

Project title Proper Pipetting Technique (v1.0)	
Purpose <i>Why the SOP is needed</i>	<p>To ensure accurate and consistent pipetting for laboratory tasks, minimizing contamination and errors while transferring liquids.</p>
Scope <i>Who the SOP applies to</i>	<p>This procedure applies to all individuals using pipettes in laboratory settings for experiments requiring precise liquid handling each time pipettes are used.</p>
Responsibility <i>Roles of individuals (e.g., lab technician, principal investigator)</i>	<ul style="list-style-type: none"> • Lab Personnel: Follow this SOP to ensure accurate and contamination-free liquid handling. • Supervisors: Provide training on proper pipette use and maintenance.
References <i>Cited guidelines, manuals, or literature</i>	<p>Eppendorf - How to Pipette in 5 Simple Steps Pipetting Tutorials Ep. 1: Micropipettes youtu.be/Wx8cLzD-C04</p>
Principle <i>Rationale or justification</i>	<p>This SOP standardizes pipetting technique.</p>
Materials and supplies	<ul style="list-style-type: none"> • Adjustable micropipette (capable of setting to 750 µL) • Appropriate pipette tips • Source liquid (e.g., reagent or sample) • Receiving tube or container • Waste container for used pipette tips

Procedure

1. Prepare pipette
 - Ensure the pipette is clean and calibrated.
 - Adjust the volume setting to 750 μL . Turn the adjustment dial until the desired volume is displayed on the digital or analog scale.
2. Attach pipette tip
 - Select a clean, sterile pipette tip appropriate for the volume.
 - Firmly press the pipette into the tip to create a secure seal without excessive force.
3. Wet loading (Optional but recommended)
 - Aspirate and dispense the liquid once or twice to condition the tip. This reduces variability due to surface tension.
4. Aspirate liquid
 - Depress the plunger to the first stop (not the second).
 - Immerse the pipette tip just below the liquid surface (2-3 mm for small volumes).
 - Slowly release the plunger to draw liquid into the tip, ensuring no air bubbles are present.
5. Transfer liquid
 - Move the pipette vertically to the receiving container to prevent spillage.
 - Keep the pipette steady during transfer to maintain accuracy.
6. Dispense liquid
 - Position the tip against the side wall of the receiving tube for better control.
 - Slowly press the plunger to the first stop to dispense the liquid.
 - Press further to the second stop to expel any residual liquid.
7. Eject tip
 - Remove the tip from the tube without touching the pipette to the container.
 - Eject the tip into a designated waste container using the tip ejector button.

Quality control

- Ensure pipettes are calibrated regularly (e.g., quarterly).
- Discard pipette tips after each use to avoid cross-contamination.
- Practice good pipetting habits, such as working at eye level to prevent errors in volume reading.
- Measure the mass of the microtube after adding the required volume of water. The mass of 1 ml of water is 1 g.

Notes

- Avoid tilting the pipette while aspirating or dispensing to maintain accuracy.
- Always use pipette tips appropriate for the pipette model and volume range.
- If working with viscous liquids, allow extra time for aspiration and dispensing to complete.