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VWR INTERNATIONAL

LABORATORY CATALOGUE

2015

RL Slaughter
For All Your Laboratory Needs

APPARATUS | INSTRUMENTS
EQUIPMENT | CONSUMABLES

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These symbols indicate important product features:

- Explosion proof
- RS232 interface
- Ethernet interface
- Autoclavable
- Sterile
- Accessories required to use the product
- Requires specialist installation
- Item is heavy and difficult to transport
- Product requires chemicals or reagents
- Documentation available on request
- USB connection
- Selected for you

IVD — CE marking conform with IVD MDD 98/79 EC for In-vitro Diagnostics

2 year warranty, 3 year warranty, 4 year warranty, 5 year warranty — Warranty

IP 21, IP 31, IP 55, IP64, IP65, IP66, IP67, IP68 — IP Classification

SEPARATION AND CONCENTRATION

The various separation techniques are based on three basic principles:

- Mechanical / physical separation for example sieve, filter, centrifuge
- Physical / thermal separation (evaporation, sublimation)
- Physical / chemical separation with chromatography

Sieving and filtration

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Test sieve shakers, EML digital plus

VWR by Haver & Boecker

EML 200 digital plus T

EML 315 digital plus N

EML 450 digital plus T

The three electromagnetically driven test sieve shakers are designed for sieve analysis with optimum three-dimensional sieving action. The self re-adjusting amplitude, which uses permanent acceleration measurement of the whole sieve tower, balances the oscillation of the shaker and its stand. This guarantees that amplitude stays the same, irrespective of the feed quantity and the installation position.

The EML 200 digital plus T for dry sieving has a built-in control panel. EML 200, 315 and 450 models for wet sieving have a separate control device.

Optional "TwinNut" quick-release clamping system:

The "TwinNut" clamps for easy fixing and removal of the cover are an alternative to the standard "Classic" knurled nuts. The guide rods of the "Classic" system can also be used for the "TwinNut" system.

- Memory for 10 test sieve parameter sets
- Timer function: 0 - 99 min or continuous operation
- Intermittent or continuous shaking operation
- Digital display of all functions
- 3000 impulses per minute (50 Hertz)
- Sound emission: ≤70 dB(A) for EML 200 digital plus and EML 315 digital plus, EML 450 digital plus: 73 dB(A)
- Maximum loading: 3 kg

Delivery information: Included as standard with each shaker: Models with either "Classic" clamping system or "TwinNut" system are supplied with two 620 mm guide rods and two knurled nuts with handlebars, cover with inspection glass and water spray diffuser for wet sieving models.

Ordering information: Sieves and collecting pan must be ordered separately. IQ-OQ documentation on request.

Type	Application	Pk	Cat. No.
EML 200 digital plus with "Classic" clamping system, for sieves up to 203 mm Ø			
EML 200 digital plus T, UK-plug	Dry sieving	1	**510-0950**
EML 200 digital plus N, UK-plug	Wet sieving	1	**510-0953**
EML 200 digital plus with "TwinNut" quick-release clamping system, for sieves up to 203 mm Ø			
EML 200 digital plus T with "TwinNut" quick-release clamping system, UK-plug	Dry sieving	1	**510-1285**
EML 200 digital plus N with "TwinNut" quick-release clamping system, UK-plug	Wet sieving	1	**510-1288**
EML 315 digital plus with "Classic" clamping system, for sieves up to 315 mm Ø			
EML 315 digital plus T, UK-plug	Dry sieving	1	**510-0956**
EML 315 digital plus N, UK-plug	Wet sieving	1	**510-0959**
EML 315 digital plus with "TwinNut" quick-release clamping system, for sieves up to 315 mm Ø			
EML 315 digital plus T with "TwinNut" quick-release clamping system, UK-plug	Dry sieving	1	**510-1291**
EML 315 digital plus N with "TwinNut" quick-release clamping system, UK-plug	Wet sieving	1	**510-1294**
EML 450 digital plus with "Classic" clamping system, for sieves up to 450 mm Ø			
EML 450 digital plus T, UK-plug	Dry sieving	1	**510-0962**
EML 450 digital plus N, UK-plug	Wet sieving	1	**510-0965**
EML 450 digital plus with "TwinNut" quick-release clamping system, for sieves up to 450 mm Ø			
EML 450 digital plus T with "TwinNut" quick-release clamping system, UK-plug	Dry sieving	1	**510-1297**
EML 450 digital plus N with "TwinNut" quick-release clamping system, UK-plug	Wet sieving	1	**510-1300**

Description	For	Pk	Cat. No.
Accessories			
Reduction piece for cover, for sieve Ø 76 mm	EML 200	1	**510-1017**
Reduction piece for cover, for sieve Ø 100 mm	EML 200	1	**510-1009**
Reduction piece for cover, for sieve Ø 150 mm	EML 200	1	**510-1013**
Reduction piece for cover, for sieve pan with discharge nozzle <400 mm	EML 450	1	**510-0997**
Inspection glass with central hole	EML 315	1	**510-1018**
Inspection glass with central hole	EML 450	1	**510-1014**

Sieve shakers, heavy duty, UWL
Haver & Boecker

For test sieves up to 400 mm diameter or square sieves up to 500×500 mm

The UWL 400 is an efficient test sieve shaker and achieves optimum result for large feed quantities. It creates a three-dimensional sieving action and is especially designed for coarse grained products. The UWL 400 T is suitable for dry sieving; the UWL 400 N is suitable for wet sieving (protection IP 54), and the UWL 400 H is suitable for square test sieves with beechwood frames.

- Separate control device, wall fixing possible
- Rotation speed: 1500 min^{-1}
- Timer function: 0 - 599 min
- Max. loading: 50 kg (20 kg sieving material)
- Sound emission: 70 dB(A)

Delivery information: Included as standard with each shaker: Models with either "Classic" clamping system or "TwinNut" system are supplied with 2×620 mm guide rods and two knurled nuts with handlebars, cover with inspection glass, water spray diffuser for wet sieving on model UWL 400 N and special appliance for beech wood frames on UWL 400 H model.

Type	Application	Pk	Cat. No.
UWL heavy duty sieve shakers			
UWL 400 T, UK-plug	Dry sieving	1	**510-0968**
UWL 400 H, UK-plug	Dry sieving with square sieves	1	**510-0971**
UWL 400 N, UK-plug	Wet sieving	1	**510-0974**
UWL heavy duty sieve shakers with "TwinNut" quick-release clamping system			
UWL 400 T with "TwinNut" quick-release clamping system, UK-plug	Dry sieving	1	**510-1304**
UWL 400 N with "TwinNut" quick-release clamping system, UK-plug	Wet sieving	1	**510-1307**

Sieve shakers, Tyler Ro-Tap®
Haver & Boecker

For dry sieving

The Tyler Ro-Tap® shakers RX 29 and RX 30 reproduce the circular and tapping motion of hand sieving, but in a repeatable mechanical action. The sieve shaker makes a circular movement of the sieve stack and a mechanical arm makes a tapping movement on the top of the sieve stack, thus creating a perfect and repeatable imitation of hand shaking with additional tapping of the sieve on the side. They are operated in a totally enclosed cabinet, which guarantees the safety of the operator, and reduces the sound emissions significantly.

The Ro-Tap® shaker RX 29 accepts sieves up to 203 mm diameter
The Ro-Tap® shaker RX 30 accepts sieves up to 305 mm diameter

- Rotation frequency: 278 rpm; tapping frequency 150 rpm
- Separate control device, mounted on the side of the enclosure
- Max. weight of full sieve tower: 3 kg (net load)
- Timer function: 0 - 99 min
- Sound emission: <70 dB(A) (with standard sound absorbing enclosure)

Delivery information: RX 29: Includes clamping system for 6 standard or 13 half height sieves.
RX 30: Includes clamping system for 5 standard or 8 half height sieves.

Type	Pk	Cat. No.
Tyler Ro-Tap® RX 29, UK-plug	1	**510-0947**
Tyler Ro-Tap® RX 30, UK-plug	1	**510-1036**

Analytical sieve shakers, AS 200/AS 300
Retsch

Retsch analytical sieve shakers are used in research and development, quality control of raw materials, interim and finished products as well as in production monitoring.

- Sieving with 3D effect
- For wet and dry sieving
- Short sieving times
- Low-noise, maintenance-free

AS 200 basic; favourably priced basic model.

AS 200 digit; powerful comfort model with touch-sensitive keypad, digital display, interval sieving.

AS 200 control; as AS 200 digit, but microprocessor controlled, with freely selectable intervals and digital vibration amplitude setting. It can be calibrated and, for the first time, allows 100% reproducible sieving results worldwide, even if different instruments are used. The AS 200 control has an integrated interface for the optional evaluation software EasySieve®. At the same time it also offers all the requirements for test materials monitoring according to ISO 9000 ff.

AS 300 control; as AS 200 control; but suitable for sieves up to 315 mm Ø and for higher loads.

Ordering information: Sieves, collecting pan and clamping device have to be ordered separately.

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Model	AS 200 digit	AS 200 basic	AS 200 control	AS 300 control
Acceleration	-		1.0 - 15 ×g	1,0 - >10 ×g
Amplitude range (mm)	0 - 3		0,2 - 3	0,2 - 2
Amplitude setting	analogue		digital	
Interfaces	no		yes	
Interval operation	yes	no		
Max. batch/feed capacity (kg)	3			6
Max. fractions (depending on sieve size)	9/17			
Max. mass of sieve stack (kg)	4		6	10
Measuring range	20 µm - 25 mm			20 µm - 40 mm
Programs	-		max. 9	
Sieve height (mm)	±450			
Suitable sieve Ø (mm)	100/150/200/203			100/150/200/203/305 /315
Time display	digital	analogue	digital	
Weight (kg)	30			35
With test certificate/can be calibrated	no		yes	
W×D×H (mm)	400×350×230			400×400×235

Type	Pk	Cat. No.
AS 200 digit	1	**510-1301**
AS 200 basic	1	**510-1201**
AS 200 control	1	**510-0373**
AS 300 control	1	**510-0047**

Sieve accessories
Retsch

These accessories are designed for products that are difficult to separate, which are not suitable for wet sieving.

Description	Pk	Cat. No.
Chain ring for test sieves 200 mm and 203 mm Ø to support horizontal sieving	1	**510-1787**
Brushes	3	**510-1785**
Cubes of vulkollan, 12 mm	10	**510-1982**
Cubes of vulkollan, 20 mm	10	**510-1788**
Rubber balls, Ø 20 mm	5	**510-1983**
Agate balls, Ø 10 mm	10	**510-1786**
Steatit balls, Ø 6 mm, 150 g	1	**411-3317**

Description	Pk	Cat. No.
Sieve rack		
Sieve rack, for max. 10 sieves to 203 mm Ø, 50 mm height	1	**510-1991**

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Test sieves

Stainless steel, ISO 3310, ASTM 11, BS 410, AFNOR

Delivery information: As standard, supplied with a certificate of compliance 2.1 according to EN 10 204.

Optional: Inspection certificate of calibration 3.1 according to EN 10 204 with measuring results of a specific test.

Sieves and accessories of other dimensions (250×55 mm, 300×60 mm, 300×30 mm, 305×60 mm, 315×75 mm, 350×60 mm, 400×65 mm and others) are available on request.
For a full overview, please go to www.vwr.com

Ø (mm)	Height (mm)	Mesh size (mm)	Pk	Cat. No.
200	50	0,020	1	**510-0700**
200	50	0,025	1	**510-0701**
200	50	0,032	1	**510-0702**
200	50	0,036	1	**510-0703**
200	50	0,038	1	**510-0704**
200	50	0,040	1	**510-0705**
200	50	0,045	1	**510-0706**
200	50	0,050	1	**510-0707**
200	50	0,053	1	**510-0708**
200	50	0,056	1	**510-0709**
200	50	0,063	1	**510-0710**
200	50	0,071	1	**510-0711**
200	50	0,075	1	**510-0712**
200	50	0,080	1	**510-0713**
200	50	0,090	1	**510-0714**
200	50	0,100	1	**510-0715**
200	50	0,106	1	**510-0716**
200	50	0,112	1	**510-0717**
200	50	0,125	1	**510-0718**
200	50	0,140	1	**510-0719**
200	50	0,150	1	**510-0720**
200	50	0,160	1	**510-0721**
200	50	0,180	1	**510-0722**
200	50	0,200	1	**510-0723**
200	50	0,212	1	**510-0724**
200	50	0,224	1	**510-0725**
200	50	0,250	1	**510-0726**
200	50	0,280	1	**510-0727**
200	50	0,300	1	**510-0728**
200	50	0,315	1	**510-0729**
200	50	0,355	1	**510-0730**
200	50	0,400	1	**510-0731**
200	50	0,425	1	**510-0732**
200	50	0,450	1	**510-0733**
200	50	0,500	1	**510-0734**
200	50	0,560	1	**510-0735**
200	50	0,600	1	**510-0736**
200	50	0,630	1	**510-0737**
200	50	0,710	1	**510-0738**
200	50	0,800	1	**510-0739**
200	50	0,850	1	**510-0740**
200	50	0,900	1	**510-0741**
200	50	1,00	1	**510-0742**
200	50	1,12	1	**510-0743**
200	50	1,18	1	**510-0744**
200	50	1,25	1	**510-0745**
200	50	1,40	1	**510-0746**
200	50	1,60	1	**510-0747**
200	50	1,70	1	**510-0748**
200	50	1,80	1	**510-0749**
200	50	2,00	1	**510-0750**
200	50	2,24	1	**510-0751**
200	50	2,36	1	**510-0752**
200	50	2,50	1	**510-0753**
200	50	2,80	1	**510-0754**
200	50	3,15	1	**510-0755**

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Ø (mm)	Height (mm)	Mesh size (mm)	Pk	Cat. No.
200	50	3,35	1	**510-0756**
200	50	3,55	1	**510-0757**
200	50	4,00	1	**510-0758**
200	50	4,50	1	**510-0759**
200	50	4,75	1	**510-0760**
200	50	5,00	1	**510-0761**
200	50	5,60	1	**510-0762**
200	50	6,30	1	**510-0763**
200	50	6,70	1	**510-0764**
200	50	7,10	1	**510-0765**
200	50	8,00	1	**510-0766**
200	50	9,00	1	**510-0767**
200	50	9,50	1	**510-0768**
200	50	10,00	1	**510-0769**
200	50	11,20	1	**510-0770**
200	50	12,50	1	**510-0771**
200	50	13,20	1	**510-0772**
200	50	14,00	1	**510-0773**
200	50	16,00	1	**510-0774**
200	50	18,00	1	**510-0775**
200	50	19,00	1	**510-0776**
200	50	20,00	1	**510-0777**
200	50	22,40	1	**510-0778**
200	50	25,00	1	**510-0779**
200	50	26,50	1	**510-0780**
200	50	28,00	1	**510-0781**
200	50	31,50	1	**510-0782**
200	50	35,50	1	**510-0783**
200	50	37,50	1	**510-0784**
200	50	40,00	1	**510-0785**
200	50	45,00	1	**510-0786**
200	50	50,00	1	**510-0787**
200	50	53,00	1	**510-0788**
200	50	56,00	1	**510-0789**
200	50	63,00	1	**510-0790**
200	50	71,00	1	**510-0791**
200	50	75,00	1	**510-0792**
200	50	80,00	1	**510-0793**
200	50	90,00	1	**510-0794**
200	50	100,00	1	**510-0795**
200	50	106,00	1	**510-0796**
200	50	112,00	1	**510-0797**
200	50	125,00	1	**510-0798**

Description	Ø (mm)	Height (mm)	Pk	Cat. No.
Accessories				
Sieve cover	200	-	1	**510-3672**
Sieve pan	200	50	1	**510-3673**
Sieve pan with discharge nozzle	200	50	1	**510-3675**
Intermediate pan (sieve frame with solid base)	200	50	1	**510-3676**
Intermediate ring (sieve frame without base)	200	50	1	**510-3678**

* All sieves are supplied with a certificate of compliance with the order 2.1 according to EN 10 204. Further certificates and calibration services are available. Contact your VWR office for further details.

Test sieves
Retsch

316 stainless steel, ISO 3310-1:2001-09

Sieves are individually laser engraved with clear and precise labelling for full traceability. Available in three of the most commonly used sizes. They are fully compatible with Retsch's existing products and can be combined with other sieves without problems.

- Sieve bodies are made in one piece and the absence of hollow spaces prevents cross-contamination
- High corrosion resistance and easy to clean
- Maximum stability and optimal sealing of the sieve stack, 15% less weight than traditional sieves

Special certificates available on request. Contact your local VWR sales office for further details.

Continued on next page

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Ø (mm)	Height (mm)	Mesh size (mm)	Pk	Cat. No.
200	50	0,020	1	510-4501
200	50	0,025	1	510-4502
200	50	0,032	1	510-4503
200	50	0,036	1	510-4504
200	50	0,038	1	510-4505
200	50	0,040	1	510-4506
200	50	0,045	1	510-4507
200	50	0,050	1	510-4508
200	50	0,053	1	510-4509
200	50	0,056	1	510-4510
200	50	0,063	1	510-4511
200	50	0,071	1	510-4512
200	50	0,075	1	510-4513
200	50	0,080	1	510-4514
200	50	0,090	1	510-4515
200	50	0,100	1	510-4516
200	50	0,106	1	510-4517
200	50	0,112	1	510-4518
200	50	0,125	1	510-4519
200	50	0,140	1	510-4520
200	50	0,150	1	510-4521
200	50	0,160	1	510-4522
200	50	0,180	1	510-4523
200	50	0,200	1	510-4524
200	50	0,212	1	510-4525
200	50	0,224	1	510-4526
200	50	0,250	1	510-4527
200	50	0,280	1	510-4528
200	50	0,300	1	510-4529
200	50	0,315	1	510-4530
200	50	0,355	1	510-4531
200	50	0,400	1	510-4532
200	50	0,425	1	510-4533
200	50	0,450	1	510-4534
200	50	0,500	1	510-4535
200	50	0,560	1	510-4536
200	50	0,600	1	510-4537
200	50	0,630	1	510-4538
200	50	0,710	1	510-4539
200	50	0,800	1	510-4540
200	50	0,850	1	510-4541
200	50	0,900	1	510-4542
200	50	1,00	1	510-4543
200	50	1,12	1	510-4544
200	50	1,18	1	510-4545
200	50	1,25	1	510-4546
200	50	1,40	1	510-4547
200	50	1,60	1	510-4548
200	50	1,70	1	510-4549
200	50	1,80	1	510-4550
200	50	2,00	1	510-4551
200	50	2,24	1	510-4552
200	50	2,36	1	510-4553
200	50	2,50	1	510-4554
200	50	2,80	1	510-4555
200	50	3,15	1	510-4556
200	50	3,35	1	510-4557
200	50	3,55	1	510-4558
200	50	4,00	1	510-4559
200	50	4,50	1	510-4560
200	50	4,75	1	510-4561
200	50	5,00	1	510-4562
200	50	5,60	1	510-4563
200	50	6,30	1	510-4564
200	50	6,70	1	510-4565
200	50	7,10	1	510-4566
200	50	8,00	1	510-4567
200	50	9,00	1	510-4568
200	50	9,50	1	510-4569
200	50	10,00	1	510-4570
200	50	11,20	1	510-4571
200	50	12,50	1	510-4572
200	50	13,20	1	510-4573
200	50	14,00	1	510-4574
200	50	16,00	1	510-4575

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Ø (mm)	Height (mm)	Mesh size (mm)	Pk	Cat. No.
200	50	18,00	1	510-4576
200	50	19,00	1	510-4577
200	50	20,00	1	510-4578
200	50	22,40	1	510-4579
200	50	25,00	1	510-4580
200	50	26,50	1	510-4581
200	50	28,00	1	510-4582
200	50	31,50	1	510-4583
200	50	35,50	1	510-4584
200	50	37,50	1	510-4585
200	50	40,00	1	510-4586
200	50	45,00	1	510-4587
200	50	50,00	1	510-4588
200	50	53,00	1	510-4589
200	50	56,00	1	510-4590
200	50	63,00	1	510-4591
200	50	71,00	1	510-4592
200	50	75,00	1	510-4593
200	50	80,00	1	510-4594
200	50	90,00	1	510-4595
200	50	100,00	1	510-4596
200	50	106,00	1	510-4597
200	50	112,00	1	510-4598
200	50	125,00	1	510-4599

* Other mesh sizes available on request.

Test sieves
Endecotts

Brass or stainless steel, ISO3310-1:2000, BS410-1:2000; DIN-ISO3310-1; NF ISO3310-1:2000

Woven wire mesh test sieves are ideal for all types of laboratory sampling and particle size analysis. Each sieve is supplied together with a certificate of examination and carries the BS 410 kite mark.
For more size options please contact your local VWR office.

Ø (mm)	Height (mm)	Mesh size (mm)	Material	Pk	Cat. No.
100	40	0,038	Brass	1	510-0196
100	40	0,045	Brass	1	510-0197
100	40	0,053	Brass	1	510-0198
100	40	0,063	Brass	1	510-0199
100	40	0,075	Brass	1	510-0200
100	40	0,090	Brass	1	510-0201
100	40	0,106	Brass	1	510-0202
100	40	0,125	Brass	1	510-0203
100	40	0,150	Brass	1	510-0204
100	40	0,180	Brass	1	510-0205
100	40	0,212	Brass	1	510-0206
100	40	0,250	Brass	1	510-0207
100	40	0,300	Brass	1	510-0208
100	40	0,355	Brass	1	510-0209
100	40	0,425	Brass	1	510-0210
100	40	0,500	Brass	1	510-0211
100	40	0,600	Brass	1	510-0212
100	40	0,710	Brass	1	510-0213
100	40	0,850	Brass	1	510-0214
100	40	1,00	Brass	1	510-0215
100	40	1,18	Brass	1	510-0216
100	40	1,40	Brass	1	510-0217
100	40	1,70	Brass	1	510-0218
100	40	11,20	Brass	1	510-0219
100	40	13,20	Brass	1	510-0220
100	40	16,00	Brass	1	510-0221
100	40	2,00	Brass	1	510-0222
100	40	2,36	Brass	1	510-0223
100	40	2,80	Brass	1	510-0224

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Ø (mm)	Height (mm)	Mesh size (mm)	Material	Pk	Cat. No.
100	40	3,35	Brass	1	**510-0225**
100	40	4,00	Brass	1	**510-0226**
100	40	4,75	Brass	1	**510-0227**
100	40	5,60	Brass	1	**510-0228**
100	40	6,70	Brass	1	**510-0229**
100	40	8,00	Brass	1	**510-0230**
100	40	9,50	Brass	1	**510-0231**
200	50	0,038	Brass	1	**510-0234**
200	50	0,045	Brass	1	**510-0235**
200	50	0,053	Brass	1	**510-0236**
200	50	0,063	Brass	1	**510-0237**
200	50	0,075	Brass	1	**510-0238**
200	50	0,090	Brass	1	**510-0239**
200	50	0,106	Brass	1	**510-0240**
200	50	0,125	Brass	1	**510-0241**
200	50	0,150	Brass	1	**510-0242**
200	50	0,180	Brass	1	**510-0243**
200	50	0,212	Brass	1	**510-0244**
200	50	0,250	Brass	1	**510-0245**
200	50	0,300	Brass	1	**510-0246**
200	50	0,355	Brass	1	**510-0247**
200	50	0,425	Brass	1	**510-0248**
200	50	0,500	Brass	1	**510-0249**
200	50	0,600	Brass	1	**510-0250**
200	50	0,710	Brass	1	**510-0251**
200	50	0,850	Brass	1	**510-0252**
200	50	1,00	Brass	1	**510-0253**
200	50	1,18	Brass	1	**510-0254**
200	50	1,40	Brass	1	**510-0255**
200	50	1,70	Brass	1	**510-0256**
200	50	11,20	Brass	1	**510-0257**
200	50	13,20	Brass	1	**510-0258**
200	50	16,00	Brass	1	**510-0259**
200	50	2,00	Brass	1	**510-0260**
200	50	2,36	Brass	1	**510-0261**
200	50	2,80	Brass	1	**510-0262**
200	50	3,35	Brass	1	**510-0263**
200	50	4,00	Brass	1	**510-0264**
200	50	4,75	Brass	1	**510-0265**
200	50	5,60	Brass	1	**510-0266**
200	50	6,70	Brass	1	**510-0267**
200	50	8,00	Brass	1	**510-0268**
200	50	9,50	Brass	1	**510-0269**
200	50	0,038	Stainless steel	1	**510-0274**
200	50	0,045	Stainless steel	1	**510-0275**
200	50	0,053	Stainless steel	1	**510-0276**
200	50	0,063	Stainless steel	1	**510-0277**
200	50	0,075	Stainless steel	1	**510-0278**
200	50	0,090	Stainless steel	1	**510-0279**
200	50	0,106	Stainless steel	1	**510-0280**
200	50	0,125	Stainless steel	1	**510-0281**
200	50	0,150	Stainless steel	1	**510-0282**
200	50	0,180	Stainless steel	1	**510-0283**
200	50	0,212	Stainless steel	1	**510-0284**
200	50	0,250	Stainless steel	1	**510-0285**
200	50	0,300	Stainless steel	1	**510-0286**
200	50	0,355	Stainless steel	1	**510-0372**
200	50	0,425	Stainless steel	1	**510-0287**
200	50	0,500	Stainless steel	1	**510-0288**
200	50	0,600	Stainless steel	1	**510-0307**
200	50	0,710	Stainless steel	1	**510-0289**
200	50	0,850	Stainless steel	1	**510-0290**
200	50	1,00	Stainless steel	1	**510-0291**
200	50	1,18	Stainless steel	1	**510-0292**
200	50	1,40	Stainless steel	1	**510-0293**
200	50	1,70	Stainless steel	1	**510-0294**
200	50	11,20	Stainless steel	1	**510-0295**
200	50	13,20	Stainless steel	1	**510-0296**
200	50	16,00	Stainless steel	1	**510-0297**
200	50	2,00	Stainless steel	1	**510-0298**
200	50	2,36	Stainless steel	1	**510-0299**
200	50	2,80	Stainless steel	1	**510-0300**
200	50	3,35	Stainless steel	1	**510-0301**
200	50	4,00	Stainless steel	1	**510-0303**
200	50	4,75	Stainless steel	1	**510-0304**

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Ø (mm)	Height (mm)	Mesh size (mm)	Material	Pk	Cat. No.
200	50	5,60	Stainless steel	1	**510-0305**
200	50	6,70	Stainless steel	1	**510-0306**
200	50	8,00	Stainless steel	1	**510-0308**
200	50	9,50	Stainless steel	1	**510-0309**
300	75	1,00	Brass	1	**510-0310**
300	75	1,18	Brass	1	**510-0311**
300	75	1,40	Brass	1	**510-0312**
300	75	1,70	Brass	1	**510-0313**
300	75	11,20	Brass	1	**510-0314**
300	75	13,20	Brass	1	**510-0315**
300	75	16,00	Brass	1	**510-0316**
300	75	2,00	Brass	1	**510-0317**
300	75	2,36	Brass	1	**510-0318**
300	75	2,80	Brass	1	**510-0319**
300	75	3,35	Brass	1	**510-0320**
300	75	4,00	Brass	1	**510-0321**
300	75	4,75	Brass	1	**510-0322**
300	75	5,60	Brass	1	**510-0323**
300	75	6,70	Brass	1	**510-0324**
300	75	8,00	Brass	1	**510-0325**
300	75	9,50	Brass	1	**510-0326**

Description	Ø (mm)	Material	Pk	Cat. No.
Accessories				
Lid	100	Brass	1	**510-0232**
Collector	100	Brass	1	**510-0233**
Lid	200	Brass	1	**510-0270**
Collector	200	Brass	1	**510-0271**
Lid	200	Stainless steel	1	**510-0272**
Collector	200	Stainless steel	1	**510-0273**
Lid	300	Brass	1	**510-0327**
Collector	300	Brass	1	**510-0328**

Sieve standards, NIST and NPL traceable

Unique microsphere method of sieve calibration applicable to all sieves from 20 - 3350 µm.

Mean aperture size traceable to NIST and NPL.

- Method analyses over 80% of the sieve surface
- Results independent of sieve shaking method
- No need to send sieves away for calibration

Accuracy and repeatability better than 1 µm.

Typical calibration time of about 1 minute.

Single use bottles remove operator bias.

Description	For	Calibration range	Pk	Cat. No.
Sieve standards	Sieve size 20 µm	19 - 24 µm	5	**510-0166**
Sieve standards	Sieve size 25 µm	22 - 30 µm	5	**510-0167**
Sieve standards	Sieve size 32 µm	28 - 34 µm	5	**510-0168**
Sieve standards	Sieve size 38 µm	34 - 41 µm	5	**510-0169**
Sieve standards	Sieve size 45 µm	42 - 50 µm	5	**510-0170**
Sieve standards	Sieve size 53 µm	48 - 59 µm	5	**510-0171**
Sieve standards	Sieve size 63 µm	57 - 70 µm	5	**510-0172**
Sieve standards	Sieve size 75 µm	67 - 83 µm	5	**510-0173**
Sieve standards	Sieve size 90 µm	79 - 97 µm	5	**510-0174**
Sieve standards	Sieve size 106 µm	91 - 117 µm	5	**510-0175**
Sieve standards	Sieve size 125 µm	112 - 140 µm	5	**510-0176**
Sieve standards	Sieve size 150 µm	134 - 167 µm	5	**510-0177**
Sieve standards	Sieve size 180 µm	161 - 200 µm	5	**510-0178**
Sieve standards	Sieve size 212 µm	191 - 237 µm	5	**510-0179**
Sieve standards	Sieve size 250 µm	226 - 281 µm	5	**510-0180**
Sieve standards	Sieve size 300 µm	270 - 333 µm	5	**510-0181**
Sieve standards	Sieve size 355 µm	322 - 398 µm	5	**510-0182**
Sieve standards	Sieve size 425 µm	377 - 470 µm	5	**510-0183**
Sieve standards	Sieve size 500 µm	440 - 557 µm	5	**510-0184**
Sieve standards	Sieve size 600 µm	526 - 657 µm	5	**510-0185**
Sieve standards	Sieve size 710 µm	648 - 809 µm	5	**510-0186**
Sieve standards	Sieve size 850 µm	774 - 950 µm	5	**510-0187**
Sieve standards	Sieve size 1,00 mm	0,91 -1,11 mm	5	**510-0377**
Sieve standards	Sieve size 1,18 mm	1,09 - 1,33 mm	5	**510-0378**
Sieve standards	Sieve size 1,40 mm	1,29 - 1,61 mm	5	**510-0379**
Sieve standards	Sieve size 1,70 mm	1,51 - 1,87 mm	5	**510-0380**

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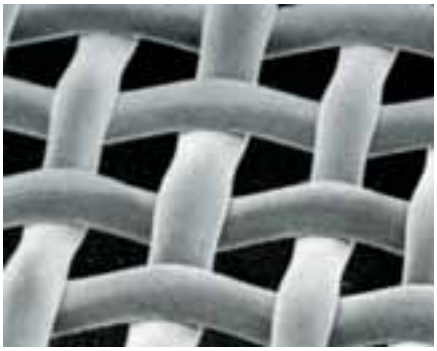
Description	For	Calibration range	Pk	Cat. No.
Sieve standards	Sieve size 2,00 mm	1,84 - 2,24 mm	5	**510-0381**
Sieve standards	Sieve size 2,36 mm	2,15 - 2,66 mm	5	**510-0382**
Sieve standards	Sieve size 2,80 mm	2,56 - 3,23 mm	5	**510-0383**
Sieve standards	Sieve size 3,35 mm	3,07 - 3,78 mm	5	**510-0384**

BioPrepNylon, synthetic cheesecloth



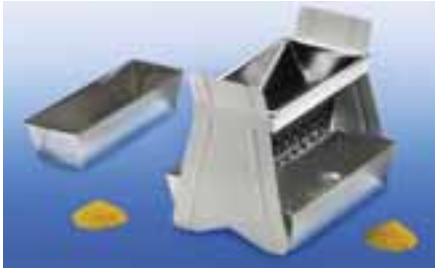
Pure nylon filaments woven into a matrix of 50 µm pores

For easy and rapid high bulk filtration with extraordinary high flow rates. For most applications it is loosely placed in the appropriate size sieve holder to form a funnel. The sample is placed in the funnel and allowed to drain. The layers are then pressed together to remove all extraction liquid. As it does not wet, significantly greater quantities of the extraction liquid are recovered compared to any other method. Compatible with salts, buffers and solvents used in biological research.

- Does not contain detergent, salts or dyes
- Low protein binding
- Reusable
- Can be used with biological material
- Can be repeatedly washed

L×W (mm)	Pk	Cat. No.
305×305	3	**510-0018**
305×305	6	**510-0019**
915×610	1 Roll	**510-0020**
915×122	1 Roll	**510-0021**

Sample splitters
VWR by Haver & Boecker



For dividing sieved material into representative test sieve samples.

Type RT 6,3 and 12,5

Consists of 1 lacquered sheet steel rack, 300×250×270 mm, 1 stainless steel divider and 3 receivers which are tin sheet (1,75 litres) or laminated plastic (2 litres).

