

# Perfect Liquid Handling

PIPETTING WITH PRECISION AND COMFORT



**VITLAB** <sup>®</sup>  
Competence in Labware

# Efficiency in variable pipetting

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## Microliter pipettes with variable volumes VITLAB® micropipette

VITLAB specialises in accurate dispensing, titration and pipetting, and offers a variety of highly developed precision instruments for Liquid Handling applications.

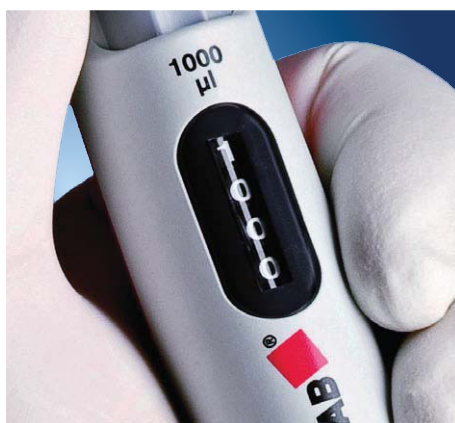
The new VITLAB® -8 und -12 multichannel pipettes complete the line of VITLAB® piston-operated pipettes. They are characterized by their especially user-friendly operation while pipetting long

series and are suitable for beginners as well as advanced users. Our single- and multichannel pipettes include all features requested by the user: robustness, simple operation, complete autoclavability and ergonomic design, as well as highest accuracy and easy calibration for long lasting reliability.



### Calibration function

The integrated calibration function allows an adjustment without tools. A change to the factory settings is indicated by the red adjustment slider which becomes visible.



### Volume setting

The desired volume can be set exactly by rotating the volume-setting wheel. The 4-digit volume display with zoom function ensures optimal readability.



### Tip cone

The streamlined shaft allows the pipette to be used in narrow vessels. The fit of the tip cone is optimal for use with VITLAB® pipette tips.

## Air-interface and positive displacement principle



There are two different types of pipettes: air interface and positive displacement. Air-interface pipettes are usually used for the exact pipetting of aqueous solutions in the ml and  $\mu$ l range. For media with high vapor pressure or high viscosity, positive displacement pipettes are used. The

positive displacement piston is in direct contact with the pipette liquid. In contrast, the piston (1) of air-interface pipettes has no direct contact with the pipetted liquid (2). Instead, an air-interface (3) keeps the liquid separated from the piston.

## Advantages of air-interface pipettes

In contamination-free environments or applications where sterile conditions are required, it is of major importance that the device not be in contact

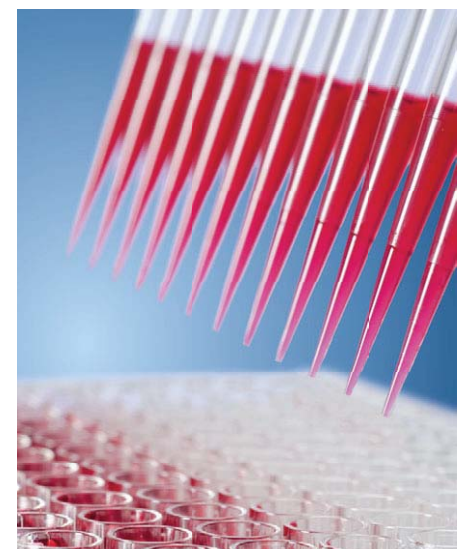
with the pipetted liquid. Only the pipette tips come in contact with the aspirated liquid and are for single-use only; therefore, cross-contamination can be pre-

