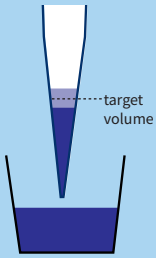
The challenges of pipetting

Challenging liquid properties

Air displacement pipettes are calibrated to water under defined environmental conditions and are ideal for pipetting aqueous solutions. For optimal results under non-aqueous conditions, positive displacement pipettes or multi-dispensers are recommended. The following techniques can improve results when using air displacement pipettes.

High/low density



A density that differs from that of water influences the expansion of the air cushion and thus the volume of liquid.

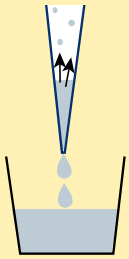
+ User Adjustment*

Viscous

High flow resistance and remaining liquid at the tip make precise work difficult.

+ Reverse pipetting**
+ Pipette slowly and extend the waiting time
+ User Adjustment*

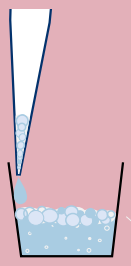
Volatile



Evaporation of the liquid into the air cushion. The air cushion expands and leads to droplet formation.

+ Pre-wet the air cushion at least 5 times
+ Reverse pipetting**
+ User Adjustment*after sufficient pre-wetting

Foaming



Foaming makes accurate pipetting difficult.

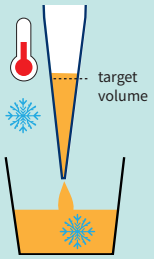
+ Reverse pipetting**
+ Slow pipetting
+ Filter tips can protect against contamination

Wetting surfaces

Difficult-to-incomplete fluid release.

+ Utilize quality tips
+ Reverse pipetting**

Temperature differences

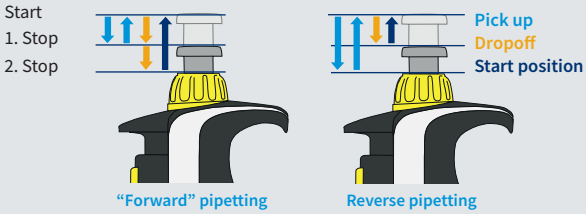


Suggest reworking to: Temperature differences can change the air cushion, leading to inaccurate pipetting results.

+ If possible, conduct temperature equalization
+ Not possible?
  - User Adjustment*
  - Do not pre-wet the air cushion
  - Tip change after each pipetting step

Pipetting technique

– forward or reverse?**



Forward pipetting is particularly suitable for aqueous solutions and standard applications.

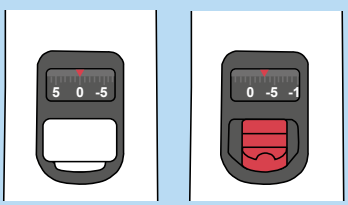
When pipetting challenging liquid properties (e.g. viscous, volatile, foaming), higher accuracy is achieved by reverse pipetting.

User Adjustment*

– quick, reversible, and without tools

The User Adjustment of the Transferpette® *pro* enables temporary adjustment to different liquid properties and conditions, e.g:

+ Challenging liquid properties
+ Temperature differences
+ Special pipette tips



How the user adjustment works:

1. Determine the volume deviation
2. Determine the adjustment value once

   You can find a calculation tool and a detailed explanation at www.brand.de/uad
3. To set the adjustment value: Remove the cover, pull the red slider down and hold it down while adjusting the volume adjustment wheel. Return the slider and replace the cover.

* Function of the Transferpette® *pro*. The User Adjustment value setting must be selected according to the pipetting technique.
** Note on reverse pipetting: Carefully check whether the additional volume can be aspirated without liquid coming into contact with the shaft or filter.

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