



Combitips advanced®

Instructions for use

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1 Operating instructions

1.1 Using this manual

- ▶ Please read these instructions for use completely before using the Combitips advanced for the first time. Also read the operating manual of the dispenser used.

1.2 Symbols used

| Symbol | Meaning |
|----------|--|
| ▶ | You are requested to perform an action. |
| 1. 2. | Perform these actions in the sequence described. |
| • | List. |
| i | References useful information. |

1.3 Glossary

A

Adapter advanced

Connecting piece for the dispenser when using Combitips advanced 25 mL and 50 mL

B

Biopur

Eppendorf Biopur® is an Eppendorf AG purity level for consumables. Eppendorf Biopur® meets the requirements for standard products, e.g., precision, accuracy, wetting behavior, tightness. Eppendorf Biopur® also fulfills the requirements with regard to sterility, absence of ATP, PCR inhibitors, human and bacterial DNA, pyrogen, DNase and RNase.

Consumables with the Biopur purity grade are controlled and certified by an external laboratory. Certificates are available for downloading from our webpage www.eppendorf.com.

C

Coding

The dispenser uses the Combitip coding to detect the volume of the Combitips.

Color code

The color code displays the volume.

D

Dispensing volume

Volume per dispensing step.

E

Eppendorf Quality

Eppendorf Quality is an Eppendorf AG purity grade for consumables. Eppendorf Quality meets the requirements for standard products, e.g., precision, accuracy, wetting behavior and tightness.

G

Graduation

Incremental graduation of a range, a surface or a volume.

M

Maximum volume

The maximum volume that can be used for dispensing.

N

Nominal volume

The maximum dispensing volume of a Combitip in conjunction with the selected dispensing device. The term "nominal volume" comes from the ISO 8655 standard.

P

PCR clean

PCR clean is an Eppendorf AG purity grade for consumables. PCR clean meets the requirements for standard products, e.g., precision, accuracy, wetting behavior, tightness. PCR clean also meets the requirements with regard to absence of human DNA, DNase, RNase and PCR inhibitors. Consumables with the PCR clean purity grade are controlled and certified by an external laboratory. Certificates are available for downloading from our webpage www.eppendorf.com.

Positive displacement principle

The liquid comes into direct contact with the Combitip piston during aspiration and dispensing. Unlike with a pipette, the liquid and piston are not separated by an air cushion. A small air bubble is visible at the piston during dispensing.

R

Random error

Precision. Describes how large the deviations of several measurements are from each other, if the same volume is measured several times.

Remaining stroke

Liquid reserve. The liquid which remains after all dispensing steps have been completed. You can discard the liquid of the remaining stroke or reuse it.

Reverse stroke

After aspiration, the piston is moved into a defined position. Liquid is dispensed during this piston movement. The reverse stroke is not a dispensing step.

S

Sterile

Sterile Eppendorf AG purity grade for consumables. Sterile meets the requirements for standard products, e.g., precision, accuracy, wetting behavior, tightness. Sterile also meets the requirements with regard to sterility and freedom from pyrogens.

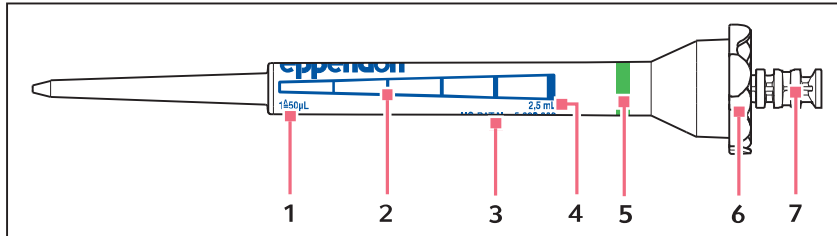
Systematic error

Accuracy. Describes how close the average value of several measurements of the same volume is to the actual value.

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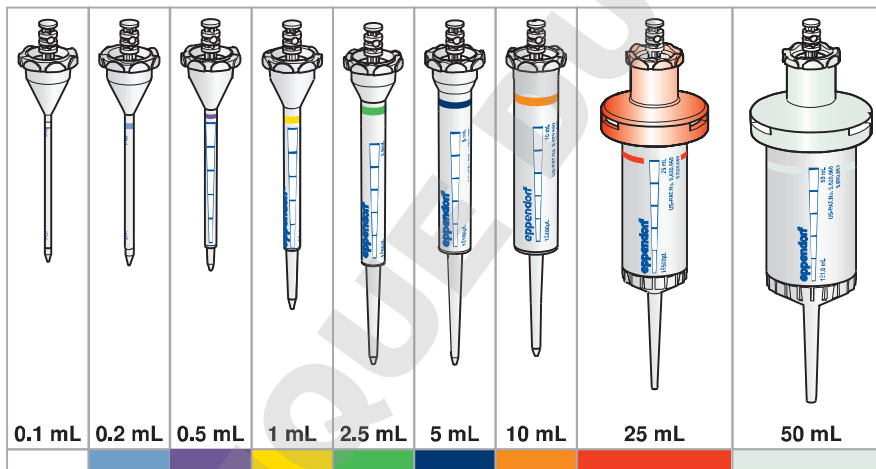
2 Product description

2.1 Main illustration



- | | | | |
|---|--|---|------------|
| 1 | Dispensing volume with the manual dispenser at selection dial position 1 | 5 | Color code |
| 2 | Graduation | 6 | Coding |
| 3 | US patent numbers | 7 | Piston |
| 4 | Maximum volume | | |

2.2 Overview of Combitips advanced with color codes



2.3 Features

Combitips advanced are disposable devices for aspirating and dispensing liquids according to the positive displacement principle. Combitips advanced are used in Eppendorf dispensers (e.g., Multipettes/Repeaters) and are made up of a cylinder and a piston. Combitips advanced in sizes 25 mL and 50 mL require an Adapter advanced. Combitips advanced are available in various sizes, which are marked using a color code.

2.4 Compatible devices

The Combitips advanced can be used with the following Eppendorf dispensers:

| Dispenser | Dispensing range |
|-------------------------------------|------------------|
| Multipette 4780/Repeater 4780 | 2 µL – 5 mL |
| Multipette plus/Repeater plus | 1 µL – 10 mL |
| Multipette pro/Repeater pro | 1 µL – 50 mL |
| Multipette stream/Repeater stream | 1 µL – 50 mL |
| Multipette Xstream/Repeater Xstream | 1 µL – 50 mL |
| EDOS 5222 | 1 µL – 50 mL |

2.5 Materials



NOTICE! Aggressive substances may damage dispensers, Combitips and accessories.

► Check the chemical resistance when using organic solvents or aggressive chemicals.

| Combitip advanced | Material |
|--------------------------|---|
| Cylinder | Polypropylene (PP) |
| Piston 0.1 mL and 0.2 mL | Polyethylene (PE) with glass fiber (GF) |
| Piston 0.5 mL to 50 mL | Polyethylene (PE) |
| Adapter advanced | Polybutylene terephthalate (PBT) |

2.6 Evaluation criteria

The Combitips advanced can be used for the single dispensing of all chemicals which are included in the following tables.

| | |
|-----|--|
| ■■■ | <p>Resistant The chemical can be used.</p> |
| ■■ | <p>Limited resistance and/or suitable for limited use The chemical can be used for a limited period of time. Dispensing must be performed soon after filling in order to ensure the tightness of the Combitips advanced and to avoid damage to the dispenser. Prolonged contact may negatively affect the error and the printing of the Combitips advanced may become discolored and detached.</p> |
| ■ | <p>Increased risk and/or increased wear The chemical can only be used with utmost caution. Dispensing must be performed immediately after filling in order to ensure the tightness of the Combitips advanced and to avoid damage to the Combitips advanced and to the dispenser. Prolonged contact may negatively affect the error and the printing of the Combitips advanced may become discolored or detached.</p> |

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2.7 Resistance to chemicals

| Acids and bases | Concentration in % | Resistance |
|-------------------------|---------------------------|-------------------|
| Ammonia solution | 25 | ■■■ |
| Ammonia solution | 2.0 | ■■■ |
| Acetic acid | 96 | ■■■ |
| Acetic acid | 12 | ■■■ |
| Caustic soda | 20 | ■■■ |
| Caustic soda | 4.0 | ■■■ |
| Perchloric acid | 10 | ■■■ |
| Nitric acid | 65 | ■■ |
| Nitric acid | 6.3 | ■■■ |
| Hydrochloric acid | 32 | ■■■ |
| Hydrochloric acid | 3.6 | ■■■ |
| Sulfuric acid | 96 | ■■■ |
| Sulfuric acid | 16 | ■■■ |
| Trichloroacetic acid | 40 | ■■ |
| Trichloroacetic acid | 10 | ■■■ |
| Trifluoroacetic acid | 100 | ■■ |
| Trifluoroacetic acid | 10 | ■■■ |
| Organic solvents | | |
| Acetone | | ■■ |
| Acetonitrile | | ■■■ |
| Petroleum ether | | ■■ |
| Chloroform | | ■■ |
| Dichloromethane | | ■■ |
| Diethyl ether | | ■■ |
| Dimethyl sulfoxide | 100 | ■ |
| Acetic acid ethyl ester | | ■■■ |
| Ethanol | 96 | ■■■ |
| Formaldehyde | 37 | ■■■ |
| Isoamyl alcohol | | ■■ |
| Isopropanol | | ■■■ |
| Methanol | | ■■■ |
| Phenol | | ■■ |
| Carbon tetrachloride | | ■■ |
| Toluol | | ■■ |
| Xylol | | ■■ |

3 Safety

3.1 Intended use

Combitips advanced are intended to be used with a Multipette/Repeater or a EDOS 5222 for dispensing liquids in the 1 µL – 50 mL volume range. In-vivo applications (applications in or on the human body) are not permitted. The Combitips advanced may only be used by specialized staff who have been adequately trained. The user must carefully read the instructions for use and the operating manual of the dispenser used and become familiar with how the device works.

3.2 Warnings for intended use



WARNING! Damage to health due to infectious liquids and pathogenic germs.

- ▶ When handling infectious liquids and pathogenic germs, observe the national regulations, the biological security level of your laboratory, the material safety data sheets, and the manufacturer's application notes.
- ▶ Wear personal protective equipment.
- ▶ Follow the instructions regarding hygiene, cleaning and decontamination.
- ▶ For complete instructions regarding the handling of germs or biological material in risk group II or higher, please refer to the "Laboratory Biosafety Manual" (source: World Health Organization, current edition of the Laboratory Biosafety Manual).



WARNING! Damage to health due to toxic, radioactive or aggressive chemicals.

- ▶ Wear personal protective equipment.
- ▶ Observe the national regulations for handling these substances.
- ▶ Observe the material safety data sheets and manufacturer's application notes.



NOTICE! Carry-over, contamination and incorrect dispensing results due to the incorrect use of Combitips.

Combitips are intended for single use. Prolonged use can have a negative impact on dispensing accuracy.

- ▶ Only use Combitips once.
- ▶ Do not use washed and/or autoclaved Combitips for dispensing.



NOTICE! Incorrect dispensing results due to evaporation.

If dispensing with an already filled Combitip is continued after a long waiting time, the next dispensing step may have a slightly reduced dispensing volume due to evaporation!

- ▶ If high trueness is required, this dispensing step should not be carried out.



WARNING! Personal injury and material damage from a bursting Combitip.

If stored for a long period of time, liquids can crystallize or solidify and thus block the outlet opening. The Combitip advanced may burst during the process of dispensing.

- ▶ Check the consistency of the liquid.
 - ▶ Dispense immediately after liquid aspiration.
-

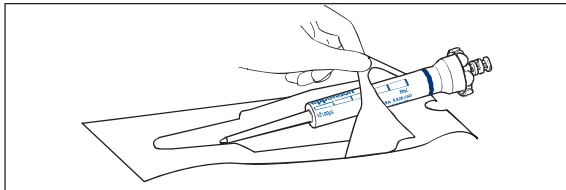
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4 Operation

4.1 Unpacking



To ensure maximum protection from carry-over, use Combitips advanced with Sterile and Biopur grades of purity immediately after they have been removed from their packing.



1. Open the packing at the location indicated.
2. Insert the Combitip into the dispenser.

3. Insert the Combitip into the dispenser.

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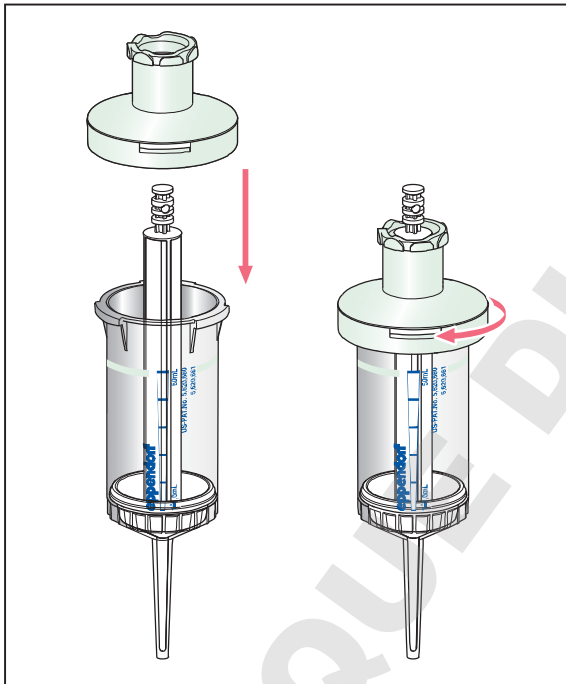
4.2 Assembling the Combitip advanced and Adapter advanced

Combitips advanced with a maximum volume of 0.1 mL – 10 mL can be used immediately. Combitips advanced with a maximum volume of 25 mL and 50 mL can only be used with the corresponding Adapter advanced. Adapter advanced and Combitips advanced have the same color code. The maximum volume is also listed on the neck of the Adapter advanced.



NOTICE! Sensor damage due to damaged or worn adapter

- ▶ Always put the adapter and Combitip together outside of the dispenser.
- ▶ Do not use damaged or worn adapters.
- ▶ Do not use adapters with damaged coding.



1. Place the adapter on the Combitip.
2. Tighten the adapter.

4.3 Inserting the Combitip

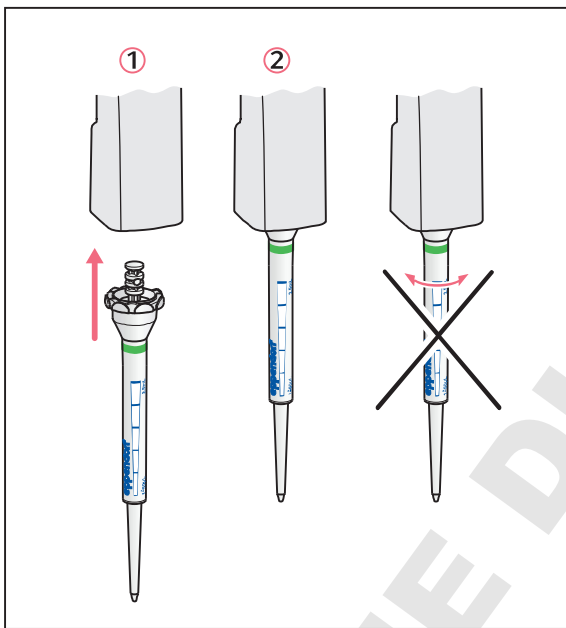


NOTICE! Device damage due to incorrect handling of the inserted Combitip

- ▶ Insert the Combitip straight into the dispenser from below.
- ▶ Do not rotate the inserted Combitip.
- ▶ Never grip the dispenser using the Combitip.



The Combitip is easier to insert if the ejector is held pressed down during insertion.



1. If the Combitip piston has been pushed out, push it back into the cylinder of the Combitip.
2. Use force to push the Combitip into the opening on the lower side of the dispenser ① until the Combitip engages ②.

4.4 Dispense liquid



The liquid dispensing angle should always be as steep as possible. A dispensing angle greater than 45° can result in an incorrect dispensing volume during the final dispensing steps.

Additional information can be found in the operating manual of your dispenser.

5 Maintenance

5.1 Cleaning



Combitips advanced are not autoclavable. Adapter advanced and Combitips advanced Rack are autoclavable.

5.1.1 Autoclaving the Adapter advanced

- ▶ Rinse the Adapter advanced with water.
- ▶ Autoclave the Adapter advanced for 20 min at an overpressure of 1 bar and 121 °C. The Adapter advanced can be autoclaved up to 100 times.

5.1.2 Autoclaving the Combitips advanced Rack

- ▶ Autoclave the empty Combitips advanced Rack for 20 min at an overpressure of 1 bar and 121 °C. Empty Combitips advanced Rack can be autoclaved up to 100 times.

6 Technical data

6.1 Ambient conditions

| | |
|----------------------|-----------------------------|
| Ambience | For indoor use only. |
| Ambient temperature | 4 °C – 40 °C |
| Relative humidity | 10 % – 95 %, non-condensing |
| Atmospheric pressure | 79.5 kPa – 166 kPa |

6.2 Errors with the Multipette M4/Repeater M4

| Combitip advanced | Testing volume | Error limits | | | |
|---|--------------------|------------------|--------|--------------|-------|
| | | Error | | | |
| | | Systematic error | | Random error | |
| | | ± % | ± µL | ± % | ± µL |
| 0.1 mL white Increment: 1 µL | 2 µL | ±1.6 | ±0.032 | ±3.0 | ±0.06 |
| | 20 µL | ±1.0 | ±0.2 | ±2.0 | ±0.4 |
| 0.2 mL light blue Increment: 2 µL | 4 µL | ±1.3 | ±0.052 | ±2.0 | ±0.08 |
| | 40 µL | ±0.8 | ±0.32 | ±1.5 | ±0.6 |
| 0.5 mL purple Increment: 5 µL | 10 µL | ±0.9 | ±0.09 | ±1.5 | ±0.15 |
| | 100 µL | ±0.8 | ±0.8 | ±0.6 | ±0.6 |
| 1 mL yellow Increment: 10 µL | 20 µL | ±0.9 | ±0.18 | ±0.9 | ±0.18 |
| | 200 µL | ±0.6 | ±1.2 | ±0.4 | ±0.8 |
| 2.5 mL green Increment: 25 µL | 50 µL | ±0.8 | ±0.4 | ±0.8 | ±0.4 |
| | 500 µL | ±0.5 | ±2.5 | ±0.3 | ±1.5 |
| 5 mL blue Increment: 50 µL | 100 µL | ±0.6 | ±0.6 | ±0.6 | ±0.6 |
| | 1 000 µL | ±0.5 | ±5.0 | ±0.25 | ±2.5 |
| 10 mL orange Increment: 0.1 mL | 200 µL 0.2 mL | ±0.5 | ±1.0 | ±0.6 | ±1.2 |
| | 2 000 µL 2 mL | ±0.5 | ±10 | ±0.25 | ±5.0 |
| 25 mL red Increment: 0.25 mL | 500 µL 0.5 mL | ±0.4 | ±2.0 | ±0.6 | ±3.0 |
| | 5 000 µL 5 mL | ±0.3 | ±15 | ±0.25 | ±12.5 |
| 50 mL light gray Increment: 0.5 mL | 1 000 µL 1 mL | ±0.3 | ±3.0 | ±0.5 | ±5.0 |
| | 10 000 µL 10 mL | ±0.3 | ±30 | ±0.3 | ±30 |

Test conditions and test evaluation in compliance with ISO 8655, Part 6. Analytical balance with evaporation protection inspected by the office of weights and measures..

- Number of determinations: 10
- Use of water in accordance with ISO 3696
- Inspection at 20 °C – 25 °C ±0.5 °C
- Dispensing on the inner wall of the tube



The test volumes for the systematic and random errors of the Multipette M4/Repeater M4 comply with the requirements of ISO 8655, part 5.

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6.3 Errors with the Multipette plus/Repeater plus

| Combitip advanced | Volume range | Error limits | | | |
|----------------------|--------------|------------------|--------|--------------|-------|
| | | Error | | | |
| | | Systematic error | | Random error | |
| | | ± % | ± µL | ± % | ± µL |
| 0.1 mL white | 2 µL | ±1.6 | ±0.032 | ±3.0 | ±0.06 |
| | 20 µL | ±1.0 | ±0.2 | ±2.0 | ±0.4 |
| 0.2 mL light blue | 4 µL | ±1.3 | ±0.052 | ±2.0 | ±0.08 |
| | 40 µL | ±0.8 | ±0.32 | ±1.5 | ±0.6 |
| 0.5 mL purple | 10 µL | ±0.9 | ±0.09 | ±1.5 | ±0.15 |
| | 100 µL | ±0.8 | ±0.8 | ±0.6 | ±0.6 |
| 1 mL yellow | 20 µL | ±0.9 | ±0.18 | ±0.9 | ±0.18 |
| | 200 µL | ±0.6 | ±1.2 | ±0.4 | ±0.8 |
| 2.5 mL green | 50 µL | ±0.8 | ±0.4 | ±0.8 | ±0.4 |
| | 500 µL | ±0.5 | ±2.5 | ±0.3 | ±1.5 |
| 5 mL blue | 100 µL | ±0.6 | ±0.6 | ±0.6 | ±0.6 |
| | 1 000 µL | ±0.5 | ±5.0 | ±0.25 | ±2.5 |
| 10 mL orange | 200 µL | ±0.5 | ±1.0 | ±0.6 | ±1.2 |
| | 2 000 µL | ±0.5 | ±10 | ±0.25 | ±5.0 |
| 25 mL red | 500 µL | ±0.4 | ±2.0 | ±0.6 | ±3.0 |
| | 5 000 µL | ±0.3 | ±15 | ±0.25 | ±12.5 |
| 50 mL light gray | 1 000 µL | ±0.3 | ±3.0 | ±0.5 | ±5.0 |
| | 10 000 µL | ±0.3 | ±30 | ±0.3 | ±30 |

Test conditions and test evaluation in compliance with ISO 8655, Part 6. Analytical balance with evaporation protection inspected by the office of weights and measures.

- Number of determinations: 10
- Use of water in accordance with ISO 3696
- Inspection at 20 °C – 25 °C ±0.5 °C
- Dispensing on the inner wall of the tube



The test volumes for the systematic and random errors of the Multipette (X)stream/Repeater (X)stream comply with the requirements of ISO 8655, part 5.

6.4 Errors with the Multipette (X)stream/Repeater (X)stream

| Combitip advanced | Volume range | Testing volume | Error limits | | | |
|--|------------------|----------------|------------------|-------------|--------------|-------------|
| | | | Error | | | |
| | | | Systematic error | | Random error | |
| | | | ± % | ± µL | ± % | ± µL |
| 0.1 mL white Increment: 0.1 µL | 1 µL – 100 µL | 10 µL | ±1.6 | ±0.16 | ±2.5 | ±0.25 |
| | | 50 µL | ±1.0 | ±0.5 | ±1.5 | ±0.75 |
| | | 100 µL | ±1.0 | ±1.0 | ±0.5 | ±0.5 |
| 0.2 mL light blue Increment: 0.2 µL | 2 µL – 200 µL | 20 µL | ±1.3 | ±0.26 | ±1.5 | ±0.3 |
| | | 100 µL | ±1.0 | ±1.0 | ±1.0 | ±1.0 |
| | | 200 µL | ±1.0 | ±2.0 | ±0.5 | ±1.0 |
| 0.5 mL purple Increment: 0.5 µL | 5 µL – 500 µL | 50 µL | ±0.9 | ±0.45 | ±0.8 | ±0.4 |
| | | 250 µL | ±0.9 | ±2.25 | ±0.5 | ±1.25 |
| | | 500 µL | ±0.9 | ±4.5 | ±0.3 | ±1.5 |
| 1 mL yellow Increment: 1 µL | 10 µL – 1 000 µL | 100 µL | ±0.9 | ±0.9 | ±0.55 | ±0.55 |
| | | 500 µL | ±0.6 | ±3.0 | ±0.3 | ±1.5 |
| | | 1 000 µL | ±0.6 | ±6.0 | ±0.2 | ±2.00 |
| 2.5 mL green Increment: 2.5 µL | 25 µL – 2 500 µL | 250 µL | ±0.8 | ±2.0 | ±0.45 | ±1.125 |
| | | 1 250 µL | ±0.5 | ±6.25 | ±0.3 | ±3.75 |
| | | 2 500 µL | ±0.5 | ±12.5 | ±0.15 | ±3.75 |
| 5 mL blue Increment: 5 µL | 50 µL – 5 000 µL | 500 µL | ±0.8 | ±4.0 | ±0.35 | ±1.75 |
| | | 2 500 µL | ±0.5 | ±12.5 | ±0.25 | ±6.25 |
| | | 5 000 µL | ±0.5 | ±25 | ±0.15 | ±7.50 |
| mL | mL | mL | ± % | ± mL | ± % | ± mL |
| 10 mL orange Increment: 0.01 mL | 0.1 mL – 10 mL | 1 mL | ±0.5 | ±0.005 | ±0.25 | ±0.0025 |
| | | 5 mL | ±0.4 | ±0.02 | ±0.25 | ±0.0125 |
| | | 10 mL | ±0.4 | ±0.04 | ±0.15 | ±0.015 |
| 25 mL red Increment: 0.025 mL | 0.25 mL – 25 mL | 2.5 mL | ±0.3 | ±0.0075 | ±0.35 | ±0.0088 |
| | | 12.5 mL | ±0.3 | ±0.0375 | ±0.25 | ±0.0313 |
| | | 25 mL | ±0.3 | ±0.075 | ±0.15 | ±0.0375 |
| 50 mL light gray Increment: 0.05 mL | 0.5 mL – 50 mL | 5 mL | ±0.3 | ±0.015 | ±0.5 | ±0.025 |
| | | 25 mL | ±0.3 | ±0.075 | ±0.20 | ±0.05 |
| | | 50 mL | ±0.3 | ±0.15 | ±0.15 | ±0.075 |

Test conditions and test analysis in accordance with ISO 8655, part 6. Test with an analytical balance with a moisture trap which has been inspected by the Office of Weights and Measures.

- Number of determinations: 10
- Use of water in accordance with ISO 3696
- Inspection at 20 °C – 25 °C ± 0.5 °C
- Dispensing onto the tube wall
- Volume tests in the mode Dis
- Speed levels set: 7












The test volumes for the systematic and random error of the Multipipette (X)stream/Repeater (X)stream comply with the requirements of ISO 8655, part 5.

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6.5 Adjustable dispensing volumes




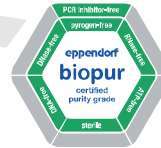
Applies to following dispensers:

- Multipette M4/Repeater M4
- Multipette plus/Repeater plus

| Selection dial | Dispensing steps | 0.1 mL | 0.2 mL | 0.5 mL | 1.0 mL | 2.5 mL | 5.0 mL | 10 mL | 25 mL | 50 mL |
|----------------|------------------|---|--|--|--|---|---|--|---|--|
| | |  white |  light blue |  purple |  yellow |  green |  blue |  orange |  red |  light gray |
| • | 100 | 1.0 µL | 2.0 µL | 5.0 µL | 10 µL | 25 µL | 50 µL | 0.1 mL | 0.25 mL | 0.5 mL |
| 1 | 50 | 2.0 µL | 4.0 µL | 10 µL | 20 µL | 50 µL | 100 µL | 0.2 mL | 0.50 mL | 1.0 mL |
| • | 33 | 3.0 µL | 6.0 µL | 15 µL | 30 µL | 75 µL | 150 µL | 0.3 mL | 0.75 mL | 1.5 mL |
| 2 | 25 | 4.0 µL | 8.0 µL | 20 µL | 40 µL | 100 µL | 200 µL | 0.4 mL | 1.00 mL | 2.0 mL |
| • | 20 | 5.0 µL | 10 µL | 25 µL | 50 µL | 125 µL | 250 µL | 0.5 mL | 1.25 mL | 2.5 mL |
| 3 | 16 | 6.0 µL | 12 µL | 30 µL | 60 µL | 150 µL | 300 µL | 0.6 mL | 1.50 mL | 3.0 mL |
| • | 14 | 7.0 µL | 14 µL | 35 µL | 70 µL | 175 µL | 350 µL | 0.7 mL | 1.75 mL | 3.5 mL |
| 4 | 12 | 8.0 µL | 16 µL | 40 µL | 80 µL | 200 µL | 400 µL | 0.8 mL | 2.00 mL | 4.0 mL |
| • | 11 | 9.0 µL | 18 µL | 45 µL | 90 µL | 225 µL | 450 µL | 0.9 mL | 2.25 mL | 4.5 mL |
| 5 | 10 | 10 µL | 20 µL | 50 µL | 100 µL | 250 µL | 500 µL | 1.0 mL | 2.50 mL | 5.0 mL |
| • | 9 | 11 µL | 22 µL | 55 µL | 110 µL | 275 µL | 550 µL | 1.1 mL | 2.75 mL | 5.5 mL |
| 6 | 8 | 12 µL | 24 µL | 60 µL | 120 µL | 300 µL | 600 µL | 1.2 mL | 3.00 mL | 6.0 mL |
| • | 7 | 13 µL | 26 µL | 65 µL | 130 µL | 325 µL | 650 µL | 1.3 mL | 3.25 mL | 6.5 mL |
| 7 | 7 | 14 µL | 28 µL | 70 µL | 140 µL | 350 µL | 700 µL | 1.4 mL | 3.50 mL | 7.0 mL |
| • | 6 | 15 µL | 30 µL | 75 µL | 150 µL | 375 µL | 750 µL | 1.5 mL | 3.75 mL | 7.5 mL |
| 8 | 6 | 16 µL | 32 µL | 80 µL | 160 µL | 400 µL | 800 µL | 1.6 mL | 4.00 mL | 8.0 mL |
| • | 5 | 17 µL | 34 µL | 85 µL | 170 µL | 425 µL | 850 µL | 1.7 mL | 4.25 mL | 8.5 mL |
| 9 | 5 | 18 µL | 36 µL | 90 µL | 180 µL | 450 µL | 900 µL | 1.8 mL | 4.50 mL | 9.0 mL |
| • | 5 | 19 µL | 38 µL | 95 µL | 190 µL | 475 µL | 950 µL | 1.9 mL | 4.75 mL | 9.5 mL |
| 10 | 5 | 20 µL | 40 µL | 100 µL | 200 µL | 500 µL | 1000 µL | 2.0 mL | 5.00 mL | 10.0 mL |

7 Purity grades and certificates

7.1 Eppendorf purity grades

| | Eppendorf Quality | Sterile | PCR clean | Biopur |
|--------------------------------------|---|---|---|---|
| |  |  |  |  |
| Human DNA-free | | | ■ | ■ |
| DNA-free (Human + Bacteria DNA-free) | | | | ■ |
| DNase-free | | | ■ | ■ |
| RNase-free | | | ■ | ■ |
| PCR inhibitor-free | | | ■ | ■ |
| ATP-free | | | | ■ |
| Pyrogen-free (Endotoxin-free) | | ■ | | ■ |
| Sterile (Ph.Eur./USP) | | ■ | | ■ |

7.2 Certificates

Various certificates for Eppendorf consumables can be downloaded from our website www.eppendorf.de/consumables.