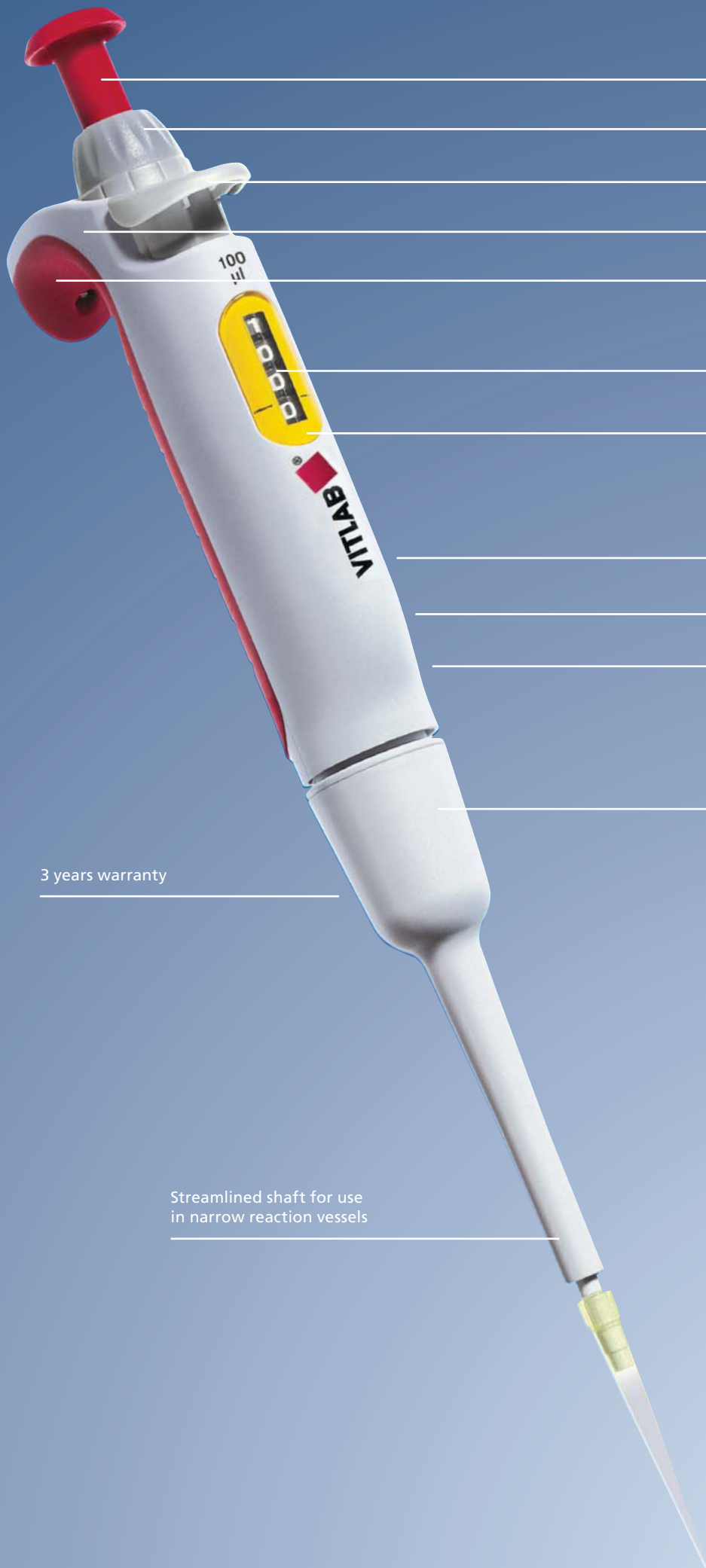
vented. The pipette tips can be rapidly replaced making the air-interface pipettes ideally suited for the fast pipetting required in longer test series.

## Fields of application

Due to their great versatility and broad volume range, variable air-interface pipettes have become an essential tool for routine lab-work. Regardless of whether your work involves analytical chemistry, biochemistry or microbiology, the VITLAB<sup>®</sup> micropipette is suitable for a variety of

different applications. Multichannel pipettes can be used for 8 or 12 pipetting operations at the same time. They are designed for work with microtiter plates that have standardized 8x12 cavities and are used, for example, for cell culture dilution techniques, enzyme or radio immunoassays.





Central, large pipetting button

Simple volume adjustment

Large, ergonomic ejection button

Integrated calibration function

Ergonomic finger rest

Precise, 4-digit volume display

Color-coded

Leightweight but still robust

Completely autoclavable at 121 °C

CE-marked

Corrosion-resistant piston and ejector

3 years warranty

Streamlined shaft for use  
in narrow reaction vessels



for smooth movement of the piston

for left- and right-handers

for rapid replacement of the tips

for easy calibration without the need for tools

that allows comfortable handling

with integrated zoom function for optimal readability

for easy tip selection

through the use of innovative plastic materials

as per DIN EN 285

according to IVD-directive 98/79 EG

for extended durability

Manifold with 360° free rotation in either direction to offer optimal working positions

Adjust  
Disassemble

20 - 200 µl

Especially service-friendly: Single shafts and seals can be easily removed, and thus can be directly cleaned or replaced in the laboratory

