

PROCEDURE

Corewell Health East - Automated Chemistry Pipetting - Royal Oak

This Procedure is Applicable to the following Corewell Health sites:
Corewell Health William Beaumont University Hospital (Royal Oak)

| | |
|----------------------------------|---------------------------------|
| Applicability Limited to: | N/A |
| Reference #: | 34261 |
| Version #: | 2 |
| Effective Date: | 12/03/2025 |
| Functional Area: | Clinical Operations, Laboratory |
| Lab Department Area: | Lab - Chemistry |

1. Principle

The purpose of this procedure is to provide technical staff with a description for the operation of pipettes in the Automated Chemistry laboratory. This procedure describes how to properly dispense liquids using calibrated single channel micro-pipettors.

2. Definitions:

Micro-pipettors are products in a general laboratory used for transferring liquids of specified volumes in combination with matching tips. In-vivo applications are not allowed. Only trained users according to the manual are allowed to use the pipettes. All users must read the procedure carefully and familiarize themselves with the device's mode of operation.

3. Responsibility

Personnel who have completed the competency requirements will perform this testing.

4. Supplies

- A. Proper Personal Protective Equipment (PPE)
- B. Appropriately sized disposable pipette tips.

5. Calibration

Pipettes must be calibrated per manufacturer's recommendations, or at least once per year.

6. Special Safety Precautions:

- A. Never use your mouth to operate a pipette.
- B. Always use caution when attaching a tip to a pipettor.
- C. Never hold your pipettor upside down when a used or full tip is in place.
- D. Never forcefully aspirate or dispense liquids out or let go of micro-pipette plunger, bulb, or other devices during dispensing as this can aerosolize liquids or cause splashing.

7. Procedure

- A. Wear the correct PPE for the material you are handling (gloves, lab coat, face shield, etc.)
- B. Choose the appropriate pipettor for the volume and type of work.

Entities will reference associated Documentation contained within this document as applicable
Printouts of this document may be out of date and should be considered uncontrolled.

- C. Choose the correct size tip for the volume you will be working with.
 1. The pipette tips can be attached by hand or mounted directly from a tip holder with the pipette.
 2. The pipette tips are single use.
- D. Aspirating the liquid
 1. Attach the tip to the pipettor.
 - a. To ensure maximum precision and accuracy, it is recommended to wet each new tip by aspirating and dispensing the liquid one to three times.
 2. Always depress the plunger to the 1st stop prior to immersing the tip into liquid sample.
 3. Immerse the pipette tip vertically into the liquid.
 4. Maintain the immersion depth and let the dispensing button slide back slowly.
 - a. Liquid is aspirated into the pipette tip.
 5. Wait until the liquid has been aspirated.
 6. Remove the pipette tip from the liquid.
 - a. If necessary, wipe the pipette tip against the tube inner wall.
- E. Dispensing the liquid
 1. Place the pipette tip on the tube inner wall with tube held at a steep angle.
 2. Slowly press down the dispensing button to the first stop.
 - a. The liquid is dispensed.
 3. Wait until the flow of liquid stops.
 4. Press down on the dispensing button to the second stop.
 - a. The pipette tip is completely emptied.
 5. Hold down the dispensing button and wipe the pipette tip on the tube inner wall.
- F. Ejecting the pipette tip
 1. Press the ejector.
 - a. The pipette tip is ejected.
 2. Dispose of waste according to the Laboratory Waste Disposal Policy.
 3. The pipette can be stored in a pipette carousel, a wall mount, or in a horizontal position.
- G. Example of pipette technique

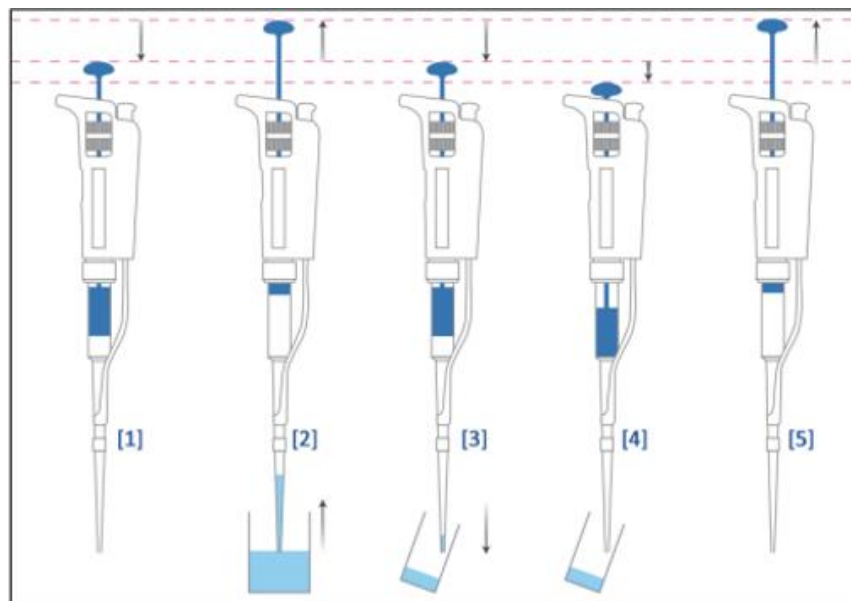


Figure 2: Aspirating and dispensing, taken from Gilson Principals of Pipetting video

1. Always depress the plunger to the 1st stop prior to immersing the tip into liquid sample
2. Always aspirate sample in the vertical position (see 2 above)

Entities will reference associated Documentation contained within this document as applicable
Printouts of this document may be out of date and should be considered uncontrolled.

3. Dispense sample while tube is held on a slight angle to prevent splashing of sample into the tube. The tip should touch the side of the vessel while dispensing. (see 3 above).
4. Do not immerse tip into liquid while dispensing (can create aerosols) (see 3 & 4 above).
5. When dispensing, carefully depress the plunger to the 1st stop; pause, and then depress the plunger to the 2nd stop to eject (blow-out) remaining liquid (see 3 & 4 above).
6. Eject tip carefully into the proper waste container.

8. Reducing Aerosols & Good Pipetting Techniques:

- A. Keep the pipette vertical when pipetting in order to prevent liquid from running into the pipette body.
- B. Release the push-button slowly.
- C. Store pipettes vertically.
- D. Change the pipette tip after each sample.
- E. Do not depress the plunger while the tip is immersed in the liquid.

9. Revisions

Corewell Health reserves the right to alter, amend, modify, or eliminate this document at any time without prior written notice.

10. References

- A. Eppendorf Research Plus Operating Manual, 2021

11. Procedure Development and Approval

Document Owner:

Laura Judd (Operations Specialist)

Writer(s):

Myrna Harbar (Medical Technologist Lead)

Reviewer(s):

Emma Hochberg (Medical Technologist Lead), Michelle Alexander (Medical Technologist Lead)

Approver:

Ann Marie Blenc (System Med Dir, Hematopath), Brittnie Berger (Dir Sr, Lab Operations), Caitlin Schein (Staff Physician), Leah Korodan (Mgr, Division Laboratory), Qian Sun (Tech Dir, Clin Chemistry, Path), Sarah Britton (VP, Laboratory Svcs), Subhashree Mallika Krishnan (Staff Physician)

12. Keywords

Not Set