- Batch-specific certificates
 Batch-specific certificates are available for Eppendorf consumables with Sterile, PCR clean and Biopur degrees of purity. These certificates are produced by an independent, recognized laboratory. The batch number can be found on the label of the folding box.
- General quality certificates
- ISO certificate

8 Ordering Information

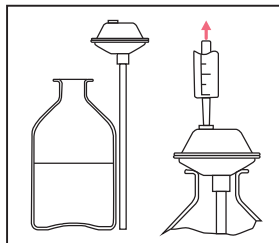
8.1 Combitips advanced

| Order no. (International) | Order no. (North America) | Description |
|---|---|---|
| 0030 089.405 – 0030 089.618 0030 089.766 | 0030089405 0030089510 0030089618 – | Combitips advanced 0.1 mL 100 pieces Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |
| 0030 089.413 – 0030 089.626 0030 089.774 | 0030089413 0030089529 0030089626 – | Combitips advanced 0.2 mL 100 pieces Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |
| 0030 089.421 – 0030 089.634 0030 089.782 | 0030089421 0030089537 0030089634 – | Combitips advanced 0.5 mL 100 pieces Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |
| 0030 089.430 – 0030 089.642 0030 089.790 | 0030089430 0030089545 0030089642 – | Combitips advanced 1.0 mL 100 pieces Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |
| 0030 089.448 – 0030 089.650 0030 089.804 | 0030089448 0030089553 0030089650 – | Combitips advanced 2.5 mL 100 pieces Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |
| 0030 089.456 – 0030 089.669 0030 089.812 | 0030089456 0030089561 0030089669 – | Combitips advanced 5.0 mL 100 pieces Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |

| Order no. (International) | Order no. (North America) | Description |
|---|---|--|
| 0030 089.464 – 0030 089.677 0030 089.820 | 0030089464 0030089570 0030089677 – | Combitips advanced 10 mL 100 pieces Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |
| 0030 089.472 – 0030 089.685 0030 089.839 | 0030089472 0030089588 0030089685 – | Combitips advanced 25 mL 100 pieces + 4 Adapter Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |
| 0030 089.480 – 0030 089.693 0030 089.847 | 0030089480 0030089596 0030089693 – | Combitips advanced 50 mL 100 pieces + 4 Adapter Eppendorf Quality Sterile, individually wrapped Biopur, individually wrapped PCR clean |

| Order no. (International) | Order no. (North America) | Description |
|---------------------------|---------------------------|---|
| 0030 089.715 | 0030089715 | Adapter advanced 25 mL 1 piece Eppendorf Quality |
| 0030 089.723 | 0030089723 | Adapter advanced 50 mL 1 piece Eppendorf Quality |
| 0030 089.731 | 0030089731 | Adapter advanced 25 mL 7 pieces Biopur, individually wrapped |
| 0030 089.740 | 0030089740 | Adapter advanced 50 mL 7 pieces Biopur, individually wrapped |

8.2 Accessories



Combilong/Combitube

The Combilong/Combitube is an aspiration tool for the Combitips advanced. It enables liquids to be directly taken out of all bottles.



Combitips advanced Rack

A Combitips advanced Rack is available for storing the Combitips advanced (≤ 10 mL).

| Order no. (International) | Order no. (North America) | Description |
|---------------------------|---------------------------|---|
| 0030 059.506 | – | Combilong Aspirating aid for removing liquids from volumetric flasks and tall bottles 2 pieces |
| – | 022261550 | Combitube Aspirating aid for removing liquids from volumetric flasks and tall bottles 2 pieces |
| 0030 089.758 | 0030089758 | Combitips advanced Rack 1 piece Eppendorf Quality |

8.2.1 Multipette M4/Repeater M4

| Order no. (International) | Order no. (North America) | Description |
|---------------------------|---------------------------|---|
| 4982 000.012 | – | Multipette M4 |
| – | 4982000020 | Repeater M4 |
| 4982 000.314 | – | Multipette M4 Starter Kit Multipette M4, Combitip Rack, Combitip Assortmentpack |
| – | 4982000322 | Repeater M4 Starter Kit Repeater M4, Combitip Rack, Combitip Assortmentpack |

8.3 Multipette plus/Repeater plus

| Order no. (International) | Order no. (North America) | Description |
|---------------------------|---------------------------|------------------------|
| 4981 000.019 | – | Multipette plus |
| – | 022260201 | Repeater plus |

8.4 Multipette (X)stream/Repeater (X)stream

| Order no. (International) | Order no. (North America) | Description |
|---------------------------|---------------------------|---------------------------|
| 4986 000.017 | – | Multipette stream |
| 4986 000.025 | – | Multipette Xstream |
| – | 022460803 | Repeater stream |
| – | 022460811 | Repeater Xstream |

9 Transport, storage and disposal

9.1 Storage

**NOTICE! Damage due to UV radiation**

- ▶ Do not store consumables in areas with strong UV radiation.

| | Air temperature | Relative humidity | Atmospheric pressure |
|-----------------------------|------------------------|--------------------------|-----------------------------|
| In transport packaging | -25 °C – 45 °C | 10 % – 95 % | 70 kPa – 106 kPa |
| Without transport packaging | -5 °C – 45 °C | 10 % – 95 % | 70 kPa – 106 kPa |

Evaluate your manual

Give us your feedback.
www.eppendorf.com/manualfeedback

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