The combination of the stepped design of the ejector and special rings made of FKM reduces the effort needed for ejecting the tips

# Efficiency in variable pipetting

## Handling of air-interface pipettes



### Aspirate sample

- Adjust volume
- Use the correct tip(s) according to the volume range (Color-Code)
- Press the pipetting button to the first stop and keep the button pressed
- Immerse the pipette tip(s) 2 to 6 mm into the liquid (depending on volume)
- Let the pipetting button slide back slowly while holding the pipette in an upright position (the liquid will be aspirated)



### Discharge sample

- Place the pipette tip(s) against the wall of the receiving vessel
- Press the pipetting button slowly and evenly down to the second stop (over-stroke) to empty the tip(s) completely
- Ensure while discharging the sample that the tip(s) are not immersed into the liquid that might be in the receiving vessel
- Wipe the pipette tip(s) against the receiving vessel wall over a distance of approx. 10 mm



### Ejecting the tip(s)

- Keep the pipetting button pressed while removing the pipette from the receiving vessel
- Let the pipetting button slide back slowly
- Press the tip ejection key to remove the tip(s)
- Correctly dispose of pipette tip(s)
- Store the pipette in an upright position when not in use (VITLAB® bench top rack/ shelf mount)



## Optimal pipetting

For exact and precise analytical results, the following points should be considered, independent of the pipetting technique:

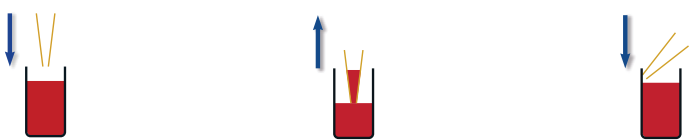
- The best results are obtained with pipette tips that are recommended by the manufacturer, since only they have been checked for an optimal fit with the pipette.
- A second important factor that can influence the analytical result is the quality of the tip material. VITLAB® pipette tips are manufactured from high quality polypropylene.
- Pipette tips are intended for single-use only. Re-use and cleaning of used pipette tips should be

avoided because it can influence accuracy and lead to cross-contamination of samples.

- The pipette should be held vertically while aspirating the sample because an increase in the angle of inclination can result in volume errors.
- To obtain optimal results, the immersion depth of the tip should only be a few millimetres (depending on volume).
- The air-interface between piston and sample should be kept as small as possible. The smaller the air-interface the higher is the accuracy of the result. The color-code helps with the selection of the fitting pipette tip.

## Forward pipetting

Starting position	1	2	3	4
First stop	↓	↑	↓	↑
Second stop			↓	



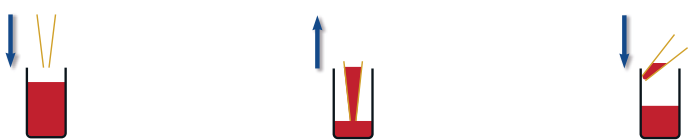
<p>Press the pipetting button to the first stop and keep the button pressed. Immerse the tip 2 - 6 mm into the liquid.</p>	<p>Let the pipetting button slide back slowly. The liquid is aspirated.</p>	<p>Press the pipetting button slowly to the first stop; then press to the second stop to empty the tip completely.</p>
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## Reverse pipetting

The reverse pipetting technique should be used to pipet viscous solutions, wetting solvents or media with high vapour pressure with air-interface

pipettes. In contrast to forward pipetting, the reverse pipetting technique is as follows:

Starting position	1	2	3	4
First stop	↓	↑	↓	↑
Second stop	↓			



<p>Press the pipetting button to the second stop and keep the button pressed. Immerse the tip 2 - 6 mm into the liquid.</p>	<p>Let the pipetting button slide back slowly. The liquid is aspirated.</p>	<p>Press the pipetting button slowly to the first stop; some liquid will remain in the tip.</p>
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## VITLAB<sup>®</sup> micropipette Starter Sets

Our VITLAB<sup>®</sup> micropipette Starter Sets offer you the possibility to get to know our singlechannel pipettes and are solid basic equipment for beginners – You can choose between 3 Starter Sets with different volume ranges, depending on your application.

Each VITLAB<sup>®</sup> Starter Set includes 3 variable VITLAB<sup>®</sup> micropipettes with different volumes and associated, color-coded tip boxes, as well as 3 rack mounts for appropriate storage of your new VITLAB<sup>®</sup> micropipettes.

