

# LIQUID HANDLING



## MEASURING AND MIXING CYLINDERS, BOROSILICATE GLASS 3.3

All LABSOLUTE® measuring and mixing cylinders made of borosilicate glass 3.3 comply with DIN EN ISO 4788. They are calibrated to "In" (20 °C) and have a solid hexagonal glass base for a secure stand.

### MEASURING CYLINDERS, HIGH FORM, CLASS A, BLUE GRADUATION

With functional spout and batch number. A batch-specific certificate of conformity is available on request.



| Capacity<br>ml | Grad.<br>ml | Tolerance<br>± ml | Height<br>mm | PK | Art. no.  |
|----------------|-------------|-------------------|--------------|----|-----------|
| 5              | 0.1         | 0.05              | 115          | 1  | 7.691 000 |
| 10             | 0.2         | 0.1               | 135          | 1  | 7.691 001 |
| 25             | 0.5         | 0.25              | 160          | 1  | 7.691 002 |
| 50             | 1           | 0.5               | 195          | 1  | 7.691 003 |
| 100            | 1           | 0.5               | 240          | 1  | 7.691 004 |
| 250            | 2           | 1.0               | 320          | 1  | 7.691 005 |
| 500            | 5           | 2.5               | 380          | 1  | 7.691 006 |
| 1000           | 10          | 5.0               | 465          | 1  | 7.691 007 |
| 2000           | 20          | 10.0              | 565          | 1  | 7.691 008 |

### MEASURING CYLINDERS, HIGH FORM, CLASS B, WHITE GRADUATION

With functional spout.



| Capacity<br>ml | Grad.<br>ml | Tolerance<br>± ml | Height<br>mm | PK | Art. no.  |
|----------------|-------------|-------------------|--------------|----|-----------|
| 5              | 0.1         | 0.1               | 115          | 1  | 7.691 160 |
| 10             | 0.2         | 0.2               | 140          | 1  | 7.691 161 |
| 25             | 0.5         | 0.5               | 170          | 1  | 7.691 162 |
| 50             | 1           | 1                 | 200          | 1  | 7.691 163 |
| 100            | 1           | 1                 | 260          | 1  | 7.691 164 |
| 250            | 2           | 2                 | 335          | 1  | 7.691 165 |
| 500            | 5           | 5                 | 390          | 1  | 7.691 166 |
| 1000           | 10          | 10                | 470          | 1  | 7.691 167 |
| 2000           | 20          | 20                | 570          | 1  | 7.691 168 |



Accuracy classes and error limits please see page 140

## MEASURING CYLINDERS, LOW FORM, CLASS B, AMBER GRADUATION

With functional spout.

| Capacity<br>ml | Grad.<br>ml | Tolerance<br>± ml | Height<br>mm | PK | Art. no.  |
|----------------|-------------|-------------------|--------------|----|-----------|
| 10             | 1           | 0.3               | 97           | 1  | 7.691 010 |
| 25             | 1           | 0.5               | 120          | 1  | 7.691 011 |
| 50             | 1           | 1.0               | 145          | 1  | 7.691 012 |
| 100            | 2           | 1.0               | 165          | 1  | 7.691 013 |
| 250            | 5           | 2.0               | 215          | 1  | 7.691 014 |
| 500            | 10          | 5.0               | 250          | 1  | 7.691 015 |
| 1000           | 20          | 10.0              | 290          | 1  | 7.691 016 |
| 2000           | 50          | 20.0              | 340          | 1  | 7.691 017 |



## MEASURING CYLINDERS, PP & PMP

All LABSOLUTE® measuring cylinders made of PP or fully transparent PMP comply with DIN 12681 & ISO 6706 standards. They are calibrated to "In" (20 °C), have a solid hexagonal base for a secure stand, an embossed scale, as well as a functional spout.

## MEASURING CYLINDERS, HIGH FORM, CLASS A, PMP

Dishwasher-proof and autoclavable. A batch-specific certificate of conformity is available on request.

Autoclaving at 121 °C according to DIN EN ISO 285 will not cause permanent exceeding of the tolerance limits of class A. Cleaning at max. 60 °C and the use of soft cleaning agents is recommended to preserve the embossed scale.

| Capacity<br>ml | Grad.<br>ml | Tolerance<br>± ml | Height<br>mm | PK | Art. no.  |
|----------------|-------------|-------------------|--------------|----|-----------|
| 25             | 0.25        | 0.25              | 170          | 1  | 7.693 110 |
| 50             | 0.5         | 0.5               | 200          | 1  | 7.693 111 |
| 100            | 0.5         | 0.5               | 250          | 1  | 7.693 112 |
| 250            | 1           | 1                 | 325          | 1  | 7.693 113 |
| 500            | 2.5         | 2.5               | 388          | 1  | 7.693 114 |
| 1000           | 5           | 5                 | 459          | 1  | 7.693 115 |
| 2000           | 10          | 10                | 533          | 1  | 7.693 116 |





## MEASURING CYLINDERS, HIGH FORM, CLASS B, PP

| Capacity<br>ml | Grad.<br>ml | Tolerance<br>± ml | Height<br>mm | PK | Art. no.  |
|----------------|-------------|-------------------|--------------|----|-----------|
| 10             | 0.2         | 0.2               | 147          | 1  | 7.693 100 |
| 25             | 0.5         | 0.5               | 170          | 1  | 7.693 101 |
| 50             | 1           | 1                 | 200          | 1  | 7.693 102 |
| 100            | 1           | 1                 | 250          | 1  | 7.693 103 |
| 250            | 2           | 2                 | 327          | 1  | 7.693 104 |
| 500            | 5           | 5                 | 389          | 1  | 7.693 105 |
| 1000           | 10          | 10                | 458          | 1  | 7.693 106 |
| 2000           | 20          | 20                | 534          | 1  | 7.693 107 |

## MEASURING AND MIXING CYLINDERS, BOROSILICATE GLASS 3.3

All LABSOLUTE® measuring and mixing cylinders made of borosilicate glass 3.3 comply with DIN EN ISO 4788. They are calibrated to "In" (20 °C) and have a solid hexagonal glass base for a secure stand.

## MIXING CYLINDERS, CLASS A, WITH PP STOPPER, BLUE GRADUATION

With standard ground joint and batch number. Delivered with a suitable PP stopper. A batch-specific certificate of conformity is available on request.



| Capacity<br>ml | Grad.<br>ml | Standard ground joint<br>NS* | Height<br>mm | PK | Art. no.  |
|----------------|-------------|------------------------------|--------------|----|-----------|
| 10             | 0.1         | 10/19                        | 137          | 1  | 7.691 120 |
| 25             | 0.2         | 14/23                        | 167          | 1  | 7.691 121 |
| 50             | 1.0         | 19/26                        | 195          | 1  | 7.691 122 |
| 100            | 1.0         | 24/29                        | 257          | 1  | 7.691 123 |
| 250            | 2.0         | 29/32                        | 330          | 1  | 7.691 124 |
| 500            | 5.0         | 34/35                        | 385          | 1  | 7.691 125 |
| 1000           | 10.0        | 45/40                        | 460          | 1  | 7.691 126 |
| 2000           | 20.0        | 45/40                        | 565          | 1  | 7.691 127 |

\* The first figure relates to the upper diameter of the standard ground joint, while the second figure specifies its length



Accuracy classes and error limits please see page 140

## VOLUMETRIC FLASKS

All LABSOLUTE® clear and amber volumetric flasks with accuracy class A comply with the DIN EN ISO 1042 standard. They are made of high-quality borosilicate glass 3.3 and calibrated to "In" (20 °C). All volumetric flasks are supplied with suitable stoppers made of glass or PE. A batch-specific certificate of conformity can be supplied on request.

### VOLUMETRIC FLASKS, CLASS A, WITH PE STOPPER, BLUE GRADUATION

| Capacity<br>ml | Standard ground joint<br>NS* | Tolerance<br>± ml | PK | Art. no.  |
|----------------|------------------------------|-------------------|----|-----------|
| 5              | 7/16                         | 0.025             | 1  | 7.691 036 |
| 5              | 10/19                        | 0.040             | 1  | 7.691 020 |
| 10             | 7/16                         | 0.025             | 1  | 7.691 033 |
| 10             | 10/19                        | 0.040             | 1  | 7.691 021 |
| 20             | 10/19                        | 0.040             | 1  | 7.691 022 |
| 20             | 12/21                        | 0.060             | 1  | 7.691 034 |
| 25             | 10/19                        | 0.040             | 1  | 7.691 023 |
| 25             | 12/21                        | 0.060             | 1  | 7.691 035 |
| 50             | 12/21                        | 0.060             | 1  | 7.691 024 |
| 50             | 14/23                        | 0.100             | 1  | 7.691 025 |
| 100            | 12/21                        | 0.100             | 1  | 7.691 026 |
| 100            | 14/23                        | 0.100             | 1  | 7.691 027 |
| 200            | 14/23                        | 0.150             | 1  | 7.691 028 |
| 250            | 14/23                        | 0.150             | 1  | 7.691 029 |
| 500            | 19/26                        | 0.250             | 1  | 7.691 030 |
| 1000           | 24/29                        | 0.400             | 1  | 7.691 031 |
| 1000           | 29/32                        | 0.600             | 1  | 7.691 037 |
| 2000           | 29/32                        | 0.600             | 1  | 7.691 032 |

\* The first figure relates to the upper diameter of the standard ground joint, while the second figure specifies its length



### VOLUMETRIC FLASKS, CLASS A, WITH HOLLOW GLASS STOPPER, BLUE GRADUATION

| Capacity<br>ml | Standard ground joint<br>NS* | Tolerance<br>± ml | PK | Art. no.  |
|----------------|------------------------------|-------------------|----|-----------|
| 5              | 10/19                        | 0.040             | 1  | 7.691 100 |
| 10             | 10/19                        | 0.040             | 1  | 7.691 101 |
| 20             | 10/19                        | 0.040             | 1  | 7.691 102 |
| 25             | 10/19                        | 0.040             | 1  | 7.691 103 |
| 50             | 14/23                        | 0.100             | 1  | 7.691 104 |
| 100            | 14/23                        | 0.100             | 1  | 7.691 105 |
| 200            | 14/23                        | 0.150             | 1  | 7.691 106 |
| 250            | 14/23                        | 0.150             | 1  | 7.691 107 |
| 500            | 19/26                        | 0.250             | 1  | 7.691 108 |
| 1000           | 24/29                        | 0.400             | 1  | 7.691 109 |
| 2000           | 29/32                        | 0.600             | 1  | 7.691 110 |

\* The first figure relates to the upper diameter of the standard ground joint, while the second figure specifies its length





## VOLUMETRIC FLASKS, AMBER, CLASS A, WITH PE STOPPER, WHITE GRADUATION

Especially used for light-sensitive samples.

| Capacity<br>ml | Standard ground joint<br>NS* | Tolerance<br>± ml | PK | Art. no.  |
|----------------|------------------------------|-------------------|----|-----------|
| 5              | 10/19                        | 0.040             | 2  | 7.691 070 |
| 10             | 10/19                        | 0.040             | 2  | 7.691 071 |
| 20             | 10/19                        | 0.040             | 2  | 7.691 072 |
| 25             | 10/19                        | 0.040             | 2  | 7.691 073 |
| 50             | 14/23                        | 0.100             | 2  | 7.691 074 |
| 100            | 14/23                        | 0.100             | 2  | 7.691 075 |
| 200            | 14/23                        | 0.150             | 2  | 7.691 076 |
| 250            | 14/23                        | 0.150             | 2  | 7.691 077 |
| 500            | 19/26                        | 0.250             | 2  | 7.691 078 |
| 1000           | 24/29                        | 0.400             | 2  | 7.691 079 |
| 2000           | 29/32                        | 0.600             | 1  | 7.691 080 |

\* The first figure relates to the upper diameter of the standard ground joint, while the second figure specifies its length



## VOLUMETRIC FLASKS, TRAPEZOIDAL, CLASS A, WITH PE STOPPER, BLUE GRADUATION

| Capacity<br>ml | Standard ground joint<br>NS* | Tolerance<br>± ml | PK | Art. no.  |
|----------------|------------------------------|-------------------|----|-----------|
| 1              | 7/16                         | 0.025             | 1  | 7.691 130 |
| 2              | 7/16                         | 0.025             | 1  | 7.691 131 |
| 5              | 10/19                        | 0.04              | 1  | 7.691 132 |
| 10             | 10/19                        | 0.04              | 1  | 7.691 133 |
| 20             | 10/19                        | 0.04              | 1  | 7.691 134 |
| 25             | 10/19                        | 0.04              | 1  | 7.691 135 |
| 50             | 12/21                        | 0.06              | 1  | 7.691 136 |

\* The first figure relates to the upper diameter of the standard ground joint, while the second figure specifies its length



LABSOLUTE® stoppers please see page 77

## GRADUATED AND VOLUMETRIC PIPETTES

The LABSOLUTE® graduated and volumetric pipettes are made of soda-lime glass and have a batch identification. A batch-specific certificate of conformity is available on request.

### Calibration

The graduated and volumetric pipettes are calibrated to "Ex" (+5 seconds) so that the draining volume of liquid corresponds to the printed volume specification after five seconds.

### Accuracy class AS

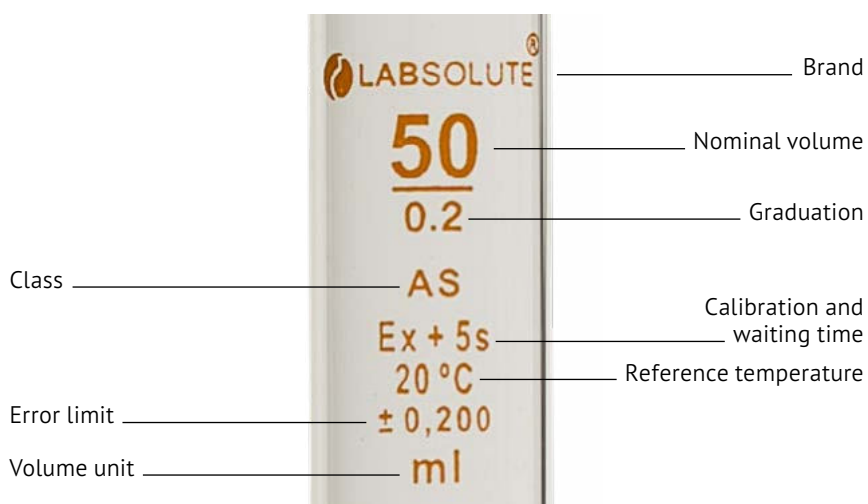
All LABSOLUTE® graduated and volumetric pipettes satisfy the criteria of the highest accuracy class A. The tolerance lies within the standard defined for class A.

The suffix "S" means rapid draining. The draining time is between 5 and 20 seconds, depending on the nominal volume, as opposed to 10 to 60 seconds with class A.

### Durable labelling

All information is imprinted in brown diffusion dye. This dye is burned into the surface of the glass and can only be destroyed by glass erosion. The labelling is therefore unaffected by chemicals and cleaning agents.

## IDENTIFICATION OF LABSOLUTE® GRADUATED AND VOLUMETRIC PIPETTES





## VOLUMETRIC PIPETTES, CLASS AS, 1 MARK, AMBER GRADUATION

According to DIN EN ISO 648.

| Volume ml | Length mm | Colour code | PK | Art. no.  |
|-----------|-----------|-------------|----|-----------|
| 1         | 350       | Blue        | 6  | 7.691 040 |
| 2         | 330       | Orange      | 6  | 7.691 041 |
| 3*        | 360       | Black       | 6  | 7.691 042 |
| 4*        | 360       | Red stripes | 6  | 7.691 048 |
| 5         | 400       | White       | 6  | 7.691 043 |
| 10        | 440       | Red         | 6  | 7.691 044 |
| 15*       | 455       | Green       | 3  | 7.691 049 |
| 20        | 510       | Yellow      | 3  | 7.691 045 |
| 25        | 520       | Blue        | 3  | 7.691 046 |
| 50        | 540       | Red         | 3  | 7.691 047 |
| 100       | 585       | Yellow      | 3  | 7.691 057 |

\* 3, 4 and 15 ml in addition to DIN EN ISO 648

## GRADUATED PIPETTES, CLASS AS, TYPE 3, AMBER GRADUATION

According to DIN EN ISO 835.

| Capacity ml | Length mm | Colour code    | Graduation ml | PK | Art. no.  |
|-------------|-----------|----------------|---------------|----|-----------|
| 1           | 360       | Yellow         | 0.01          | 6  | 7.691 050 |
| 2           | 360       | Black          | 0.02          | 6  | 7.691 051 |
| 5           | 360       | Red            | 0.05          | 6  | 7.691 052 |
| 10          | 360       | Orange         | 0.10          | 6  | 7.691 053 |
| 20          | 360       | Yellow stripes | 0.10          | 3  | 7.691 054 |
| 25          | 450       | White          | 0.10          | 3  | 7.691 055 |
| 50          | 450       | Black          | 0.20          | 3  | 7.691 056 |



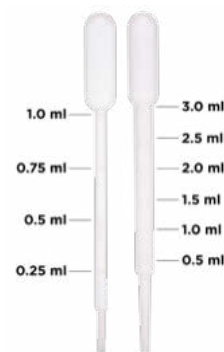
Accuracy classes and error limits please see page 140



## PASTEUR PIPETTES, LDPE

LABSOLUTE® Pasteur pipettes guarantee a comfortable and safe handling of fluids. Due to the constant drop volume the transfer pipettes are perfectly suited to aliquot larger volumes of liquids. The soft suction ball and precisely finished tip guarantee pleasant, clean working.

- Made from transparent LDPE
- Suitable for food analyses
- Free of BSE



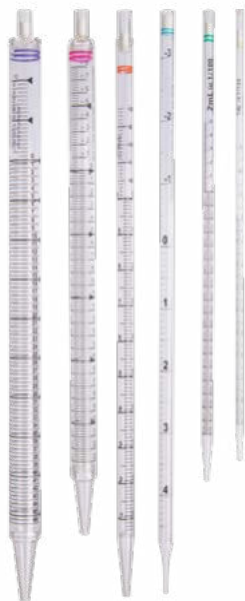
| Capacity<br>ml | Sterile | Package                       | Length<br>mm | Grad.<br>ml | Drop volume<br>ml | PK  | Art. no.  |
|----------------|---------|-------------------------------|--------------|-------------|-------------------|-----|-----------|
| 1              | No      | Bulk                          | 154          | 0,25        | 0.040             | 500 | 7.691 200 |
| 1              | Yes     | Individually, blistered       | 154          | 0,25        | 0.040             | 500 | 7.691 201 |
| 1              | Yes     | Packed per 10 pcs., blistered | 154          | 0,25        | 0.040             | 500 | 7.691 206 |
| 3              | No      | Bulk                          | 154          | 0,5         | 0.040             | 500 | 7.691 202 |
| 3              | Yes     | Individually, blistered       | 154          | 0,5         | 0.040             | 500 | 7.691 203 |
| 3              | Yes     | Packed per 10 pcs., blistered | 154          | 0,5         | 0.040             | 500 | 7.691 207 |
| 10             | No      | Bulk                          | 170          | -           | 0.056             | 200 | 7.691 204 |
| 10             | No      | Bulk                          | 300          | -           | 0.045             | 100 | 7.691 205 |

## PASTEUR PIPETTES, SODA-LIME GLASS

LABSOLUTE® Pasteur pipettes, made of soda-lime glass with elongated, fine tips, are designed for single use. There is a narrowing at the end of the approximately 20 mm long suction tube that guarantees secure positioning of a cotton wool ball. The pipettes have a volume of about 2 ml independent of their length.

| Length<br>mm | Capillary-Ø<br>mm | Outer suction tube-Ø<br>mm | Pack size<br>pieces | PK   | Art. no.  |
|--------------|-------------------|----------------------------|---------------------|------|-----------|
| 150          | 1.1               | 7.1                        | 4 x 250             | 1000 | 7.691 060 |
| 230          | 1.1               | 7.1                        | 4 x 250             | 1000 | 7.691 061 |





## SEROLOGICAL PIPETTES, STERILE, PS

The serological pipettes from LABSOLUTE® are ideal for working with sterile solutions in the millilitre range and applications in cell culture. Manufactured from crystal clear PS, serological pipettes are individually packaged in an easy-to-open paper/plastic blister.

- Free of DNase, RNase and pyrogens
- Non-cytotoxic
- Quick and easy identification by colour coding
- Gamma sterilized (SAL 10<sup>-6</sup>)

| Capacity<br>ml | Grad.<br>ml | Colour | Negative grad.<br>ml | PK  | Art. no.  |
|----------------|-------------|--------|----------------------|-----|-----------|
| 1              | 1/100       | Yellow | 0.3                  | 500 | 7.695 550 |
| 2              | 1/50        | Green  | 0.6                  | 500 | 7.695 551 |
| 5              | 1/10        | Blue   | 3                    | 200 | 7.695 552 |
| 10             | 1/10        | Orange | 3                    | 200 | 7.695 553 |
| 25             | 2/10        | Red    | 8                    | 150 | 7.695 554 |
| 50             | 5/10        | Purple | 10                   | 100 | 7.695 555 |



## SEROLOGICAL PIPETTES, SHORT VERSION, STERILE, PS

The short version of the serological pipettes from LABSOLUTE® is with 23.5 cm significantly shorter than the normal pipette. It is specially designed for liquid handling operation in limited working space and enables a comfortable and safe working. They are available in three different volumes: 5 ml, 10 ml and 25 ml.

| Capacity<br>ml | Grad.<br>ml | Colour | Negative grad.<br>ml | PK  | Art. no.  |
|----------------|-------------|--------|----------------------|-----|-----------|
| 5              | 1/10        | Blue   | 3                    | 200 | 7.695 556 |
| 10             | 2/10        | Orange | 10                   | 150 | 7.695 557 |
| 25             | 5/10        | Red    | 9                    | 100 | 7.695 558 |



## ASPIRATING PIPETTES, PS, STERILE

Aspirating pipettes from LABSOLUTE® are sterile, ungraduated and unplugged pipettes for aspirating liquid using vacuum suction.

- Gamma sterile
- Single packed

| Capacity<br>ml | PK  | Art. no.  |
|----------------|-----|-----------|
| 1              | 500 | 7.695 559 |
| 2              | 500 | 7.695 560 |
| 5              | 200 | 7.695 561 |
| 25             | 150 | 7.695 562 |

## SAFETY PIPETTE FILLERS, NATURAL RUBBER

The red LABSOLUTE® safety pipette fillers Flip, Standard and Universal, made of natural rubber are the perfect complement for the LABSOLUTE® graduated and volumetric pipettes as well as all other graduated, volumetric and serological pipettes.

Especially the Flip with its integrated automatic valve and only two operating points is very easy to handle.



| Description | PK | Art. no.  |
|-------------|----|-----------|
| Universal   | 1  | 7.691 068 |
| Standard    | 1  | 7.691 069 |
| Flip        | 1  | 7.691 067 |

## PIPETTE STAND, VERTICAL, 94 POSITIONS

The vertical, turnable LABSOLUTE® pipette stand made of PP with 94 positions of different sizes is the best choice for space-saving and secure storage of your LABSOLUTE® graduated and volumetric pipettes. The pipette stand is autoclavable at 121 °C and has a solid base and an additional rotating plate to protect the pipette tips.

| Description                           | PK | Art. no.  |
|---------------------------------------|----|-----------|
| Pipette stand, vertical, 94 positions | 1  | 7.695 718 |



## PIPETTE STAND

Use the LABSOLUTE® pipette stand as a laboratory helper to store your pipettes securely and, at the same time, have them easily to hand. Size or model differences are immaterial with this concept.

- Convenient storage of up to eight single or multichannel pipettes
- Easy to clean
- Non-rotatable

| Description   | PK | Art. no.  |
|---------------|----|-----------|
| Pipette stand | 1  | 7.695 717 |





## PIPETTE STAND WITH DUAL BINS FOR PIPETTE TIPS

This acrylic LABSOLUTE® pipette rack keeps your pipettes and tips together in one convenient stand. You can store up to four pipettes within the provided openings. The dual reservoirs offer space for different sizes of pipette tips which you can easily access even while wearing gloves. The transparent lid allows for dust-free storage of your tips. Universally compatible with different pipette models.

- Dimensions (W x H x D): 244 x 246 x 165 mm

| Description   | PK | Art. no.  |
|---------------|----|-----------|
| Pipette stand | 1  | 7.695 716 |

## REAGENT RESERVOIRS, PS

The white LABSOLUTE® solution reservoirs made of PS for multichannel pipettes offer several advantages. The bottom features a narrow trough to aid full sample recovery. The inside walls have graduation marks which enable you to determine the fluid level. Furthermore, the basins have thicker walls and thus are very stable. A special shaping prevents the reservoirs from sticking together. Last but not least, the spouts guarantee a safe transfer of fluid.

- Dimensions (W x H x D): 145 x 25 x 85 mm
- Non-sterile



| Capacity<br>ml | Dimensions W x H x D<br>mm | PK  | Art. no.  |
|----------------|----------------------------|-----|-----------|
| 55             | 140 x 24 x 61              | 100 | 7.695 725 |
| 100            | 143 x 32 x 83              | 100 | 7.695 726 |

## PIPETTE CONTROLLER

Pipetting made easy – the wireless LABSOLUTE® Pipette assistant ensures comfortable working with glass and plastic pipettes (0.1 – 100 ml).

- Effortless pipetting thanks to the ergonomic grip and smooth-running buttons – simple operation with one hand
- High working speed: a 25 ml pipette is filled in less than four seconds
- Extremely quiet and powerful motor with three speed settings
- The charging device prevents overloading or heating of the battery
- Exchangeable membrane filters protect the device mechanism against contamination
- Differently coloured autoclavable cones allow customization

The supplied package includes charger, batteries, desktop stand, wall mount bracket and two spare membrane filters (PTFE 0.2 µm, PTFE 0.45 µm). Further you will receive three differently coloured pipette holder cones (blue, green and orange). Accessoires can be ordered separately if required.



| Description                         | PK | Art. no.  |
|-------------------------------------|----|-----------|
| Pipette controller with accessories | 1  | 7.696 030 |
| PTFE membrane filter 0.2 µm         | 5  | 7.696 031 |
| PTFE membrane filter 0.45 µm        | 5  | 7.696 032 |
| Silicone adapter with safety valve  | 1  | 7.696 033 |
| Spare charger                       | 1  | 7.696 035 |
| Spare batteries                     | 2  | 7.696 036 |
| Pipette holder cone, red            | 1  | 7.696 037 |
| Pipette holder cone, blue           | 1  | 7.696 038 |
| Pipette holder cone, green          | 1  | 7.696 039 |
| Pipette holder cone, black          | 1  | 7.696 034 |
| Pipette holder cone, orange         | 1  | 7.696 040 |

## MICROLITRE PIPETTES

Ergonomical and lightweight: our range of microlitre pipettes offers models in various volumes with one, eight and twelve channels. The pipettes boast extreme precision and accuracy whilst being superbly convenient. They are perfectly suitable for long-term use in all laboratory applications and facilitate fatigue-free working. The calibration tool included in the scope of delivery allows you to carry out recalibration very easily yourself.

### Double volume adjustment

To adjust the volume, you can use the push button or the thumbwheel. This makes the adjustment process especially comfortable for you.

### Soft-spring system

Easy-running, soft pipetting minimizes the exertion required and adds comfort to your everyday laboratory practices.

### Easy-to-read volume display

The display has a vertical structure. As a result, you do not have to rotate the pipette to read off the set volume - an additional comfort feature that makes your work easier.

### Colour coding

To ensure you recognize the pipette's volume range directly, the push buttons are colour-coded.

### High-quality materials

- Stable shaft
- UV-resistant
- Autoclavable



## SINGLE-CHANNEL PIPETTES

User-friendliness and superlative quality make the LABSOLUTE® single-channel pipettes the perfect instrument for your laboratory. The colour coding on the push button allows the volume range of the pipettes to be recognized at a glance.

### Easy personalization

The pack contains seven coloured rings (in red, white, yellow, black, pink, violet and green). These allow you to mark the pipette and thereby visually assign them at a glance.

### Stable shaft

The high-quality material ensures particular stability and longevity for the pipettes, even in high-use situations.

### Contamination-free working

The pipettes in the larger volume range (7.695 706 and 7.695 707) have an exchangeable sterile filter in the shaft which protects against cross-contamination and must be removed before autoclaving. All other models are fully autoclavable.

| Volume range<br>µl | Colour code | Grad.<br>µl | PK | Art. no.  |
|--------------------|-------------|-------------|----|-----------|
| 0.1 - 2            | White       | 0.002       | 1  | 7.695 700 |
| 0.5 - 10           | White       | 0.02        | 1  | 7.695 701 |
| 2 - 20             | Yellow      | 0.02        | 1  | 7.695 702 |
| 10 - 100           | Yellow      | 0.2         | 1  | 7.695 703 |
| 20 - 200           | Yellow      | 0.2         | 1  | 7.695 704 |
| 100 - 1000         | Blue        | 2.0         | 1  | 7.695 705 |
| 500 - 5000         | White       | 10          | 1  | 7.695 706 |
| 1000 - 10000       | White       | 20          | 1  | 7.695 707 |



## ACCESSORIES FOR SINGLE-CHANNEL PIPETTES

| Description                               | PK | Art. no.  |
|-------------------------------------------|----|-----------|
| Shaft filters for 7.695 706 and 7.695 707 | 10 | 7.695 719 |

## SINGLE-CHANNEL PIPETTE STARTER SETS

With our starter sets, we offer you a handy, inexpensive and uniform all-in-one solution. The sets contain three pipettes each and a rack of pipette tips for each pipette size contained in the set.

| Description   | Pipette with volume range<br>µl   | PK | Art. no.  |
|---------------|-----------------------------------|----|-----------|
| Starter set 1 | 0.1 - 2, 0.5 - 10 and 10 - 100    | 3  | 7.695 720 |
| Starter set 2 | 0.5 - 10, 10 - 100 and 100 - 1000 | 3  | 7.695 721 |
| Starter set 3 | 2 - 20, 20 - 200 and 100 - 1000   | 3  | 7.695 722 |



MULTICHANNEL PIPETTES

LABSOLUTE® offers both eight-channel and twelve-channel pipettes with different volume ranges. As with the single-channel pipettes, the colour codes on the push button help you to quickly and reliably recognize the volume ranges at a glance.

Revolutionary spring system

The individual shafts can glide back separately as soon as they are pressed against a pipette tip. This ensures that each pipette tip is firmly and tightly attached.

Innovative ejection mechanism

The ejection is designed so that the tips can be taken off in stages. This reduces the amount of force required considerably - providing tangible comfort in daily use.

Individual 360° adjustment

The pipetting unit can be rotated around 360°, allowing optimized and comfortable working.

EIGHT-CHANNEL PIPETTES

| Volume range<br>µl | Colour code | Grad.<br>µl | PK | Art. no.  |
|--------------------|-------------|-------------|----|-----------|
| 5 - 50             | Yellow      | 0.1         | 1  | 7.695 710 |
| 20 - 200           | Yellow      | 0.2         | 1  | 7.695 711 |
| 50 - 300           | White       | 1.0         | 1  | 7.695 712 |



TWELVE-CHANNEL PIPETTES

| Volume range<br>µl | Colour code | Grad.<br>µl | PK | Art. no.  |
|--------------------|-------------|-------------|----|-----------|
| 5 - 50             | Yellow      | 0.1         | 1  | 7.695 713 |
| 20 - 200           | Yellow      | 0.2         | 1  | 7.695 714 |
| 50 - 300           | White       | 1.0         | 1  | 7.695 715 |



## PIPETTE TIPS

LABSOLUTE® offers a complete assortment for your pipetting tasks – no matter whether packed in bags, within racks or within our efficient refill system: all pipette tips are part of a system in which the components can be replaced. The pipette tips are made of pure PP and comply with the requirements of EN ISO 8655.

In combination with the LABSOLUTE® pipettes, they constitute the perfect pipetting unit. Thanks to their universal fit and the high-quality material, the tips guarantee a firm and absolutely tight hold on diverse pipette models. And all this with much less attachment and ejection forces. The fully automated production and packaging of the pipette tips under clean room conditions guarantee completely contamination-free working conditions with products which are certified free of DNase, RNase, human DNA, pyrogens and ATP – to ensure you reproducible and consistent results.

- High quality standard
- Graduated tips: the volume is visible at first glance
- 200 µl and 1000 µl tips are available in yellow or blue, respectively
- Autoclavable

**Our pipette tips boxes offer you the best conditions for comfortable and efficient pipetting:**

- Simple-to-use closure for single-handed opening
- The transparent design provides a complete overview of your tips
- Coloured trays enable you to recognize the volume at first glance
- Refill system: easy and fast removal and replacement of the trays
- Stackable boxes for space-saving and safe storage
- Autoclavable



## PIPETTE TIPS WITHOUT AEROSOL BARRIER IN BAGS, NON-STERILE

Delivered in resealable bags, your pipette tips are stored safely and dust-free.

| Volume range<br>µl                 | Figure | Colour      | Overall length<br>mm | Grad.<br>µl                                                                                                       | PK   | Art. no.  |
|------------------------------------|--------|-------------|----------------------|-------------------------------------------------------------------------------------------------------------------|------|-----------|
| 0,1 - 10                           | 1      | Transparent | 31                   | 2, 10                                                                                                             | 1000 | 7.695 840 |
| 0,1 - 10 XL/20*                    | 2      | Transparent | 44                   | 1, 5, 10, 20                                                                                                      | 1000 | 7.695 841 |
| 2 - 200 (Spitze abgeschrägt**)     | 3      | Transparent | 51                   | -                                                                                                                 | 1000 | 7.695 842 |
| 2 - 200 (Spitze abgeschrägt**)     | 4      | Yellow      | 51                   | -                                                                                                                 | 1000 | 7.695 843 |
| 2 - 200                            | 5      | Transparent | 53                   | 10, 50, 100                                                                                                       | 1000 | 7.695 844 |
| 2 - 200                            | 6      | Yellow      | 53                   | 10, 50, 100                                                                                                       | 1000 | 7.695 845 |
| 20 - 300                           | 7      | Transparent | 55                   | 50, 100, 200                                                                                                      | 1000 | 7.695 846 |
| 100 - 1000                         | 8      | Transparent | 71                   | 100, 500                                                                                                          | 500  | 7.695 847 |
| 100 - 1.000                        | 9      | Blue        | 71                   | 100, 500                                                                                                          | 500  | 7.695 848 |
| 100 - 1250                         | 10     | Transparent | 76                   | -                                                                                                                 | 500  | 7.695 849 |
| 100 - 1250 XL                      | 11     | Transparent | 98                   | 200, 500, 1000                                                                                                    | 500  | 7.695 854 |
| 500 - 5000, Eppendorf Fit          | 12     | Transparent | 120                  | 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000                                                              | 250  | 7.695 850 |
| 500 - 5000, Gilson Fit             | 13     | Transparent | 120                  | 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000                                                              | 250  | 7.695 933 |
| 500 - 5000, Thermo Fit***          | 14     | Transparent | 147                  | -                                                                                                                 | 250  | 7.695 855 |
| 1000 - 10000, Eppendorf/Gilson Fit | 15     | Transparent | 160                  | 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8000, 8500, 9000, 9500, 10000 | 200  | 7.695 934 |
| 1000 - 10000, Eppendorf Fit        | 16     | Transparent | 165                  | 1000, 5000, 10000                                                                                                 | 100  | 7.695 851 |

## PIPETTE TIPS WITHOUT AEROSOL BARRIER IN RACKS, NON-STERILE

Delivered in stackable and stable racks.

| Volume range<br>µl | Figure | Colour      | Overall length<br>mm | Grad.<br>µl    | Pack size<br>pieces | PK  | Art. no.  |
|--------------------|--------|-------------|----------------------|----------------|---------------------|-----|-----------|
| 0.1 - 10           | 1      | Transparent | 31                   | 2, 10          | 10 x 96             | 960 | 7.695 860 |
| 0.1 - 10 XL/20*    | 2      | Transparent | 44                   | 1, 5, 10, 20   | 10 x 96             | 960 | 7.695 861 |
| 2 - 200            | 5      | Transparent | 53                   | 10, 50, 100    | 10 x 96             | 960 | 7.695 862 |
| 2 - 200            | 6      | Yellow      | 53                   | 10, 50, 100    | 10 x 96             | 960 | 7.695 863 |
| 20 - 300           | 7      | Transparent | 55                   | 50, 100, 200   | 10 x 96             | 960 | 7.695 864 |
| 100 - 1000         | 8      | Transparent | 71                   | 100, 500       | 10 x 96             | 960 | 7.695 865 |
| 100 - 1000         | 9      | Blue        | 71                   | 100, 500       | 10 x 96             | 960 | 7.695 866 |
| 100 - 1250         | 10     | Transparent | 76                   | -              | 10 x 96             | 960 | 7.695 867 |
| 100 - 1250 XL      | 11     | Transparent | 98                   | 200, 500, 1000 | 10 x 96             | 960 | 7.695 868 |

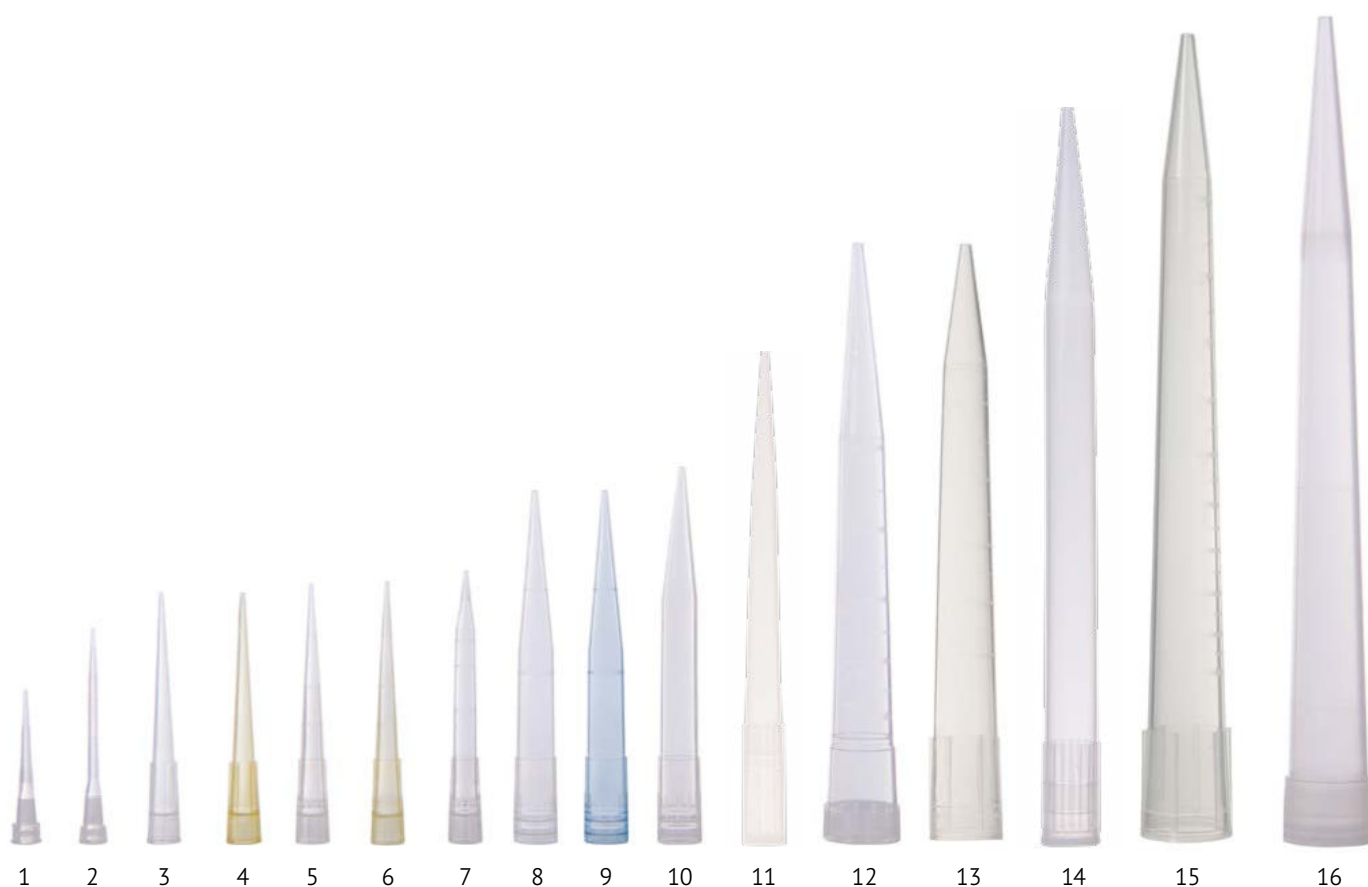
## PIPETTE TIPS WITHOUT AEROSOL BARRIER IN RACKS, STERILE

Delivered in stackable and stable racks.

| Volume range<br>µl | Figure | Colour      | Overall length<br>mm | Grad.<br>µl    | Pack size<br>pieces | PK  | Art. no.  |
|--------------------|--------|-------------|----------------------|----------------|---------------------|-----|-----------|
| 0.1 - 10           | 1      | Transparent | 31                   | 2, 10          | 10 x 96             | 960 | 7.695 870 |
| 0.1 - 10 XL/20*    | 2      | Transparent | 44                   | 1, 5, 10, 20   | 10 x 96             | 960 | 7.695 871 |
| 2 - 200            | 5      | Transparent | 53                   | 10, 50, 100    | 10 x 96             | 960 | 7.695 872 |
| 2 - 200            | 6      | Yellow      | 53                   | 10, 50, 100    | 10 x 96             | 960 | 7.695 873 |
| 20 - 300           | 7      | Transparent | 55                   | 50, 100, 200   | 10 x 96             | 960 | 7.695 874 |
| 100 - 1000         | 8      | Transparent | 71                   | 100, 500       | 10 x 96             | 960 | 7.695 875 |
| 100 - 1000         | 9      | Blue        | 71                   | 100, 500       | 10 x 96             | 960 | 7.695 876 |
| 100 - 1250         | 10     | Transparent | 76                   | -              | 10 x 96             | 960 | 7.695 877 |
| 100 - 1250 XL      | 11     | Transparent | 98                   | 200, 500, 1000 | 10 x 96             | 960 | 7.695 878 |



- \* Compatible with 20 µl Eppendorf Reference® and Eppendorf Research® Plus
- \*\* Due to the bevelled end the contact surface of the pipetted liquid is reduced, and the pipetting accuracy increases
- \*\*\* Compatible with 5 ml Finnpipettes™ from Thermo Fisher Scientific and Transferpettes from Brand



## PIPETTE TIPS WITH AEROSOL BARRIER IN RACKS, STERILE

Our filter tips offer dual protection! The fine-pored filter made of PE serves as a defence to protect your samples from aerosols and biomolecules. At the same time, the hydrophobic material prevents your pipette from contamination. Delivered in stackable and stable racks.

| Volume range<br>µl | Figure | Colour      | Overall length<br>mm | Grad.<br>µl      | Pack size<br>pieces | PK  | Art. no.  |
|--------------------|--------|-------------|----------------------|------------------|---------------------|-----|-----------|
| 0.1–10             | 17     | Transparent | 31                   | 2, 10            | 10 x 96             | 960 | 7.695 880 |
| 0.1–10 XL/20*      | 18     | Transparent | 44                   | 1, 5, 10, 20     | 10 x 96             | 960 | 7.695 881 |
| 0.5–20             | 19     | Transparent | 53                   | 10, 50, 100      | 10 x 96             | 960 | 7.695 882 |
| 2–100              | 20     | Transparent | 55                   | 10, 50, 100, 200 | 10 x 96             | 960 | 7.695 883 |
| 2–200              | 21     | Transparent | 55                   | 10, 50, 100, 200 | 10 x 96             | 960 | 7.695 884 |
| 20–300             | 22     | Transparent | 55                   | 50, 100, 200     | 10 x 96             | 960 | 7.695 885 |
| 100–1000           | 23     | Transparent | 76                   | -                | 10 x 96             | 960 | 7.695 886 |
| 100–1250 XL        | 24     | Transparent | 98                   | 200, 500, 1000   | 10 x 96             | 960 | 7.695 887 |

\* Compatible with 20 µl Eppendorf Reference® and Eppendorf Research® Plus



Tips are shown in original size

## REFILL SYSTEMS, PIPETTE TIPS WITHOUT AEROSOL BARRIER, NON-STERILE

This efficient refill systems help you to preserve the environment and the budget! All pipette tip boxes provide trays which can be easily replaced and directly indicate the respective volume due to their colour. To safely store the pipette tips, the refill systems are delivered in the form of two individually shrink-wrapped towers. The outer packaging made of cardboard additionally guarantees that your pipette tips remain dust-free. Last but not least, with each refill system, you will get **two refillable pipette tip boxes for free!**

| Volume range<br>µl | Figure | Colour      | Overall length<br>mm | Grad.<br>µl  | Pack size<br>pieces | PK  | Art. no.  |
|--------------------|--------|-------------|----------------------|--------------|---------------------|-----|-----------|
| 0.1–10             | 1      | Transparent | 31                   | 2, 10        | 10 x 96             | 960 | 7.695 890 |
| 0.1–10 XL/20*      | 2      | Transparent | 44                   | 1, 5, 10, 20 | 10 x 96             | 960 | 7.695 891 |
| 2–200              | 5      | Transparent | 53                   | 10, 50, 100  | 10 x 96             | 960 | 7.695 892 |
| 20–300             | 7      | Transparent | 55                   | 50, 100, 200 | 10 x 96             | 960 | 7.695 893 |
| 100 - 1000         | 8      | Transparent | 71                   | 100, 500     | 10 x 96             | 960 | 7.695 894 |

\* Compatible with 20 µl Eppendorf Reference® and Eppendorf Research® Plus

## PIPETTE TIPS BOXES

Would you like to replace your boxes? That's not a problem with our refillable pipette tips boxes. The unfilled trays hold up to 96 tips and are coloured differently according to the volume of the appropriate tips. The trays can be replaced easily as it is the case for all of our pipette tips boxes.

| Description        | Suitable for           | PK | Art. no.  |
|--------------------|------------------------|----|-----------|
| Pipette tips boxes | 10 µl, 10 µl XL/20 µl* | 10 | 7.695 897 |
| Pipette tips boxes | 20 µl - 300 µl*        | 10 | 7.695 898 |
| Pipette tips boxes | 1000 µl, 1250 µl*      | 10 | 7.695 899 |

\* LABSOLUTE® pipette tips (7.695 840 - 7.695 894)





## RACKS FOR 5 ML AND 10 ML PIPETTE TIPS

The boxes made of PP offer space for 18 pieces of 5 ml or 10 ml pipette tips from LABSOLUTE®, respectively. Tips are not included.

| Suitable for         | Height Box<br>mm | Ø<br>mm | PK | Art. no.  |
|----------------------|------------------|---------|----|-----------|
| 5 ml pipette tips*   | 188              | 102     | 2  | 7.695 852 |
| 10 ml pipette tips** | 188              | 102     | 2  | 7.695 853 |

\* 7.695 850

\*\* 7.695 851

## MANUAL DISPENSER PRO

A perfect ergonomic design to ensure maximum comfort. The LABSOLUTE® manual dispenser Pro offers you long-lasting dispensing action and an ergonomic shape, lightweight design and smooth dispensing mechanism. Another benefit is that the window offers a clear view of the stroke setting and dispensing volume which is dependent on the dispenser tips used.

Included with delivery: manual dispenser Pro, 1x 5 ml dispenser tip, 1x 1 ml dispenser tip, adapter.

### High compatibility

- LABSOLUTE® dispenser tips and dispenser tips Plus
- Ritips® and Ritips® Professional (Ritter GmbH)
- PD-Tips TM (Brand GmbH & Co. KG)
- Combitips®, Combitips Plus® and Combitips Advanced® (Eppendorf AG)

### Maximum comfort

With perfect ergonomic style, the LABSOLUTE® manual dispenser Pro sits perfectly in the hand. The easy-to-operate dispensing button and light weight ensure maximum comfort, even with longer dosing series. The easy operation of the dispensing button makes volume selection, pick-up and drop possible with just one hand.

### Maximum flexibility

LABSOLUTE® manual dispenser Pro allows 120 programming steps – handy and flexible for 12 different tip sizes and with 10 stroke settings.

### Independent and maintenance-free

LABSOLUTE® manual dispensers have an entirely mechanical structure. This makes them maintenance-free and independent of additional resources, such as power packs or batteries.

### Our guarantee

Each individual device is checked after production for its functionality and precision. Only when all requirements of the DIN EN ISO 8655 standard have been met, does LABSOLUTE® manual dispenser Pro receive its serial number.

| Description          | PK | Art. no.  |
|----------------------|----|-----------|
| Manual dispenser Pro | 1  | 7.695 800 |



DISPENSER TIPS

The dispenser tips work according to the positive displacement principle and are available in three sizes, each in a non-sterile or sterile version. Suitable for volumes of 1 µl to 12500 µl.

- Complete safety and reproducibility - each individual tip is mechanically checked
- Purity as follows has been confirmed by independent laboratories: free of endotoxins, ATP, RNase and DNA
- Certificate available on request

High compatibility with the following dispensers and others (upon request):

- LABSOLUTE® manual dispenser Pro
- Ripette®, Ripette® pro (Ritter GmbH)
- Multipette® 4780 (Eppendorf AG)
- HandyStep®, HandyStep® electronic\* (Brand GmbH & Co. KG)
- RepeatOne® (Starlab AG)
- Distriman® Stepper (Gilson AG)

| Volume<br>ml | Sterile | PK  | Art. no.  |
|--------------|---------|-----|-----------|
| 0.05**       | No      | 100 | 7.695 950 |
| 1.25         | No      | 100 | 7.695 951 |
| 12.5         | No      | 100 | 7.695 952 |
| 0.05**       | Yes     | 100 | 7.695 953 |
| 1.25         | Yes     | 100 | 7.695 954 |
| 12.5         | Yes     | 100 | 7.695 955 |

\* No volume indication on the display using these dispensers

\*\* When dispensing with tip size 0.05 ml, please use a suitable pipette tip (10 µl or 20 µl)



In Originalgröße abgebildet

## DISPENSER TIPS PLUS

The universally compatible dispenser tips Plus from LABSOLUTE® come in nine sizes and are suitable for volumes of 1 µl to 50000 µl. The tips work according to the positive displacement principle: which, for you, means safe dispensing without risk of contamination, even with infectious solutions. Irrespective of viscosity and volatility, the desired volume will be dispensed at all time – without forming aerosols. The dispenser tips are available in sterile and non-sterile designs.

- Rapid identification thanks to individual colour coding
- Complete safety and reproducibility – each individual tip is mechanically checked
- The sterile dispenser tips are individually packaged
- Free of endotoxins, ATP, RNase and DNA
- Ultra-fine conical tips increase precision, especially when dispensing in the single-digit µl range
- Thanks to their elongated shape, ideally suited for working with long laboratory vessels
- Certificate available on request
- Lot number on each packaging unit
- Autoclaving is not recommended

### Universal compatibility with the following dispensers and others (upon request):

- LABSOLUTE® manual dispenser Pro
- Ripette®, Ripette® Pro (Ritter GmbH)
- Multipette® 4780, Multipette® plus, Multipette® M4\* (Eppendorf AG)
- HandyStep®, HandyStep® electronic\* (Brand GmbH & Co.KG)
- RepeatOne® (Starlab AG)

\*No volume indication on the display using these dispensers

## TEST PACKAGE DISPENSER TIPS

The test package offers the ideal solution for testing all of the dispenser tips available. It contains all 12 sizes from 0.05 to 50 ml (non-sterile). There are five dispenser tips of each size in the package - making a total of 60 tips for you to test. For the 25 ml and 50 ml sizes, the matching adapters are included in the supplied package.

| Description                 | PK | Art. no.  |
|-----------------------------|----|-----------|
| Test package dispenser tips | 60 | 7.695 691 |

**ALL 12  
DISPENSER TIP  
SIZES – FOR YOU  
TO TEST**



| Volume<br>ml           | Sterile | PK  | Art. no.  |
|------------------------|---------|-----|-----------|
| 0.1                    | No      | 100 | 7.695 670 |
| 0.2                    | No      | 100 | 7.695 671 |
| 0.5                    | No      | 100 | 7.695 672 |
| 1.0                    | No      | 100 | 7.695 673 |
| 2.5                    | No      | 100 | 7.695 674 |
| 5.0                    | No      | 100 | 7.695 675 |
| 10.0                   | No      | 100 | 7.695 676 |
| 25.0                   | No      | 25  | 7.695 677 |
| 50.0                   | No      | 25  | 7.695 678 |
| 0.1                    | Yes     | 100 | 7.695 680 |
| 0.2                    | Yes     | 100 | 7.695 681 |
| 0.5                    | Yes     | 100 | 7.695 682 |
| 1.0                    | Yes     | 100 | 7.695 683 |
| 2.5                    | Yes     | 100 | 7.695 684 |
| 5.0                    | Yes     | 100 | 7.695 685 |
| 10.0                   | Yes     | 100 | 7.695 686 |
| 25.0                   | Yes     | 25  | 7.695 687 |
| 50.0                   | Yes     | 25  | 7.695 688 |
| Adapter for 25 ml tips |         | 1   | 7.695 689 |
| Adapter for 50 ml tips |         | 1   | 7.695 690 |



Tips are not shown to scale

## BOTTLE TOP DISPENSERS

The LABSOLUTE® bottle top dispenser series is impressive with its high quality and unlimited reliability in combination with a high degree of safety and user-friendliness. Exceptionally high-quality materials guarantee a long service life and superlative chemical resistance.

### No compromises on quality or reliability

All wetted parts of the LABSOLUTE® bottle top dispensers are made of PTFE, fluorinated ethylene propylene and borosilicate glass. The constant ejection volume and completely bubble-free dispensing make them the number one choice in terms of precision and reproducibility. Each of the LABSOLUTE® dispensers comes with an individual certificate, since all devices are calibrated in accordance with DIN ISO 8655.

### Extra security when handling liquids and maximum handling comfort

- Protection of the borosilicate dispensing cylinder with PP material
- Safety closure valve prevents uncontrolled dripping, air contact or drying out
- Five universal adapters from 28 - 45 mm for all common bottle sizes
- Free-running mechanism thanks to specially constructed PTFE piston with silicon O-ring
- Telescopic suction tube to different bottle heights
- Rapid and easily visible volume adjustment with handy adjustment screw
- Autoclavable at 121 °C

Adapters with 28, 30, 36, 40 or 45 mm thread for securing the dispensers to bottles are included in the supplied package.



| Volume range<br>ml | Grad.<br>ml | Accuracy max. vol.<br>≤ ± R% | Precision max. vol.<br>≤ CV% | PK | Art. no.  |
|--------------------|-------------|------------------------------|------------------------------|----|-----------|
| 0.25 - 2.5         | 0.05        | 0.6                          | 0.2                          | 1  | 7.695 530 |
| 0.5 - 5            | 0.10        | 0.5                          | 0.1                          | 1  | 7.695 531 |
| 1.0 - 10           | 0.20        | 0.5                          | 0.1                          | 1  | 7.695 532 |
| 2.5 - 30           | 0.50        | 0.5                          | 0.1                          | 1  | 7.695 533 |
| 5.0 - 60           | 1.00        | 0.5                          | 0.1                          | 1  | 7.695 534 |
| 10.0 - 100         | 2.00        | 0.5                          | 0.1                          | 1  | 7.695 535 |

## BOTTLE TOP DISPENSERS WITH RECIRCULATION VALVE

The dispenser with recirculation valve allows a uniform, precise and reliable bubble-free dosing without reagent loss. The specially designed bottle adapter allows a 360° rotation of the dispenser on the mounted bottle.

| Volume range<br>ml | Grad.<br>ml | Accuracy max. vol.<br>≤ ± R% | Precision max. vol.<br>≤ CV% | PK | Art. no.  |
|--------------------|-------------|------------------------------|------------------------------|----|-----------|
| 0.25 - 2.5         | 0.05        | 0.6                          | 0.2                          | 1  | 7.695 540 |
| 0.5 - 5            | 0.10        | 0.5                          | 0.1                          | 1  | 7.695 541 |
| 1.0 - 10           | 0.20        | 0.5                          | 0.1                          | 1  | 7.695 542 |
| 2.5 - 30           | 0.50        | 0.5                          | 0.1                          | 1  | 7.695 543 |
| 5.0 - 60           | 1.00        | 0.5                          | 0.1                          | 1  | 7.695 544 |
| 10.0 - 100         | 2.00        | 0.5                          | 0.1                          | 1  | 7.695 545 |

## ACCESSORIES FOR BOTTLE TOP DISPENSERS

Accessories and spare parts can be reordered as required.

| Description                                           | PK | Art. no.  |
|-------------------------------------------------------|----|-----------|
| Glass cylinder 2.5 ml                                 | 1  | 7.695 510 |
| Glass cylinder 5.0 ml                                 | 1  | 7.695 511 |
| Glass cylinder 10.0 ml                                | 1  | 7.695 512 |
| Glass cylinder 30.0 ml                                | 1  | 7.695 513 |
| Glass cylinder 60.0 ml                                | 1  | 7.695 514 |
| Glass cylinder 100.0 ml                               | 1  | 7.695 515 |
| Adapter set (28, 32, 36, 40 and 45 mm)                | 1  | 7.695 516 |
| Telescopic tube                                       | 1  | 7.695 517 |
| Volume adjustment knob for 2.5, 5 and 10 ml cylinder  | 1  | 7.695 518 |
| Volume adjustment knob for 30, 60 and 100 ml cylinder | 1  | 7.695 519 |
| Nozzle for 2.5, 5, and 10 ml cylinder                 | 1  | 7.695 520 |
| Nozzle for 30, 60 and 100 ml cylinder                 | 1  | 7.695 521 |
| PTFE piston for 2.5 ml cylinder                       | 1  | 7.695 523 |
| PTFE piston for 5 ml cylinder                         | 1  | 7.695 524 |
| PTFE piston for 10 ml cylinder                        | 1  | 7.695 525 |
| PTFE piston for 30 ml cylinder                        | 1  | 7.695 526 |
| PTFE piston for 60 ml cylinder                        | 1  | 7.695 527 |
| PTFE piston for 100 ml cylinder                       | 1  | 7.695 528 |



## BURETTES

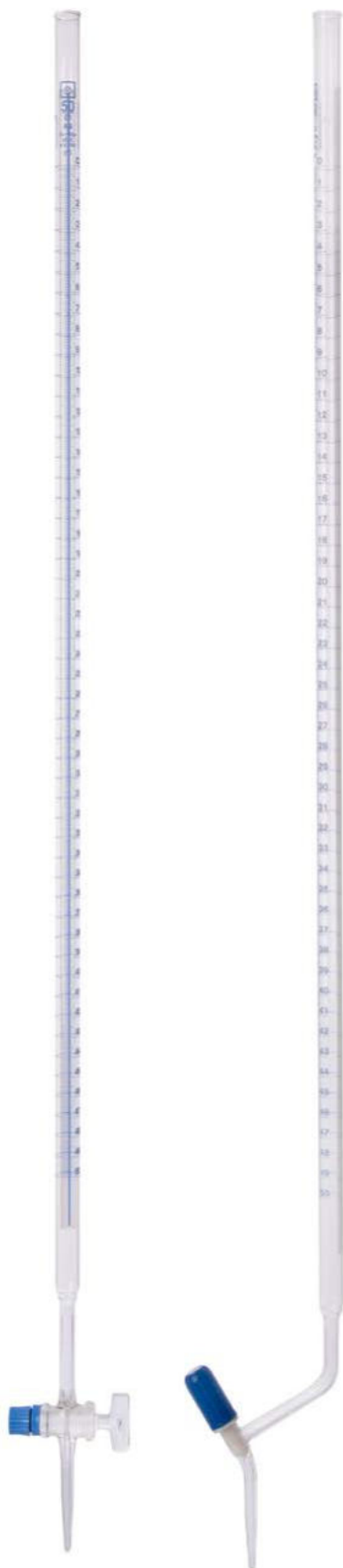
The LABSOLUTE® burettes made of borosilicate glass 3.3 comply with DIN EN ISO 385. They are available with straight and lateral stopcock with glass plug or PTFE needle valve. The class AS burettes are a very economic way to get reliable values in volumetric analysis quickly and easily. They are calibrated to "Ex" and have a blue graduation and inscription as well as a Schellbach stripe on the backside to be able to read the meniscus precisely.

### BURETTES, STRAIGHT STOPCOCK, CLASS AS

| Capacity<br>ml | Grad.<br>ml | Tolerance<br>± ml | Stopcock with | PK | Art. no.  |
|----------------|-------------|-------------------|---------------|----|-----------|
| 10             | 0.02        | 0.02              | Glass key     | 1  | 7.691 144 |
| 25             | 0.05        | 0.05              | Glass key     | 1  | 7.691 145 |
| 50             | 0.1         | 0.10              | Glass key     | 1  | 7.691 146 |
| 10             | 0.02        | 0.02              | PTFE spindle  | 1  | 7.691 147 |
| 25             | 0.05        | 0.03              | PTFE spindle  | 1  | 7.691 148 |
| 50             | 0.1         | 0.05              | PTFE spindle  | 1  | 7.691 149 |

### BURETTES, LATERAL STOPCOCK, CLASS AS

| Capacity<br>ml | Grad.<br>ml | Tolerance<br>± ml | Stopcock with | PK | Art. no.  |
|----------------|-------------|-------------------|---------------|----|-----------|
| 10             | 0.02        | 0.02              | Glass key     | 1  | 7.691 150 |
| 25             | 0.05        | 0.03              | Glass key     | 1  | 7.691 151 |
| 50             | 0.1         | 0.05              | Glass key     | 1  | 7.691 152 |
| 10             | 0.02        | 0.02              | PTFE spindle  | 1  | 7.691 153 |
| 25             | 0.05        | 0.03              | PTFE spindle  | 1  | 7.691 154 |
| 50             | 0.1         | 0.05              | PTFE spindle  | 1  | 7.691 155 |



## AUTOMATIC BURETTES ACC. TO DR. SCHILLING, CLASS B

The automatic LABSOLUTE® burettes according to Dr. Schilling can be used for several applications in many areas, such as electroplating, water treatment or sewage plants. They are impressing through their precise dosing, the possibility of fine titration and an exact draining tip. The class B burettes are justified to "Ex" and come with a LDPE bottle and solid stand. The tolerances comply with DIN EN ISO 385. There is a Schellbach stripe on the backside of the burettes that makes it easier to read the exact filling level. The bottle and the burette are fixed together by the titrating armature.

| Burette capacity<br>ml | Grad.<br>ml | Tolerance<br>± ml | Bottle capacity<br>ml | PK | Art. no.  |
|------------------------|-------------|-------------------|-----------------------|----|-----------|
| 10                     | 0.05        | 0.03              | 500                   | 1  | 7.691 140 |
| 15                     | 0.1         | 0.04              | 1000                  | 1  | 7.691 141 |
| 25                     | 0.1         | 0.05              | 1000                  | 1  | 7.691 142 |
| 50                     | 0.1         | 0.08              | 1000                  | 1  | 7.691 143 |



## ACCURACY CLASSES

With volumetric measurement, the subsequent analysis is only as precise as your sample preparation. However with some applications, absolute precision is needed, whereas in other cases a higher error limit can be tolerated. As a result, the LABSOLUTE® range includes volumetric flasks of accuracy class A, measuring cylinders of classes A and B, mixing cylinders of class A and graduated and volumetric pipettes of class AS.

### Error limits for measuring & mixing cylinders, high form

| Nominal volume | Scale division | Error limit class A |
|----------------|----------------|---------------------|
| 5 ml           | 0.1 ml         | ± 0.05 ml           |
| 10 ml          | 0.2 ml         | ± 0.1 ml            |
| 25 ml          | 0.5 ml         | ± 0.25 ml           |
| 50 ml          | 1 ml           | ± 0.5 ml            |
| 100 ml         | 1 ml           | ± 0.5 ml            |
| 250 ml         | 2 ml           | ± 1 ml              |
| 500 ml         | 5 ml           | ± 2.5 ml            |
| 1000 ml        | 10 ml          | ± 5 ml              |
| 2000 ml        | 20 ml          | ± 10 ml             |

### Error limits for measuring cylinders, low form

| Nominal volume | Scale division | Error limit class B |
|----------------|----------------|---------------------|
| 5 ml           | 0.5 ml         | ± 0.2 ml            |
| 10 ml          | 1 ml           | ± 0.3 ml            |
| 25 ml          | 1 ml           | ± 0.5 ml            |
| 50 ml          | 1 ml           | ± 1 ml              |
| 100 ml         | 2 ml           | ± 1 ml              |
| 250 ml         | 5 ml           | ± 2 ml              |
| 500 ml         | 10 ml          | ± 5 ml              |
| 1000 ml        | 20 ml          | ± 10 ml             |
| 2000 ml        | 50 ml          | ± 20 ml             |

### Error limits for graduated pipettes

| Nominal volume | Scale division | Error limit class AS |
|----------------|----------------|----------------------|
| 0.1 ml         | 0.01 ml        | ± 0.006 ml           |
| 0.2 ml         | 0.01 ml        | ± 0.006 ml           |
| 0.5 ml         | 0.01 ml        | ± 0.006 ml           |
| 1 ml           | 0.01 ml        | ± 0.007 ml           |
| 1 ml           | 0.10 ml        | ± 0.007 ml           |
| 2 ml           | 0.02 ml        | ± 0.010 ml           |
| 2 ml           | 0.10 ml        | ± 0.010 ml           |
| 5 ml           | 0.05 ml        | ± 0.030 ml           |
| 5 ml           | 0.10 ml        | ± 0.030 ml           |
| 10 ml          | 0.1 ml         | ± 0.05 ml            |
| 20 ml          | 0.1 ml         | ± 0.1 ml             |
| 25 ml          | 0.1 ml         | ± 0.1 ml             |
| 25 ml          | 0.2 ml         | ± 0.1 ml             |

The greatest deviations at each point on the scale are defined as the error limits. They also define the maximum permissible differences between the deviations at any two points on the scale. The differences between the classes are defined by the German Calibration Directive.

### Error limits for volumetric flasks with wide neck

| Nominal volume | Neck size NS | Error limit class A |
|----------------|--------------|---------------------|
| 5 ml           | 10/19        | ± 0.040 ml          |
| 10 ml          | 10/19        | ± 0.040 ml          |
| 20 ml          | 12/21        | ± 0.060 ml          |
| 25 ml          | 12/21        | ± 0.060 ml          |
| 50 ml          | 14/23        | ± 0.100 ml          |
| 100 ml         | 14/23        | ± 0.100 ml          |
| 1000 ml        | 29/32        | ± 0.600 ml          |

### Error limits for volumetric flasks with narrow neck

| Nominal volume | Neck size NS | Error limit class A |
|----------------|--------------|---------------------|
| 1 ml           | 7/16         | ± 0.025 ml          |
| 2 ml           | 7/16         | ± 0.025 ml          |
| 5 ml           | 7/16         | ± 0.025 ml          |
| 10 ml          | 7/16         | ± 0.025 ml          |
| 20 ml          | 10/19        | ± 0.040 ml          |
| 25 ml          | 10/19        | ± 0.040 ml          |
| 50 ml          | 12/21        | ± 0.060 ml          |
| 100 ml         | 12/21        | ± 0.100 ml          |
| 200 ml         | 14/23        | ± 0.150 ml          |
| 250 ml         | 14/23        | ± 0.150 ml          |
| 500 ml         | 19/26        | ± 0.250 ml          |
| 1000 ml        | 24/29        | ± 0.400 ml          |
| 2000 ml        | 29/32        | ± 0.600 ml          |
| 5000 ml        | 34/35        | ± 1.200 ml          |

### Error limits for volumetric pipettes

| Nominal volume | Error limit class AS |
|----------------|----------------------|
| 1 ml           | ± 0.008 ml           |
| 2 ml           | ± 0.010 ml           |
| 5 ml           | ± 0.015 ml           |
| 10 ml          | ± 0.02 ml            |
| 20 ml          | ± 0.03 ml            |
| 25 ml          | ± 0.03 ml            |
| 50 ml          | ± 0.05 ml            |
| 100 ml         | ± 0.08 ml            |