

# Eppendorf Reference<sup>®</sup> 2



1. **Single-button operation:** Quick and easy tip ejection immediately following dispensing saves unergonomic side movement of thumb and actively reduces aerosols re-entering the pipette
2. **Robust design:** Sturdy upper handle including stainless steel and bumper system guarantees long service life and increased robustness
3. **Volume Setting:** Quick and secure volume setting including volume lock to prevent unwanted change. 4-digit display for accurate volume setting
4. **User adjustment:** Option to temporarily adjust the pipetting volume by up to  $\pm 2\%$  to offset inaccuracies when working with difficult liquids (e.g., warm, cold, volatile or high density liquids). Return to factory adjustment without calibration
5. **Easy to clean surface:** Smooth surface without grooves where bacteria could hide allows easy and safe cleaning
6. **Eppendorf TrackIT:** Embedded RFID data chip for heightened traceability in combination with Eppendorf TrackIT, see page 71 for details
7. **Serial number traceability:** Serial number is printed on upper and lower part to avoid a mixup of volume determining parts
8. **Fully autoclavable** without disassembly
9. **Spring-loaded tip cone:** Improves ergonomics by lowering tip attachment forces and reproducibility by ensuring consistent tip attachment



Watch our 360° view of the Reference 2 on our website!

[www.eppendorf.com/reference2-360](http://www.eppendorf.com/reference2-360)

► Pipette service and maintenance contracts can be found on page 420. Pipette tips can be found on page 44 onward.

Technical specifications subject to change.



## Description

The Eppendorf Reference 2 is the newest pipette family at Eppendorf and it is our premium product. Besides improvement of its ergonomics the focus of its design lay on providing the most accurate results possible, optimum user safety, reliability and robustness for a long service life. The innovative single button operation is not only fast and easy, but it also allows active aerosol reduction and thus protects the user, the sample and the pipette. The sturdy handle manufactured with stainless steel protects the pipette from impact and in combination with the spring loaded bumpers the Reference 2 is likely to stay within calibration even if it takes a fall. These high levels of security make the Reference 2 ideal for use with precious liquids, or in any application requiring extremely high levels of accuracy. When there can be no compromise on quality and reproducibility, Eppendorf's Reference 2 is an ideal instrument for these Liquid Handling applications.

## Applications

- > Forward pipetting
- > Reverse pipetting
- > Removal of supernatants
- > Sample mixing
- > Phase extraction
- > Volume determination
- > Filling of plates, gels, and reaction vessels



The Eppendorf Reference 2 is available as single channel pipette with fixed and variable volume as well as 8 and 12 channel pipette



Comfortable, high precision pipetting is the result of perfect teamwork between the pipette and tip. Why not rely upon the excellent team of Eppendorf Reference 2 pipettes and epT.I.P.S.? Now conveniently available as Reference 2 3-pack at a special price that's too good to miss! In addition to three Reference 2 pipettes, each pack contains one set of matching Eppendorf tips and one of the popular Eppendorf ballpoint pens.



Have a look at our brochure on our website or directly with this QR Code!



[www.eppendorf.com/reference2-brochure](http://www.eppendorf.com/reference2-brochure)

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## Eppendorf Reference® 2



## Ordering information

Volume range	Color code	Rel. systematic error <sup>1)</sup>	Abs. systematic error <sup>1)</sup>	Rel. random error <sup>1)</sup>	Abs. random error <sup>1)</sup>	Order no.
<b>Eppendorf Reference® 2, single-channel, fixed</b>						
1 µL	■ dark gray	±2.5 %	±0.025 µL	±1.8 %	±0.018 µL	4921 000.010
2 µL	■ dark gray	±2.0 %	±0.04 µL	±1.2 %	±0.024 µL	4921 000.028
5 µL	■ medium gray	±1.2 %	±0.06 µL	±0.6 %	±0.03 µL	4921 000.036
10 µL	■ medium gray	±1.0 %	±0.1 µL	±0.5 %	±0.05 µL	4921 000.044
20 µL	■ light gray	±0.8 %	±0.16 µL	±0.3 %	±0.06 µL	4921 000.060
10 µL	■ yellow	±1.2 %	±0.12 µL	±0.5 %	±0.05 µL	4921 000.052
20 µL	■ yellow	±1.0 %	±0.2 µL	±0.3 %	±0.06 µL	4921 000.079
25 µL	■ yellow	±1.0 %	±0.25 µL	±0.3 %	±0.075 µL	4921 000.087
50 µL	■ yellow	±0.7 %	±0.35 µL	±0.3 %	±0.15 µL	4921 000.095
100 µL	■ yellow	±0.6 %	±0.6 µL	±0.2 %	±0.2 µL	4921 000.109
200 µL	■ yellow	±0.6 %	±1.2 µL	±0.2 %	±0.4 µL	4921 000.117
200 µL	■ blue	±0.6 %	±1.2 µL	±0.2 %	±0.4 µL	4921 000.125
250 µL	■ blue	±0.6 %	±1.5 µL	±0.2 %	±0.5 µL	4921 000.133
500 µL	■ blue	±0.6 %	±3.0 µL	±0.2 %	±1.0 µL	4921 000.141
1,000 µL	■ blue	±0.6 %	±6.0 µL	±0.2 %	±2.0 µL	4921 000.150
2 mL	■ red	±0.6 %	±0.012 mL	±0.2 %	±0.004 mL	4921 000.168
2.5 mL	■ red	±0.6 %	±0.015 mL	±0.2 %	±0.005 mL	4921 000.176

<sup>1)</sup> The error data, according to EN ISO 8655, only apply if original Eppendorf tips are used. Technical specifications are subject to change. Errors and omissions excepted.

## Ordering information

Volume range	Color code	Volume	Rel. systematic error <sup>1)</sup>	Abs. systematic error <sup>1)</sup>	Rel. random error <sup>1)</sup>	Abs. random error <sup>1)</sup>	Order no.
<b>Eppendorf Reference® 2, single-channel, variable, incl. epT.I.P.S.® Box and holder for pipette carousel</b>							
0.1 – 2.5 µL	■ dark gray	0.1 µL	±48.0 %	±0.048 µL	±12.0 %	±0.012 µL	4920 000.016
		0.25 µL	±12.0 %	±0.03 µL	±6.0 %	±0.015 µL	
		1.25 µL	±2.5 %	±0.031 µL	±1.5 %	±0.019 µL	
		2.5 µL	±1.4 %	±0.035 µL	±0.7 %	±0.018 µL	
0.5 – 10 µL	■ medium gray	0.5 µL	±8.0 %	±0.04 µL	±5.0 %	±0.025 µL	4920 000.024
		1.0 µL	±2.5 %	±0.025 µL	±1.8 %	±0.018 µL	
		5.0 µL	±1.5 %	±0.075 µL	±0.8 %	±0.04 µL	
		10 µL	±1.0 %	±0.10 µL	±0.4 %	±0.04 µL	
2 – 20 µL	■ light gray	2.0 µL	±3.0 %	±0.06 µL	±1.5 %	±0.03 µL	4920 000.032
		10 µL	±1.0 %	±0.10 µL	±0.6 %	±0.06 µL	
		20 µL	±0.8 %	±0.16 µL	±0.3 %	±0.06 µL	
2 – 20 µL	■ yellow	2.0 µL	±5.0 %	±0.10 µL	±1.5 %	±0.03 µL	4920 000.040
		10 µL	±1.2 %	±0.12 µL	±0.6 %	±0.06 µL	
		20 µL	±1.0 %	±0.2 µL	±0.3 %	±0.06 µL	
10 – 100 µL	■ yellow	10 µL	±3.0 %	±0.3 µL	±0.7 %	±0.07 µL	4920 000.059
		50 µL	±1.0 %	±0.5 µL	±0.3 %	±0.15 µL	
		100 µL	±0.8 %	±0.8 µL	±0.2 %	±0.2 µL	
20 – 200 µL	■ yellow	20 µL	±2.5 %	±0.5 µL	±0.7 %	±0.14 µL	4920 000.067
		100 µL	±1.0 %	±1.0 µL	±0.3 %	±0.3 µL	
		200 µL	±0.6 %	±1.2 µL	±0.2 %	±0.4 µL	
30 – 300 µL	■ orange	30 µL	±2.5 %	±0.75 µL	±0.7 %	±0.21 µL	4920 000.075
		150 µL	±1.0 %	±1.5 µL	±0.3 %	±0.45 µL	
		300 µL	±0.6 %	±1.8 µL	±0.2 %	±0.6 µL	
100 – 1,000 µL	■ blue	100 µL	±3.0 %	±3.0 µL	±0.6 %	±0.6 µL	4920 000.083
		500 µL	±1.0 %	±5.0 µL	±0.2 %	±1.0 µL	
		1,000 µL	±0.6 %	±6.0 µL	±0.2 %	±2.0 µL	
<b>Eppendorf Reference® 2, single-channel, variable, incl. epT.I.P.S.® sample bag and holder for pipette carousel</b>							
0.25 – 2.5 mL	■ red	0.25 mL	±4.8 %	±0.012 mL	±1.2 %	±0.003 mL	4920 000.091
		1.25 mL	±0.8 %	±0.010 mL	±0.2 %	±0.0025 mL	
		2.5 mL	±0.6 %	±0.015 mL	±0.2 %	±0.005 mL	
0.5 – 5 mL	■ violet	0.5 mL	±2.4 %	±0.012 mL	±0.6 %	±0.003 mL	4920 000.105
		2.5 mL	±1.2 %	±0.030 mL	±0.25 %	±0.006 mL	
		5.0 mL	±0.6 %	±0.030 mL	±0.15 %	±0.0075 mL	
1 – 10 mL	■ turquoise	1.0 mL	±3.0 %	±0.030 mL	±0.6 %	±0.006 mL	4920 000.113
		5.0 mL	±0.8 %	±0.040 mL	±0.2 %	±0.010 mL	
		10.0 mL	±0.6 %	±0.060 mL	±0.15 %	±0.015 mL	

<sup>1)</sup> The error data, according to EN ISO 8655, only apply if original Eppendorf tips are used. Technical specifications are subject to change. Errors and omissions excepted.

## Ordering information

Description	Order no.
<b>Eppendorf Reference® 2, 3-pack</b> , single-channel, variable, incl. epT.I.P.S.® Box or sample bag and ballpoint pen	
<b>Option 1:</b> 0.5-10 µL, 10-100 µL, 100-1,000 µL	4920 000.903
<b>Option 2:</b> 2-20 µL yellow, 20-200 µL, 100-1,000 µL	4920 000.911
<b>Option 3:</b> 100-1,000 µL, 0.5-5 mL, 1-10 mL	4920 000.920

i For more information go to [www.eppendorf.com/Reference2](http://www.eppendorf.com/Reference2)

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## Eppendorf Reference® 2



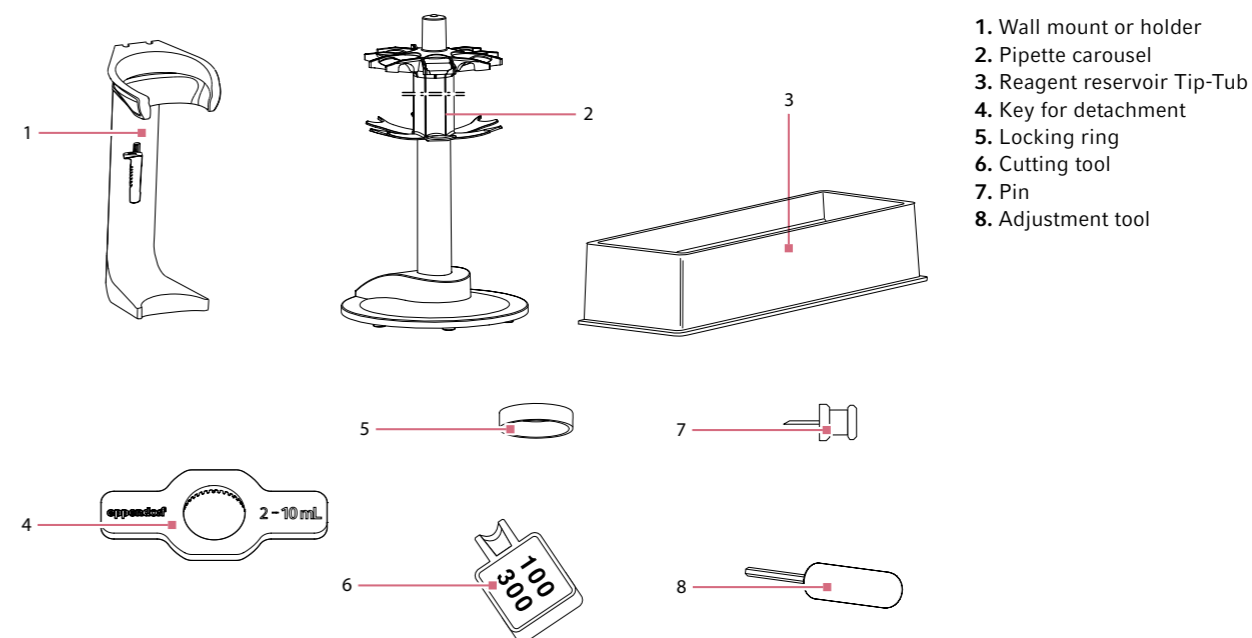
## Ordering information

Volume range	Volume	Rel. systematic error <sup>1)</sup>	Abs. systematic error <sup>1)</sup>	Rel. random error <sup>1)</sup>	Abs. random error <sup>1)</sup>	Order no.
<b>Eppendorf Reference® 2, 8-channel, variable, incl. holder for pipette carousel</b>						
0.5 – 10 µL	medium gray	0.5 µL	±12.0 %	±0.06 µL	±8.0 %	±0.04 µL
		1.0 µL	±8.0 %	±0.08 µL	±5.0 %	±0.05 µL
		5.0 µL	±4.0 %	±0.2 µL	±2.0 %	±0.1 µL
		10 µL	±2.0 %	±0.2 µL	±1.0 %	±0.1 µL
10 – 100 µL	yellow	10 µL	±3.0 %	±0.3 µL	±2.0 %	±0.2 µL
		50 µL	±1.0 %	±0.5 µL	±0.8 %	±0.4 µL
		100 µL	±0.8 %	±0.8 µL	±0.3 %	±0.3 µL
30 – 300 µL	orange	30 µL	±3.0 %	±0.9 µL	±1.0 %	±0.3 µL
		150 µL	±1.0 %	±1.5 µL	±0.5 %	±0.75 µL
		300 µL	±0.6 %	±1.8 µL	±0.3 %	±0.9 µL
<b>Eppendorf Reference® 2, 12-channel, variable, incl. holder for pipette carousel</b>						
0.5 – 10 µL	medium gray	0.5 µL	±12.0 %	±0.06 µL	±8.0 %	±0.04 µL
		1.0 µL	±8.0 %	±0.08 µL	±5.0 %	±0.05 µL
		5.0 µL	±4.0 %	±0.2 µL	±2.0 %	±0.1 µL
		10 µL	±2.0 %	±0.2 µL	±1.0 %	±0.1 µL
10 – 100 µL	yellow	10 µL	±3.0 %	±0.3 µL	±2.0 %	±0.2 µL
		50 µL	±1.0 %	±0.5 µL	±0.8 %	±0.4 µL
		100 µL	±0.8 %	±0.8 µL	±0.3 %	±0.3 µL
30 – 300 µL	orange	30 µL	±3.0 %	±0.9 µL	±1.0 %	±0.3 µL
		150 µL	±1.0 %	±1.5 µL	±0.5 %	±0.75 µL
		300 µL	±0.6 %	±1.8 µL	±0.3 %	±0.9 µL

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## Accessories

Description	Order no.
Pipette carousel, with 6 holders, for Eppendorf Reference® 2	4923 000.009
Pipette holder, for Eppendorf Reference® 2, for pipette carousel	4923 601.002
Pipette holder, wall mount, for Eppendorf Reference® 2, with hook and loop strip	4923 000.017
Eppendorf Reference® 2 red adjustment seal ADJ, incl. pin for removing the inserted seal, 1 set = 5 pieces	4920 626.004
Eppendorf Reference® 2 red safety plug, incl. pin for removing the inserted safety plug, 1 set = 5 pieces	4920 625.008
Adjustment tool, for changing factory or secondary user adjustment	3120 633.006
Protection filter 2.5 mL, 10 filters with 1 filter sleeve, for Eppendorf Reference® 2: 0.25 – 2.5 mL variable, 2 mL fixed volume and 2.5 mL fixed volume, color code: red	4920 622.009
Protection filter 5 mL, 10 filters with 1 filter sleeve, for 0.5 – 5 mL variable Eppendorf Reference® 2, Eppendorf Research® plus and Eppendorf Xplorer® (plus), color code: violet	4920 623.005
Protection filter 10 mL, 10 filters with 1 filter sleeve, for 1 – 10 mL variable Eppendorf Reference® 2, Eppendorf Research® plus and Eppendorf Xplorer® (plus), color code: turquoise	4920 624.001
Cutting tool, for O-rings of 100 and 300 µL multi-channel pipettes	3122 610.003
Key, for detachment of 2 – 10 mL pipettes lower parts, for Eppendorf Research® plus, Eppendorf Reference® 2, Eppendorf Xplorer®	3120 634.002
Locking ring, to prevent spring action of 10 mL to 1,000 µL single channel pipettes tip cones	3120 635.009
Tip-Tub reagent reservoir 70 mL, autoclavable reservoir for aspirating liquids with multi-channel pipettes, 1 set = 10 reservoirs and 10 lids	0030 058.607
Pipette grease with lint-free applicator	0013 022.153
Eppendorf TrackIT, RFID Reader and Software	3903 000.014

► For more information go to [www.eppendorf.com/Reference2](http://www.eppendorf.com/Reference2)

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