

Stay Informed

Precise and Repeatable Pipetting of Problem Liquids

Pipetting seems easy, but some tips and tricks can help you to get consistent and reproducible results—even with difficult liquids.

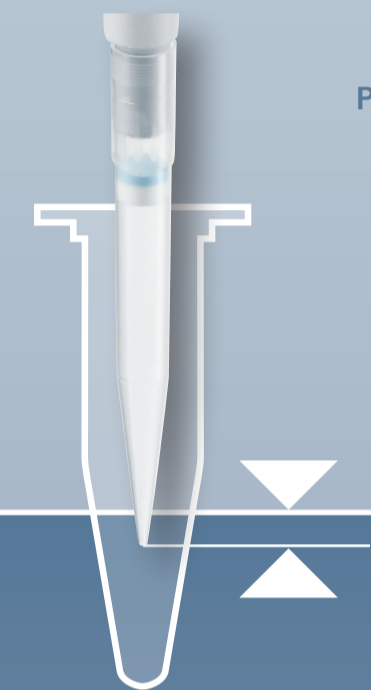
Air-cushion pipette

Positive displacement dispenser

1st stop

2nd stop

Rest position



1 Immersion depth

- > Immerse as little as possible, to prevent liquid transfer on the tip's outside
- > Immerse deep enough to avoid uptake of air

| Volume in μL | Depth in mm |
|-------------------------|-------------|
| 0.1–1 | 1 |
| 1–100 | 2–3 |
| 100–1,000 | 2–4 |
| 1,000–10,000 | 3–6 |

2 Forward & reverse pipetting

- | | | |
|----------------|-------------------|---|
| Forward | Liquid uptake: | 1. Press to 1st stop 2. Move up completely |
| | Liquid discharge: | Press via 1st stop down to 2nd stop |
| Reverse | Liquid uptake: | 1. Press to 2nd stop 2. Move up completely |
| | Liquid discharge: | Press to 1st stop |

3 Ice-cold liquids

Very cold liquids will cause a reduced volume of the air cushion in the pipette. Thus, for frequent use of very cold or very hot liquids, the pipette calibration should be adjusted accordingly.

Foaming liquids

It is difficult to pipette samples of foaming liquids accurately, especially when these liquids were moved before.

With an air-cushion pipette, reverse pipetting is recommended to minimize the effect. However, with the use of a positive displacement dispenser the effect can be controlled perfectly.

Viscous liquids

Viscous liquids have a higher resistance to flow into and out of the pipette tip.

When using an air-cushion pipette it is recommended to pipette slowly and use reverse pipetting. However, to fully control the problem, the use of a positive displacement dispenser is highly recommended.

0°

4 Pipetting angle

When aspirating, the pipette should be as vertical as possible. Noticeable angles have to be avoided.

Also, the pipette should be in a consistent angle when dispensing.

