

LABORATORY GLASSWARE CATALOGUE



DURAN GROUP
magic of precision

WELCOME TO THE DURAN GROUP

The DURAN GROUP is one of the world's leading manufacturers of borosilicate glass, a special glass invented by Otto Schott in 1887 and registered in 1938 under the trade name DURAN®. With sites in Germany, UK and Croatia, the DURAN GROUP has a complete value-added chain from the glass melting process right through to glass forming and processing.

Over the last 70 years, DURAN® glass has proven itself both in laboratories as well as in industrial and domestic applications. At the same time our special industrial glass is used in numerous industries, amongst others, mechanical engineering, the electrical industry and medical technology.

Well-known companies spread across all continents trust in the quality of our products and the creativity of our employees. Based on close dialogue with our customers, we achieve solutions, which meet individual requirements and permit highly precise applications in widely varying sectors.

The unique precision involved in the manufacturing and processing of DURAN® glass is the foundation of our corporate philosophy and guideline for our day-to-day operations. We offer our customers the flexibility of a medium-sized company with comprehensive know-how built up from many years of experience.

DURAN GROUP. Magic of precision.

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DURAN® LABORATORY GLASSWARE WITH BATCH IDENTIFICATION AND QUALITY CERTIFICATES

Increasing requirements and standards in terms of quality assurance as well as the traceability of primary packaging and auxiliary materials (DIN EN ISO 9001:2008/8402, GMP, EU 178/2002) are becoming more and more significant.

To meet these requirements, there are now a wide range of articles available with a Retrace Code. These include bottles, beakers, erlenmeyer flasks, premium caps and volumetric flasks. A pictogram displayed below the product image, indicates whether the product is supplied with a Retrace Code.

This eight-digit batch code (two digits for premium caps and four digits for the volumetric products) allows the products to be retraced to the point of production and the matching batch. The retrace code is a contribution to a continuous documentation within the user's quality management system and it is therefore particularly important in the areas of medicine, the pharmaceutical and food industries.

By using this "Retrace Code" and the corresponding DURAN® item number (directly or via a selection menu), users can readily retrieve a batch and quality certificate via the internet. Besides the production date and the signature of the Quality Manager, the certificate also provides information on conformity with standards and USP/EP/JP.

Please see www.duran-group.com for more information about the Retrace Code.



DURAN® YOUTILITY BOTTLE SYSTEM

The DURAN Group introduces the new bottle system for the 21st century laboratory. The new YOUTILITY bottle system was developed by the DURAN Group, who originated the screw threaded GL 45 DURAN® borosilicate glass laboratory bottle in 1972. Since then the DURAN® GL 45 Laboratory Bottle has become the bottle of choice for laboratories around the world.

Now, the DURAN® YOUTILITY bottle represents a new generation of glass laboratory bottles for use in a wide and diverse range of applications. The innovation does not stop at the improved ergonomic bottle shape, but extends to dedicated accessories that incorporate many new innovative features to improve handling, sample identification, and ease of use. The new YOUTILITY bottles and accessories help to make laboratory work easier, safer, more economical and fun.



The specially shaped gripping zones on both sides of the bottle enable easier and safer handling. With the new YOUTILITY bottle thread opening or closing the bottle is significantly faster. The thread is fully compatible with DIN GL 45 closures and other accessories. The slimmer YOUTILITY bottle shape allows a more optimal use of limited space in autoclaves and laboratory refrigerators. A pre-defined labelling area is compatible with the dedicated DURAN® self-adhesive YOUTILITY bottle labels. Nominal volume is shown at the top of the easy-to-read graduation scale for fast determination of the volumes. The glass bottle body is moulded from the tried and tested DURAN® borosilicate 3.3 pharmacopoeial Type I neutral glass. DURAN® glass offers very good chemical resistance and high temperature resistance. Each DURAN® YOUTILITY bottle is supplied as a complete system, with a pouring ring (PP¹) and a GL 45 cap (PP¹).

Cat. No. Clear glass	Cat. No. Amber glass	Capacity ml	Thread GL	d mm	h mm	Pack/ Quantity
21 881 28 54		125	45	55	124	4
21 88 136 53		250	45	66	158	4
21 881 44 52		500	45	78	193	4
21 881 54 57		1 000	45	93	253	4
	21 886 28 59	125	45	55	124	4
	21 886 36 58	250	45	66	158	4
	21 886 44 57	500	45	78	193	4
	21 886 54 53	1 000	45	93	253	4

¹ For chemical and thermal resistance, see page 49.

The DURAN® YOUTILITY Screw Cap GL 45 is manufactured from a food-grade polypropylene (PP¹) and is fully reusable. Ergonomically shaped screw cap with optimised grooves and ridges for a more efficient and easier tightening or removal, especially with smaller sized or gloved hands. The faster opening and closing thread of the YOUTILITY screw cap is fully compatible with DIN GL 45 bottle threads. The optimised cap sealing system ensures a liquid tight seal. A pre-defined labelling area on the cap is compatible with the dedicated DURAN® self-adhesive YOUTILITY labels.

Cat. No.	Thread GL	Colour	d mm	h mm	Pack/Quantity
YOUTILITY Cap					
29 229 28 02	45	cyan	53	25	10
Pouring ring					
29 241 28 08	45	cyan		4	16

¹ For chemical and thermal resistance, see page 49.

The colourful silicone GL 45 Bottle Tags can be easily and securely attached around the neck of the YOUTILITY bottle. The Bottle Tags are available in several distinct colours for easy customisation and unambiguous bottle identification. The elastic Bottle Tags will fit around any DIN GL 45 bottle neck, and can even be applied with the screw cap in place.

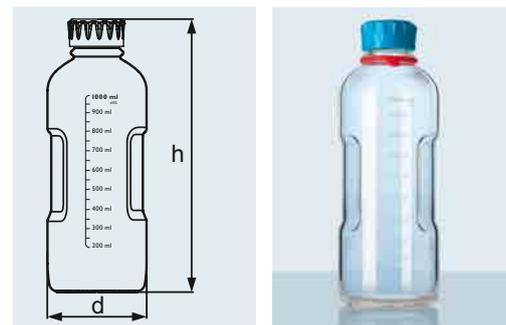
Cat. No.	Colour	Pack/ Quantity
29 243 29 04	Eight colours. Two silicone Bottle Tags are supplied in each colour	16

DURAN® YOUTILITY LABELS Self-adhesive

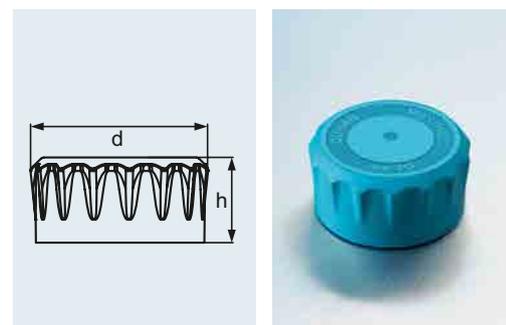
DURAN® YOUTILITY Labels are designed for use with the YOUTILITY bottle system. A pack contains 200 bottle and 200 screw cap labels. The white polyester labels are chemically resistant with a wide -40 °C to +150 °C performance range.

Cat. No.	Material and colour	Pack/ Quantity
294010006	White polyester labels with heat sensitive indicator	1

DURAN® YOUTILITY LABORATORY BOTTLE GL 45



DURAN® YOUTILITY SCREW CAP GL 45



DURAN® BOTTLE TAG GL 45





With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic. With proven DURAN® properties. Available as sole bottle and completed bottle with blue screw cap (PP¹, integral lip seal) and pouring ring (PP¹) for drip-free pouring and clean, safe working. Service temperature level of screw cap and pouring ring: +140 °C. For screw cap assortment, see pages 10 – 14.

Typical applications: storage, sample preparation, transport.

Cat. No. with screw cap	Cat. No. without screw cap	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
21 801 08 5 ²	21 801 08 ^{2,4}	10	25	36	50	10
21 801 14 5 ²	21 801 14 ²	25	25	36	74	10
21 801 17 5	21 801 17	50	32	46	91	10
21 801 24 5	21 801 24	100 ³	45	56	105	10
21 801 29 5	21 801 29	150 ³	45	62	115	10
21 801 36 5	21 801 36	250 ³	45	70	143	10
21 801 44 5	21 801 44	500 ³	45	86	181	10
21 801 51 5	21 801 51	750 ³	45	95	208	10
21 801 54 5	21 801 54	1 000 ³	45	101	230	10
21 801 63 5	21 801 63	2 000 ³	45	136	265	10
21 801 69 5	21 801 69	3 500	45	160	300	1
21 801 73 5	21 801 73	5 000	45	182	335	1
21 801 86 5	21 801 86	10 000	45	227	415	1
21 801 88 5	21 801 88	15 000	45	268	450	1
21 801 91 5	21 801 91	20 000	45	288	510	1

¹ For chemical and thermal resistance, see page 49.
² With specially shaped glass edge for improved pouring out (so that an additional plastic pouring ring is not required).
³ Bottles of 100–2 000 ml capacity have a shoulder reinforcement ring corresponding to the bottles nominal capacity.
⁴ Without Retrace Code.

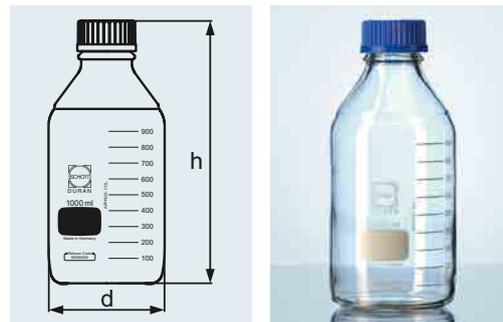
UV protection up to approx. 500 nm wavelength. Unchanged DURAN® properties within the bottle, as colouration is only to the outer surface. Very uniform, durable and chemically resistant amber colour due to use of innovative technology. With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic. Available as sole bottle and completed bottle with blue screw cap (PP¹, integral lip seal) and pouring ring (PPI) for drip-free pouring and clean, safe working. For screw cap assortment, see pages 10 – 14.

Typical applications: storage and transport of light-sensitive substances.

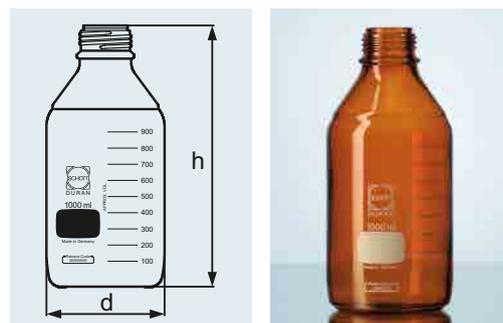
Cat. No. with screw cap	Cat. No. without screw cap	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
21 806 08 5 ^{2,4}	21 806 08 ^{2,4}	10	25	36	50	10
21 806 14 5 ²	21 806 14 ²	25	25	36	70	10
21 806 17 5	21 806 17	50	32	46	87	10
21 806 24 5	21 806 24	100 ³	45	56	100	10
21 806 29 5	21 806 29	150 ³	45	62	110	10
21 806 36 5	21 806 36	250 ³	45	70	138	10
21 806 44 5	21 806 44	500 ³	45	86	176	10
21 806 51 5	21 806 51	750 ³	45	95	203	10
21 806 54 5	21 806 54	1 000 ³	45	101	225	10
21 806 63 5	21 806 63	2 000 ³	45	136	260	10
21 806 69 5	21 806 69	3 500	45	160	295	1
21 806 73 5	21 806 73	5 000	45	182	330	1
21 806 86 5	21 806 86	10 000	45	227	410	1
21 806 88 5	21 806 88	15 000	45	268	445	1
21 806 91 5	21 806 91	20 000	45	288	505	1

¹ For chemical and thermal resistance, see page 49.
² With specially shaped glass edge for improved pouring out (so that an additional plastic pouring ring is not required).
³ Bottles of 100–2 000 ml capacity have a shoulder reinforcement ring corresponding to the bottles nominal capacity.
⁴ Without Retrace Code.

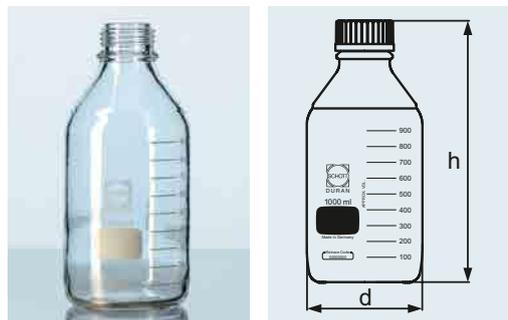
DURAN® LABORATORY BOTTLE with DIN thread, GL 45



DURAN® LABORATORY BOTTLE, AMBER with DIN thread, GL 45



DURAN® PROTECT
LABORATORY BOTTLE
with DIN thread, GL 45, plastic coated



Service temperature limit of the PU¹ plastic coating: -30 °C to +135 °C. The coating provides scratch, leak and splinter protection and is ideally suited to both the transport and storage of hazardous media or valuable samples. UV protection up to approx. 380 nm wavelength. High transparency. Suitable for microwaving. With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic. Caps and pouring rings see pages 10 – 14.

Typical applications: storage, transport and safe handling of hazardous substances.

Cat. No.	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
Without cap and pouring ring, clear					
21 805 08	10	25	36	50	10
10 926 76 ²	25	25	36	70	10
10 926 77	50	32	46	87	10
21 805 24	100 ³	45	56	100	10
21 805 29	150 ³	45	62	110	10
21 805 36	250 ³	45	70	138	10
21 805 44	500 ³	45	86	176	10
21 805 51	750 ³	45	95	203	10
21 805 54	1 000 ³	45	101	225	10
21 805 63	2 000 ³	45	136	260	10
21 805 69	3 500	45	160	295	1
21 805 73	5 000	45	182	330	1

¹ For chemical and thermal resistance, see page 49.

² With specially shaped glass edge for improved pouring out (so that an additional plastic pouring ring is not required).

³ Bottles of 100–2 000 ml capacity have a shoulder reinforcement ring corresponding to the bottles nominal capacity.

DURAN® PRESSURE PLUS
LABORATORY BOTTLE¹
with DIN thread, GL 45



Pressure resistance conforms to DIN EN 1595, confirmed by GS marking (TÜV ID: 0000020716). Vacuum and/or pressure resistant from -1 to +1.5 bar due to modified geometry (based on ISO 4796-1). When pressure loaded the following applies: thermal shock resistance 30 K and maximum usage temperature +140 °C. Blue scale for visual differentiation from the standard laboratory bottle. With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable ceramic. Also available in amber. See pages 10 – 14 for spare caps and pouring rings.

Typical applications: safe working under pressure or vacuum, sampling under pressure, storage of gas generating media.

Cat. No.	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
Without cap and pouring ring, clear					
10 922 34	250	45	70	138	10
10 922 35	500	45	86	176	10
21 810 54	1 000	45	101	225	10
Without cap and pouring ring, amber					
10 943 67	250	45	70	138	10
10 943 68	500	45	86	176	10
21 816 54	1 000	45	101	225	10

Bottle with plastic coating is available on demand.

Ergonomic handling due to angular shape, highly stable, good stackability. Alongside proven DURAN® properties, a space saving of 44 % in comparison with standard laboratory bottles (example applies to 100 ml bottles). With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic. Complete with blue screw cap (PP¹, integral lip seal) and pouring ring (PP¹) for drip-free pouring and clean, safe working. Service temperature limit of screw cap and pouring ring: +140 °C. Caps and pouring rings see pages 10 – 14.

Typical applications: space-saving storage, space-saving transport.

Cat. No.	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
With cap and pouring ring					
21 820 24 5	100	32	50	109	10
21 820 36 5	250	45	64	143	10
21 820 44 5	500	45	78	181	10
21 820 54 5	1 000	45	94	222	10

¹ For chemical and thermal resistance, see page 49.

Together with proven DURAN® properties, TÜV tested thermal shock resistance of 160 K, confirmed by GS-marking (TÜV ID: 0000020715). USP/FDA conformity for the entire system comprised of bottle, screw cap and pouring ring. DMF available upon request (DMF no. 19757). Accurate scale: ± 5 %. Additional graduations as well as additional opposing scale simplify reading off. With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic. Complete with pouring ring and cap from TpCh260¹ (similar to PFA). The premium cap with its PTFE¹ coated silicone seal is colourless and temperature resistant from -196 °C to +260 °C.

Typical applications: due to its properties, ideal for applications in the pharmaceutical industry, handling of aggressive media, sterilisation processes (hot air and dry sterilisation) and depyrogenation.

Cat. No.	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
With premium screw cap and pouring ring					
11 270 75	100	45	56	100	10
11 270 76	250	45	70	138	10
11 270 77	500	45	86	176	10
11 270 78	1 000	45	101	225	10

¹ For chemical and thermal resistance, see page 49.

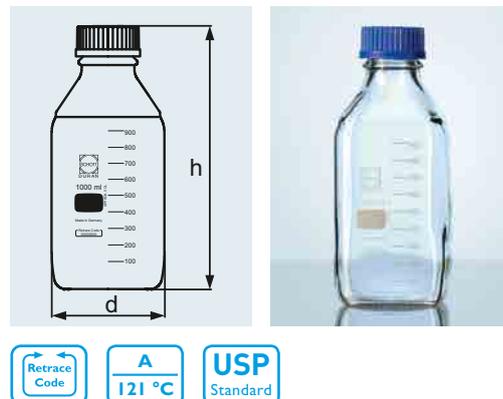
Complete with screw connection cap¹, silicone seal and stopcock with PTFE² spindle. Dosing of liquids is possible via a stopcock.

