

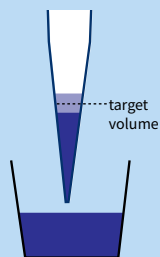
# The challenges of pipetting



## 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

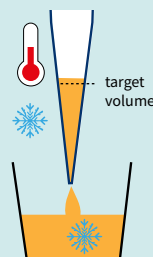


Difficult-to-incomplete fluid release.



+ Utilize quality tips  
+ Reverse pipetting\*\*

### Temperature differences



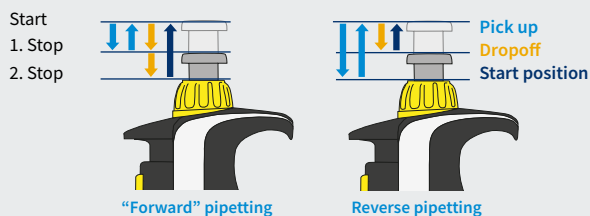
Suggest reworking to: Temperature differences can change the air cushion, leading to inaccurate pipetting results.



+ 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:**

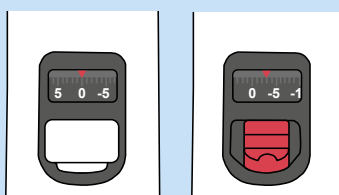
1. Determine the volume deviation
2. Determine the adjustment value once



You can find a calculation tool and a detailed explanation at [www.brand.de/uad](http://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.