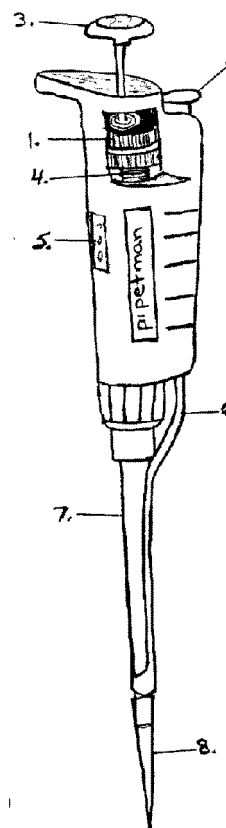
1. Report all accidents regardless of how minor to an instructor.
2. If glassware is broken, clean the area and dispose of broken glass in the blue broken glass container.
3. If there is a chemical spill notify an instructor immediately.
4. For minor skin burns, immediately plunge the burned area into cold water and notify an instructor.
5. If you get any chemical in your eye, immediately wash the eye with the eye-wash fountain and notify an instructor. To use the eyewash, keep eyes forcibly open and flood with water for a minimum of 15 minutes. The station should only be used if chemicals come in contact with the eyes.

Instructions for Using a Pipetman
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A Pipetman is used to measure small volumes. Throughout the quarter, you might use five different Pipetman types: P2, P10, P20, P100 and P1000. The P2 is for measuring volumes between 0.2 and 2.0 μL ($1 \mu\text{L} = 1/1,000,000 \text{ L}$), the P10 is for volumes between 1.0 and 10.0 μL , the P20 is for volumes between 1.0 and 20.0 μL , the P100 is for volumes between 10.0 and 100.0 μL and the P1000 is for volumes between 100 and 1000 μL . You will use the same Pipetmen all quarter and your first task will be to test your Pipetman for accuracy using water and a scale; the density of water is 1.00 g/mL. The directions for using a Pipetmen are given below.

Parts:

1. Volume adjustment dial
2. Tip ejector button
3. Plunger button
4. Stainless steel micrometer
5. Digital volume indicator
6. Stainless steel ejector arm (removable)
7. Plastic shaft
8. Disposable tip



Pointers:

1. Be careful; pipetman are fragile and expensive.
2. Never rotate the volume adjustment knob past the upper or lower range of the Pipetman (see above).
3. Never use a pipetman without a tip in place.
4. Never lay the pipetman down on its side when it contains liquid; this can cause liquid to enter into the pipetman.

Directions:

1. Check the top of the pipetman plunger button to make sure that you have the pipetman you need.
2. Rotate the volume adjustment knob until the digital indicator reaches the desired volume (see diagram).

3. Firmly place a disposable tip on the shaft of the pipetman.
4. Press down the plunger to the first stop. You will be able to push past this point, but there is enough resistance to stop the movement if you try to be aware of it.
5. Hold the pipetman vertically and immerse the disposable tip into the sample.
6. Allow the plunger button to return slowly to its original position. Wait a couple of seconds to ensure that the full volume of the sample is drawn into the tip; withdraw the tip from the sample.
7. To dispense the sample, place the tip against the side wall of the receiving tube and push the plunger down to the first stop. Wait a second and depress the plunger to the second stop in order to expel any residual sample in the tip.
8. Holding the plunger down, remove the pipetman from the tube, and allow the plunger to slowly return to its original position.
9. Discard the disposable tip by pushing the ejector button; be careful where you point.

Sample Pipetman Settings