Our micropipettes are conformity certified to DIN 12600, are CE-IVD compliant and are completely autoclavable at 121 °C (2 bar) acc. DIN EN 285.

Let yourself be convinced by the quality and comfort of our pipettes at an attractive introductory price.

### Starter Set "Mini"

Scope of delivery:

- VITLAB<sup>®</sup> micropipette 0.5 - 10 µl
- VITLAB<sup>®</sup> micropipette 10 - 100 µl
- VITLAB<sup>®</sup> micropipette 100 - 1000 µl
- Tip-Box 0.5 - 20 µl
- Tip-Box 2 - 200 µl
- Tip-Box 50 - 1000 µl
- Rack mount (3x)
- Product & application brochure

Cat. No.: 33331

### Starter Set "Classic"

Scope of delivery:

- VITLAB<sup>®</sup> micropipette 2 - 20 µl
- VITLAB<sup>®</sup> micropipette 20 - 200 µl
- VITLAB<sup>®</sup> micropipette 100 - 1000 µl
- Tip-Box 2 - 200 µl (2x)
- Tip-Box 50 - 1000 µl
- Rack mount (3x)
- Product & application brochure

Cat. No.: 33332

### Starter Set "Maxi"

Scope of delivery:

- VITLAB<sup>®</sup> micropipette 100 - 1000 µl
- VITLAB<sup>®</sup> micropipette 500 - 5000 µl
- VITLAB<sup>®</sup> micropipette 1000 - 10000 µl
- Tip-Box 50 - 1000 µl
- Tip-Box 0.5 - 5 ml
- Tip-Box 1 - 10 ml
- Rack mount (3x)
- Product & application brochure

Cat. No.: 33333





## VITLAB<sup>®</sup> micropipette

The micropipettes are conformity certified to DIN 12600, are CE-IVD compliant and are completely autoclavable at 121 °C (2 bar) acc. DIN EN 285.

Scope of delivery: VITLAB<sup>®</sup> micropipette, quality certificate, and instruction manual.

Volume µl	A* ≤ ± %	CV* ≤ %	Tip types µl	PU	Cat. No.
0.5 - 10	1.0	0.5	20	1	1641000
2 - 20	0.8	0.4	200	1	1641002
10 - 100	0.6	0.2	200/300	1	1641004
20 - 200	0.6	0.2	200/300	1	1641006
100 - 1000	0.6	0.2	1000	1	1641008
500 - 5000	0.6	0.2	5000	1	1641010
1000 - 10000	0.6	0.2	10000	1	1641012

\* Calibrated to deliver ,Ex'. \* Accuracy and coefficient of variation based on the nominal volume (= maximum volume) printed on the instrument at the same temperature (20 °C) of instrument, environment, and distilled water, as well as uniform, jerk-free handling. The error limits in DIN EN ISO 8655-2 are satisfied.



## VITLAB<sup>®</sup> micropipette -8/-12

The multichannel pipettes are conformity certified to DIN 12600, are CE-IVD compliant and are completely autoclavable at 121 °C (2 bar) acc. DIN EN 285.

Scope of delivery: VITLAB<sup>®</sup> micropipette -8 or -12, quality certificate, and instruction manual.

Volume µl	A* ≤ ± %	CV* ≤ %	Tip types µl	PU	Cat. No.
micropipette -8					
5 - 50	0.8	0.4	200	1	1608002
10 - 100	0.8	0.3	200/300	1	1608004
20 - 200	0.8	0.3	200/300	1	1608006
30 - 300	0.6	0.3	300	1	1608008
micropipette -12					
5 - 50	0.8	0.4	200	1	1612002
10 - 100	0.8	0.3	200/300	1	1612004
20 - 200	0.8	0.3	200/300	1	1612006
30 - 300	0.6	0.3	300	1	1612008

\* Calibrated to deliver ,Ex'. \* Accuracy and coefficient of variation based on the nominal volume (= maximum volume) printed on the instrument at the same temperature (20 °C) of instrument, environment, and distilled water, as well as uniform, jerk-free handling. The error limits in DIN EN ISO 8655-2 are satisfied.



## Accessories for VITLAB® micropipettes

With the practical rack mount and freely rotatable bench-top stand, VITLAB® micropipettes can be stored safely and ready to use.