Cat. No.	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
24 703 54	1 000	45	101	225	1
24 703 63	2 000	45	136	260	1
24 703 73	5 000	45	182	330	1
24 703 86	10 000	45	230	410	1

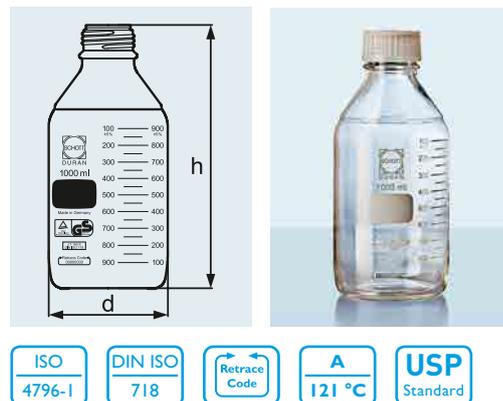
¹ Spare cap, see page 12.

² For chemical and thermal resistance, see page 49.

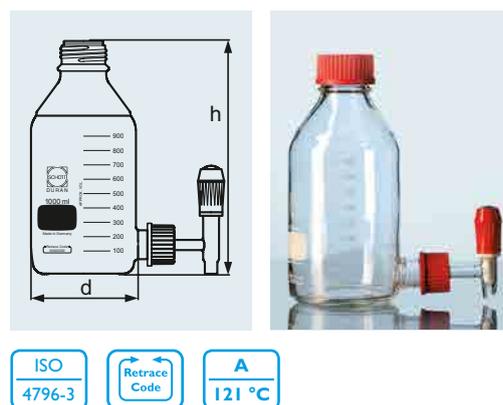
DURAN® LABORATORY BOTTLE, SQUARE with DIN thread, GL 45



DURAN® PREMIUM BOTTLE with DIN thread, GL 45



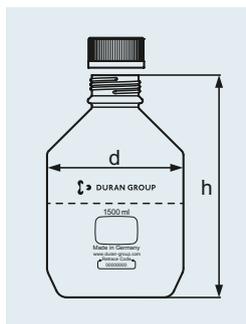
DURAN® ASPIRATOR BOTTLE neck with DIN thread GL 45, tabulator with GL 32



STAINLESS STEEL (SHIPPING) BOTTLE
from stainless steel type 316 L (1.4404)

The stainless steel bottle is ideal for storage applications where glass is not applicable, due to the risk of breakage or chemical incompatibility. The bottle has a GL 45 thread with a built-in pouring lip and a rim for taper-evident-caps. Supplied without a cap, a stainless steel cap is available. It is fully compatible with all the DURAN Group GL 45 caps.

NEW

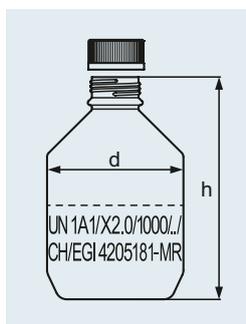


The stainless steel shipping bottle is ideal for the storage and safe shipping of dangerous liquid goods such as solvents, and reagents, without the need for additional protective outer packaging*. The bottle has a special thread (45 mm) with a built-in pouring lip. Supplied complete with Stainless Steel screw cap and PTFE-sealing disc, and UN certification mark and code.

Cat. No.		Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
29 901 60	DURAN Group GL 45 Stainless Steel Laboratory Bottle	1 500	45	120	201	1
29 911 28	Stainless Steel cap , with PTFE sealing-disc GL 45		45	50	27	1
29 901 60 5	DURAN Group Stainless Steel Shipping Bottle , UN-certified ¹ , complete	1 500	45	120	201	1

* Certified to UN standards for the carriage of liquids classified as dangerous goods in UN packing Groups II (medium danger) and III (low danger). It is suitable for liquids with a relative density of 2.0 or less. International regulations are subject to change, it is the user's responsibility for complying with all applicable laws and regulations.

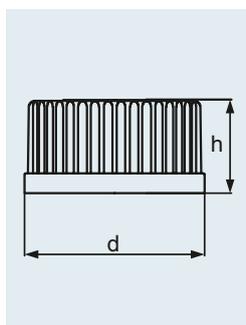
NEW



Compound formulated without colour dye to avoid risk of leaching. Service temperature limit from -196 °C to +260 °C. Very high chemical resistance. High leak tightness through use of PTFE¹ coated silicone seal. DMF (no. 19757, in conjunction with premium bottle) available upon request. A matching TpCh260¹ pouring ring is also available, permitting clean, drop-free use.

PREMIUM CAP
from TpCh260¹ (similar to PFA)
with PTFE¹ coated silicone seal²

Typical applications: due to its properties, ideal for applications in the pharmaceutical industry, handling of aggressive media, demanding sterilisation processes such as hot air or dry sterilisation and depyrogenation.



Cat. No.	DIN thread GL	Colour	d mm	h mm	Pack/Quantity
Cap					
11 296 00	25	colourless	32	22	5
10 886 79	45	colourless	51	26	5
Pouring ring					
10 886 78	45	colourless		4	5
Replacement sealing disc²					
29 248 14	25	colourless	23,5	3,1	10
29 248 29	45	colourless	43,1	3,1	10



¹ For chemical and thermal resistance, see page 49.

² Platinum-cured silicon.

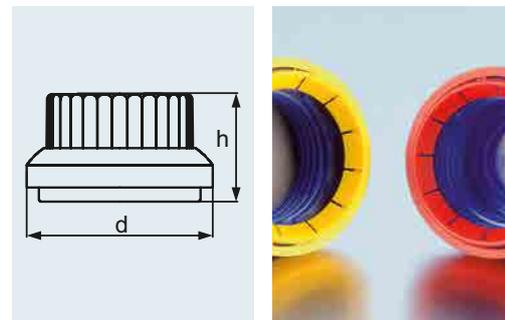
The tamper-evident screw cap is available with lip seal or PTFE¹ coated silicone seal. The integral plastic ring tears when the cap is first opened and is retained on the bottle neck. Therefore it can be clearly seen whether the bottle retains its original seal. After first untwisting, can be used as standard PP screw cap.

Typical applications: secure storage and transport/shipping of valuable media.

Cat. No.	DIN thread GL	Colour	d mm	h mm	Pack/Quantity
With lip seal					
10 175 26	45	blue-red	66	38	10
With PTFE silicone seal					
11 558 86	45	blue-yellow	66	38	10

¹ For chemical and thermal resistance, see page 49.

TAMPER-EVIDENT SCREW CAP
from PP¹, for laboratory bottles with
DIN thread



A
121 °C

Tmax.
140 °C

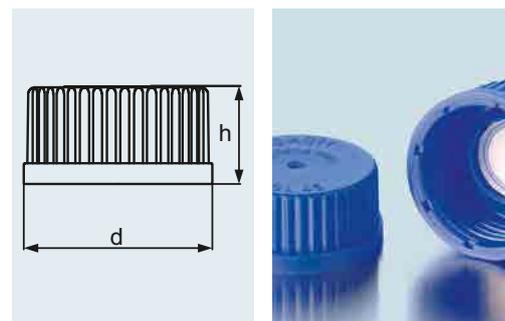
For all GL 45, GL 32 and GL 25 threads. Ideal for autoclaving processes because the membrane permits pressure equalisation and tight sealing, greatly reducing the risk of contamination. Ingress of liquids or solids is prevented and the bottle contents remain sterile.

Typical applications: storage or transport of gas generating media, autoclaving of media.

Cat. No.	DIN thread GL	d mm	h mm	Pack/Quantity
11 832 50	25	33	19	5
11 832 51	32	41	24	5
10 886 55	45	54	25	5

¹ For chemical and thermal resistance, see page 49.

MEMBRANE SCREW CAP
from PP¹, blue with welded-in PTFE¹
membrane for pressure equalisation



A
121 °C

Tmax.
140 °C

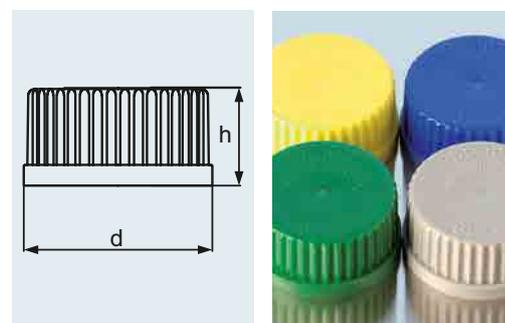
Available in the colours blue, green, yellow and grey with matching colour pouring rings. Distinguishing media types is simplified and interchanging of screw caps and carry over of substances is effectively excluded.

Typical applications: visual aid to the safe identification of different media.

Cat. No.	DIN thread GL	Colour	d mm	h mm	Pack/Quantity
Cap					
29 239 13	25	blue	33	19	10
29 239 19	32	blue	40	24	10
29 239 28	45	blue	54	25	10
29 338 28 0	45	yellow	54	25	10
29 338 28 6	45	green	54	25	10
29 338 28 8	45	grey	54	25	10
Pouring ring					
29 242 19	32	blue		4	10
29 242 28	45	blue		4	10
10 899 11	45	green		4	10
10 899 14	45	grey		4	10
10 899 17	45	yellow		4	10

¹ For chemical and thermal resistance, see page 49.

SCREW CAP
from PP¹, with lip seal

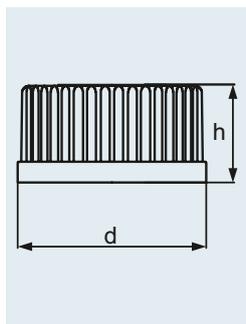


A
121 °C

Tmax.
140 °C

SCREW CAP
from PBT¹, red

High leak tightness through use of PTFE¹ coated silicone seal. More chemically resistant than PP¹ screw cap. A matching ETFE¹ pouring ring is also available, permitting clean, drop-free use.



A
121 °C

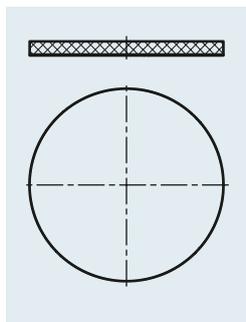
Tmax.
180 °C

Cat. No.	DIN thread GL	d mm	h mm	Pack/Quantity
Cap				
29 240 08	14	20	17	10
29 240 11	18	23	20	10
29 240 13	25	33	23	10
29 240 19	32	42	26	10
29 240 28	45	54	28	10
Pouring ring				
29 244 19	32		4	10
29 244 28	45		4	10

¹ For chemical and thermal resistance, see page 49.

SILICONE SEAL
PTFE¹ coated (VMQ¹)

Suitable for PBT¹ screw caps, premium and tamper-evident screw caps². Heat resistance: 130 °C (vapour) and 200 °C (dry heat). Good chemical resistance due to PTFE¹ coating. Silicone is peroxidically cured.



A
121 °C

Tmax.
200 °C

Cat. No.	for screw caps, red GL	Pack/Quantity
29 248 08	14	10
29 248 11	18	10
29 248 13	25	10
29 248 19	32	10
29 248 28	45	10

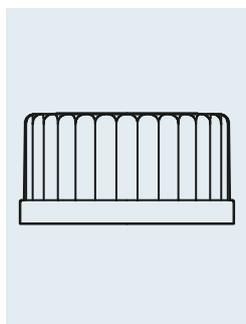
¹ For chemical and thermal resistance, see page 49.

² For caps, see pages 10 – 12.

SCREW CAP WITH APERTURE
from PBT¹, red

Suitable for silicone seal for piercing (Septa). More chemically resistant than PP¹ cap.

Typical applications: injection or removal of media.



A
121 °C

Tmax.
180 °C

Cat. No.	DIN thread GL	Aperture bore d mm	Pack/Quantity
29 227 05	14	9,5	10
29 227 06	18	11	10
29 227 09	25	15	10
29 227 08	32	20	10
29 227 10	45	34	10

¹ For chemical and thermal resistance, see page 49.

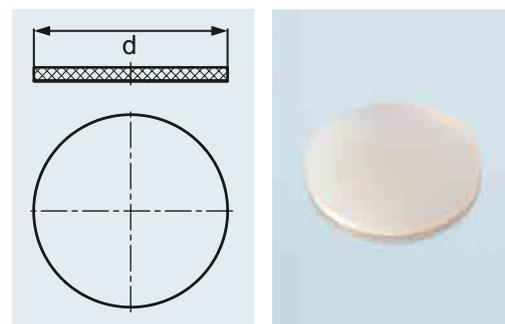
Suitable for PBT¹ screw cap with aperture. Heat resistance: 130 °C (vapour) and 200 °C (dry heat). Silicone is peroxidically cured.

SILICONE SEAL (Septa)
VMQ¹, for piercing

Typical applications: injection or removal of media.

Cat. No.	for DIN thread GL	d mm	Thickness mm	Pack/Quantity
29 246 05	14	12	2	100
29 246 06	18	16	2	100
29 246 09	25	22	2	100
29 246 08	32	29	2	100
29 246 10	45	42	3	100

¹ For chemical and thermal resistance, see page 49.



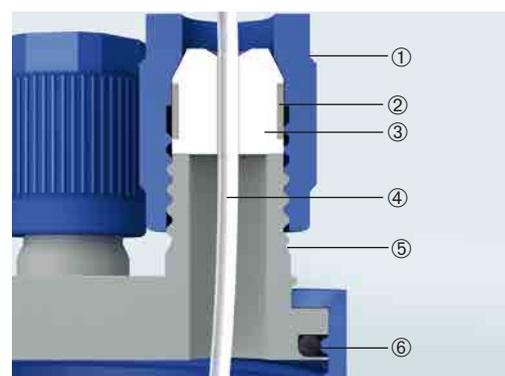
Materials used: PP¹ and PTFE¹. Flexible modular system. Four different hose diameters (1.6 mm; 3.0 mm; 3.2 mm and 6.0 mm) can be connected. Sterile pressure equalisation is possible through use of membrane filter. Unused ports can be provided with a blind cap.

CONNECTION SYSTEM
screw cap GL 45 with two or three ports

Typical applications: safe transfer of liquid media within a closed and sterile system (evaporation is reduced).

Cat. No.	Description	DIN thread GL	Pack/Quantity
11 297 50	Screw cap GL 45, PP ¹ , 2 ports GL 14	45	2
11 297 51	Screw cap GL 45, PP ¹ , 3 ports GL 14	45	2
11 298 14	Screw cap GL 14 PP ¹ , for hose connection	14	2
11 298 15	Insert for screw cap GL 14, 1.6 mm (1/16 inch) ID		1
11 298 16	Insert for screw cap GL 14, 3.0 mm (~1/8 inch) ID		1
11 298 17	Insert for screw cap GL 14, 3.2 mm (1/8 inch) ID		1
11 298 18	Insert for screw cap GL 14, 6.0 mm (~1/4 inch) ID		1
11 562 92	Screw cap, PBT ¹ , with PTFE ¹ coated seal, red, GL 14	14	2
11 377 99	Set for pressure compensation 2- and 3-port screw cap (incl. 0.2 µm membrane filter), GL 14		1
11 298 19	Spare membrane filter for pressure compensation, 0.2 µm		2

¹ For chemical and thermal resistance, see page 49.



Schematic diagram of GL 45 connection system

- ① Screw cap GL 14 (PP)
- ② Silicone sealing ring on insert
- ③ PTFE insert/tubing connector
- ④ Tubing (not supplied)
- ⑤ Port (PP)
- ⑥ O-ring seal

CONNECTION SYSTEM
screw cap GL 45 with two hose connections



A
121 °C

Tmax.
140 °C

Materials used: PP¹. Ideal for the connection of elastic, soft tubing, which, for example, is used in biotechnology when transferring media with the aid of peristaltic pumps. The curved hose connections prevent kinking of the tubing. The grey PP core moves freely and allows the vessel to be changed without twisting of the firmly attached tubing. Sterile pressure equalisation is possible through use of membrane filter:

Typical applications: safe transfer of liquid media within a closed and sterile system (evaporation is reduced).

Cat. No.	Description	Pack/Quantity
11 297 55	GL 45 screw cap with 2 hose connections	2
11 298 25	Filter top part for pressure equalization	2

¹ For chemical and thermal resistance, see page 49.

GL 45 STIRRED REACTOR
materials used: PP¹/PTFE¹/PEK¹/stainless steel

NEW



A
121 °C

Tmax.
140 °C

The GL 45 stirred reactor is suitable for a wide range of laboratory mixing processes. The connections (2 x GL 14) provided permit addition or removal of media from the bottle during the mixing process. The whole assembly can be autoclaved and is therefore suitable for use in the biological sector. By using components from the GL 45 connection system, an additional media bottle (OD hose: 1.6–6.0 mm) can be connected or a sterile pressure equalizer attached. Drive for the stirrer is provided by a standard commercial magnetic stirrer. The variable stirrer shaft can be used in DURAN® GL 45 laboratory glass bottles (500, 750 and 1 000 ml) and provides notably improved mixing in comparison with standard magnetic stir bars. The agitating element can be used up to 500 rpm.

Typical applications: mixing of liquids, dissolving of solids, simple fermentation processes.

Cat. No.	Description	Pack/Quantity
12 003 95	GL 45 stirred reactor; incl. 500 ml DURAN® GL 45 bottle, folding magnetic stirrer and GL 45 PP cap with 2 x GL 14 ports, 2 x GL 14 PBT caps red	1
12 003 96	GL 45 stirred reactor; incl. 1 000 ml DURAN® GL 45 bottle, folding magnetic stirrer and GL 45 PP cap with 2 x GL 14 ports, 2 x GL 14 PBT caps red	1
12 003 91	Folding magnetic stirrer for GL 45 stirred reactor; incl. shaft	1
12 003 90	Spare screw cap 2-ports for GL 45 stirred reactor (excl. stirrer) with GL 14 screw cap (PP; blue)	1

¹ For chemical and thermal resistance, see page 49.

The components for a secure tube connection can be found on page 13.

DURAN GROUP DISPENSER

DURAN Group Bottle-top dispensers make the serial dispensing of liquids directly from DURAN® laboratory glass bottles safer and quicker.

Reliable and reproducible liquid dispensing due to a very precise borosilicate 3.3 glass cylinder. Volume settings can be quickly and accurately adjusted.

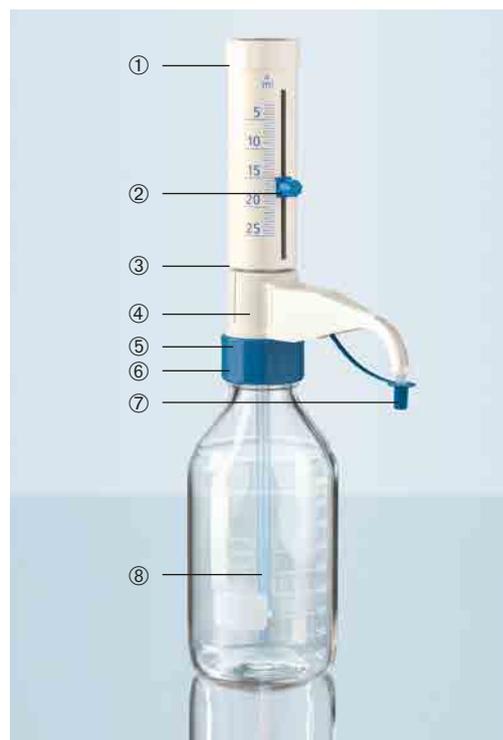
Simple dispensing operation, even with one hand. Dispenser rotates freely 360° on the bottle to a convenient position. Materials of construction offer good chemical resistance¹. Adaptable to different bottles threads (adaptors for GL 32, GL 38, S 40 or GL 28, GL 45, S 40) and bottle heights with a telescopic intake tube. PFA sealing lip prevents crystallization build-up. The modular design is easy to dismantle and clean. Supplied with certificate of performance, and multi-lingual instruction manual. All accessories available as spare parts.

Cat. No.	Capacity ml	Thread GL	Adaptor	Pack/Quantity
29 115 03	0,25 – 2,5	32	GL 28, GL 45, S40	1
29 115 06	0,5 – 5,0	32	GL 28, GL 45, S40	1
29 115 09	1,0 – 10,0	32	GL 28, GL 45, S40	1
29 115 14	2,5 – 25,0	45	GL 32, GL 38, S40	1
29 115 17	5,0 – 50,0	45	GL 32, GL 38, S40	1
29 115 24	10,0 – 100,0	45	GL 32, GL 38, S40	1

¹List of chemical resistance available online

When the instrument is correctly used, the dispensed liquid comes into contact with only the following materials: Borosilicate glass, FEP, ETFE, PFA, PTFE, Platinum-Iridium and PVDF (closure cap).

- ① Easy handling thanks to directly pushed piston complete with PFA sealing lip → prevents sticking due to crystal formation
- ② Fast, easy and precise volume setting
- ③ Very precise glass cylinder protected by a plastic cover
- ④ Dispenser fitted on the bottle rotates freely through 360°
- ⑤ GL 45 thread and adaptor, precisely matched to DURAN® laboratory glass bottles → leak proof
- ⑥ Only high quality materials used for the inner surfaces → good chemical resistance → universal use
- ⑦ No dripping once discharge tube closure cap is in place
- ⑧ Adjustable telescopic tube → can be matched to the bottle size



DURAN GROUP DISPENSER PRO

NEW



DURAN Group Bottle-top dispensers make the serial dispensing of liquids directly from DURAN® laboratory glass bottles safer and quicker:

Reliable and reproducible liquid dispensing due to a very precise borosilicate 3.3 glass cylinder. Volume settings can be quickly and accurately adjusted.

Simple dispensing operation, even with one hand. Dispenser rotates freely 360° on the bottle to a convenient position. Materials of construction offer good chemical resistance¹. Adaptable to different bottles threads (adaptors for GL 32, GL 38, S 40 or GL 28, GL 45, S 40) and bottle heights with a telescopic intake tube. PFA sealing lip prevents crystallization build-up. The modular design is easy to dismantle and clean. Supplied with certificate of performance, and multi-lingual instruction manual. All accessories available as spare parts.

The new DURAN Group Dispenser PRO has an innovative recirculation valve that permits switching between dispensing and priming. After prolonged use or for specific applications, the dispenser can be easily re-calibrated by turning the slot of the adjustment mechanism using a coin.

Cat. No.	Capacity ml	Thread GL	Adapter	Pack/Quantity
29 215 03 02	0,25 – 2,5	32	GL 28, GL 45, S 40	1
29 215 06 02	0,5 – 5,0	32	GL 28, GL 45, S 40	1
29 215 09 02	1,0 – 10,0	32	GL 28, GL 45, S 40	1
29 215 14 01	2,5 – 25,0	45	GL 32, GL 38, S 40	1
29 215 17 01	5,5 – 50,0	45	GL 32, GL 38, S 40	1
29 215 24 06	10,0 – 100,0	45	GL 32, GL 37, S 40	1

¹ List of chemical resistance available online



When the instrument is correctly used, the dispensed liquid comes into contact with only the following materials: Borosilicate glass, FEP, ETFE, PFA, PTFE, Platinum-Iridium and PVDF (closure cap).

- ① Easy handling thanks to directly pushed piston complete with PFA sealing lip → prevents sticking due to crystal formation
- ② Fast, easy and precise volume setting
- ③ Very precise glass cylinder protected by a plastic cover
- ④ Dispenser fitted on the bottle rotates freely through 360°
- ⑤ GL 45 thread and adaptor; precisely matched to DURAN® laboratory glass bottles → leak proof
- ⑥ Only high quality materials used for the inner surfaces → good chemical resistance → universal use
- ⑦ No dripping once discharge tube closure cap is in place
- ⑧ Adjustable telescopic tube → can be matched to the bottle size
- ⑨ Adjusting mechanism → enables exact volume setting
- ⑩ Valve switch → to adjust the recirculation valve
- ⑪ Discharge/recirculation valve → prevents media loss during priming
- ⑫ Recirculation tube → leads liquid back if necessary

The 80 mm wide outer diameter of the bottle neck permits easy filling and pouring out of powders and viscous substances. With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic. Available as sole bottle and completed bottle with blue quick release closure (PP¹, integral lip seal) and pouring ring (PP¹) for drip-free pouring and clean, safe working. Service temperature limit of closure and pouring ring: +140 °C. Special thread means opening takes less than a turn.

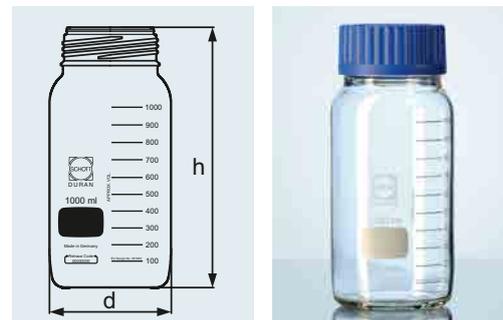
Typical applications: storage, transport, safekeeping and sampling of substances, easy to use with granulated material, powders and viscous media, sampling of hot media.

Cat. No. with cap	Cat No. without cap	Capacity ml	Thread GLS	d mm	h mm	Pack/ Quantity
21 860 36 5	21 860 36	250	80	95	105	10
11 126 27	11 783 92	500	80	101	152	10
11 127 13	11 784 24	1 000	80	101	222	10
11 127 15	11 784 25	2 000	80	136	252	10
21 860 69 5	21 860 69	3 500	80	160	275	1
11 139 49	11 784 26	5 000	80	182	314	1
11 139 50	11 784 27	10 000	80	227	389	1
11 139 51	11 784 28	20 000	80	288	484	1
12 002 65 ²		30 000	80	340	548	1
12 001 54 ²		50 000	80	400	590	1

¹ For chemical and thermal resistance, see page 49.

² Laboratory bottles 30 and 50 l available upon request. Please contact us.

DURAN® GLS 80® LABORATORY BOTTLE, WIDE NECK with GLS 80® thread



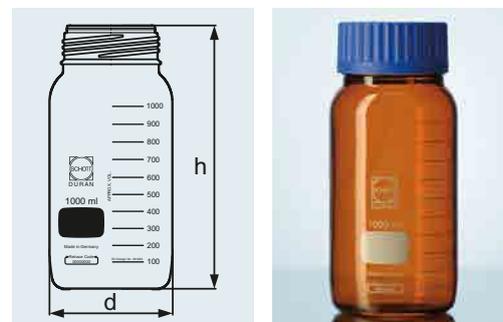
The 80 mm wide outer diameter of the bottle neck permits easy filling and pouring out of powders and viscous substances. With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic. Available as sole bottle and completed bottle with blue quick release closure (PP¹, integral lip seal) and pouring ring (PP¹) for drip-free pouring and clean, safe working. Service temperature limit of closure and pouring ring: +140 °C. Alongside easy handling, UV protection up to 500 nm. Unchanged DURAN® properties within the bottle, as colouration is only to the outer surface. Very uniform, durable and chemically resistant amber colour due to use of innovative technology.

Typical applications: storage, transport and safekeeping of light-sensitive substances, easy to use with granulated material, powders and viscous media.

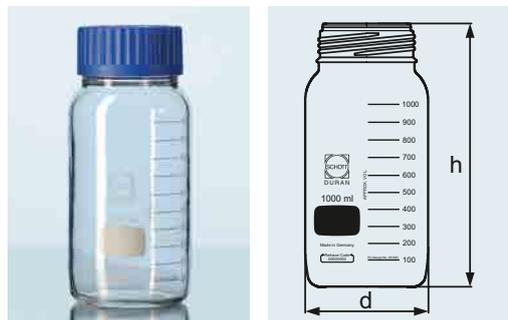
Cat. No. with cap	Cat No. without cap	Capacity ml	Thread GLS	d mm	h mm	Pack/ Quantity
21 866 36 5	21 866 36	250	80	95	105	10
11 601 46	11 784 29	500	80	101	152	10
11 601 47	11 784 30	1 000	80	101	222	10
11 601 48	11 784 31	2 000	80	136	252	10
21 866 69 5	21 866 69	3 500	80	160	275	1
11 601 49	11 784 32	5 000	80	182	314	1
11 601 50	11 784 33	10 000	80	227	389	1
11 601 51	11 784 34	20 000	80	288	484	1

¹ For chemical and thermal resistance, see page 49.

DURAN® GLS 80® LABORATORY BOTTLE, WIDE NECK, AMBER with GLS 80® thread



DURAN® GLS 80® PROTECT LABORATORY BOTTLE with GLS 80® thread, plastic coated



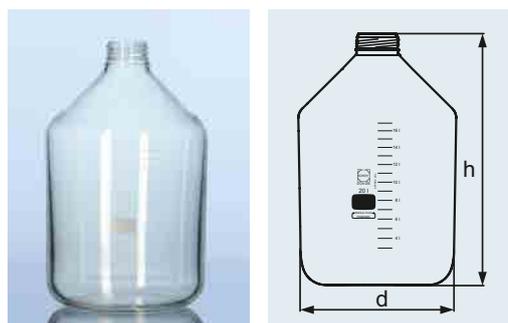
The coating provides scratch, leak and splinter protection and is ideally suited to both the transport and storage of hazardous media or valuable samples. UV protection up to approx. 380 nm wavelength. High transparency. Suitable for microwaving. With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic. Complete with blue quick release closure (PP¹, integral lip seal) and pouring ring (PP¹) for drip-free pouring and clean, safe working. Service temperature limit of closure and pouring ring: +140 °C. Service temperature limit of the PU¹ plastic coating: -30 °C to +135 °C.

Typical applications: storage, transport and safe handling of hazardous substances.

Cat. No.	Capacity ml	Thread GLS	d mm	h mm	Pack/Quantity
With screw cap and pouring ring					
21 860 36 5	250	80	95	105	10
11 601 52	500	80	101	148	10
11 601 63	1 000	80	101	218	10
11 601 64	2 000	80	136	248	10
21 865 69 5	3 500	80	160	275	1
11 601 65	5 000	80	182	310	1

¹ For chemical and thermal resistance, see page 49.

DURAN® PRODUCTION BOTTLE with DIN thread, GLS 80® and GL 45

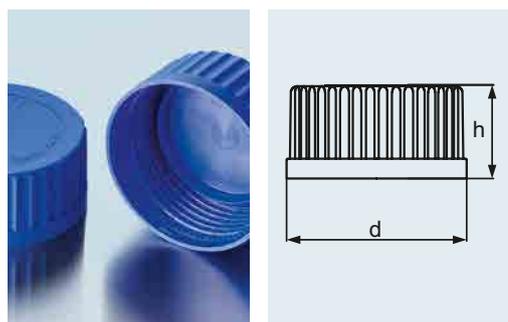


Production bottles have a stronger wall thickness as standard bottles due to the increased amount of glass being used the mechanical sturdiness is significantly improved. Ideal for mixing and stirring processes with large and heavy magnetic stir bars. With easy-to-read scale and large labelling field for easy marking, in fired-on, highly durable white ceramic.

Typical applications: mixing of liquids, storage, transport.

Cat. No.	Capacity ml	DIN thread GLS/GL	d mm	h mm	Pack/Quantity
Without screw cap and pouring ring					
11 602 20	10 000	80	228	385	1
11 601 10	20 000	80	289	480	1
11 602 00	10 000	45	228	410	1
11 601 00	20 000	45	289	505	1

QUICK RELEASE CLOSURE FOR DURAN® GLS 80® LABORATORY BOTTLE from PP¹, blue, with lip seal



Permits opening and closing of the DURAN® GLS 80 bottle with only a three-quarter turn. A matching PP¹ pouring ring is also available, permitting clean, drop-free use.

Cat. No.	Thread GLS	d mm	h mm	Pack/Quantity
Cap				
11 127 16	80	87	40	10
Pouring ring				
11 601 66	80		6.85	10

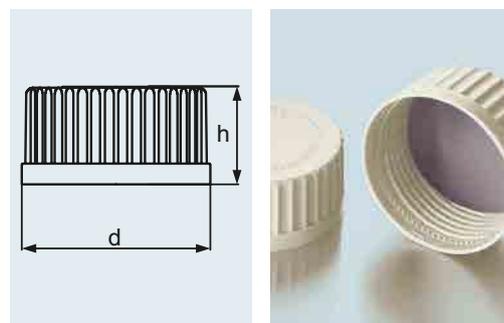
¹ For chemical and thermal resistance, see page 49.

The material used is a special compound based on a polyarylsulphone¹. Consequently the chemical, thermal and mechanical properties of the material are noticeably improved and matched to laboratory requirements. Thanks to the thread, the DURAN® GLS 80 bottle can be opened and closed with only a three-quarter turn. The seal, which is coated on both sides with PTFE¹, ensures the bottle can be tightly closed. A matching PTFE¹ pouring ring is also available, permitting clean, drop-free use.

QUICK RELEASE CLOSURE FOR DURAN® GLS 80® LABORATORY BOTTLE with sealing disc (PSU compound¹)

Cat. No.	Thread GLS	d mm	h mm	Pack/Quantity
Cap				
11 658 88	80	88.5	40	5
Pouring ring				
11 673 07	80		6.85	5
Replacement sealing disc				
11 529 21	80	79	3.1	5

¹ For chemical and thermal resistance, see page 49.



NEW

A Tmax. 121 °C 180 °C

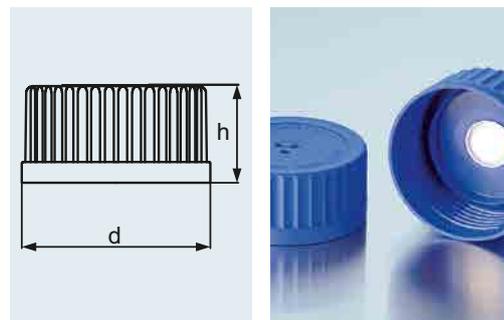
For GLS 80 thread. Ideal for autoclaving processes because the membrane permits pressure equalisation and tight sealing. Hence the risk of contamination is greatly reduced. Ingress of liquids or solids is prevented and the bottle contents remain sterile.

Typical applications: storage or transport of gas generating media, autoclaving of media.

MEMBRANE SCREW CAP FOR DURAN® GLS 80® LABORATORY BOTTLE from PP¹, blue, with welded-in PTFE¹ membrane for pressure equalisation

Cat. No.	Thread GLS	d mm	h mm	Pack/Quantity
11 601 68	80	86	40	2

¹ For chemical and thermal resistance, see page 49.

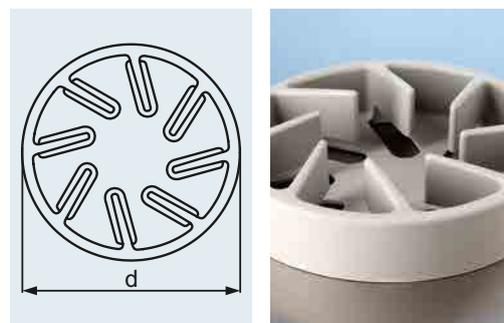


A Tmax. 121 °C 140 °C

The holder helps stabilise bottles during activities such as liquid dispensing or pipetting. The flexible ribs accommodate both round and square bottles with diameters or base widths of between 75 and 120 mm. The solid silicone construction makes the holder autoclavable, durable, and chemically resistant.

Cat. No.	d mm	h mm	Pack/Quantity
29 213 54	165	40	1

SILICONE BOTTLE HOLDER



GLS 80® CONNECTION SYSTEM
 screw cap GLS 80® with four ports
 (GL 18 thread)

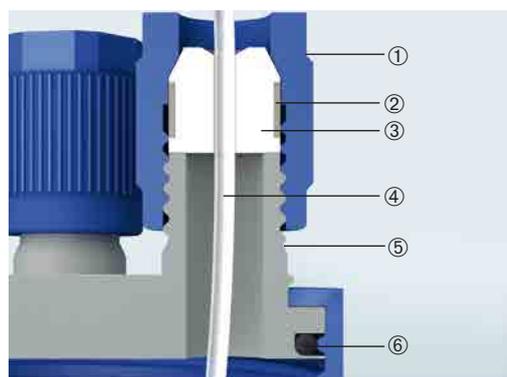
Materials used: PP¹ and PTFE¹. Flexible modular system. Five different hose diameters (3.2 mm; 6.0 mm; 8.0 mm; 10.0 mm and 12.0 mm) can be connected. Sterile pressure equalisation is possible by using the membrane filter. Unused ports can be provided with a blind cap.



Typical applications: safe transfer of liquid media within a closed and sterile system (evaporation is reduced).

Cat. No.	Thread GLS	d mm	h mm	Pack/Quantity
11 601 76	80	86	~60	2
Accessories				
11 601 69	Insert for screw cap GL 18, ID 3.2 mm			1
11 601 70	Insert for screw cap GL 18, ID 6.0 mm			1
11 601 71	Insert for screw cap GL 18, ID 8.0 mm			1
11 601 72	Insert for screw cap GL 18, ID 10.0 mm			1
11 601 73	Insert for screw cap GL 18, ID 12.0 mm			1
11 601 74	Screw cap for tube connection, blue, GL 18			2
11 601 67	Pressure equalisation set for 4-port, GL 18			1
11 706 82	Screw cap, red, PBT ¹ , GL 18			2

¹ For chemical and thermal resistance, see page 49.



Schematic diagram of GLS 80® connection system

- ① Screw cap GL 18 (PP)
- ② Silicone sealing ring on insert
- ③ PTFE insert/tubing connector
- ④ Tubing (not supplied)
- ⑤ Port (PP)
- ⑥ O-ring seal

The GLS 80[®] stirred reactor is suitable for a wide range of laboratory mixing processes. The connections (2 × GL 14, 2 × GL 18) provided permit addition or removal of media from the bottle during the mixing process. The whole assembly can be autoclaved and is therefore suitable for use in the biological sector. By using components from the GLS 80[®] connection system, an additional media bottle (OD hose: 1.6–12.0 mm) can be connected or a sterile pressure equalizer attached. Drive for the stirrer is provided by a standard commercial magnetic stirrer. The variable stirrer shaft can be used in DURAN[®] GLS 80[®] laboratory glass bottles (1 000 and 2 000 ml) and provides notably improved mixing in comparison with standard magnetic stir bars. The agitating element is exchangeable and use up to 500 rpm is possible.

Typical applications: mixing of liquids, dissolving of solids, simple fermentation processes.

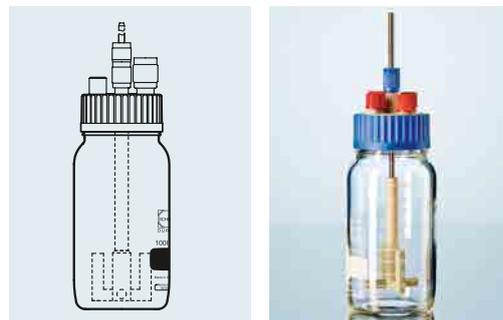
Cat. No.	Description	Thread GLS	Anchor stirrer d mm	Impeller stirrer d mm	Pack/Quantity
12 003 79		80	62		1
	Stirred reactor cap, stirrer anchor type, magnetic, complete with shaft, connection and screw cap				
12 003 80		80	62		1
	Stirred reactor anchor type, magnetic, complete with DURAN [®] GLS 80 [®] bottle 1 000 ml, GL 14 screw cap (PP ¹ , blue), 2 × GL 14 screw cap (PBT ¹ red), 2 × GL 18 screw cap (PBT ¹ red)				
12 003 81		80	62		1
	Stirred reactor anchor type, magnetic, complete with DURAN [®] GLS 80 [®] bottle 2 000 ml, GL 14 screw cap (PP ¹ , blue), 2 × GL 14 screw cap (PBT ¹ red), 2 × GL 18 screw cap (PBT ¹ red)				
Accessories for GLS 80 [®] stirred reactor					
12 003 82				62	1
	Stirrer impeller type, magnetic, for GLS 80 [®] stirred reactor				
12 003 83			62		1
	Stirrer anchor type, magnetic, for GLS 80 [®] stirred reactor				
12 003 85		80			1
	Spare screw cap for GLS 80 [®] stirred reactor, PP, blue/grey				
12 003 86					1
	Spare shaft for GLS 80 [®] stirred reactor, stainless steel, including PEEK connection				

¹ For chemical and thermal resistance, see page 49.

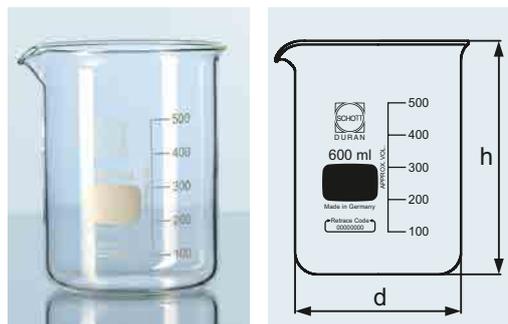
The components for a secure tube connection can be found on pages 13 and 20.

GLS 80 STIRRED REACTOR

materials used: PP¹/PTFE¹/PEEK¹/
stainless steel



DURAN® BEAKER
low form, with spout



With easy-to-read scale and large labelling field for easy marking in fired-on, highly durable, white ceramic. Spout for clean pouring. Uniform wall thickness distribution makes these beakers ideal for heating applications.

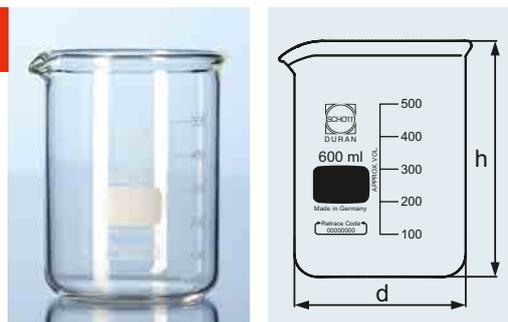
Cat. No.	Capacity ml	d mm	h mm	Pack/Quantity
21 106 07 ¹	5	22	30	10
21 106 08 ¹	10	26	35	10
21 106 14	25	34	50	10
21 106 17	50	42	60	10
21 106 24	100	50	70	10
21 106 29	150	60	80	10
21 106 36	250	70	95	10
21 106 41	400	80	110	10
21 106 48	600	90	125	10
21 106 53	800	100	135	10
21 106 54	1 000	105	145	10
21 106 63	2 000	132	185	10
21 106 68	3 000	152	210	4
21 106 73	5 000	170	270	1
21 106 86 ^{1,2}	10 000	217	350	1

¹ Without graduation.

² Non-DIN/ISO size.

DURAN® BEAKER SUPER DUTY
low form with spout, with reinforced rim

NEW

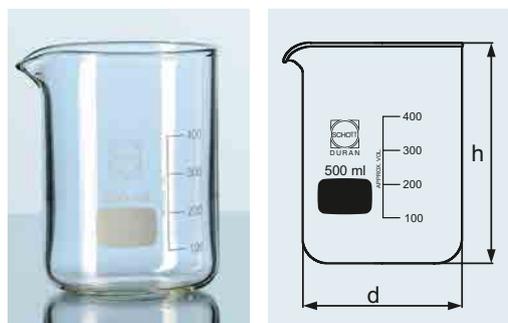


Better mechanical stability due to increased glass content. Reinforced rim increases shock resistance and reduces risk of breakage. Typical applications: Working under mechanical load.

Note: Uniform and slow heating is recommended. The standard DURAN® beakers should be used when working at very high temperatures or if rapid temperature changes are expected.

Cat. No.	Capacity ml	d mm	h mm	Pack/Quantity
21 107 29	150	60	80	10
21 107 36	250	70	95	10
21 107 41	400	80	110	10
21 107 48	600	90	125	10
21 107 54	1 000	105	145	10
21 107 63	2 000	132	185	10
21 107 73	5 000	170	270	1

DURAN® BEAKER
heavy-wall (filtering beaker)



With easy-to-read scale and large labelling field for easy marking in fired-on, highly durable, white ceramic. Due to the increased wall thickness, it has better mechanical properties than the standard beaker. Thermal shock resistance, however, is reduced so only limited application for heating. Spout for clean pouring.

Cat. No.	Capacity ml	d mm	h mm	Pack/Quantity
21 131 24	100	52	85	10
21 131 29	150	54	93	10
21 131 36	250	70	94	10
21 131 44	500	89	124	10
21 131 54	1 000	105	160	10
21 131 63	2 000	135	195	10
21 131 68	3 000	157	205	4
21 131 73	5 000	182	256	1
21 131 86 ¹	10 000	225	340	1
21 131 88 ¹	15 000	260	390	1
21 131 91 ¹	20 000	285	430	1

¹ Without graduation.

With easy-to-read scale and large labelling field for easy marking in fired-on, highly durable, white ceramic. Due to conical form, suited to the mixing of liquids. Uniform wall thickness distribution makes these flasks ideal for heating applications.

Cat. No.	Capacity ml	d mm	d ₁ mm	h mm	Pack/Quantity
21 216 14	25	42	22	75	10
21 216 17	50	51	22	90	10
21 216 24	100	64	22	105	10
21 216 28	125	67	28	112	10
21 990 27 ¹	150	74	28	118	10
21 216 32 ¹	200	79	34	131	10
21 216 36	250	85	34	145	10
21 216 39 ¹	300	87	34	156	10
21 216 44	500	105	34	180	10
21 216 53	800	120	42	200	10
21 216 54	1 000	131	42	220	10
21 216 63	2 000	166	50	280	10
21 216 68	3 000	187	52	310	2
21 216 73	5 000	220	52	365	1

¹ Non-DIN ISO size.

With easy-to-read scale and large labelling field for easy marking in fired-on, highly durable, white ceramic. Due to conical form, suited to the mixing of liquids. Uniform wall thickness distribution makes these flasks ideal for heating applications. The wide neck enables easy filling and cleaning.

Cat. No.	Capacity ml	d mm	d ₁ mm	h mm	Pack/Quantity
21 226 14 ¹	25	43	31	70	10
21 226 17	50	51	34	85	10
21 226 24	100	64	34	105	10
21 226 32 ¹	200	79	50	131	10
21 226 36	250	85	50	140	10
21 226 39 ¹	300	87	50	156	10
21 226 44	500	105	50	175	10
21 226 54	1 000	131	50	220	10
21 226 63 ¹	2 000	153	72	276	10

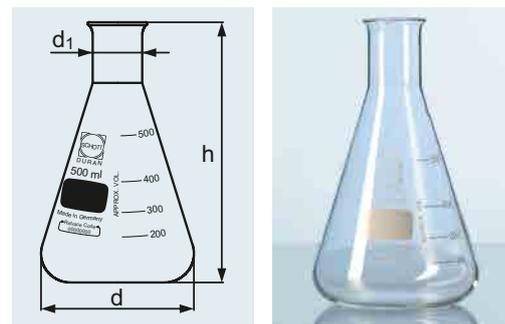
¹ Non-DIN EN ISO size.

Better mechanical stability due to increased glass content. Reinforced rim increases shock resistance and reduces risk of breakage. Typical applications: Working under mechanical load.

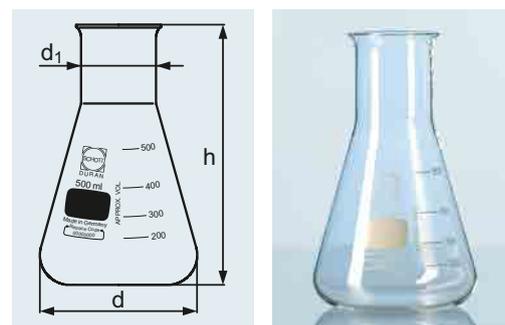
Note: Uniform and slow heating is recommended. The standard DURAN® beakers should be used when working at very high temperatures or if rapid temperature changes are expected.

Cat. No.	Capacity ml	d mm	d ₁ mm	h mm	Pack/Quantity
21 217 14	25	42	22	75	10
21 217 17	50	51	22	90	10
21 217 24	100	64	22	105	10
21 217 36	250	85	34	145	10
21 217 44	500	105	34	180	10
21 217 54	1 000	131	42	220	10
21 217 63	2 000	166	50	280	10
21 217 73	5 000	220	52	365	1

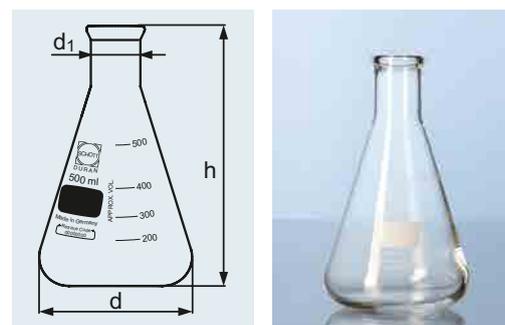
DURAN® Erlenmeyer Flask narrow neck



DURAN® Erlenmeyer Flask wide neck



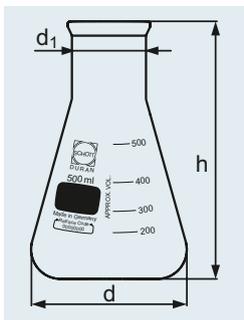
DURAN® Erlenmeyer Flask SUPER DUTY narrow neck, with reinforced rim



**DURAN® ERLLENMEYER FLASK
SUPER DUTY**

wide neck, with reinforced rim

NEW



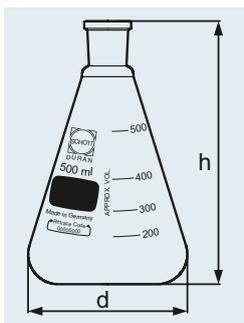
Better mechanical stability due to increased glass content. Reinforced rim increases shock resistance and reduces risk of breakage. Typical applications: Working under mechanical load.

Note: Uniform and slow heating is recommended. The standard DURAN® beakers should be used when working at very high temperatures or if rapid temperature changes are expected.

Cat. No.	Capacity ml	d mm	d ₁ mm	h mm	Pack/Quantity
21 227 24	100	64	34	105	10
21 227 36	250	85	50	140	10
21 227 44	500	105	50	175	10
21 227 54	1 000	131	50	220	10

DURAN® ERLLENMEYER FLASK

with standard ground joint



With easy-to-read scale and large labelling field for easy marking. The conical shape makes these flasks ideal for mixing liquids and, due to the even wall thickness, also suitable for use as heating glassware. Closable with glass and plastic stopper. Combinable with other standard ground joint articles.

Cat. No.	Capacity ml	Neck NS	d mm	h mm	Pack/Quantity
24 193 13	25	14/23	42	75	10
24 193 20	50	14/23	51	85	10
24 193 17	50	19/26	51	85	10
24 193 18 ¹	50	24/29	51	85	10
24 193 19	50	29/32	51	85	10
24 193 24	100	19/26	64	105	10
24 193 26 ¹	100	24/29	64	105	10
24 193 27	100	29/32	64	105	10
24 193 32 ¹	200	29/32	79	131	10
24 193 36	250	24/29	85	140	10
24 193 37	250	29/32	85	140	10
24 193 38 ¹	250	45/40	85	140	10
24 193 39 ¹	300	29/32	87	155	10
24 193 44	500	24/29	105	175	10
24 193 46	500	29/32	105	175	10
24 193 47 ¹	500	45/40	105	175	10
24 193 54	1 000	24/29	131	220	10
24 193 56	1 000	29/32	131	220	10
24 193 57 ¹	1 000	45/40	131	220	10

¹ Non-DIN ISO size.

Uniform wall thickness distribution makes these flasks ideal for heating applications. The geometry permits very uniform heating. Flasks with a neck diameter of 65 mm or more have a reinforced rim.

Cat. No.	Capacity ml	d mm	d ₁ mm	h mm	Pack/Quantity
21 721 17	50	51	26	95	10
21 721 24	100	64	26	110	10
21 721 36	250	85	34	144	10
21 721 44	500	105	34	168	10
21 721 54	1 000	131	42	200	10
21 721 64 ¹	2 000	166	42	260	10
21 721 68 ¹	3 000	185	50	260	1
21 721 71	4 000	207	52	290	1
21 721 73 ¹	5 000	223	50	305	1
21 721 77 ¹	6 000	236	51	355	1
21 721 86	10 000	279	65	380	1
21 721 87 ^{1,2}	12 000	295	65	380	1
21 721 91 ²	20 000	345	76	515	1

¹ Non-DIN ISO size.

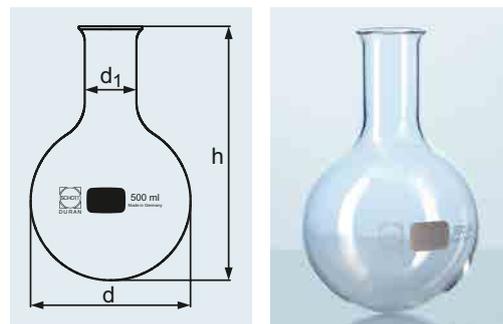
² Conforms to ASTM E 1403.

Uniform wall thickness distribution makes these flasks ideal for heating applications. The geometry permits very uniform heating. The wide neck permits easy filling and removal of flask contents. Flasks with a neck diameter of 76 mm or more have a reinforced rim.

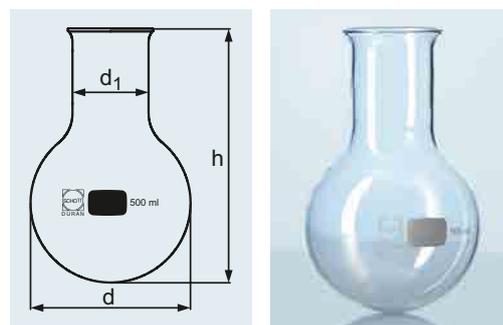
Cat. No.	Capacity ml	d mm	d ₁ mm	h mm	Pack/Quantity
21 741 17 ¹	50	51	34	105	10
21 741 24	100	64	35	110	10
21 741 36	250	85	51	143	10
21 741 44	500	105	50	168	10
21 741 54	1 000	131	50	200	10
21 741 55 ¹	1 000	131	65	200	10
21 741 63	2 000	165	76	240	10
21 741 64 ¹	2 000	166	50	240	10
21 741 68 ¹	3 000	185	65	260	1
21 741 71	4 000	206	76	290	1
21 741 73 ¹	5 000	223	65	310	1
21 741 76	6 000	236	89	330	1
21 741 77 ¹	6 000	236	65	330	1
21 741 86 ¹	10 000	279	89	420	1
21 741 91 ¹	20 000	345	89	520	1

¹ Non-DIN ISO size.

DURAN® ROUND BOTTOM FLASK narrow neck, with beaded rim

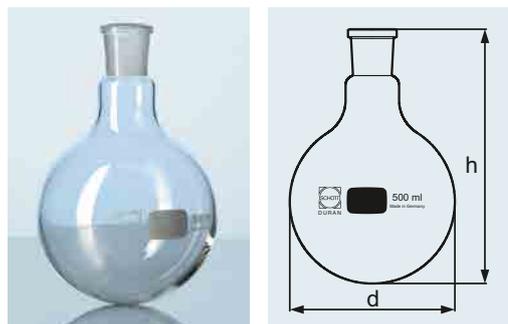


DURAN® ROUND BOTTOM FLASK wide neck, with beaded rim



DURAN® ROUND BOTTOM FLASK
with standard ground joint

Thanks to the uniform wall thickness, round bottom flasks are ideal as heating vessels. The geometry permits very uniform heating. Closable with glass and plastic stopper. Combinable with other standard ground joint articles.



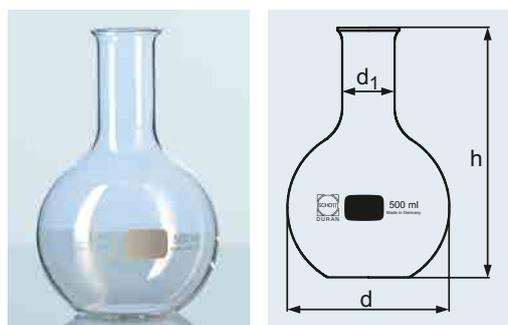
Typical applications: distillation, extraction.

Cat. No.	Capacity ml	Neck NS	d mm	h mm	Pack/Quantity
24 170 13	25	14/23	41	85	10
24 170 14 ¹	25	19/26	41	85	10
24 170 20	50	14/23	51	90	10
24 170 17	50	19/26	51	90	10
24 170 18 ¹	50	24/29	51	105	10
24 170 19 ¹	50	29/32	51	105	10
24 170 25	100	14/23	64	105	10
24 170 24	100	19/26	64	105	10
24 170 26	100	24/29	64	105	10
24 170 27	100	29/32	64	105	10
24 170 36	250	24/29	85	140	10
24 170 37	250	29/32	85	140	10
24 170 44	500	24/29	105	163	10
24 170 46	500	29/32	105	163	10
24 170 47 ¹	500	45/40	105	163	10
24 170 54	1 000	24/29	131	200	10
24 170 56	1 000	29/32	131	200	10
24 170 57 ¹	1 000	45/40	131	200	10
24 170 63	2 000	29/32	166	240	10
24 170 64 ¹	2 000	45/40	166	240	10
24 170 72	4 000	45/40	207	290	1

¹ Non-DIN ISO size.

DURAN® FLAT BOTTOM FLASK
narrow neck, with beaded rim

Uniform wall thickness distribution makes these flasks ideal for heating applications. Flat base means flasks can be set down without a supporting ring. Flasks with a neck diameter of 65 mm have a reinforced rim.



Cat. No.	Capacity ml	d mm	d ₁ mm	h mm	Pack/Quantity
21 711 17	50	51	26	90	10
21 711 24	100	64	26	105	10
21 711 36	250	85	34	138	10
21 711 44	500	105	34	163	10
21 711 54	1 000	131	42	190	10
21 711 64 ¹	2 000	166	42	250	10
21 711 68 ¹	3 000	185	50	250	1
21 711 71	4 000	207	50	275	1
21 711 73 ¹	5 000	223	50	290	1
21 711 76	6 000	237	65	315	1
21 711 86	10 000	280	65	360	1

¹ Non-DIN ISO size.

Uniform wall thickness distribution makes these flasks ideal for heating applications. Flat base means flasks can be set down without a supporting ring. The wide neck permits easy filling and removal of flask contents. Flasks with a neck diameter of 76 mm have a reinforced rim.

Cat. No.	Capacity ml	d mm	d ₁ mm	h mm	Pack/Quantity
21 731 17	50	51	34	90	10
21 731 24	100	64	34	105	10
21 731 36	250	85	50	138	10
21 731 44	500	105	50	163	10
21 731 54	1 000	131	50	190	10
21 731 63 ¹	2 000	166	76	230	10
21 731 64	2 000	166	50	230	10

¹ Non-DIN EN ISO size.

Due to the flat bottom the flask can be set upon a bench without a support ring.

Cat. No.	Capacity ml	Neck NS	d mm	h mm	Pack/Quantity
24 171 19	50	29/32	51	85	10
24 171 24	100	19/26	64	103	10
24 171 26	100	24/29	64	103	10
24 171 27	100	29/32	64	103	10
24 171 36 ¹	250	24/29	85	130	10
24 171 37	250	29/32	85	130	10
24 171 44 ¹	500	24/29	105	160	10
24 171 46	500	29/32	105	160	10
24 171 54 ¹	1 000	24/29	131	187	10
24 171 56	1 000	29/32	131	187	10
24 171 63 ¹	2 000	29/32	166	230	10

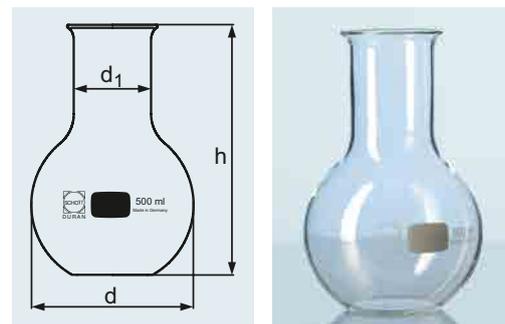
¹ Non-DIN ISO size.

Thanks to the uniform wall thickness, round bottom flasks are ideal as heating vessels. The geometry permits very uniform heating. Depending upon the application, accessories, columns, thermometers, dropping funnels, boiling capillaries, etc. can be fitted.

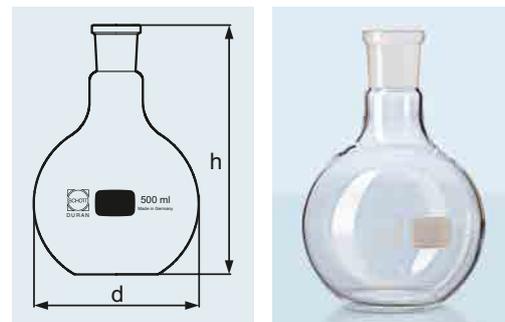
Typical applications: distillation, extraction.

Cat. No.	Capacity ml	Centre neck NS	Side necks NS	d mm	h mm	Pack/Quantity
24 188 27	100	29/32	14/23	64	105	1
24 188 36	250	24/29	14/23	85	105	1
24 188 37	250	29/32	14/23	85	140	1
24 188 43	500	24/29	14/23	105	140	1
24 188 46	500	29/32	14/23	105	163	1
24 188 53	1 000	24/29	14/23	131	163	1
24 188 55	1 000	29/32	14/23	131	200	1

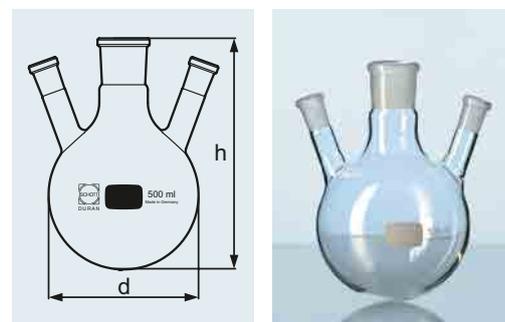
DURAN® FLAT BOTTOM FLASK
wide neck, with beaded rim



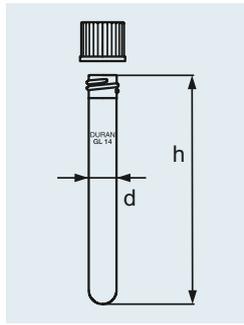
DURAN® FLAT BOTTOM FLASK
with standard ground joint



DURAN® TRIPLE-NECK, ROUND BOTTOM FLASK
with standard ground joint, inclined side necks



DURAN® CULTURE TUBE
with DIN thread and screw cap from PBT¹



DURAN® culture tube are manufactured from borosilicate glass 3.3. The DIN thread permits the use of PBT¹ screw caps; tubes are therefore well suited to the culture of micro-organisms. The contents only come into contact with the glass and PTFE¹ seal.

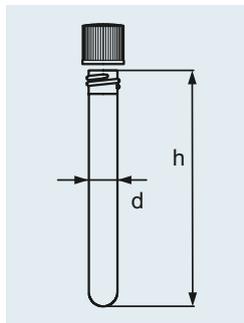
Typical applications: growing and storage of sterile cultures.

Cat. No.	d x h mm	approx. Vol. ml	DIN-thread GL	Pack/Quantity
With screw-cap ²				
26 135 11 5	12 x 100	6	14	50
26 135 12 5	13 x 100	9	14	50
26 135 22 5	16 x 150	20	18	50
26 135 24 5	20 x 150	20	18	50
26 135 21 5	16 x 160	20	18	50
26 135 23 5	18 x 180	30	18	50
Without screw-cap ²				
26 135 11	12 x 100	6	14	50
26 135 12	13 x 100	9	14	50
26 135 22	16 x 150	20	18	50
26 135 24	20 x 150	20	18	50
26 135 21	16 x 160	20	18	50
26 135 23	18 x 180	30	18	50

¹ For chemical and thermal properties, see page 49.

² Replacement caps, see page 12.

DISPOSABLE CULTURE TUBE
FROM SODA-LIME GLASS
with DIN thread and PP¹ screw cap



With screw cap from PP¹ and sealing disc from TPE.

Cat. No.	d x h mm	approx. Vol. ml	DIN-thread GL	Wall thickness mm	Pack/Quantity
With TPE seal					
23 175 11 5 ²	12 x 100	6	14	1	100
23 175 14 5	16 x 100	12	18	1	100
23 175 21 5	16 x 160	22	18	1	100
23 175 23 5	18 x 180	32	18	1	100

¹ For chemical and thermal properties, see page 49.

² With sealing disc from SBR. Max operating temperature 70 °C.

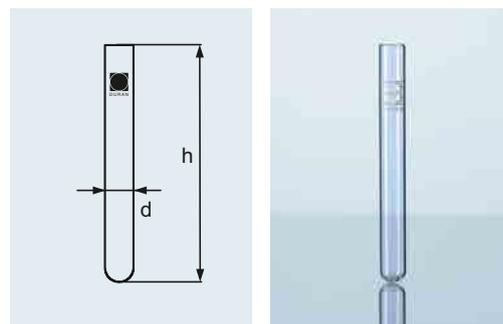
Screw Cap also available separately: Cat. No. 29 990 12 (GL 14),
Cat. No. 29 990 13 (GL 18).

The test tubes are thick-walled and therefore mechanically very resistant, yet still retain good thermal shock resistance.

DURAN® TEST TUBE

with beaded rim or straight rim

Cat. No. Beaded rim	Cat. No. Straight rim	d x h mm	approx. Vol. ml	Wall thickness mm	Pack/Quantity
26 130 01	26 131 01	8 x 70	2	0.8-1.0	100
26 130 03	26 131 03	10 x 75	4	0.8-1.0	100
26 130 06	26 131 06	10 x 100	5	0.8-1.0	100
26 130 08	26 131 08	12 x 75	6	0.8-1.0	100
26 130 11	26 131 11	12 x 100	8	0.8-1.0	100
26 130 12	26 131 12	13 x 100	9	0.8-1.0	100
26 130 13	26 131 13	14 x 130	16	0.8-1.0	100
26 130 16	26 131 16	16 x 130	17	1.0-1.2	100
26 130 21	26 131 21	16 x 160	21	1.0-1.2	100
26 130 23	26 131 23	18 x 180	32	1.0-1.2	100
26 130 26	26 131 26	20 x 150	34	1.0-1.2	100
26 130 28	26 131 28	20 x 180	40	1.0-1.2	100
26 130 33	26 131 33	25 x 150	55	1.0-1.2	50
26 130 36	26 131 36	25 x 200	70	1.0-1.2	50
26 130 38	26 131 38	30 x 200	100	1.0-1.4	50

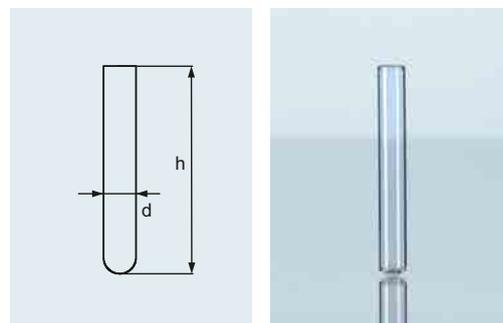


Cat. No.	d x h mm	approx. Vol. ml	Wall thickness mm	Pack/Quantity
23 172 018	9.75 x 75	4	0.80	814
23 172 036	10.0 x 75	4	0.60	766
23 172 058	11.75 x 75	5	0.80	550
23 172 086	11.75 x 75	6	0.55	550
23 172 096	12.25 x 75	7	0.55	500
23 172 099	12.25 x 75	6	0.80	500
23 172 078	11.75 x 100	8	0.80	550
23 172 119	12.25 x 100	9	0.80	500
23 172 148	15.5 x 100	14	0.80	310
23 172 109	15.75 x 100	15	0.90	310
23 172 128	12.25 x 120	18	0.80	500
23 172 188	10.0 x 150	8	0.80	766
23 172 198	15.5 x 150	19	0.80	310
23 172 219	15.5 x 160	22	0.80	310

DISPOSABLE TEST TUBE

FROM SODA-LIME GLASS

straight rim

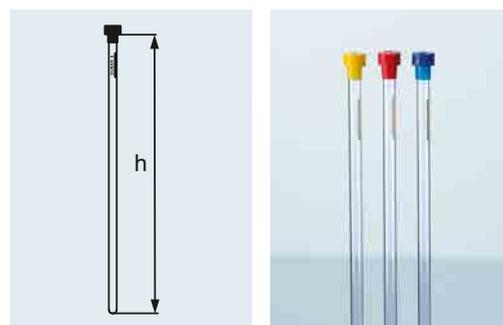


NMR tubes are available, according to requirement, in three accuracy classes. The correct tube can be selected depending on magnetic field and spin. These tubes are noteworthy for their close tolerances and accuracy, especially to their straightness, wall thickness and wall thickness distribution. Consequently, quick and accurate test results are achievable.

NMR TUBES

three accuracy classes

Cat. No.	h mm	OD mm	iD mm	Camber mm	MHZ mm	Pack/Quantity
Economic, with Retrace Code						
23 170 01 I ¹	178	4.95+/- 0.05	4.20+/- 0.05	0.07	300	250
Professional						
23 170 02 I	178	4.97+/- 0.025	4.20+/- 0.025	0.03	400	250
Scientific						
23 170 03 I	178	4.97+/- 0.013	4.20+/- 0.025	0.013	500	5



¹ DURAN®.

DURAN® FILTERING APPARATUS

NEW

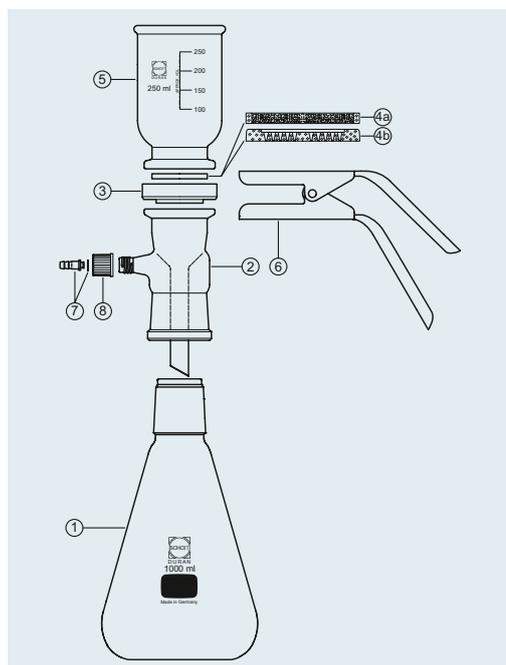


Virtually universal applications, as the medium only comes into contact with glass and PTFE. The scaled funnel simplifies dosing and analysis. With PTFE plate holder: Filter paper, membrane filters (47 mm) or glass filters can be used for filtration. **Plates and PTFE adapters are replaceable.** Easy and fast cleaning. All components are available as spare parts. Easy to clean from both sides.

Application examples: Coarse and fine filtration, filtration of HPLC media, residue analysis

Cat. No.	Description	Pack/Quantity
25 710 54 5	DURAN® filtration apparatus complete with PTFE insert and clamp	1
29 400 28	PTFE insert	1
29 076 36	Clamp (anodised aluminium)	1
24 722 36	Funnel with 250 ml scale	1
24 317 32	Head standard ground joint 45/40	1
24 202 54	Filtering flask with standard ground joint 45/40, 1000 ml	1
29 255 06	Plastic hose connection with silicone seal, straight, GL 14	1
29 227 05	Screw connection caps, red, made from PBT, GL 14, 9.5 mm bore	1
25 205 02	DURAN® filter plate with 50mm glass rim, NW 43, por. 2	1
21 340 31	DURAN® slit-sieve, plate diameter 48 mm	1

Removable glass filter disc and slit-sieve disc for different filtration applications and easy cleaning.



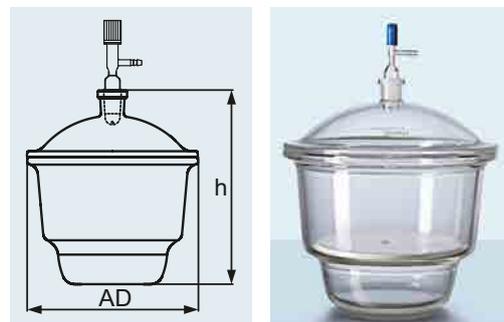
- ① DURAN® Filtering flask, 1000 ml with NS 45/40
- ② Head NS 45/40 with hose connection GL 14
- ③ PTFE adapter disc
- ④ a DURAN® Glass filter disc, 50 mm in diameter
- ④ b DURAN® Slit-sieve disc, 48 mm in diameter
- ⑤ Funnel with 250 ml scale
- ⑥ Clamp (anodised aluminium)
- ⑦ Plastic hose connection with silicone seal, straight
- ⑧ Screw connection cap made of PBT, red, GL 14

DURAN® desiccators completed with a porcelain plate and a vacuum connection. Porcelain plate and the lid diameter corresponds to the diameter of the base and vacuum connection remains air tight.

Typical applications: drying of moist samples and storage of moisture-sensitive substances.

Cat. No.	DN	h mm	ID Flange mm	OD Flange mm	approx. Vol. l	Tubulature	Pack/Quantity
24 782 57 5	150	239	172	215 +/- 2	2.4	24/29	1
24 782 61 5	200	296	224	270 +/- 2	5.8	24/29	1
24 782 66 5	250	344	274	320 +/- 2	10.5	24/29	1
24 782 69 5	300	420	332	380 +/- 2	18.5	24/29	1

DURAN® VACUUM DESICCATOR-SET with NOVUS standard ground joint (NS 24/29) junction tube in the lid, stopcock and flat flange



NEW

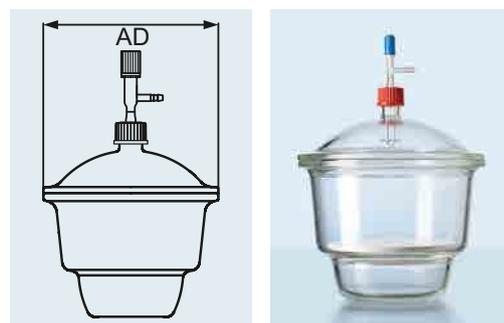


DURAN® desiccators completed with a porcelain plate and a vacuum connection. Porcelain plate and the lid diameter correspond to the diameter of the base and vacuum connection remains air tight.

Typical applications: drying of moist samples and storage of moisture-sensitive substances.

Cat. No.	DN	h mm	ID Flange mm	OD Flange mm	approx. Vol. l	GL	Pack/Quantity
24 783 57 5	150	239	172	215 +/- 2	2.4	32	1
24 783 61 5	200	296	224	270 +/- 2	5.8	32	1
24 783 66 5	250	344	274	320 +/- 2	10.5	32	1
24 783 69 5	300	420	332	380 +/- 2	18.5	32	1

DURAN® VACUUM DESICCATOR-SET with threaded outlet, Type MOBILEX (GL 32)

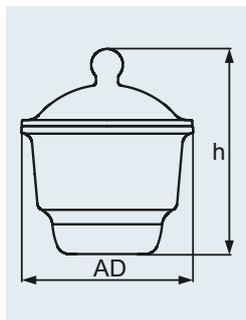


NEW



DESICCATORS

DURAN® DESICCATOR with flat flange and knobbed lid, no connection



DIN
13130

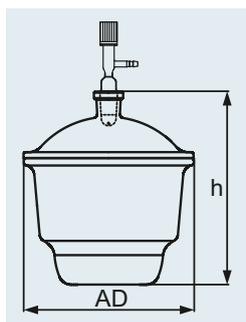
USP
Standard

Desiccator lid made from DURAN® borosilicate glass 3.3. Components are vacuum tight (DIN 12491). Spare parts such as lids and bases can be interchanged (observe DN), porcelain plates to be ordered separately.

Typical applications: drying of moist products and storage of moisture-sensitive substances.

Cat. No.	DN	h mm	ID Flange mm	OD Flange mm	approx. Vol. l	Pack/Quantity
24 781 46	100	187	119	153 +/- 2	0.7	1
24 781 57	150	252	172	215 +/- 2	2.4	1
24 781 61	200	309	224	270 +/- 2	5.8	1
24 781 66	250	357	274	320 +/- 2	10.5	1
24 781 69	300	433	332	380 +/- 2	18.5	1

DURAN® VACUUM DESICCATOR with NOVUS standard ground joint (NS 24/29) junction tube in the lid, stopcock and flat flange



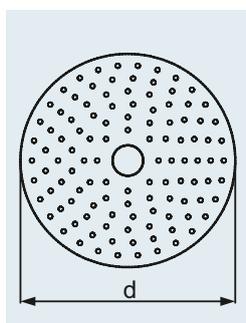
DIN
13130

Vacuum-tight, made from DURAN® borosilicate glass 3.3. To accelerate drying, a vacuum can be applied via the stopcock. Spare parts such as lids, bases, stopcocks and caps can be interchanged (observe DN).

Typical applications: drying of moist samples and storage of moisture-sensitive substances.

Cat. No.	DN	h mm	ID Flange mm	OD Flange mm	approx. Vol. l	Tubulature	Pack/Quantity
24 782 46	100	174	119	153 +/- 2	0,7	24/29	1
24 782 57	150	239	172	215 +/- 2	2,4	24/29	1
24 782 61	200	296	224	270 +/- 2	5,8	24/29	1
24 782 66	250	344	274	320 +/- 2	10,5	24/29	1
24 782 69	300	420	332	380 +/- 2	18,5	24/29	1

PORCELAIN DESICCATOR PLATE



DIN
12911

Cat. No.	DN	d mm	Pack/Quantity
Porcelain			
29 725 46	100	90	1
29 725 57	150	140	1
29 725 61	200	190	1
29 725 66	250	235	1
29 725 69	300	280	1

Due to limited oxygen transfer, cell growth is restricted in standard Erlenmeyer flasks. Baffled flasks interrupt the laminar flow to create a turbulent flow increase the surface of the liquid and the gas exchange surface produce a higher oxygen transfer compared to standard Erlenmeyer flasks. Due to completely automated machine manufacturing, the Erlenmeyer flasks with baffles are geometrically reproducible. Complete with membrane screw cap (reproducible gas exchange) and pouring ring from PP¹. Service temperature limit of screw cap and pouring ring: +140 °C.

Cat. No.	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
21 283 36 5	250	45	85	145	4
21 283 44 5	500	45	105	180	4
21 283 54 5	1 000	45	135	220	4
21 283 36 ²	250	45	85	145	4
21 283 44 ²	500	45	105	180	4
21 283 54 ²	1 000	45	135	220	1

¹ For chemical and thermal resistance, see page 49.

² Flask only.

With easy-to-read scale and large labelling field for easy marking in fired-on, highly durable, white ceramic. The flask can be closed with a PBT cap¹ or membrane cap² (permits gas exchange).

Typical applications: The flask is suitable for storage, media preparation and cultivation.

Cat. No.	Capacity ml	DIN thread GL	d mm	h mm	Pack/Quantity
21 803 24	100	25	64	105	10
21 803 24 5 ³	100	25	64	109	10
21 803 36	250	32	85	145	10
21 803 36 5 ³	250	32	85	149	10
21 803 44	500	32	105	175	10
21 803 44 5 ³	500	32	105	180	10
21 803 54	1 000	32	131	220	10
21 803 54 5 ³	1 000	32	131	225	10

¹ PBT cap, see page 12.

² Membrane cap, see page 11.

³ With PBT cap.

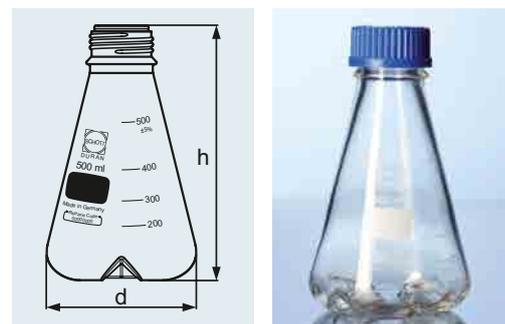
With screw cap and pouring ring (blue, PP¹). Spare caps and pouring rings see pages 10–12.

Typical application: preparation of cultures in nutrient media.

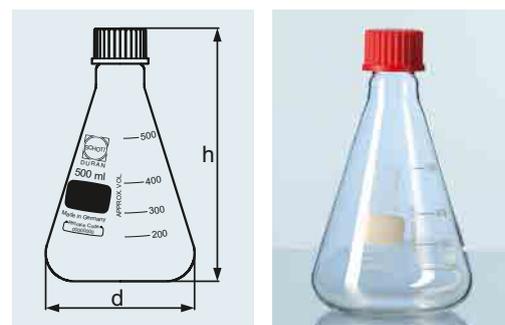
Cat. No.	Capacity ml	d mm	h mm	Pack/Quantity
21 772 68 5	2 000	110	285	2
21 772 86 5	3 500	110	450	1

¹ For chemical and thermal resistance, see page 49.

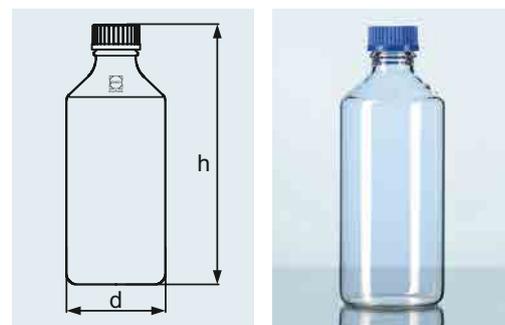
DURAN® BAFFLED FLASK GL 45, with 4 bottom baffles



DURAN® ERLERMAYER FLASK with DIN thread



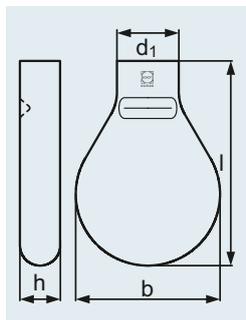
DURAN® ROLLER BOTTLE FOR CELL CULTURES with DIN thread, GL 45



DURAN® CULTURE FLASK,
KOLLE TYPE
oval neck

Large, flat, bottom surface allows uniform culture thickness. DURAN® culture flasks are manufactured from borosilicate glass 3.3. Ideal for cell growth and vaccine production.

Typical application: preparation of cultures in nutrient media.



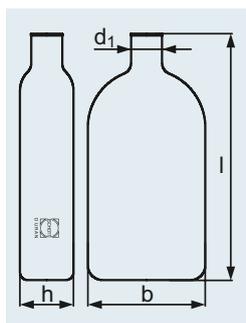
Cat. No.	Capacity ml	l mm	b mm	h mm	d ₁ mm	Pack/Quantity
21 521 41	400	200	140	39	60	10



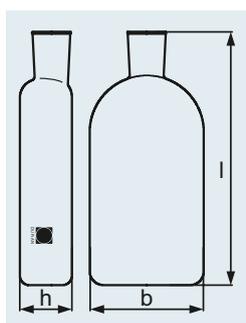
DURAN® CULTURE FLASK,
ROUX TYPE
round neck

Large, flat, bottom surface allows uniform culture thickness. DURAN® culture flasks are manufactured from borosilicate glass 3.3. Ideal for cell growth and vaccine production.

Typical application: preparation of cultures in nutrient media.



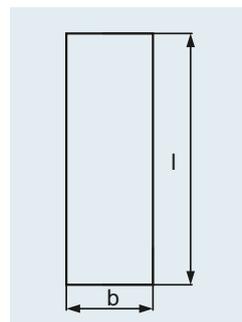
Cat. No.	Capacity ml	l mm	b mm	h mm	d ₁ mm	Pack/Quantity
Round neck						
21 541 58	1 200	260	123	56	33	10
Conical neck, excentric						
21 571 58	1 200	275	123	56	41	10



DURAN Group microscope slides are made from high quality float glass (soda-lime glass) of hydrolytic class 3. Particularly suitable for microscopic examinations. Designed for single use only. Uniform wettability due to flawless surface. It is not necessary to re-adjust the microscope.

MICROSCOPE SLIDES FROM SODA-LIME GLASS

Cat. No.	Colour	B x L mm	Pack/Quantity
Cut			
23 550 11		26 x 76	30 x 50
23 550 12	Matt strip	26 x 76	30 x 50
Ground to 45°			
23 550 13		26 x 76	30 x 50
23 550 14	Matt strip	26 x 76	30 x 50
Ground to 90°			
23 550 22	Blue	26 x 76	30 x 50
23 550 21	White	26 x 76	30 x 50
23 550 23	Yellow	26 x 76	30 x 50
23 550 24	White PRINT	26 x 76	30 x 50
23 550 25	White adhesive	26 x 76	30 x 50
23 550 26	White adhesive ++	26 x 76	30 x 50

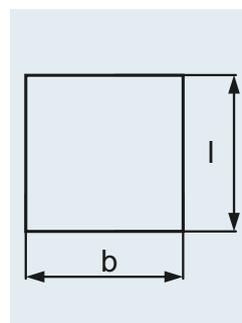


DIN ISO
8037-1

DURAN Group cover slips are made from pure white borosilicate glass (D263® M) i. e. absorption-free in the visible spectral range. Cover slips are used as covering material and for fixing preparations during microscopic examinations. They also ensure the distribution of droplets on the microscope slide.

COVER SLIPS FROM D 263® M

Cat. No.	Strength	B x L mm	Pack/Quantity
23 550 31	I	18 x 18	10 x 100
23 550 32	I	22 x 22	10 x 100
23 550 33	I	24 x 40	10 x 100
23 550 34	I	24 x 50	10 x 100
23 550 35	1.5 Automatic machine	24 x 50	10 x 100
23 550 36	I	24 x 60	10 x 100
23 550 37	1.5 Automatic machine	24 x 60	10 x 100



ISO
8255-1

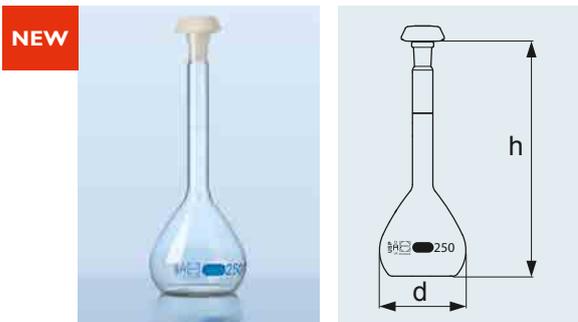
DURAN® volumetric flasks, measuring and mixing cylinders play a vital role in the laboratory. These products are manufactured from chemically and heat resistant borosilicate glass 3.3 and therefore have a very good chemical and thermal resistance together with a high mechanical stability. They have precisely calibrated scales that permit the very accurate determination and measurement of volumes. All accuracy class “A” products are conformity certified to “H”. This confirms that the instruments are manufactured in accordance with the German Federal Weights and Measures Regulations. Conformance to DIN 12 600 is printed directly on to the glass products.

DURAN® volumetric flasks are used for the accurate measurement of specific quantities of liquids. They are volumetric analysis aids in quantitative laboratory work. Volumetric flasks are available in two different accuracy classes: class “A” and class “B”. The two classes differ in the accuracy of measurement with class A being the highest accuracy, and class B is approximately half that of class “A”.

The products with accuracy class “A” have a blue print for clear glass products and a white print for amber versions. The class “A” Volumetric flasks are calibrated individually, but are available with two different types of certificates, one type is supplied with a certificate of the production lot (also available online), the other type with individual certificates.

The accuracy class “B” products have a white print. For these products only a general glass specification is available

**DURAN® VOLUMETRIC FLASK,
CLASS A, USP <31> CONFORMITY**
Blue graduation, with one graduation mark and PE¹ stopper
Conformity “H” certified
Supplied with **individual USP certificate**



Cat. No.	Capacity ml	Accuracy limits ± ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Neck inner diameter mm	Pack/Quantity
24 671 09 5	5 W ²	0,02	70	22	10/19	9 ±1	2
24 671 10 5	10 W ²	0,02	90	27	10/19	9 ±1	2
24 671 14 5	25	0,03	110	40	10/19	9 ±1	2
24 671 17 5	50	0,05	140	50	12/21	11 ±1	2
24 671 25 5	100	0,08	170	60	14/23	13 ±1	2
24 671 32 5	200	0,1	210	75	14/23	15,5 ±1,5	2
24 671 36 5	250	0,12	220	80	14/23	15,5 ±1,5	2
24 671 44 5	500	0,2	260	100	19/26	19 ±2	2
24 671 54 5	1 000	0,3	300	125	24/29	23 ±2	2
24 671 63 5	2 000	0,5	370	160	29/32	27,5 ±2,5	2

¹ For chemical and thermal resistance, see page 49.

² Wide neck.



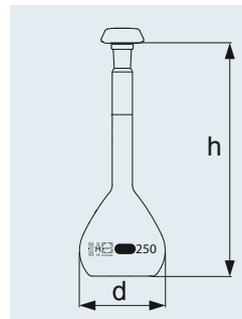
Cat. No.	Capacity ml	Accuracy limits ± ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Neck inner diameter mm	Pack/Quantity
24 678 01 5	1	0,025	65	13	7/16	7 ±1	2
24 678 02 5	2	0,025	70	17	7/16	7 ±1	2
24 678 09 5	5 W ²	0,04	70	22	10/19	9 ±1	2
24 678 10 5	10 W ²	0,04	90	27	10/19	9 ±1	2
24 678 12 5	20	0,04	110	39	10/19	9 ±1	2
24 678 14 5	25	0,04	110	40	10/19	9 ±1	2
24 678 17 5	50	0,06	140	50	12/21	11 ±1	2
24 678 24 5	100	0,1	170	60	12/21	13 ±1	2
24 678 25 5	100	0,1	170	60	14/23	13 ±1	2
24 678 32 5	200	0,15	210	75	14/23	15,5 ±1,5	2
24 678 36 5	250	0,15	220	80	14/23	15,5 ±1,5	2
24 678 44 5	500	0,25	260	100	19/26	19 ±2	2
24 678 54 5	1 000	0,4	300	125	24/29	23 ±2	2
24 678 55 5	1 000 W ²	0,6	300	125	29/32	27,5 ±2,5	2
24 678 63 5	2 000	0,6	370	160	29/32	27,5 ±2,5	2
24 678 73 5	5 000	1,2	475	215	34/35	38 ±3	1

DURAN® VOLUMETRIC FLASK, CLASS A

Blue graduation, with one graduation mark and PE¹ stopper

Conformity "H" certified

Supplied with **batch certificate**



NEW



¹ For chemical and thermal resistance, see page 49.

² Wide neck.

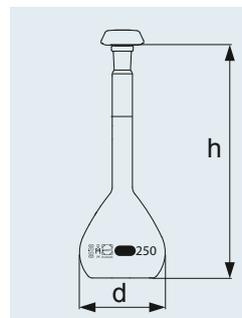
Cat. No.	Capacity ml	Accuracy limits ± ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Neck inner diameter mm	Pack/Quantity
24 679 01 5	1	0,025	65	13	7/16	7 ±1	2
24 679 02 5	2	0,025	70	17	7/16	7 ±1	2
24 679 09 5	5 W ²	0,04	70	22	10/19	9 ±1	2
24 679 10 5	10 W ²	0,04	90	27	10/19	9 ±1	2
24 679 12 5	20	0,04	110	39	10/19	9 ±1	2
24 679 14 5	25	0,04	110	40	10/19	9 ±1	2
24 679 17 5	50	0,06	140	50	12/21	11 ±1	2
24 679 24 5	100	0,1	170	60	12/21	13 ±1	2
24 679 25 5	100	0,1	170	60	14/23	13 ±1	2
24 679 32 5	200	0,15	210	75	14/23	15,5 ±1,5	2
24 679 36 5	250	0,15	220	80	14/23	15,5 ±1,5	2
24 679 44 5	500	0,25	260	100	19/26	19 ±2	2
24 679 54 5	1 000	0,4	300	125	24/29	23 ±2	2
24 679 55 5	1 000 W ²	0,6	300	125	29/32	27,5 ±2,5	2
24 679 63 5	2 000	0,6	370	160	29/32	27,5 ±2,5	2
24 679 73 5	5 000	1,2	475	215	34/35	38 ±3	1

DURAN® VOLUMETRIC FLASK, CLASS A

Blue graduation, with one graduation mark and PE¹ stopper

Conformity "H" certified

Supplied with **individual certificate**



NEW



¹ For chemical and thermal resistance, see page 49.

² Wide neck.

VOLUMETRIC GLASSWARE

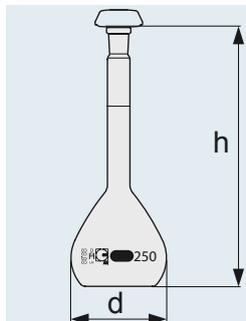
DURAN® VOLUMETRIC FLASK, CLASS A, AMBER

White graduation, with one graduation mark and PE¹ stopper

Conformity “H” certified

Supplied with **batch certificate**

NEW



Cat. No.	Capacity ml	Accuracy limits ± ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Neck inner diameter mm	Pack/Quantity
24 676 09 5	5 W ²	0,04	70	22	10/19	9 ±1	2
24 676 10 5	10 W ²	0,04	90	27	10/19	9 ±1	2
24 676 12 5	20	0,04	110	39	10/19	9 ±1	2
24 676 14 5	25	0,04	110	40	10/19	9 ±1	2
24 676 17 5	50	0,06	140	50	12/21	11 ±1	2
24 676 24 5	100	0,1	170	60	12/21	13 ±1	2
24 676 25 5	100	0,1	170	60	14/23	13 ±1	2
24 676 32 5	200	0,15	210	75	14/23	15,5 ±1,5	2
24 676 36 5	250	0,15	220	80	14/23	15,5 ±1,5	2
24 676 44 5	500	0,25	260	100	19/26	19 ±2	2
24 676 54 5	1 000	0,4	300	125	24/29	23 ±2	2
24 676 63 5	2 000	0,6	370	160	29/32	27,5 ±2,5	2

¹ For chemical and thermal resistance, see page 49.

² Wide neck.

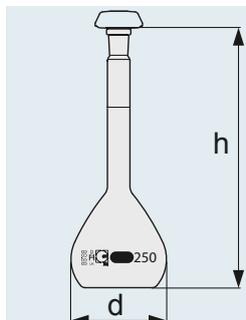
DURAN® VOLUMETRIC FLASK, CLASS A, AMBER

White graduation, with one graduation mark and PE¹ stopper

Conformity “H” certified

Supplied with **individual certificate**

NEW



Cat. No.	Capacity ml	Accuracy limits ± ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Neck inner diameter mm	Pack/Quantity
24 677 09 5	5 W ²	0,04	70	22	10/19	9 ±1	2
24 677 10 5	10 W ²	0,04	90	27	10/19	9 ±1	2
24 677 12 5	20	0,04	110	39	10/19	9 ±1	2
24 677 14 5	25	0,04	110	40	10/19	9 ±1	2
24 677 17 5	50	0,06	140	50	12/21	11 ±1	2
24 677 24 5	100	0,1	170	60	12/21	13 ±1	2
24 677 25 5	100	0,1	170	60	14/23	13 ±1	2
24 677 32 5	200	0,15	210	75	14/23	15,5 ±1,5	2
24 677 36 5	250	0,15	220	80	14/23	15,5 ±1,5	2
24 677 44 5	500	0,25	260	100	19/26	19 ±2	2
24 677 54 5	1 000	0,4	300	125	24/29	23 ±2	2
24 677 63 5	2 000	0,6	370	160	29/32	27,5 ±2,5	2

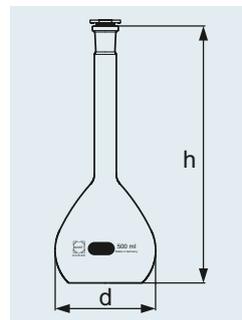
¹ For chemical and thermal resistance, see page 49.

² Wide neck.

Cat. No.	Capacity ml	Accuracy limits ± ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Neck inner diameter mm	Pack/Quantity
21 678 07	5	0,025	70	22	7/16	7 ±1	2
21 678 08	10	0,025	90	27	7/16	7 ±1	2
21 678 12	20	0,04	110	39	10/19	9 ±1	2
21 678 14	25	0,04	110	40	10/19	9 ±1	2
21 678 17	50	0,06	140	50	12/21	11 ±1	2
21 678 24	100	0,1	170	60	12/21	13 ±1	2
21 678 25	100	0,1	170	60	14/23	13 ±1	2
21 678 32	200	0,15	210	75	14/23	15,5 ±1,5	2
21 678 36	250	0,15	220	80	14/23	15,5 ±1,5	2
21 678 44	500	0,25	260	100	19/26	19 ±2	2
21 678 54	1 000	0,4	300	125	24/29	23 ±2	2
21 678 63	2 000	0,6	370	160	29/32	27,5 ±2,5	2
21 678 73	5 000	1,2	475	215	34/35	38 ±3	1

DURAN® VOLUMETRIC FLASK, CLASS A

White graduation, with one graduation mark and PE¹ stopper
Supplied with batch certificate

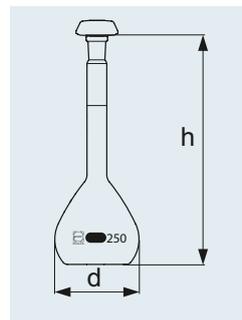


¹ For chemical and thermal resistance, see page 49.

Cat. No.	Capacity ml	Accuracy limits ± ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Neck inner diameter mm	Pack/Quantity
24 670 09 5	5 W ²	0,08	70	22	10/19	9 ±1	2
24 670 10 5	10 W ²	0,08	90	27	10/19	9 ±1	2
24 670 12 5	20	0,08	110	39	10/19	9 ±1	2
24 670 14 5	25	0,08	110	40	10/19	9 ±1	2
24 670 17 5	50	0,12	140	50	12/21	11 ±1	2
24 670 25 5	100	0,2	170	60	14/23	13 ±1	2
24 670 32 5	200	0,3	210	75	14/23	15,5 ±1,5	2
24 670 36 5	250	0,3	220	80	14/23	15,5 ±1,5	2
24 670 44 5	500	0,5	260	100	19/26	19 ±2	2
24 670 54 5	1 000	0,8	300	125	24/29	23 ±2	2
24 670 63 5	2 000	1,2	370	160	29/32	27,5 ±2,5	2
24 670 73 5	5 000	2,4	475	215	34/35	38 ±3	1

DURAN® VOLUMETRIC FLASK, CLASS B

White graduation, with one graduation mark and PE¹ stopper



NEW



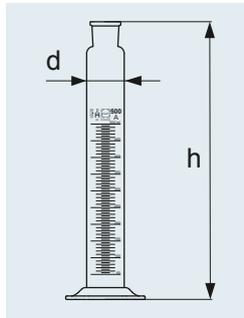
¹ For chemical and thermal resistance, see page 49.

² Wide neck.

DURAN® MIXING CYLINDER, CLASS A

Blue graduation, with main points ring graduation and PE¹ stopper, hexagonal base
Conformity "H" certified
Supplied with batch certificate

NEW



ISO
4788

A
121 °C

D
G
H

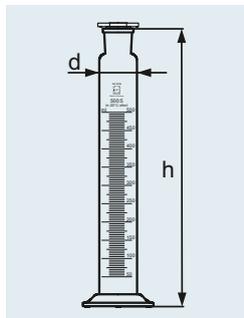
DURAN® Mixing cylinders are for diluting solutions and mixing several components in a given quantity ratio. Available in two different accuracy classes – class "A" with **main ring points graduation** and class "B" with **line graduation**. For additional differentiation the mixing cylinders with accuracy class "A" have a **blue** graduation and "B" class mixing cylinders a **white** graduation. Volume content tolerances for measuring and mixing cylinders conform to DIN and ISO accuracy limits. Thus the desired concentration can be precisely set.

The **batch certificates** for the mixing cylinders are also available to download **online**.

Cat. No.	Capacity ml	Accuracy limits ± ml	Graduation divisions ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Pack/Quantity
24 618 08 56	10	0,1	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

DURAN® MIXING CYLINDER, CLASS B

White graduation, with line graduation and PE¹ stopper, hexagonal base



ISO
4788

A
121 °C

Cat. No.	Capacity ml	Accuracy limits ± ml	Graduation divisions ml	h mm approx. total height	d mm approx. outer diameter	NS ground joint size	Pack/Quantity
21 618 08	10	0,2	0,2	156	14	10/19	2
21 618 14	25	0,5	0,5	190	21	14/23	2
21 618 17	50	1	1	222	25	19/26	2
21 618 24	100	1	1	287	29	24/29	2
21 618 36	250	2	2	363	39	29/32	2
21 618 44	500	5	5	395	53	34/35	2
21 618 54	1000	10	10	500	65	45/40	1
21 618 63	2000	20	20	540	85	45/40	1

DURAN® Measuring cylinders are for holding, measuring, and varying amounts of liquids. Available in two different accuracy classes – class “A” with **main ring points graduation** and class “B” with **line graduation**. For additional differentiation, the measuring cylinders with accuracy class “A” have a blue graduation whereas the “B” class measuring cylinders have a white graduation. Volume content tolerances for measuring and mixing cylinders conform to DIN and ISO accuracy limits. Thus the desired concentration can be precisely created.

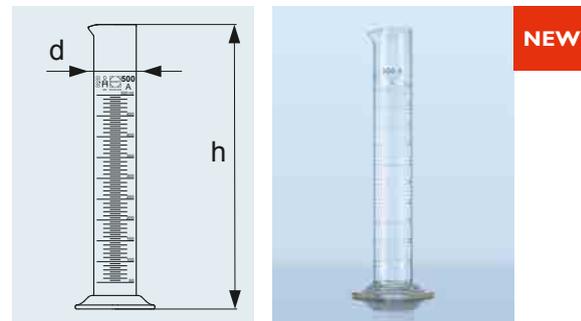
The **batch certificates** for the measuring cylinders are also available to download **online**.

Cat. No.	Capacity ml	Accuracy limits ± ml	Graduation divisions ml	h mm approx. total height	d mm approx. outer diameter	Pack/Quantity
21 390 07 01	5	0,05	0,1	112	12	2
21 390 08 04	10	0,1	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

Cat. No.	Capacity ml	Accuracy limits ± ml	Graduation divisions ml	h mm approx. total height	d mm approx. outer diameter	Pack/Quantity
21 396 07	5	0,1	0,1	112	12	2
21 396 08	10	0,2	0,2	137	14	2
21 396 14	25	0,5	0,5	167	21	2
21 396 17	50	1	1	196	25	2
21 396 24	100	1	1	256	29	2
21 396 36	250	2	2	331	39	2
21 396 44	500	5	5	360	53	2
21 396 54	1000	10	10	460	65	1
21 396 63	2000	20	20	500	85	1

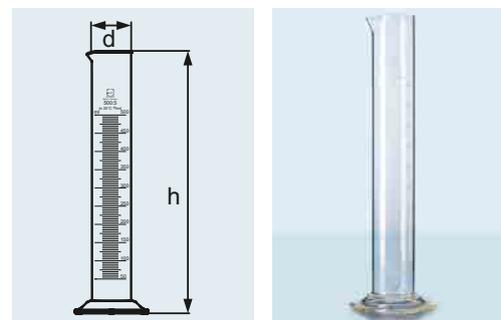
DURAN® MEASURING CYLINDER, CLASS A

Blue graduation, with main points ring graduation, hexagonal base
Conformity “H” certified
Supplied with batch certificate



DURAN® MEASURING CYLINDER, CLASS B

White graduation, with line graduation, hexagonal base



POLYETHYLENE¹ STOPPER

NEW



DIN
12254

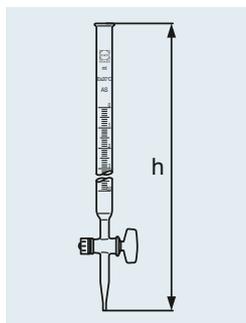
Tmax.
80 °C

The new stoppers have an ergonomic grip that makes the opening and closing of the flasks easier and more secure. The tapered bodies of the stoppers have moulded ridges for optimal flask sealing. Coloured inserts in the different sizes of stoppers allow the easy identification of the corresponding ground (NS/TS) neck size. The colour identification system used for the inserts is identical to that used for the Keck™ interchangeable glassware clips.

Cat. No.	NS ground joint size	Insert colour	h mm approx. total height	d ₁ mm approx. outer diameter	d ₂ mm approx. outer diameter	Pack/Quantity
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

¹ For chemical and thermal resistance, see page 49.

DURAN® BURETTE
with straight standard ground stopcock,
class AS, 30 seconds waiting time



ISO
385

A
121 °C

USP
Standard

D
G
H

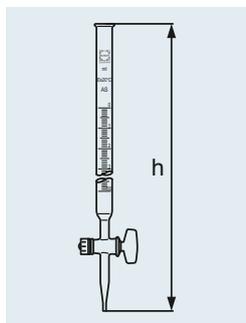
With Schellbach stripe and main graduations as circular divisions. Calibration is based on the poured out volume ("Ex") at a +20 °C reference temperature. Volume content tolerances conform to DIN. Supplied with batch certificate.

Typical application: titration.

Cat. No.	Capacity ml	Accuracy limits ± ml	Graduation divisions ml	h mm	Run-out time s	Pack/Quantity
With glass key						
24 329 27	10	0.02	0.02	750	35–45	2
24 329 33	25	0.03	0.05	750	35–45	2
24 329 36	50	0.05	0.1	750	35–45	2
24 329 39	100	0.1	0.2	750	30–50	2

Work in the laboratory is simplified by the fact that unlike glass keys, the PTFE keys do not have to be lubricated.

NEW



ISO
385

A
121 °C

USP
Standard

D
G
H

Cat. No.	Capacity ml	Accuracy limits ± ml	Graduation divisions ml	h mm	Run-out time s	Pack/Quantity
With PTFE key						
24 330 27	10	0.02	0.02	750	35–45	2
24 330 33	25	0.03	0.05	750	35–45	2
24 330 36	50	0.05	0.1	750	35–45	2
24 330 39	100	0.1	0.2	750	30–50	2

With Schellbach stripe and main graduations as circular divisions, reservoir bottle (2,000 ml) and blowball. Supplied with batch certificate.

Typical application: titration.

Cat. No.	Capacity ml	Accuracy limits ± ml	Graduation divisions ml	Run-out time s	Overall length mm	Pack/Quantity
24 318 27 5	10	0.02	0.02	35–45	930	1
24 318 33 5	25	0.03	0.05	35–45	930	1
24 318 36 5	50	0.05	0.1	35–45	930	1

Cat. No.	Components	Pack/Quantity
24 318 27	Burette only, 10 ml, with side stopcock	1
24 318 33	Burette only, 25 ml, with side stopcock	1
24 318 36	Burette only, 50 ml, with side stopcock	1
21 159 63	Reservoir bottle, clear, 2 000 ml	1
29 245 01	Blowball	1

Numbering from the top down. Due to the scale, variable volumes can be held and then dispensed in the same or differing increments. Supplied with batch certificate.

Typical applications: accurate measurement and decanting of liquids.

Cat. No.	Capacity ml	Accuracy limits ± ml	Graduation divisions ml	Colour code DIN 12 621	Run-out time s	Overall length mm	Pack/Quantity
24 345 11	1	0.006	0.01	yellow	2–8	360	12
24 345 17	2	0.01	0.02	black	2–8	360	12
24 345 23	5	0.03	0.05	red	5–11	360	12
24 345 29	10	0.05	0.1	orange	5–11	360	12
24 345 34	25	0.1	0.1	white	9–15	450	12

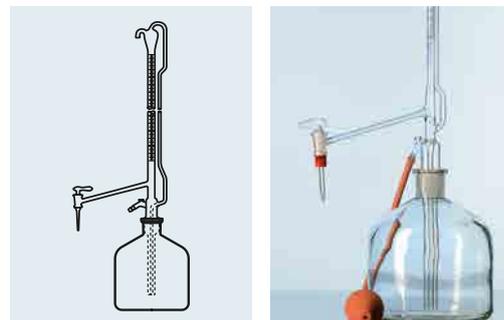
Calibrated to measure and discharge a single volume ("Ex") at a +20 °C reference temperature. Calibrated to measure and discharge a single volume. Supplied with batch certificate.

Typical applications: accurate measurement and decanting of liquids.

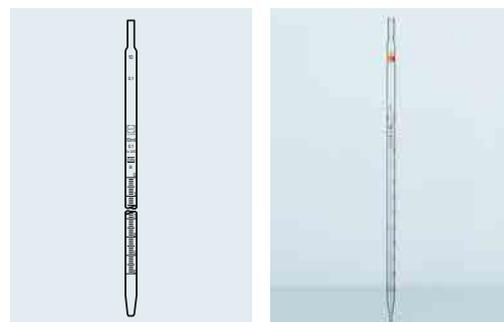
Cat. No.	Capacity ml	Accuracy limits ± ml	Colour code DIN 12 621	Run-out time s	Overall length mm	Pack/Quantity
24 338 01 ¹	1	0.007	blue	5–9	270	12
24 338 02	2	0.01	orange	5–9	330	12
24 338 07	5	0.015	white	7–11	400	12
24 338 08	10	0.02	red	8–12	440	12
24 338 12	20	0.03	yellow	9–13	510	6
24 338 14	25	0.03	blue	10–15	520	6
24 338 17	50	0.05	red	13–18	540	6
24 338 24	100	0.08	yellow	25–30	585	6

¹ No bulb.

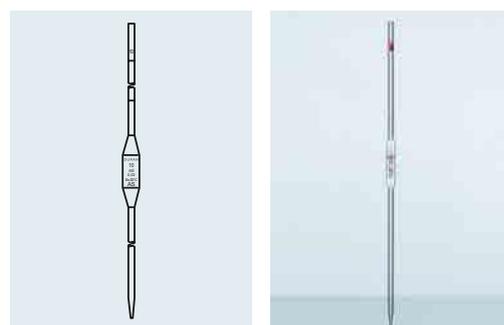
DURAN® AUTOMATIC BURETTE
Pellet-type, side-positioned standard ground stopcock, class AS, 30 seconds waiting time



MEASURING PIPETTE FOR COMPLETE AND PARTIAL OUTFLOW FROM SODA-LIME GLASS
class AS, main graduations as circular divisions, 5 seconds waiting time



BULB PIPETTE FROM SODA-LIME GLASS
class AS, 5 seconds waiting time





BOTTLES

Laboratory bottles

DURAN® laboratory bottles are chemically resistant and stable. The extensive range of original accessories includes screw caps for the widest possible range of applications. Alongside the standard PP screw cap for everyday laboratory use, further caps made from various plastics and having special properties are available. DURAN® laboratory bottles are completed by suitable pouring rings from different plastics, which enable drip-free working. As almost all GL 45 bottles of 100 ml capacity and above use the same thread size, screw caps and pouring rings are fully interchangeable. The bottles, pouring rings and caps are autoclavable/sterilisable.

Properties

Light protection

- amber bottles are opaque up to 500 nm
- plastic coated bottles are opaque up to 380 nm
- Application: storage of light sensitive substances

High thermal shock resistance

Due to their temperature properties, the bottles are suitable for autoclaving and sterilising. Because of the bottom geometry and the wall thickness, direct heating with an unshielded flame is not recommended. When using an electronic heating plate or water bath laboratory bottles should be heated gradually.

Recommendations

Pressure resistance

DURAN® laboratory bottles are, with the exception of the pressure-resistant DURAN® pressure plus bottles, in general not suitable for use under pressure or in a vacuum. DURAN® pressure plus bottles are pressure resistant from -1 to $+1.5$ bar (overpressure) due to a modified geometry and increased wall thickness.

Sterilisation

When sterilising or autoclaving contents, the screw cap must only be loosely fitted (max. one turn). The contents may expand or boil causing a large pressure difference in a closed vessel, which may well result in explosive failure. Alternatively, a DURAN® membrane cap may be used. Pressure equalisation takes place through the PTFE membrane, while at the same time the membrane cap can remain tightly closed, greatly reducing the risk of contamination.

Cleaning

Cleaning should be carried out manually in a soaking bath or automatically in a dishwasher. When cleaning in a dishwasher, load so that there is no glass-to-glass contact (especially the threads) to avoid chips or abrasions.

Freezing substances

Recommendation: The bottle should be frozen slanted at an angle of 45° , filled to a maximum $3/4$ (to enlarge the surface area) and dependent on the properties of any screw caps or other components used. For the blue PP screw cap the minimum temperature is -40°C . Alternatively the Premium screw cap can be used (min. working temperature: -196°C).

Thawing frozen substances

Frozen contents can be thawed by immersing the bottle in a liquid bath while taking care that the temperature difference between the contents and the bath does not exceed $\Delta T = 100\text{K}$. This will ensure that the frozen material is warmed uniformly from every side without damaging the bottle. The contents can, however, also be thawed slowly from above, so that the surface melts first, allowing the material to expand.

Laboratory bottles with plastic coating

The coating of DURAN® Protect bottles is a resistant and transparent plastic coating based on a cross-linked copolymer. The coating adheres securely to the glass surface and fulfils the following functions:

- Protects the glass surface against mechanical damage (scratch protection).
- Holds the fragments together in the event of the glass breaking (splinter protection).
- Minimises liquid loss if the glass breaks (protects against contents escaping and splash).
- Absorbs UV rays up to a light wavelength of 380 nm (light protection).

Recommendations

- The plastic coating does not increase the pressure resistance. These bottles are not designed for pressure or vacuum applications.
- If the plastic coated bottle breaks during use, the contents and the plastic coating are likely to come into contact. A test for any interaction between plastic and contents should be carried out to ensure that the contents remain unchanged and can be further used.

Temperature resistance

Do not expose DURAN® protect bottles to open flames or direct heat, e.g. on a laboratory hotplate. The maximum operating temperature is $+135\text{ }^{\circ}\text{C}$ and thus the bottle is suitable for use in an autoclave. Long-term exposure to temperature (> 30 minutes) should be avoided. DURAN® protect bottles can be used for freezing to $-30\text{ }^{\circ}\text{C}$ and used in microwaves. Thermal and chemical stresses can result in coating discolouration.

Autoclaving

The following procedure, bearing in mind the maximum temperature resistance, is recommended:

- Steam sterilisation at $+121\text{ }^{\circ}\text{C}$ or $+134\text{ }^{\circ}\text{C}$.
- The cycle duration should not exceed 20 minutes.

When sterilising, the screw cap should only be loosely applied (max. one turn – do not tighten), or use a membrane cap that allows pressure equalisation.



DURAN® SUPER DUTY

The new DURAN® Super Duty articles have greater mechanical stability compared to standard DURAN® articles due to increased glass content. The reinforced rim also increases shock resistance and considerably reduces the risk of breakage. They provide maximum possible safety for users when working under mechanical load e.g. frequent cleaning.

Uniform wall-thickness distribution, tried-and-tested DURAN® properties and increased shock resistance extend their service life and make DURAN® Super Duty glass containers more economical.

Recommendations

Uniform and slow heating is recommended for the Super Duty products to avoid thermal stresses in the glass. The standard DURAN® beakers and Erlenmeyer flasks should be used when working at very high temperatures or if rapid temperature changes are expected, as they are characterised by excellent resistance to temperature changes. However, the mechanical stability of these DURAN® products is limited compared to the Super Duty product range.

VOLUMETRIC PRODUCTS

Burettes

DURAN® burettes are manufactured from chemically highly resistant borosilicate glass 3.3. They are primarily used for titration. The precise scale permits exact reading of the liquid quantity required for the titration. Calibration is based on the released volume ("Ex") at a +20 °C reference temperature. The fluid quantity released can be taken exactly from the scale, as the liquid adhesion to the glass is taken into account in the calibration. This only applies, however, if the specified waiting times for reading the scale are adhered to. Volume content tolerances for burettes conform to DIN and ISO accuracy limits. The DURAN® Class B burettes' accuracy limits are roughly one and a half times the Class AS accuracy limit. The tolerances are thus stricter than specified by DIN.

The tried-and-tested DURAN® burettes are also available with PTFE keys. Work in the laboratory is simplified by the fact that unlike glass keys, these do not have to be lubricated.

By the specification of a class "AS", the German weights and measures regulations have, within the scope of the 15th Amendment Regulations, acknowledged that the great majority of volumetric measurements, especially in clinical laboratories, are carried out with water or dilute aqueous solutions; thus apparatus with considerably shorter draining times than previously required but with the same accuracy limits is now admitted by the calibration regulations.

Capacity ml	Accuracy limits class AS suitable for official calibration DIN 12 700 ± ml	Accuracy limits class B	
		DIN 12 700 ± ml	DURAN ± ml
1	0.01	–	–
2	0.01	–	–
5	0.01	–	–
10	0.02	0.05	0.03
25	0.03	0.05	0.04
50	0.05	0.1	0.08
100 ¹	0.08	0.2	0.15

¹ Non-DIN size.

Pipettes

Measurement and bulb pipettes are made from soda-lime glass. Pipettes are for precise measurement and filling of liquids. Measurement pipettes are graduated to permit the taking up of varying liquid quantities and then dispensing of the same or different amounts. Bulb pipettes are designed to repeatedly take up and discharge a fixed volume for each pipette size. Calibration is based on the released volume ("Ex") at a +20 °C reference temperature. The fluid quantity released can be taken exactly from the scale, as the liquid adhesion to the glass is taken into account in the calibration. This only applies, however, if the specified waiting times for reading the scale are adhered to. Volume content tolerances for calibrated pipettes conform to DIN and ISO accuracy limits. DURAN® Class B pipettes' accuracy limits are roughly one and a half times the Class AS accuracy limit. The tolerances are thus stricter than specified by DIN.

By the specification of a class "AS", the German weights and measures regulations have, within the scope of the 15th Amendment Regulations, acknowledged that the great majority of volumetric measurements, especially in clinical laboratories, are carried out with water or dilute aqueous solutions; thus apparatus with considerably shorter draining times than previously required but with the same accuracy limits is now admitted by the calibration regulations.

Capacity ml	Accuracy limits class AS suitable for official calibration DIN 385 ± ml	Accuracy limits class B	
		ISO 385 ± ml	DURAN ± ml
0.1 ¹	–	–	0.01
0.2 ¹	–	–	0.01
0.5	–	0.01	0.008
1	0.007	0.01	0.008
2	0.010	0.02	0.015
5	0.030	0.05	0.040
10	0.050	0.10	0.080
25	0.100	0.20	0.150

¹ Non-ISO size

Recommendations

- To ensure a long service life for your volumetric glassware and to exclude possible volume changes, these products should not be heated above +180 °C in drying cabinets or sterilisers.
- Never heat volumetric glassware on a hot plate.
- Always heat up and cool down volumetric glassware gradually, to avoid thermal stresses and thus any possible breakage of the glass.

Laboratory glassware and plastics

Plastics used with laboratory glass¹

To complement DURAN® laboratory glassware products, various plastic products such as screw caps are available. Their properties are listed in the following table.

		Temperature resistance range °C
EPDM	Ethylene/propylene-diene-rubber	-45 to +150
ETFE	Partially crystalline ethylene/tetrafluoroethylene copolymer	-100 to +180
EVA	Ethylene-vinyl-acetate	-80 to +70
FEP	Tetra-Fluor-Ethylene/Hexafluor-Propylene	-200 to +200
FKM	Fluorinated rubber	-20 to +200
PBT ²	Polybutylenterephthalat	-45 to +180
PE	Polyethylene	-40 to +80
POM	Polyoxymethylene	-40 to +90
PP	Polypropylene	-40 to +140
PTFE	Polytetrafluorethylene	-200 to +260
PU ³	Polyurethane	-30 to +135
SBE	Styrene Butadiene Rubber	-30 to +70
TpCh260	Thermoplastic/duroplastic	-196 to +260
TPE	Thermoplastic – thermosetting plastic	to 140
VMQ	Silicone rubber	-50 to +200
PSU Compound	Compound polyarylsulfone based	-45 to +180

¹ The details in the table relating to temperature resistance relate to standard autoclaving processes with steam and a duration of 20 minutes

² Changes in colour may occur if exposed to temperatures above 180 °C.

³ All laboratory glasses coated with PU may only be cleaned while moist in order to avoid any electrostatic charge which may form.

Chemical resistance of plastics

Classes of substances +20 °C	PE	PP	PBT	PTFE/ FEP	TpCh260	ETFE	VMQ	EPDM	PU	FKM	POM	PSU Compound
Alcohols, aliphatic	+	+	++	++	++	++	+	+	++	-	+	++
Aldehydes	+	+	++	++	++	++	+		++		+	+
Alkaline solutions	++	++	+	++	++	++	-	++	++	-	+	++
Esters	+	+	+	++	++	++	-	++	+	-	-	+
Ethers	-	-	+	++	++	++	-	-	+	-	+	+
Hydrocarbons, aliphatic	-	+	+	++	++	++	-	++	++	++	+	+
Hydrocarbons, aromatic	-	+	+	++	++	++	-	+	++	++	+	-
Hydrocarbons, halogenated	-	+		++	++	++	-	+	-	++	+	-
Ketones	+	+	+	++	++	+	-	++	+	-	+	-
Acids, dilute or weak	+	++	++	++	++	++	-	++	++	++	-	++
Acids, conc. or strong	+	+	+	++	++	++	-	++	+	++	-	++
Acids, oxidising	-	+	-	++	++	+	-	-	+	+	-	+

++ = very good resistance

+ = good to limited resistance

- = low resistance

Pictograms



Corresponds to the indicated standard



Product with batch identifier



Product with trademarked EU design



Autoclavable



Maximum usage temperature



Glass type corresponds to USP, EP and JP guidelines

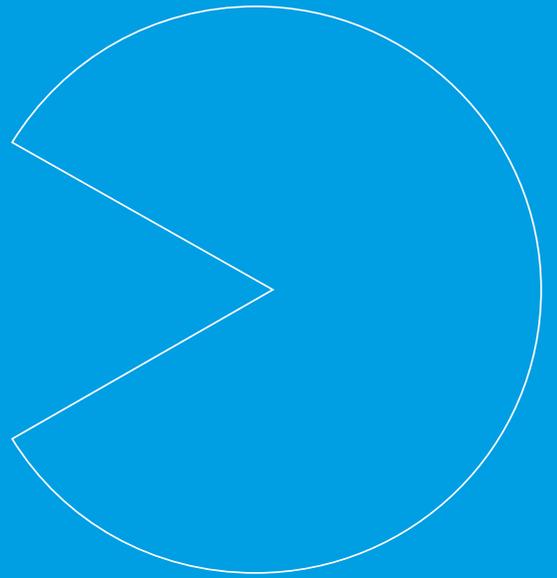
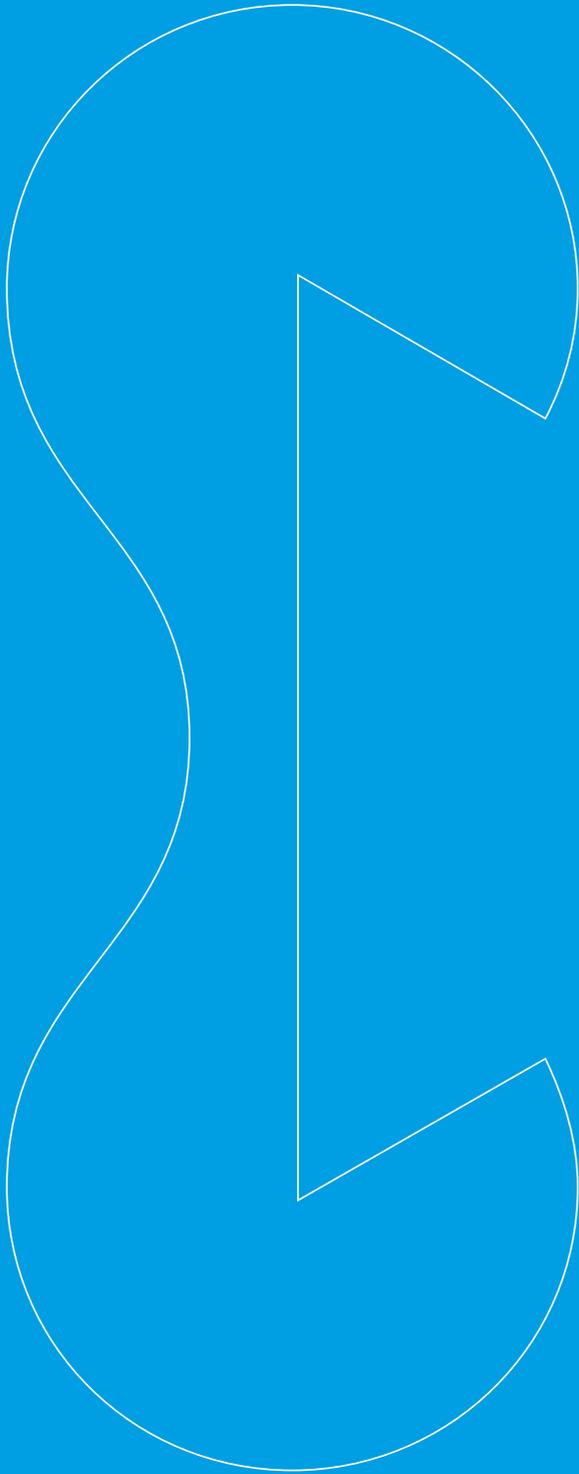


Conformity mark of calibration regulations



With porcelain plate

Notes



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