



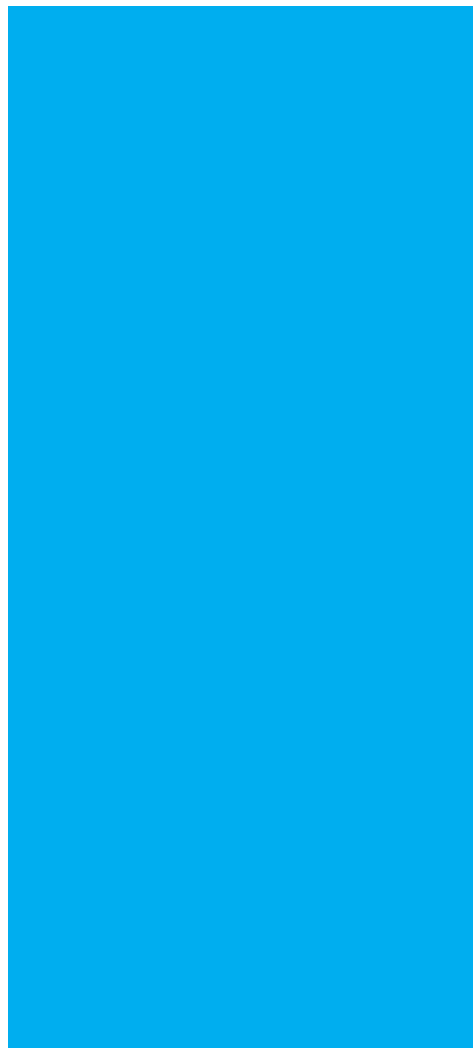
 **DURAN GROUP**
magic of precision

DURAN®
VOLUMETRIC INSTRUMENTS

Extensive range.
Proven design.

2 TABLE OF CONTENTS

DURAN® VOLUMETRIC INSTRUMENTS: ACHIEVING PRECISION THROUGH QUALITY	03
DURAN® LABORATORY GLASSWARE: END-TO-END PRODUCTION FROM A SINGLE SOURCE	04
FOR THE HIGHEST DEMANDS: QUALITY RIGHT DOWN THE LINE	05
GUARANTEED: ALL OPTIONS COVERED	07
PRECISE DIFFERENTIATION: TWO ACCURACY CLASSES	08
ALL INFORMATION AT A GLANCE	09
VOLUMETRIC FLASKS, MEASURING AND MIXING CYLINDERS	10
QUALITY EXPRESSED IN COLOUR	12
CERTIFICATES: TEST RESULTS CLEARLY DEMONSTRATED	13
DURAN® VOLUMETRIC FLASKS: ASSISTING IN MEASUREMENT ANALYSIS	14
DEFINITIVE LASER MARKING FROM DURAN®: RULING OUT MIX-UPS	21
DURAN® MEASURING CYLINDERS: TWO APPLICATIONS IN ONE	22
DURAN® MIXING CYLINDERS: CREATING DILUTIONS	24
DURAN® POLYETHYLENE STOPPERS: EXTREMELY PRACTICAL SOLUTION	26
PIPETTES AND BURETTES	28
PIPETTES	30
MEASURING PIPETTES	32
FULL PIPETTES	39
DURAN® BURETTES	42
DURAN® AUTOMATIC PELLET BURETTES	48
DURAN® MICRO-BURETTES	50



3 DURAN® VOLUMETRIC INSTRUMENTS: ACHIEVING PRECISION THROUGH QUALITY

Volume measurement – a routine laboratory procedure. All the more important is the assurance of quality in the associated instrumentation over the long term, from volumetric flasks to stoppers. From one day to the next, with each analysis.

DURAN® volumetric instruments have the same attributes as DURAN® laboratory glassware: They are robust, virtually inert and exceptionally resistant to high temperatures. Outstanding corrosion protection also guarantees they are particularly cost effective.

In short, DURAN® volumetric instruments ensure that the influence of undesirable factors is kept to an absolute minimum which means a consistently high degree of precision with every measurement.

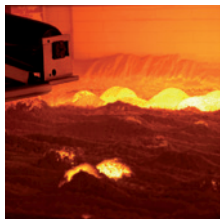


A typical surface curvature of the liquid level (meniscus)

4 DURAN® LABORATORY GLASSWARE: END-TO-END PRODUCTION FROM A SINGLE SOURCE

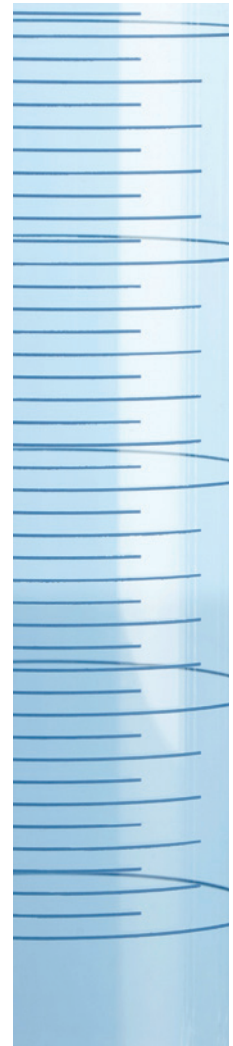
Stringent specifications apply for the selection of raw materials and mixture preparation for the borosilicate glass 3.3. In addition, because DURAN® laboratory glassware is manufactured exclusively in-house, high quality is guaranteed. This applies to every manufacturing phase – from glass melting through to calibration.

The result: outstanding precision during volumetric measurement.



5 FOR THE HIGHEST DEMANDS: QUALITY RIGHT DOWN THE LINE

Whether measuring liquid amounts, diluting solutions or mixing several components – DURAN® volumetric products cover all applications. This is good news for laboratories, which can ensure high-quality process stability in all areas of volumetric measurement as a result. And what's more, this is possible to the usual high standard established with all other laboratory tasks where DURAN® laboratory glassware is used.





7 GUARANTEED: ALL OPTIONS COVERED

The DURAN® range of volumetric measurement products is characterised by an impressive array of advantages in addition to the products being manufactured from the chemically highly resistant borosilicate glass 3.3 that offers chemical, thermal and mechanical stability. For example:

Unrestricted choice – The range of products on offer covers all accuracy classes including the associated certificates and glass specifications

Outstanding print quality – Emphasises the most important information such as volume specification, accuracy class and standard taper joint details

Clear labelling – Batch numbers are clearly printed on the glass, while individual numbers are laser-etched onto the base of the volumetric flask



The range also includes the new ergonomically shaped stoppers for straightforward and reliable opening and closing (see page 26).



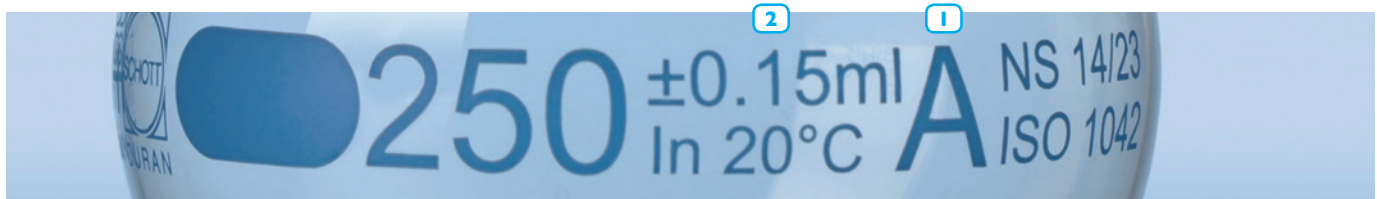
8 PRECISE DIFFERENTIATION: TWO ACCURACY CLASSES

The volumetric instruments are essentially available in the accuracy classes A, AS and B.

A

Accuracy class A: 1

Denotes the accuracy limit in accordance with DIN and ISO and is therefore the most accurate class. A conformity mark is printed on volumetric instruments in class A to indicate they satisfy the requirements of the German weights and measures regulation and the applicable standards.



Tolerance indication with a volumetric flask in accuracy class A 2

AS

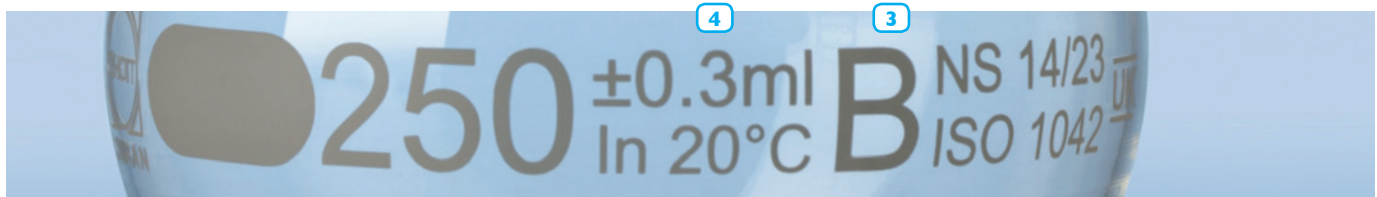
Accuracy class AS:

Denotes pipettes and burettes in accuracy class A with a rapid discharge (S). The waiting time is significantly less than with class A.

B



Accuracy class B: 3




Denotes an accuracy limit which is twice as large as class A.



Tolerance indication with a volumetric flask in accuracy class B 4

Screen print label for volumetric flasks


 **250** ±0.15ml
In 20°C **A** NS 14/23
ISO 1042  Volumetric flask, accuracy class A

  **250** ±0.12ml
In 20°C **A** NS 14/23
ISO 1042  Volumetric flask, accuracy class A,
compliant with USP <31 >

 **250** ±0.3ml
In 20°C **B** NS 14/23
ISO 1042  Volumetric flask, accuracy class B

Screen print label for pipettes

Measurement pipette Full pipette





 **10**
0.1
ISO 835
AS
Ex +5
20°C
± 0.05
 ml


 **10**
ISO 648
AS
Ex +5
20°C
± 0.02
 ml

Screen print label for burettes

Burette

 **10**
0.02
ISO 385
AS
Ex +30
20°C
± 0.02
 ml

	Batch number; e.g. 15.01
	Conformity mark – verifies compliance with the requirements of the German weights and measures regulation and applicable standards.
USP	United States Pharmacopoeia – the product satisfies the requirements specified in USP <31 >
250	Nominal volume in ml
±0.12ml	Accuracy limit – the deviation of the nominal volume must be no greater than this value which is specified in standards
20°C	Reference temperature – the temperature at which a volumetric instrument must achieve the nominal volume (20°C) stated on it.
A	Accuracy class – denotes the accuracy limit (see page 8)
NS 14/23	Standard taper joint size
ISO 1042	Standard designation
	Country of origin
AAA-0001	Individual number (laser-etched onto the base)
DD.MM.YY	Production date (laser-etched onto the base)
In	Calibration based on "In" (poured in volume). The quantity of liquid held corresponds to the volume specification printed on the product.
Ex	Calibration based on discharged volume. The quantity of liquid discharged corresponds to the volume specification printed on the product, e.g. pipettes, burettes. The remaining liquid on the walls of the vessel or in the tip is also taken into consideration.
Ex +30s	Waiting time. Allow to discharge and wait 30 seconds. It is important to comply with the specified waiting time to prevent measurement errors.
10 0.02	Total measurement volume – scale increment is specified below

10 VOLUMETRIC FLASKS,
MEASURING AND
MIXING CYLINDERS





±0.15ml NS 14/23
in 20°C A ISO 1042

SCHOTT DURAN
500.5
in 20°C ±2.5ml
ISO 4788
A

SCHOTT DURAN
500.5
in 20°C ±2.5ml
ISO 4788
A

250 ±0.3ml NS 14/23
in 20°C B ISO 1042

12 QUALITY EXPRESSED IN COLOUR

To further highlight the differences between the accuracy classes, a high-contrast colour code is used:



Accuracy class A, clear
glass:
Printed in blue.

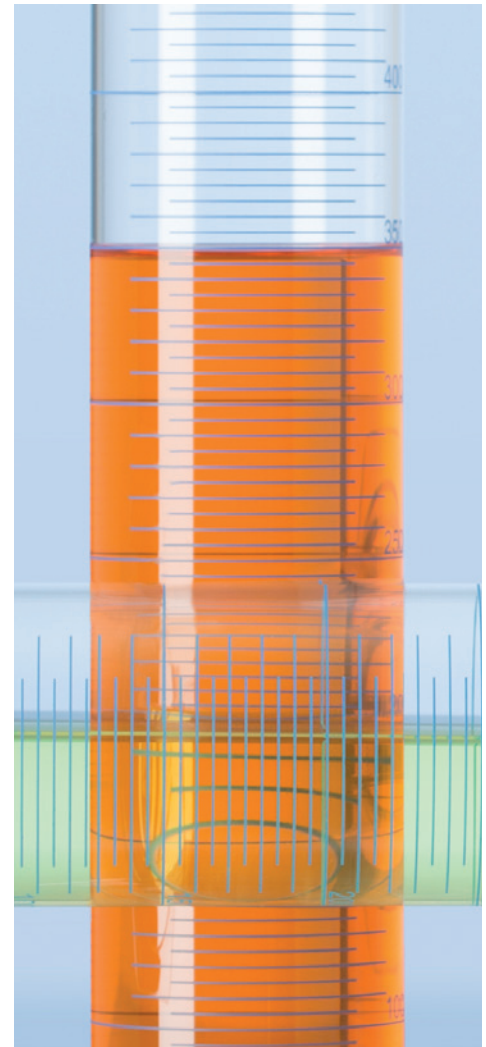


Accuracy class A,
amber glass:
Printed in white.



Accuracy class B,
Clear glass only:
Printed in white.

All glassware is heated in an oven following printing and the colour is fired on to the glass. This procedure guarantees that the printing inks used are highly resistant to chemicals and heat which in turn increases the service life and cost-effectiveness of the glassware. Important information such as volume, accuracy class and the SCHOTT DURAN® logo should remain as clearly identifiable features over the long term as a result.



13 CERTIFICATES: TEST RESULTS CLEARLY DEMONSTRATED

Conformity mark **DE-M** – Volumetric instruments that comply with the requirements of applicable standards (e.g. the German weights and measures regulation) are labelled accordingly with “DE-M”. The “DE-M 15” mark is made up of the elements DE (which stands for “Deutschland”), M (which stands for “Metrologie” (metrology), and the year number 15 (2015, the year in which the measuring instrument was labelled).

Batch certificate – Volumetric flasks and measuring and mixing cylinders with a batch number and accuracy class A are supplied with a batch certificate. This certificate documents the mean value obtained from measuring the batch in question, the standard deviation and the day of issue. The batch certificates can also be retrieved online. The batch number consists of four digits, e.g.: 1501. The first two numbers specify the production year, and the following two numbers specify the batch.

Individual certificate – Volumetric flasks which, in addition to the batch number, are numbered individually, are supplied with an individual certificate. The individual number is permanently laser-etched onto the base of the volumetric flask and is entered on the corresponding certificate. The volume measured for the corresponding volumetric flask, the measurement uncertainty and the day of issue are documented on this certificate. It is also possible to retrieve a batch certificate online. The individual number is a consecutive number and comprises three letters and a four digit number, for example: AAA-0001.

USP individual certificate – The volumetric flasks are labelled with an individual number. This is permanently laser-etched onto the base of the volumetric flask and is entered on the corresponding certificate. The accuracy limits for USP <31> compliant volumetric flasks are stricter than flasks conforming to ISO 1042 and therefore satisfy the requirements of the United States Pharmacopoeia (USP). The volume measured for the corresponding volumetric flask, the measurement uncertainty and the day of issue are documented on this certificate.

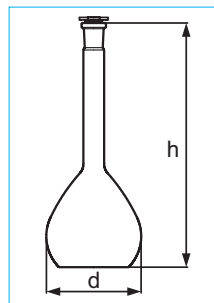
Precise reading made simple

The liquid at the edge of the vessel is generally higher and therefore forms what is known as the meniscus. The difficulty this creates with reading can be avoided by reading off at the lowest point of the liquid surface. This means that the lowest point of the meniscus should touch the top edge of the measurement mark precisely.



14 DURAN® VOLUMETRIC FLASKS: ASSISTING IN MEASUREMENT ANALYSIS

DURAN® volumetric flasks are used to precisely measure specific liquid quantities in combination with the preparation and storage of solutions. An individual or a batch certificate for the volumetric flask is enclosed with the product. The batch certificates can also be retrieved online.



DURAN® VOLUMETRIC FLASKS, CLASS A, USP <31> COMPLIANT

Blue printed image, with one graduation mark and new ergonomic polyethylene stopper

With certificate of conformity

With USP individual certificate

Cat. No.:	Capacity ml	Accuracy limit ± ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Inner neck diameter mm	Packaging unit
24 671 09 58	5W ¹	0.02	70	22	10/19	9 ± 1	2
24 671 10 54	10W ¹	0.02	90	27	10/19	9 ± 1	2
24 671 14 57	25	0.03	110	40	10/19	9 ± 1	2
24 671 17 57	50	0.05	140	50	12/21	11 ± 1	2
24 671 25 56	100	0.08	170	60	14/23	13 ± 1	2
24 671 32 52	200	0.1	210	75	14/23	15.5 ± 1.5	2
24 671 36 55	250	0.12	220	80	14/23	15.5 ± 1.5	2
24 671 44 54	500	0.2	260	100	19/26	19 ± 2	2
24 671 54 59	1000	0.3	300	125	24/29	23 ± 2	2
24 671 63 52	2000	0.5	370	160	29/32	27.5 ± 2.5	2

W¹ - wide neck



15 DURAN® VOLUMETRIC FLASKS, CLASS A,
ISO-COMPLIANT WITH INDIVIDUAL CERTIFICATE

Blue printed image, with one graduation mark and new ergonomic polyethylene stopper

With certificate of conformity

With individual certificate

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Inner neck diameter mm	Packaging unit
24 679 01 51	1	0.025	65	13	7/16	7 \pm 1	2
24 679 02 54	2	0.025	70	17	7/16	7 \pm 1	2
24 679 09 57	5W ¹	0.04	70	22	10/19	9 \pm 1	2
24 679 10 53	10W ¹	0.04	90	27	10/19	9 \pm 1	2
24 679 12 59	20	0.04	110	39	10/19	9 \pm 1	2
24 679 14 56	25	0.04	110	40	10/19	9 \pm 1	2
24 679 17 56	50	0.06	140	50	12/21	11 \pm 1	2
24 679 24 52	100	0.1	170	60	12/21	13 \pm 1	2
24 679 25 55	100	0.1	170	60	14/23	13 \pm 1	2
24 679 32 51	200	0.15	210	75	14/23	15.5 \pm 1.5	2
24 679 36 54	250	0.15	220	80	14/23	15.5 \pm 1.5	2
24 679 44 53	500	0.25	260	100	19/26	19 \pm 2	2
24 679 54 58	1000	0.4	300	125	24/29	23 \pm 2	2
24 679 55 52	1000W ¹	0.6	300	125	29/32	27.5 \pm 2.5	2
24 679 63 51	2000	0.6	370	160	29/32	27.5 \pm 2.5	2
24 679 73 56	5000	1.2	475	215	34/35	38 \pm 3	1

W¹ - wide neck



16 DURAN® VOLUMETRIC FLASKS, CLASS A, ISO-COMPLIANT WITH BATCH CERTIFICATE

Blue printed image, with one graduation mark and new ergonomic polyethylene stopper

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit ± ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Inner neck diameter mm	Packaging unit
24 678 01 59	1	0.025	65	13	7/16	7 ± 1	2
24 678 02 53	2	0.025	70	17	7/16	7 ± 1	2
24 678 09 56	5W ¹	0.04	70	22	10/19	9 ± 1	2
24 678 10 52	10W ¹	0.04	90	27	10/19	9 ± 1	2
24 678 12 58	20	0.04	110	39	10/19	9 ± 1	2
24 678 14 55	25	0.04	110	40	10/19	9 ± 1	2
24 678 17 55	50	0.06	140	50	12/21	11 ± 1	2
24 678 24 51	100	0.1	170	60	12/21	13 ± 1	2
24 678 25 54	100	0.1	170	60	14/23	13 ± 1	2
24 678 32 59	200	0.15	210	75	14/23	15.5 ± 1.5	2
24 678 36 53	250	0.15	220	80	14/23	15.5 ± 1.5	2
24 678 44 52	500	0.25	260	100	19/26	19 ± 2	2
24 678 54 57	1000	0.4	300	125	24/29	23 ± 2	2
24 678 55 51	1000W ¹	0.6	300	125	29/32	27.5 ± 2.5	2
24 678 63 59	2000	0.6	370	160	29/32	27.5 ± 2.5	2
24 678 73 55	5000	1.2	475	215	34/35	38 ± 3	1

W¹ - wide neck



17 DURAN® VOLUMETRIC FLASKS, CLASS A,
ISO-COMPLIANT WITH BATCH CERTIFICATE

White printed image, with one graduation mark and polyethylene octagonal stopper

With batch certificate

Without certificate of conformity

Cat. No.:	Capacity ml	Accuracy limit ± ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Inner neck diameter mm	Packaging unit
21 678 07 04	5	0.025	70	22	7/16	7 ± 1	2
21 678 08 07	10	0.025	90	27	7/16	7 ± 1	2
21 678 12 03	20	0.04	110	39	10/19	9 ± 1	2
21 678 14 09	25	0.04	110	40	10/19	9 ± 1	2
21 678 17 09	50	0.06	140	50	12/21	11 ± 1	2
21 678 24 05	100	0.1	170	60	12/21	13 ± 1	2
21 678 25 08	100	0.1	170	60	14/23	13 ± 1	2
21 678 32 04	200	0.15	210	75	14/23	15.5 ± 1.5	2
21 678 36 07	250	0.15	220	80	14/23	15.5 ± 1.5	2
21 678 44 06	500	0.25	260	100	19/26	19 ± 2	2
21 678 54 02	1000	0.4	300	125	24/29	23 ± 2	2
21 678 63 04	2000	0.6	370	160	29/32	27.5 ± 2.5	2
21 678 73 09	5000	1.2	475	215	34/35	38 ± 3	1



18 DURAN® VOLUMETRIC FLASKS, AMBER, CLASS A,
ISO-COMPLIANT WITH INDIVIDUAL CERTIFICATE

White printed image, with one graduation mark and new ergonomic polyethylene stopper

With certificate of conformity

With individual certificate

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Inner neck diameter mm	Packaging unit
24 677 09 55	5W ¹	0.04	70	22	10/19	9 \pm 1	2
24 677 10 51	10W ¹	0.04	90	27	10/19	9 \pm 1	2
24 677 12 57	20	0.04	110	39	10/19	9 \pm 1	2
24 677 14 54	25	0.04	110	40	10/19	9 \pm 1	2
24 677 17 54	50	0.06	140	50	12/21	11 \pm 1	2
24 677 24 59	100	0.1	170	60	12/21	13 \pm 1	2
24 677 25 53	100	0.1	170	60	14/23	13 \pm 1	2
24 677 32 58	200	0.15	210	75	14/23	15.5 \pm 1.5	2
24 677 36 52	250	0.15	220	80	14/23	19 \pm 2	2
24 677 44 51	500	0.25	260	100	19/26	23 \pm 2	2
24 677 54 56	1000	0.4	300	125	24/29	27.5 \pm 2.5	2
24 677 63 58	2000	0.6	370	160	29/32	38 \pm 3	2

W¹ - wide neck



19 DURAN® VOLUMETRIC FLASKS, AMBER, CLASS A,
ISO-COMPLIANT WITH BATCH CERTIFICATE

White printed image, with one graduation mark and new ergonomic polyethylene stopper

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit ± ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Inner neck diameter mm	Packaging unit
24 676 09 54	5W ¹	0.04	70	22	10/19	9 ± 1	2
24 676 10 59	10W ¹	0.04	90	27	10/19	9 ± 1	2
24 676 12 56	20	0.04	110	39	10/19	9 ± 1	2
24 676 14 53	25	0.04	110	40	10/19	9 ± 1	2
24 676 17 53	50	0.06	140	50	12/21	11 ± 1	2
24 676 24 58	100	0.1	170	60	12/21	13 ± 1	2
24 676 25 52	100	0.1	170	60	14/23	13 ± 1	2
24 676 32 57	200	0.15	210	75	14/23	15.5 ± 1.5	2
24 676 36 51	250	0.15	220	80	14/23	19 ± 2	2
24 676 44 59	500	0.25	260	100	19/26	23 ± 2	2
24 676 54 55	1000	0.4	300	125	24/29	27.5 ± 2.5	2
24 676 63 57	2000	0.6	370	160	29/32	38 ± 3	2

W¹ - wide neck



20 DURAN® VOLUMETRIC FLASKS, CLASS B,
ISO-COMPLIANT

White printed image, with one graduation mark and new ergonomic polyethylene stopper

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Inner neck diameter mm	Packaging unit
24 670 09 57	5W ¹	0.08	70	22	10/19	9 \pm 1	2
24 670 10 53	10W ¹	0.08	90	27	10/19	9 \pm 1	2
24 670 12 59	20	0.08	110	39	10/19	9 \pm 1	2
24 670 14 56	25	0.08	110	40	10/19	9 \pm 1	2
24 670 17 56	50	0.12	140	50	12/21	11 \pm 1	2
24 670 25 55	100	0.2	170	60	14/23	13 \pm 1	2
24 670 32 51	200	0.3	210	75	14/23	15.5 \pm 1.5	2
24 670 36 54	250	0.3	220	80	14/23	15.5 \pm 1.5	2
24 670 44 53	500	0.5	260	100	19/26	19 \pm 2	2
24 670 54 58	1000	0.8	300	125	24/29	23 \pm 2	2
24 670 63 51	2000	1.2	370	160	29/32	27.5 \pm 2.5	2
24 670 73 56	5000	2.4	475	215	34/35	38 \pm 3	1

W¹ - wide neck



21 DEFINITIVE LASER MARKING FROM DURAN®: RULING OUT MIX-UPS

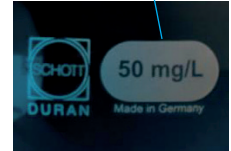
The labelling field of volumetric flasks can be permanently marked without damaging the glass. This avoids errors during routine work. The vessels can also be integrated into the complete workflow automatically using a scanner, saving time and money.

The font size is predefined and the contents can be selected freely: markings can include barcodes, serial numbers, texts, digits or logos. This is even possible regardless of the order quantity. The service is therefore available for single items and small batches as well as large-scale production runs.

More information is available at www.duran-group.com/lasermarking



Labelling field
without laser marking



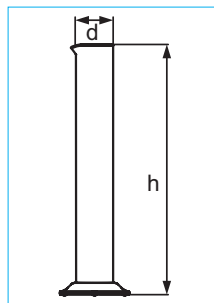
Labelling field
with laser marking



Sample layout for a laser-marked labelling field

22 DURAN® MEASURING CYLINDERS: TWO APPLICATIONS IN ONE

DURAN® measuring cylinders are used to hold and also measure different quantities of liquids. The tolerances for the volume of measuring and mixing cylinders correspond to the DIN and ISO (DIN EN ISO 4788) accuracy limits. The batch certificates for the measuring cylinders are enclosed with the product and can also be retrieved online.



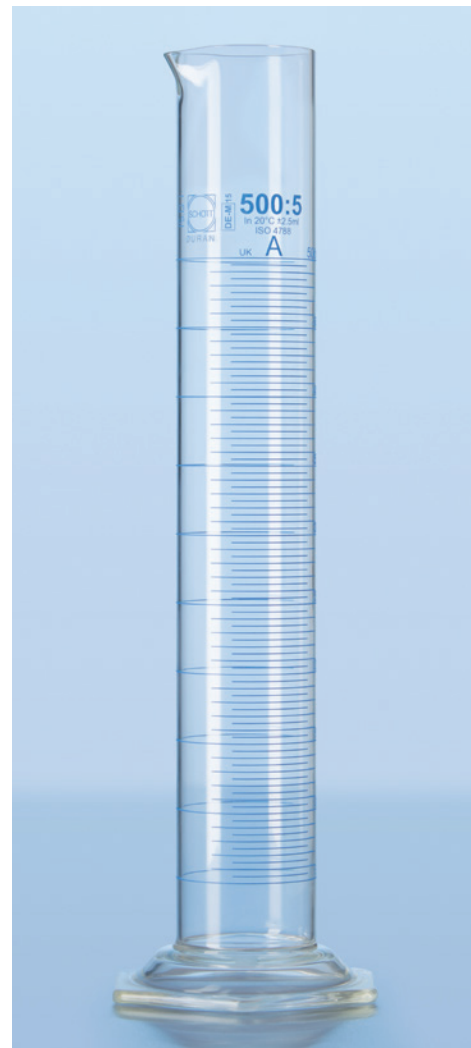
DURAN® MEASURING CYLINDERS, CLASS A

Blue scale, with ring graduations for the main points, hexagonal base

With certificate of conformity

With batch certificate

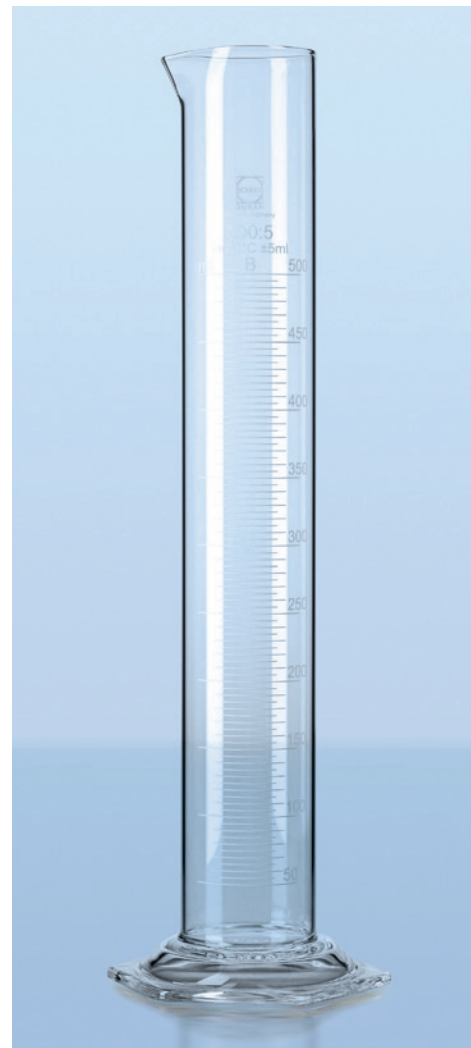
Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Overall height h mm	Outer diameter d mm	Packaging unit
21 390 07 01	5	0.05	0.1	112	12	2
21 390 08 04	10	0.10	0.2	137	14	2
21 390 14 06	25	0.25	0.5	167	21	2
21 390 17 06	50	0.5	1	196	25	2
21 390 24 02	100	0.5	1	256	29	2
21 390 36 04	250	1	2	331	39	2
21 390 44 03	500	2.5	5	360	53	2
21 390 54 08	1000	5	10	460	65	1
21 390 63 01	2000	10	20	500	85	1



23 DURAN® MEASURING CYLINDERS, CLASS B

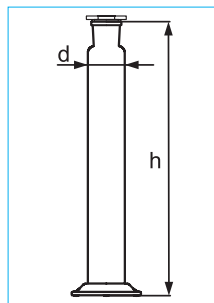
White scale, with graduation marks, hexagonal base

Cat. No.:	Capacity ml	Accuracy limit ± ml	Graduation ml	Overall height h mm	Outer diameter d mm	Packaging unit
21 396 07 07	5	0.1	0.1	112	12	2
21 396 08 01	10	0.2	0.2	137	14	2
21 396 14 03	25	0.5	0.5	167	21	2
21 396 17 03	50	1	1	196	25	2
21 396 24 08	100	1	1	256	29	2
21 396 36 01	250	2	2	331	39	2
21 396 44 09	500	5	5	360	53	2
21 396 54 05	1000	10	10	460	65	1
21 396 63 07	2000	20	20	500	85	1



24 DURAN® MIXING CYLINDERS: CREATING DILUTIONS

DURAN® mixing cylinders are used to dilute solutions and mix several components at a specified ratio. The tolerances for the volume of measuring and mixing cylinders correspond to the DIN and ISO (DIN EN ISO 4788) accuracy limits. The batch certificates for the mixing cylinders are enclosed with the product and can also be retrieved online.



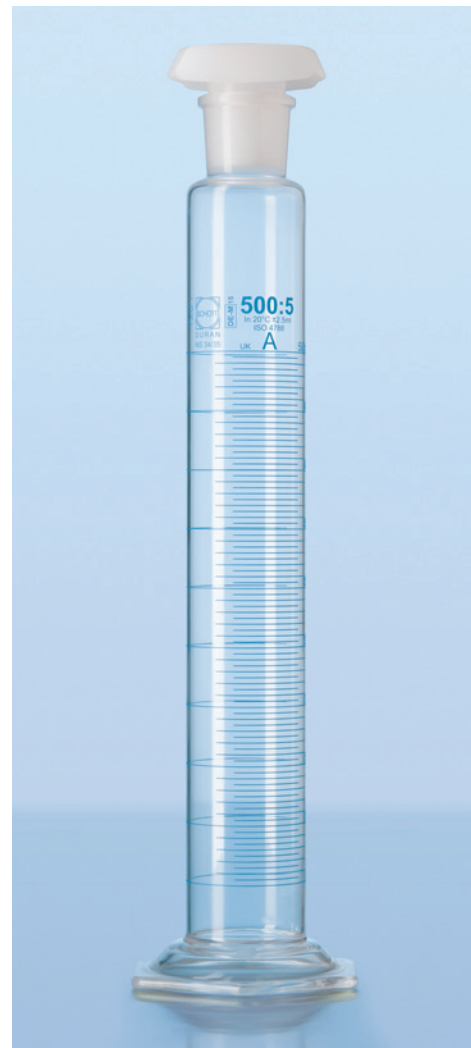
DURAN® MIXING CYLINDERS, CLASS A

Blue scale, with ring graduations for the main points, new ergonomic polyethylene stopper and hexagonal base

[With certificate of conformity](#)

[With batch certificate](#)

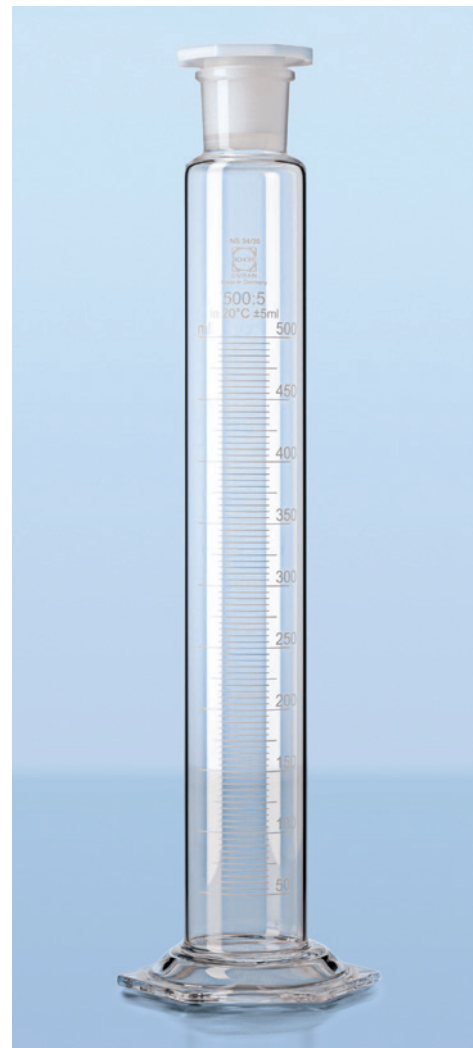
Cat. No.:	Capacity ml	Accuracy limit ± ml	Graduation ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Packaging unit
24 618 08 56	10	0.10	0.2	156	14	10/19	2
24 618 14 58	25	0.25	0.5	190	21	14/23	2
24 618 17 58	50	0.5	1	222	25	19/26	2
24 618 24 54	100	0.5	1	287	29	24/29	2
24 618 36 56	250	1	2	363	39	29/32	2
24 618 44 55	500	2.5	5	395	53	34/35	2
24 618 54 51	1000	5	10	500	65	45/40	1
24 618 63 53	2000	10	20	540	85	45/40	1



25 DURAN® MIXING CYLINDERS, CLASS B

White scale, with graduation marks, polyethylene octagonal stopper and hexagonal base

Cat. No.:	Capacity ml	Accuracy limit ± ml	Graduation ml	Overall height h mm	Outer diameter d mm	Stopper size standard taper	Packaging unit
21 618 08 01	10	0.2	0.2	156	14	10/19	2
21 618 14 03	25	0.5	0.5	190	21	14/23	2
21 618 17 03	50	1	1	222	25	19/26	2
21 618 24 08	100	1	1	287	29	24/29	2
21 618 36 01	250	2	2	363	39	29/32	2
21 618 44 09	500	5	5	395	53	34/35	2
21 618 54 05	1000	10	10	500	65	45/40	1
21 618 63 07	2000	20	20	540	85	45/40	1

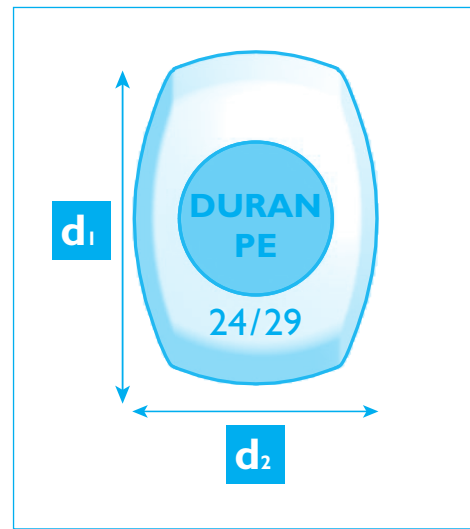


26 DURAN® POLYETHYLENE STOPPERS: AN EXCEPTIONALLY PRACTICAL SOLUTION

DURAN® polyethylene stoppers are ergonomically shaped. This ensures that measuring flasks, mixing cylinders and storage bottles can be easily opened and securely closed. Furthermore, a taper with several grooves ensures the perfect seal. The standard taper joint size can be easily and quickly assigned using stopper inserts with different colours. The colour coding uses the same system as interchangeable Keck™ clips. Batch certificates for DURAN® polyethylene stoppers can be retrieved at www.duran-group.com.

Batch indicator dial: Production specifications at a glance

The batch indicator dial on the underside of each stopper consists of two concentric circles. The inner circle contains information on the production year and an arrow which points to one of the numbers in the outer circle to indicate the month in which the product was manufactured, e.g. 1 = January. Additionally, the material designation "PE04" for polyethylene can be found on the underside of every stopper.



Dimensions



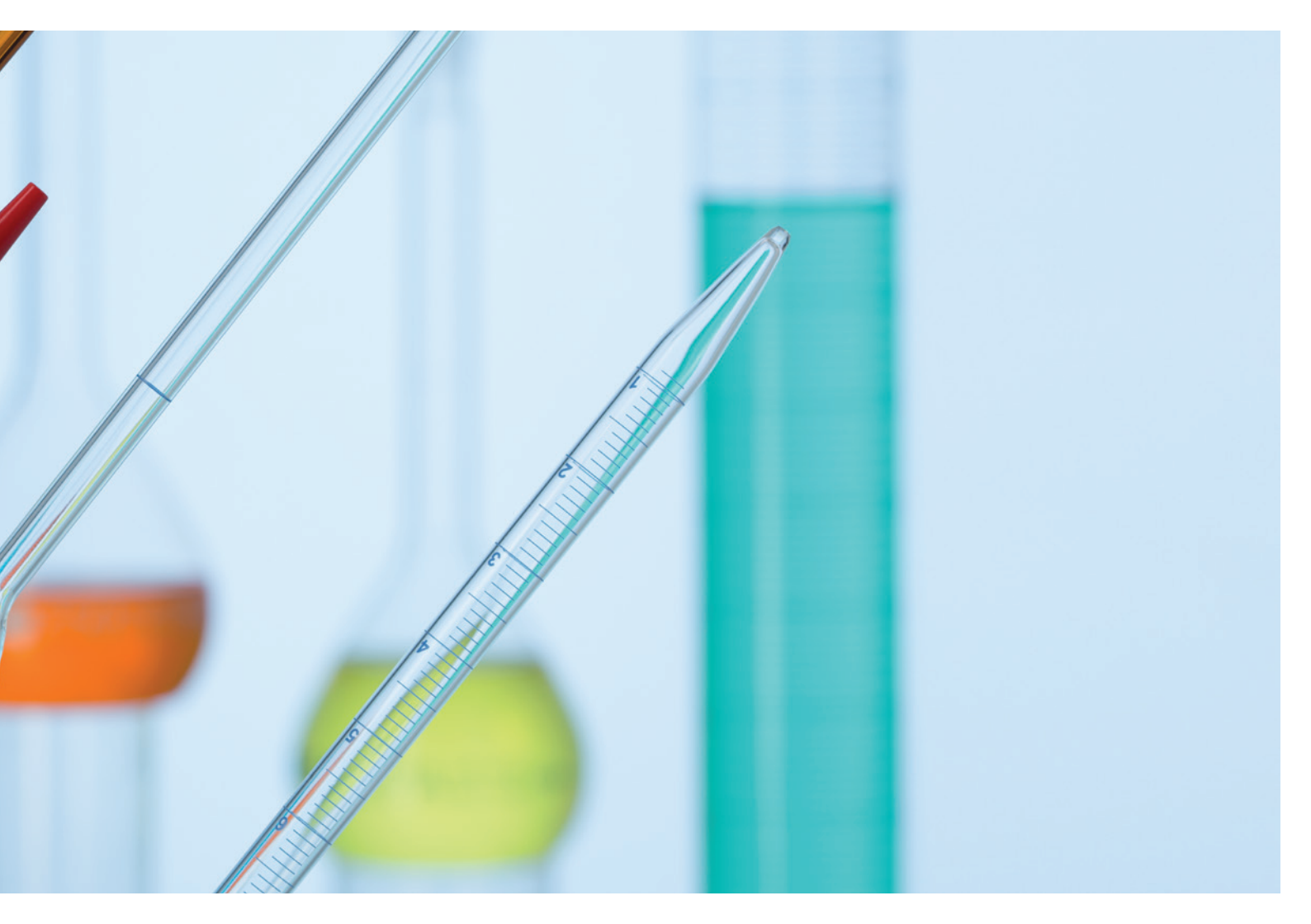
View from below



Cat. No.:	Standard taper size	Colour of insert	Overall height h mm	Outer diameter d ₁ mm	Outer diameter d ₂ mm	Packaging unit
29 205 02 01	7/16	Blue	28	29.5	17.5	10
29 205 03 04	10/19	Green	32	32.5	20	10
29 205 04 07	12/21	Violet	35	36.5	22	10
29 205 06 04	14/23	Yellow	38	40	25	10
29 205 07 07	19/26	Blue	42	44.5	31	10
29 205 08 01	24/29	Green	46	51.5	38	10
29 205 09 04	29/32	Red	50	61	45.5	10
29 205 11 03	34/45	Orange	54	71	54.5	1
29 205 12 06	45/40	Brown	60	81.5	65.5	1







Pipettes are manufactured from soda-lime glass.

They are used for the precise measurement and decanting of liquids. Full pipettes only allow filling to specific quantities. Measuring pipettes allow different quantities of liquids to be held and dispensed in portions of the same size or different sizes.

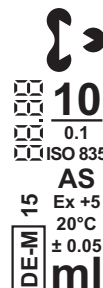
Calibration of the pipettes and burettes is based on the discharged volume (“Ex”) at a reference temperature of 20°C. This means that the quantities can be withdrawn precisely as shown on the scale as the adhesion of the liquid to the glass has been taken into account during calibration.

Conformity mark DE-M – The conformity mark confirms that the instruments satisfy the requirements of the German weights and measures regulation and the applicable standards.

Batch certificate – Pipettes and burettes in the accuracy class AS have a batch number and are supplied with a batch certificate. This certificate documents the mean value obtained from measuring the batch in question, the standard deviation and the day of issue. The batch certificates can also be retrieved online. The batch number consists of four digits, for example: 15.01. The first two numbers specify the production year, and the following two numbers specify the batch.

Screen print label for pipettes

Measurement pipette



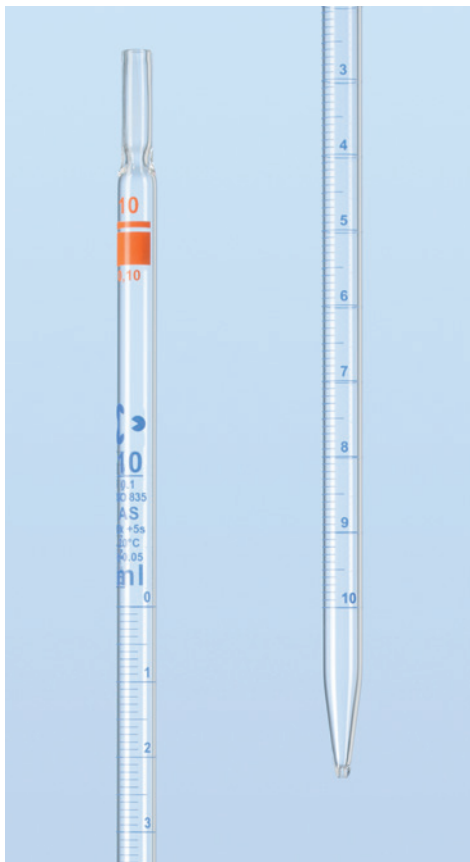
Full pipette



For explanations see page 9

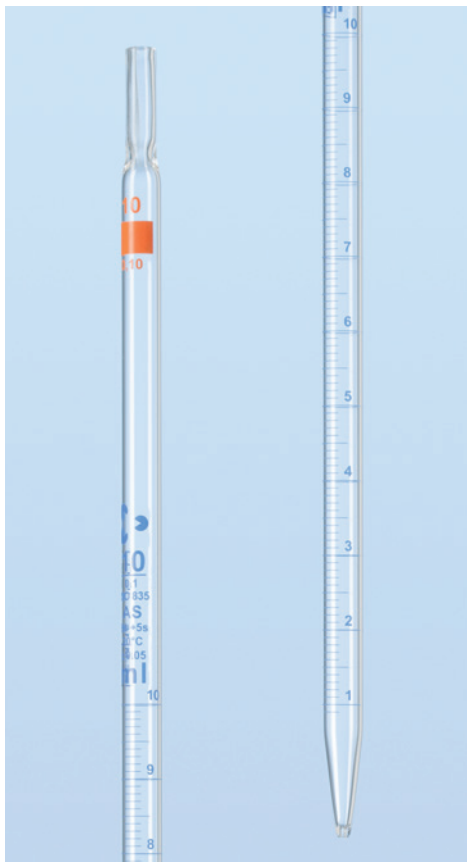
31 MEASURING PIPETTE TYPE 1

Drain-out,
zero at top



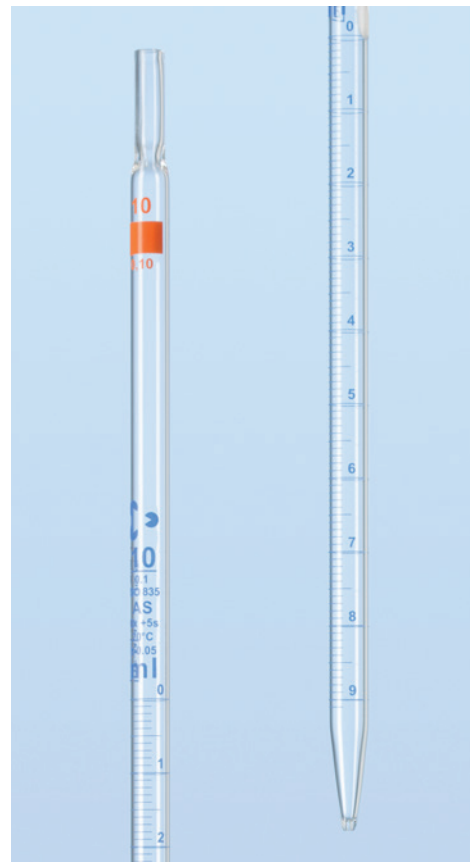
MEASURING PIPETTE TYPE 2

Blow-out, zero at bottom,
graduated to tip (total delivery)



MEASURING PIPETTE TYPE 3

Blow-out, zero at top,
graduated to tip (total delivery)

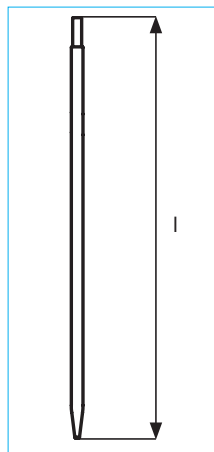


32 MEASURING PIPETTES MADE OF SODA-LIME GLASS, CLASS AS, TYPE I

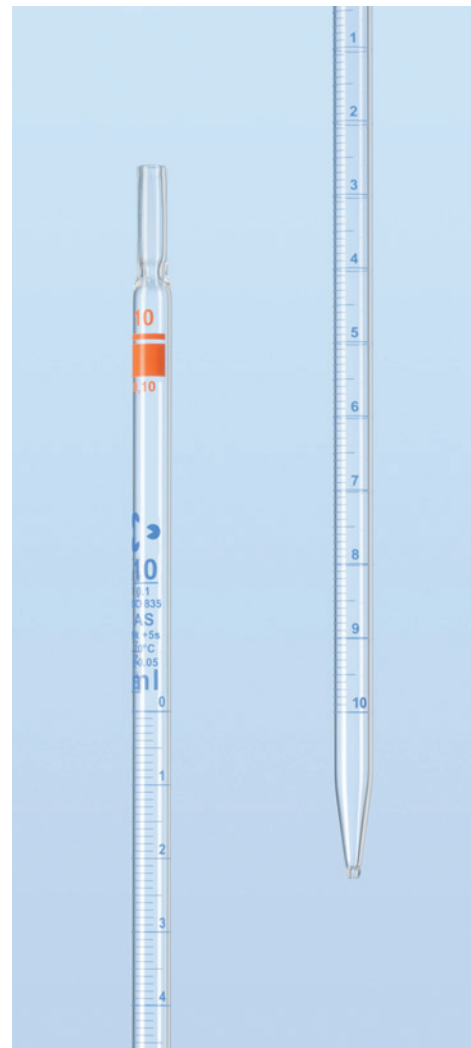
Blue colour; drain-out, zero at top, with cotton plug

With certificate of conformity

With batch certificate



Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Colour coding	Total length l mm	Packaging unit
23 346 06 06	0.5	0.006	0.01	3 x yellow	360	12
23 346 11 05	1	0.007	0.01	2 x yellow	360	12
23 346 16 02	2	0.01	0.02	2 x black	360	12
23 346 23 07	5	0.03	0.05	2 x red	360	12
23 346 29 07	10	0.05	0.1	2 x orange	360	12
23 346 32 09	20	0.1	0.1	3 x yellow	360	6
23 346 34 06	25	0.1	0.1	2 x white	450	6
23 346 36 03	50	0.2	0.2	2 x black	450	6



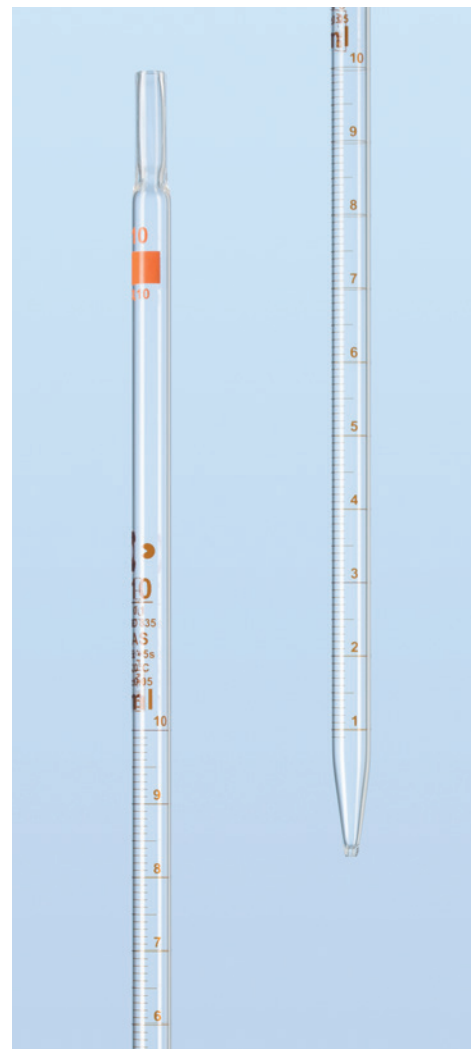
33 MEASURING PIPETTES MADE OF SODA-LIME GLASS, CLASS AS, TYPE 2

Brown diffusion print, blow-out, zero at bottom, graduated to tip (total delivery), with cotton plug

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Colour coding	Total length l mm	Packaging unit
23 347 06 07	0.5	0.006	0.01	2 x yellow	360	12
23 347 11 06	1	0.007	0.01	1 x yellow	360	12
23 34716 03	2	0.01	0.02	1 x black	360	12
23 347 23 08	5	0.03	0.05	1 x red	360	12
23 347 29 08	10	0.05	0.1	1 x orange	360	12
23 347 32 01	20	0.1	0.1	2 x yellow	360	6
23 347 34 07	25	0.1	0.1	1 x white	450	6
23 347 36 04	50	0.2	0.2	1 x black	450	6



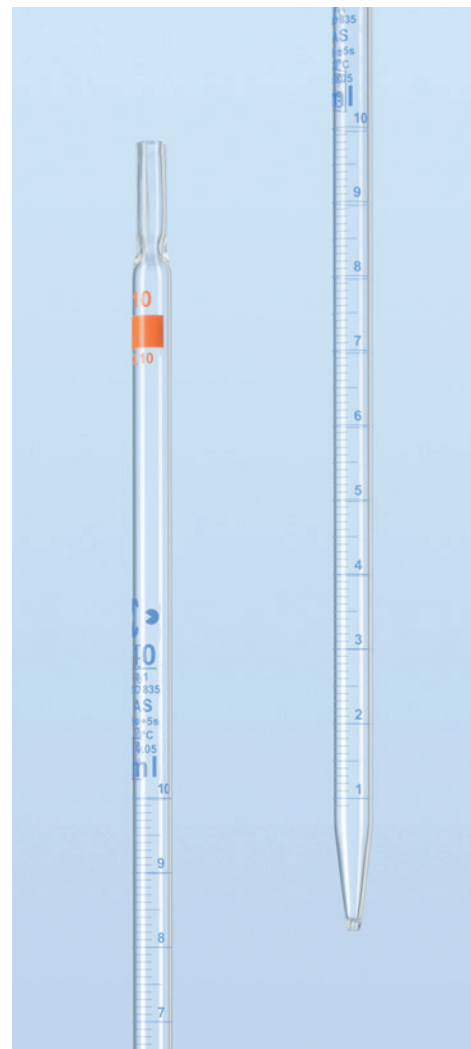
34 MEASURING PIPETTES MADE OF SODA-LIME GLASS, CLASS AS, TYPE 2

Blue colour; blow-out, zero at bottom, graduated to tip (total delivery), with cotton plug

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Colour coding	Total length l mm	Packaging unit
23 348 06 08	0.5	0.006	0.01	2 x yellow	360	12
23 348 11 07	1	0.007	0.01	1 x yellow	360	12
23 348 16 04	2	0.01	0.02	1 x black	360	12
23 348 23 09	5	0.03	0.05	1 x red	360	12
23 348 29 09	10	0.05	0.1	1 x orange	360	12
23 348 32 02	20	0.1	0.1	2 x yellow	360	6
23 348 34 08	25	0.1	0.1	1 x white	450	6
23 348 36 05	50	0.2	0.2	1 x black	450	6



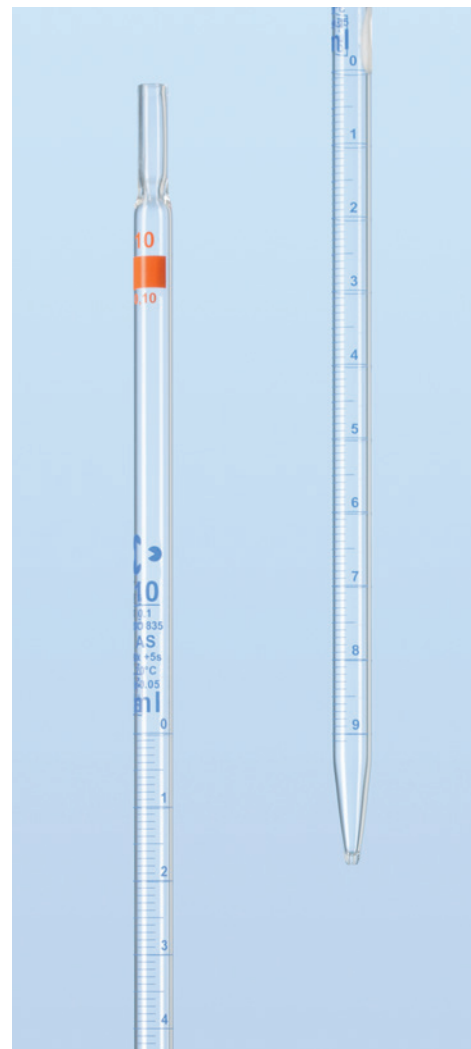
35 MASURING PIPETTES MADE OF SODA-LIME GLASS, CLASS AS, TYPE 3

Blue colour; blow-out, zero at top, graduated to tip (total delivery), with cotton plug

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Colour coding	Total length l mm	Packaging unit
23 349 06 09	0.5	0.006	0.01	2 x yellow	360	12
23 349 11 08	1	0.007	0.01	1 x yellow	360	12
23 349 16 05	2	0.01	0.02	1 x black	360	12
23 349 23 01	5	0.03	0.05	1 x red	360	12
23 349 29 01	10	0.05	0.1	1 x orange	360	12
23 349 32 03	20	0.1	0.1	2 x yellow	360	6
23 349 34 09	25	0.1	0.1	1 x white	450	6
23 349 36 06	50	0.2	0.2	1 x black	450	6



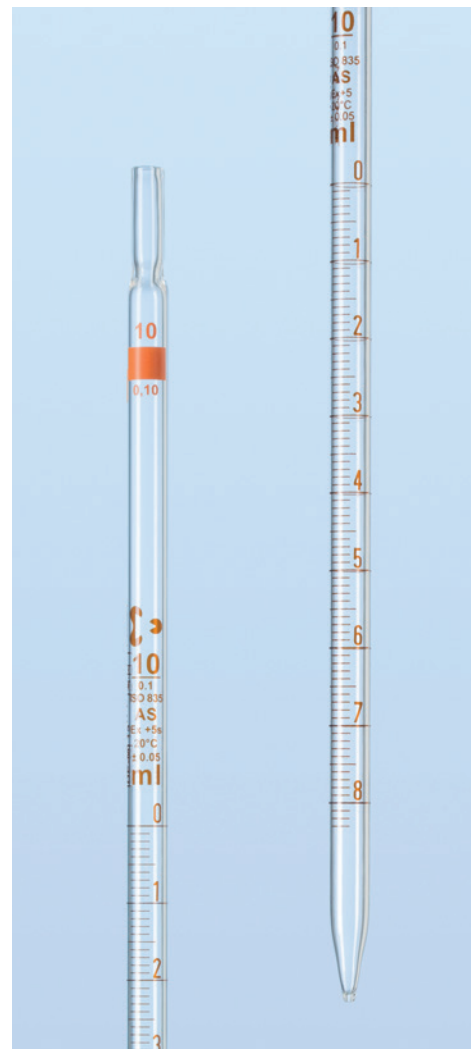
36 MEASURING PIPETTES MADE OF SODA-LIME GLASS, CLASS AS, TYPE 3

Brown diffusion print, blow-out, zero at top, graduated to tip (total delivery), with cotton plug

With certificate of conformity

With batch certificate

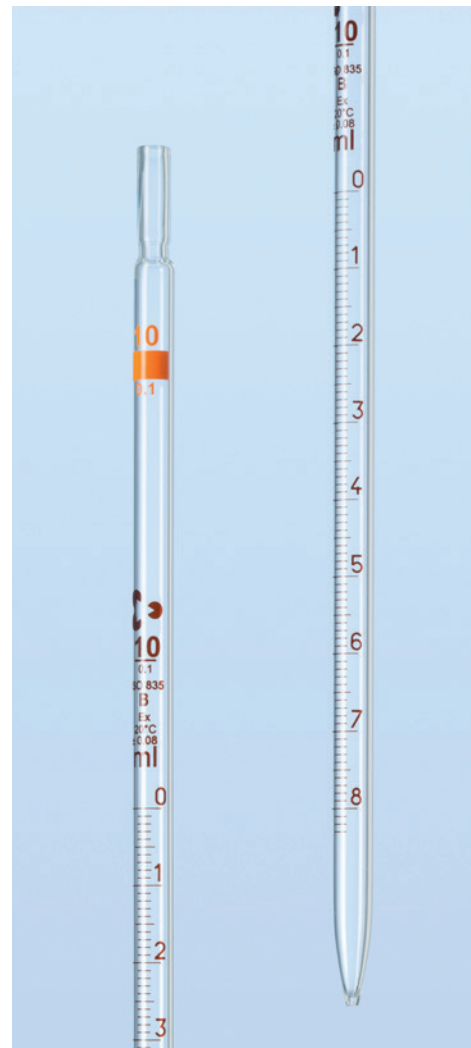
Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Colour coding	Total length l mm	Packaging unit
24 345 11 09	1	0.007	0.01	1 x yellow	360	12
24 345 17 09	2	0.01	0.02	1 x black	360	12
24 345 23 02	5	0.03	0.05	1 x red	360	12
24 345 29 02	10	0.05	0.1	1 x orange	360	12
24 345 34 01	25	0.1	0.1	1 x white	450	12



37 MEASURING PIPETTES MADE OF SODA-LIME GLASS, CLASS B, TYPE 3

Brown diffusion print, blow-out, zero at top, graduated to tip (total delivery), with cotton plug

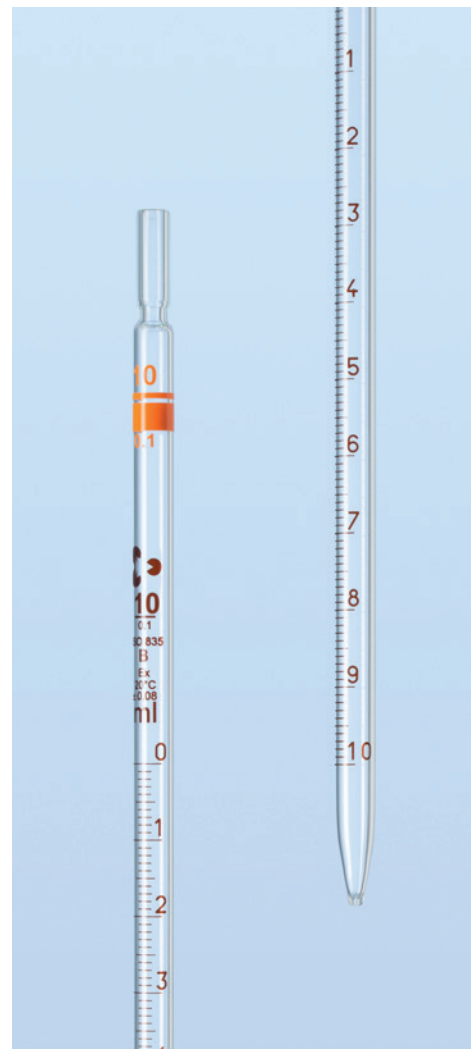
Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Colour coding	Total length l mm	Packaging unit
24 344 01 03	0.1	0.01	0.001	2 x green	360	12
24 344 03 09	0.2	0.01	0.001	2 x blue	360	12
24 344 06 09	0.5	0.008	0.01	2 x yellow	360	12
24 344 11 08	1	0.008	0.01	1 x yellow	360	12
24 344 16 05	2	0.015	0.02	1 x black	360	12
24 344 23 01	5	0.04	0.05	1 x red	360	12
24 344 29 01	10	0.08	0.1	1 x orange	360	12
24 344 34 09	25	0.15	0.1	1 x white	450	12



38 MEASURING PIPETTES MADE OF SODA-LIME GLASS, CLASS B, TYPE I

Brown diffusion print, drain-out, zero at top, with cotton plug

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Colour coding	Total length l mm	Packaging unit
24 343 01 02	0.1	0.01	0.001	3 x green	360	12
24 343 03 08	0.2	0.01	0.001	3 x blue	360	12
24 343 06 08	0.5	0.008	0.01	3 x yellow	360	12
24 343 11 07	1	0.008	0.01	2 x yellow	360	12
24 343 16 04	2	0.015	0.02	2 x black	360	12
24 343 23 09	5	0.04	0.05	2 x red	360	12
24 343 29 09	10	0.08	0.1	2 x orange	360	12
24 343 34 08	25	0.15	0.1	2 x white	450	12

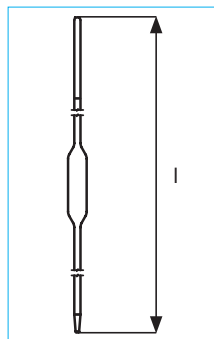


39 FULL PIPETTES MADE OF SODA-LIME GLASS, CLASS AS

Blue colour

With certificate of conformity

With batch certificate



Cat. No.:	Capacity ml	Accuracy limit \pm ml	Colour coding	Total length l mm	Packaging unit
23 339 00 51	0.5	0.005	2 x black	300	12
23 339 01 05	1	0.008	1 x blue	325	12
23 339 02 08	2	0.01	1 x orange	350	12
23 339 03 02	3	0.01	1 x black	350	6
23 339 04 05	4	0.015	2 x red	410	6
23 339 05 08	5	0.015	1 x white	410	6
23 339 06 02	6	0.015	2 x orange	410	6
23 339 07 05	7	0.015	2 x green	410	6
23 339 08 08	8	0.02	1 x blue	450	6
23 339 09 02	9	0.02	1 x black	450	6
23 339 10 07	10	0.02	1 x red	450	6
23 339 15 04	15	0.03	1 x green	520	6
23 339 20 03	20	0.03	1 x yellow	520	6
23 339 25 09	25	0.03	1 x blue	530	6
23 339 30 08	30	0.03	1 x black	530	6
23 339 40 04	40	0.05	1 x white	550	6
23 339 50 09	50	0.05	1 x red	550	6
23 339 00 02	100	0.08	1 x yellow	600	6



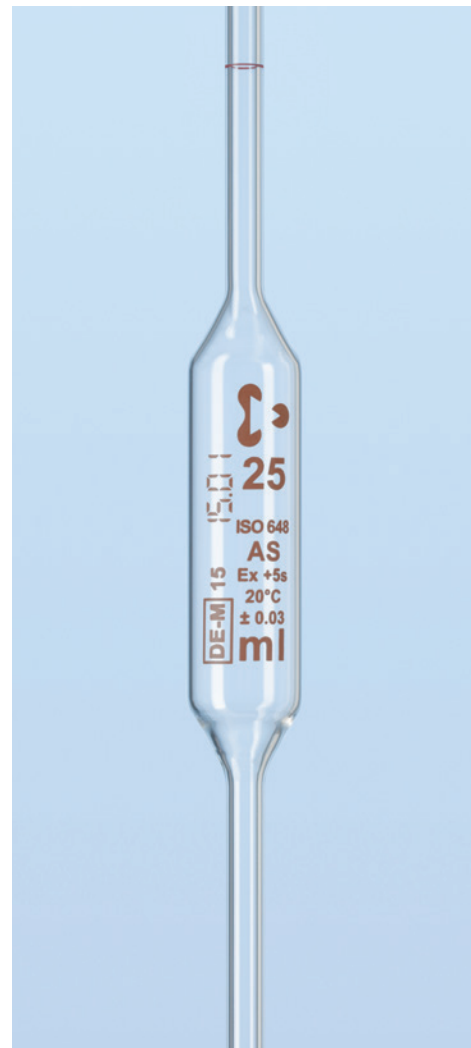
40 FULL PIPETTES MADE OF SODA-LIME GLASS, CLASS AS

Brown diffusion print

With certificate of conformity

With batch certificate

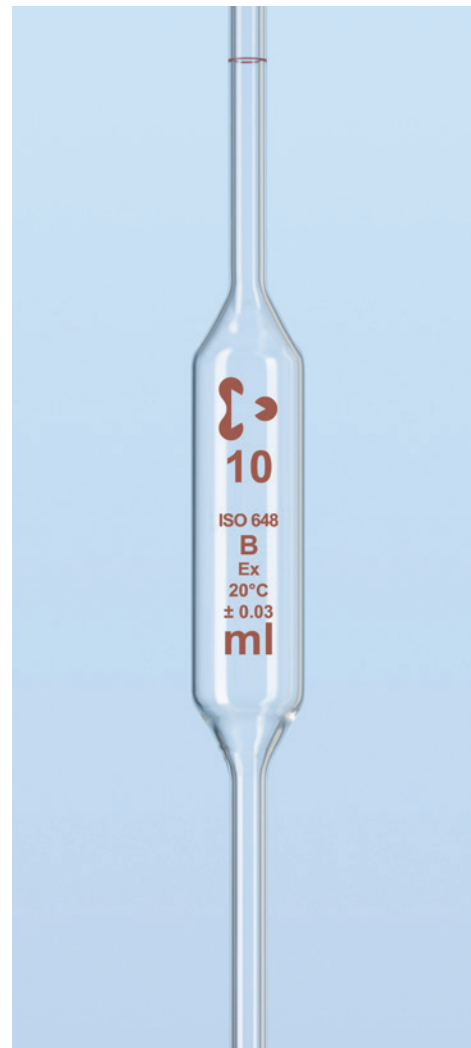
Cat. No.:	Capacity ml	Accuracy limit \pm ml	Colour coding	Total length l mm	Packaging unit
24 338 01 09	1	0.008	1 x blue	325	12
24 338 02 03	2	0.01	1 x orange	350	12
24 338 07 09	5	0.015	1 x white	410	12
24 338 08 03	10	0.02	1 x red	450	12
24 338 12 08	20	0.03	1 x yellow	520	6
24 338 14 05	25	0.03	1 x blue	530	6
24 338 17 05	50	0.05	1 x red	550	6
24 338 24 01	100	0.08	1 x yellow	600	6



41 FULL PIPETTES MADE OF SODA-LIME GLASS, CLASS B

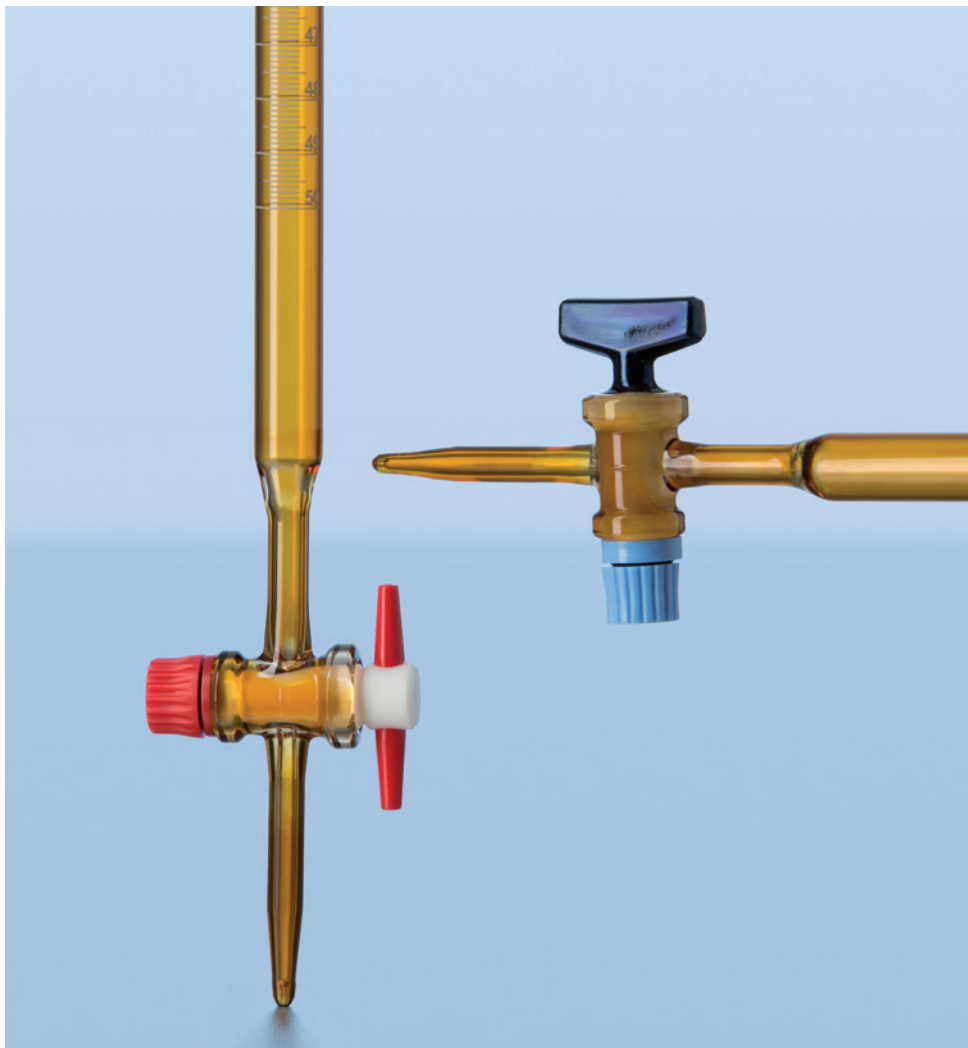
Brown diffusion print

Cat. No.:	Capacity ml	Accuracy limit ± ml	Colour coding	Total length l mm	Packaging unit
24 337 01 08	1	0.01	1 x blue	325	12
24 337 02 02	2	0.015	1 x orange	350	12
24 337 07 08	5	0.02	1 x white	410	12
24 337 08 02	10	0.03	1 x red	450	12
24 337 12 07	20	0.05	1 x yellow	520	6
24 337 14 04	25	0.05	1 x blue	530	6
24 337 17 04	50	0.08	1 x red	550	6
24 337 24 09	100	0.12	1 x yellow	600	6



42 DURAN® BURETTES

DURAN® burettes are made of highly chemical-resistant borosilicate glass 3.3 and are only used for titration. The quantity of liquid required for titration, which is unknown beforehand, can be precisely read off once the reaction is complete.

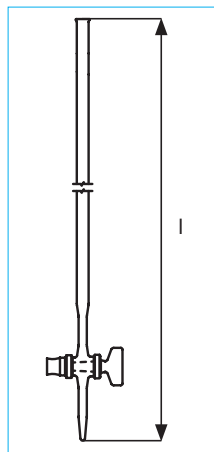


43 DURAN® BURETTES, ACCURACY CLASS AS,
CLEAR GLASS WITH SCHELLBACH STRIPE

With straight standard taper joint stopcock and glass key, blue inscription

With certificate of conformity

With batch certificate



Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Total length l mm	Packaging unit
24 329 27 04	10	0.02	0.02	820	2
24 329 33 06	25	0.03	0.05	820	2
24 329 36 06	50	0.05	0.10	820	2
24 329 39 06	100	0.10	0.20	870	2



44 DURAN® BURETTES, ACCURACY CLASS AS, AMBER GLASS

With straight standard taper joint stopcock and glass key, white inscription

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit ± ml	Graduation ml	Total length l mm	Packaging unit
24 326 27 01	10	0.02	0.02	820	2
24 326 33 03	25	0.03	0.05	820	2
24 326 36 03	50	0.05	0.10	820	2
24 326 39 03	100	0.10	0.20	870	2



45 DURAN® BURETTES, ACCURACY CLASS AS, CLEAR GLASS,
WITH SCHELLBACH STRIPE

With straight standard taper joint stopcock and PTFE key, blue inscription

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit ± ml	Graduation ml	Total length l mm	Packaging unit
24 330 27 02	10	0.02	0.02	820	2
24 330 33 04	25	0.03	0.05	820	2
24 330 36 04	50	0.05	0.10	820	2
24 330 39 04	100	0.10	0.20	870	2



46 DURAN® BURETTES, ACCURACY CLASS AS, AMBER GLASS

With straight standard taper joint stopcock and PTFE key, white inscription

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit ± ml	Graduation ml	Total length l mm	Packaging unit
24 336 27 08	10	0.02	0.02	820	2
24 336 33 01	25	0.03	0.05	820	2
24 336 36 01	50	0.05	0.10	820	2
24 336 39 01	100	0.10	0.20	870	2



47 DURAN® BURETTE, ACCURACY CLASS B, CLEAR GLASS

With straight standard taper joint stopcock and glass key, blue inscription

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Total length l mm	Packaging unit
24 328 27 03	10	0.03	0.02	820	2
24 328 33 05	25	0.04	0.05	820	2
24 328 36 05	50	0.08	0.10	820	2
24 328 39 05	100	0.15	0.20	870	2



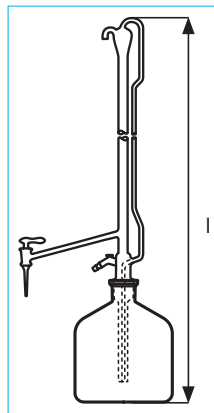
48 DURAN® AUTOMATIC PELLET BURETTES
ACCURACY CLASS AS, WITH SCHELLBACH STRIPE

With lateral standard taper joint stopcock and glass key, blue inscription,

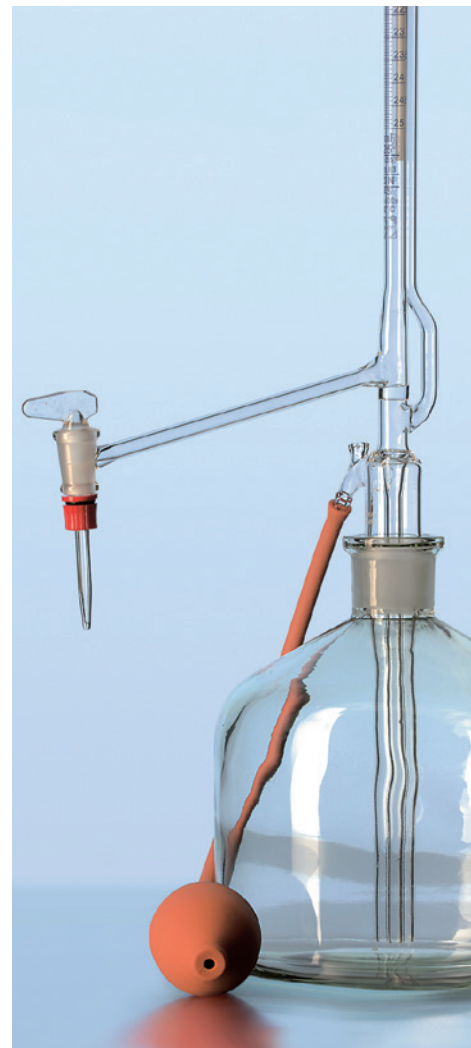
including bottle and rubber bulb

With certificate of conformity

With batch certificate



Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Total length l mm	Packaging unit
24 318 27 54	10	0.02	0.02	930	1
24 318 33 56	25	0.03	0.05	930	1
24 318 36 56	50	0.05	0.10	930	1

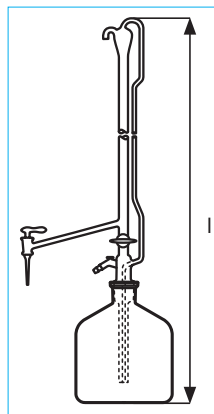


49 DURAN® AUTOMATIC PELLET BURETTES,
ACCURACY CLASS AS, WITH SCHELLBACH STRIPE

With lateral standard taper joint stopcock with PTFE key and PTFE intermediate stopcock, blue inscription, including bottle and rubber bulb

With certificate of conformity

With batch certificate



Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Total length l mm	Packaging unit
24 317 27 53	10	0.02	0.02	930	1
24 317 33 55	25	0.03	0.05	930	1
24 317 36 55	50	0.05	0.10	930	1

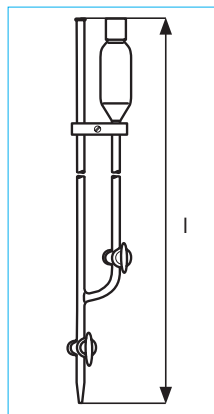


50 DURAN® MICRO BURETTES, ACCURACY CLASS AS,
WITH SCHELLBACH STRIPE

With straight standard taper joint stopcock and glass key, with glass intermediate stopcock, blue inscription

With certificate of conformity

With batch certificate



Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Total length l mm	Packaging unit
24 320 11 08	1	0.01	0.01	475	1
24 320 16 05	2	0.01	0.01	550	1
24 320 22 07	5	0.01	0.02	700	1



51 DURAN® MICRO BURETTES, ACCURACY CLASS AS,
MIT SCHELLBACHSTREIFEN

With straight standard taper joint stopcock and PTFE key, with PTFE intermediate stopcock, blue inscription

With certificate of conformity

With batch certificate

Cat. No.:	Capacity ml	Accuracy limit \pm ml	Graduation ml	Total length l mm	Packaging unit
24 321 11 09	1	0.01	0.01	475	2
24 321 16 06	2	0.01	0.01	550	2
24 321 22 08	5	0.01	0.02	700	2
24 321 27 05	10	0.02	0.02	781	2





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