Description	PU	Cat. No.
Wall mount for 1 pipette	1	1672000
Bench-top stand for 6 single-channel instruments or 6 multi-channel instruments	1	1672002
Filter for pipette, 5 ml	25	1672010
Filter for pipette, 10 ml	25	1672012
Silicone oil for pipettes, up to 1000 µl	1	1672015
Silicone oil for pipettes, 5 ml / 10 ml	1	1672016



## Reagent reservoir, non-sterile, PP

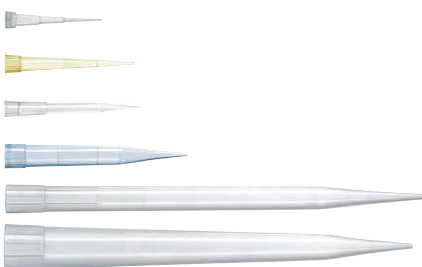
Transparent, with lid to guard against contamination and spilling out of contents during movement. Optimally suited for working with multichannel pipettes. Autoclavable at 121 °C (2 bar) according to DIN EN 285.

Volume ml	PU	Cat. No.
60	10	319099

## Pipette tip selection guide

Which pipette tip will fit my VITLAB® micropipette?

Tip volume	Tip types	Nominal volume VITLAB® micropipettes							Nominal volume VITLAB® micropipette -8/-12				
		10 µl	20 µl	100 µl	200 µl	1000 µl	5 ml	10 ml	50 µl	100 µl	200 µl	300 µl	
0.5 - 20 µl	A	◆											
2 - 200 µl	B		◆	◆	◆				◆	◆	◆		
5 - 300 µl	C			◆	◆				◆	◆	◆	◆	
50 - 1000 µl	D					◆							
0.5 - 5 ml	E						◆						
1 - 10 ml	F							◆					



The VITLAB® pipette tips are conformity certified, CE-marked according to IVD-directive 98/79 EG and are tested for pipettes made by VITLAB. They are also suitable for a wide range of pipettes from different manufacturers. VITLAB® pipette tips are made from high-quality polypropylene and are autoclavable at 121°C (2 bar) according to DIN EN 285.

## Pipette tips, non-sterile, in a bag

The tips are produced under the most modern clean-room conditions, and automatically heat-sealed in bags and packed in cartons. The catalogue number, volume range, and lot number of the tips are printed on each bag.

Volume µl	Colour	Packaging	PU	Cat. No.
0.5 - 20	colourless	10 bags with 1000 tips	10000	145494
2 - 200	yellow	10 bags with 1000 tips	10000	145694
50 - 1000	blue	10 bags with 500 tips	5000	145994
500 - 5000	colourless	1 bag with 200 tips	200	146294
1000 - 10000	colourless	2 bags with 100 tips	200	146494



## Tip-Box filled with pipette tips (palleted, non-sterile)

PP box with fitted lid. Available in two different heights. The shorter version is for 96 tips up to 300 µl, the taller for 100 tips of 1000 µl. The box is stackable and autoclavable at 121 °C (2 bar) according to DIN EN 285.

Volume µl	Tip types	Packaging	PU	Cat. No.
0.5 - 20	colourless	5 boxes of 96 tips on a gray mounting plate	5	149294
2 - 200	yellow	5 boxes of 96 tips on a yellow mounting plate	5	149494
5 - 300	colourless	5 boxes of 96 tips on a green mounting plate	5	149594
50 - 1000	blue	5 boxes of 100 tips on a blue mounting plate	5	149894



## Tip-Box filled with pipette tips (palleted, non-sterile)

PP box with fitted lid. Filled with 5 ml tips (28 pc.) or 10 ml tips (18 pc.). The box is autoclavable at 121 °C (2 bar) according to DIN EN 285.

Volume ml	Tip types	Packaging	PU	Cat. No.
0.5 - 5	colourless	1 box of 28 tips on a natural-colour mounting plate	1	150294
1 - 10	colourless	1 box of 18 tips on a natural-colour mounting plate	1	150394



# More information about VITLAB®?

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We will be happy to send you  
more information about

- VITLAB® laboratory products for volume measurement
  - VITLAB® laboratory products for saving and storing
  - VITLAB® catalogue with complete product range
- or
- the options for customized imprints on  
VITLAB® laboratory products.

Distributor: