

Introduction to Biochemistry and Biotechnology Lab

Experiment 1: Use of Micropipettes to measure volume accurately

Pipettes



https://proscitech.com/?navaction=show_page&chapter=1&page=4



<http://www.capp.dk/categories/pipettes>

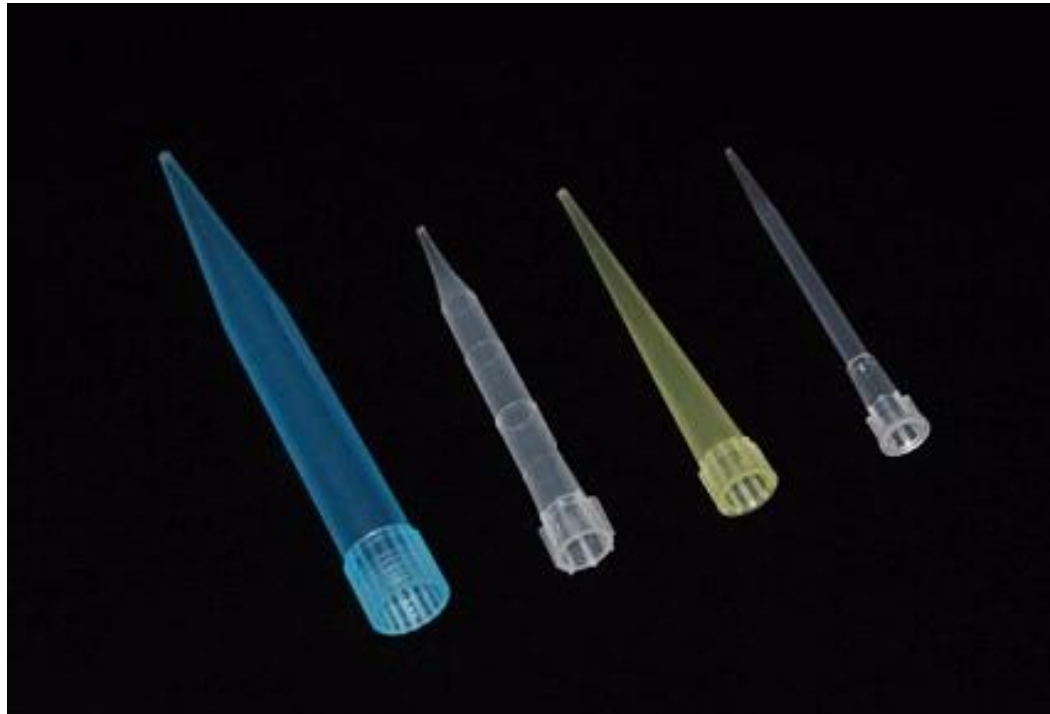


<http://www.pipette.com/raininpipettes?sbr=846&sbn=Rainin%20Pipet-X%20Pipette%20Controller>

Micropipettes



Micropipette tips



<https://www.alibaba.com/showroom/eppendorf-pipette-tip-200ul.html>

Micropipettes with tips



<https://www.pipettes.com/eppendorf-research-plus-3-pack-2-20-l-20-100-l-100-1-000-l>

How to pipette correctly – a short step-by-step introduction into proper pipetting

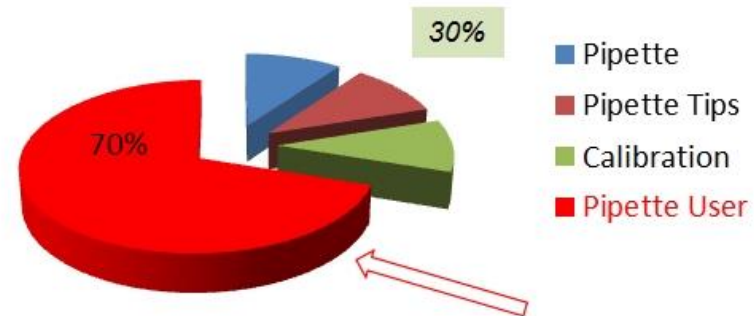
<https://www.youtube.com/watch?v=QGX490kuKjg>

Sources of Error during Micropipetting

Sources of Error for micropipet

- Bad pipet tip: leaks, clogged tip
- Damaged pipetor
- Wrong size tip for pipet size
- Bubbles in your tip due to poor technique
- Liquid not at room temperature or it may be viscous

Major Sources of Pipetting Error in the Lab



F. Micropipette Rules

Each micropipette cost \$200 and is paid for by your technology fee. To keep these pipettors functioning properly it is important that they be handled with care. Please follow these rules to keep from breaking the micropipettors

1. Never adjust the volume beyond the range of the micropipettor. No micropipette should be adjusted below zero μl . The P20 should never be adjusted above 20μ , the P200 over 200 μl and the P1000 over 1ml.
2. Never force the volume adjustor dial. If the knob becomes difficult to adjust it probably means that you are exceeding the limits for the pipette or the pipette is damaged. Please report the problem to the instructor or TA.
3. Do not drop pipettors.
4. Always use a smooth motion when using the pipettors. This will help give you accurate measurements and also prevent breakage of pipettes. There should be not “snapping” noises.
5. Always keep pipettes upright. Store the micropipettes on the mounted rack on your bench when not in use. Never lay a pipette on the benchtop.
6. Always choose to appropriate size pipette for the volume you are measuring.
7. Always dispose of tips in appropriate waste containing. Never leave tips in glassware.

Lab Reprt

- **Discussion**
- 1. What common error in handling a micropipette can account for pipetting too much reagent into a tube?
- 2. What errors account for underpipetting?
- 3. What can be done to avoid the errors?