Type 25, 37,5, 50 and 75

Consists of 1 rack 620×260×420 mm, 1 divider and 3 receivers with grab handles (8 litres), all of galvanised steel

Description	Type	Pk	Cat. No.
Type RT 6,3 and 12,5			
12 partitions of 6,3 mm, 1,75 litre of tin sheet receivers	RT 6,3	1	**510-0492**
12 divisions of 6,3 mm, 2 litre laminated plastic receivers	RT 6,3	1	**510-0494**
18 partitions of 12,5 mm, 1,75 litre tin sheet receivers	RT 12,5	1	**510-0491**
18 partitions of 12,5 mm, 2 litre laminated plastic receivers	RT 12,5	1	**510-0493**
Type 25, 37,5, 50 and 75			
16 partitions of 25 mm	RT 25	1	**510-0490**
12 partitions of 37,5 mm	RT 37,5	1	**510-0489**
8 partitions of 50 mm	RT 50	1	**510-0488**
6 partitions of 75 mm	RT 75	1	**510-0487**

Three piece filter funnels
Whatman (GE Healthcare)

Funnel and reservoir in borosilicate glass 3.3, acrylic support plate

For filtration with glass microfibre filters of aqueous solutions.

- Easily and quickly dismantled and cleaned
- Ground flat flange sealing to ensure a good filter seal

Max. temperature: +65 °C

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
16	25	1	**516-0605**
36	47	1	**516-0606**
115	70	1	**516-0607**
210	70	1	**516-0610**
400	70	1	**516-0611**
200	90	1	**516-0608**
530	125	1	**516-0609**

Description	Pk	Cat. No.
Accessories		
Filter funnel plate, PP, 90 mm	1	**511-1000**

Filtration funnels
ROBU®

Borosilicate glass 3.3

With integrated sintered glass filter plate.

Stem O-Ø (mm)	Plate Ø (mm)	Capacity (ml)	Porosity	Pk	Cat. No.
8	25	25	1	1	**511-3301**
8	25	25	2	1	**511-3302**
8	25	25	3	1	**511-3303**
8	25	25	4	1	**511-3304**

Vacuum filtration funnels
ROBU®

Borosilicate glass 3.3

With integrated sintered glass filter plate.

Stem O-Ø (mm)	Plate Ø (mm)	Capacity (ml)	Porosity	Pk	Cat. No.
10	35	50	1	1	**511-1301**
10	35	50	2	1	**511-1302**
10	35	50	3	1	**511-1303**
10	35	50	4	1	**511-1304**
10	35	50	5	1	**511-1305**
10	45	75	1	1	**511-1311**
10	45	75	2	1	**511-1312**
10	45	75	3	1	**511-1313**
10	45	75	4	1	**511-1314**
10	45	75	5	1	**511-1315**
10	60	125	1	1	**511-1321**
10	60	125	2	1	**511-1322**
10	60	125	3	1	**511-1323**
10	60	125	4	1	**511-1324**
10	60	125	5	1	**511-1325**
22	95	500	1	1	**511-1331**
22	95	500	2	1	**511-1332**
22	95	500	3	1	**511-1333**
22	95	500	4	1	**511-1334**
22	95	500	5	1	**511-1335**
22	120	1000	1	1	**511-1341**
22	120	1000	2	1	**511-1342**
22	120	1000	3	1	**511-1343**
22	120	1000	4	1	**511-1344**
22	120	1000	5	1	**511-1345**
30	175	4000	1	1	**511-1351**
30	175	4000	2	1	**511-1352**
30	175	4000	3	1	**511-1353**
30	175	4000	4	1	**511-1354**

Vacuum micro filtration funnels
ROBU®

Borosilicate glass 3.3

With integrated sintered glass filter plate.

Capacity (ml)	Plate Ø (mm)	Porosity	Stem O-Ø (mm)	Pk	Cat. No.
0,8	10	1	6	1	**511-1101**
0,8	10	2	6	1	**511-1102**
0,8	10	3	6	1	**511-1103**
0,8	10	4	6	1	**511-1104**
2	10	1	6	1	**511-1111**
2	10	2	6	1	**511-1112**
2	10	3	6	1	**511-1113**
2	10	4	6	1	**511-1114**

Vacuum filtration funnels according to Allihn
ROBU®

Borosilicate glass 3.3

With integrated sintered glass filter plate. Height above sintered glass filter plate: 100 mm.

Capacity (ml)	Plate Ø (mm)	Porosity	Stem O-Ø (mm)	Pk	Cat. No.
30	20	1	10	1	**511-3101**
30	20	2	10	1	**511-3102**
30	20	3	10	1	**511-3103**
30	20	4	10	1	**511-3104**

Gas distribution tubes
ROBU®

Borosilicate glass 3.3

Length: 250 mm

Porosity	Head Ø (mm)	Tube O-Ø (mm)	Pk	Cat. No.
0	22	7	1	511-0700
0	25	8	1	511-0710
1	22	7	1	511-0701
1	25	8	1	511-0711
2	22	7	1	511-0702
2	25	8	1	511-0712

Filtration crucibles

Porcelain, with porous bottom

Porosity	Capacity (ml)	Plate Ø (mm)	Pk	Cat. No.
1	8	25	2	511-0275
2	8	25	2	511-0276
3	8	25	2	511-0277
1	15	30	2	511-0278
2	15	30	2	511-0279
3	15	30	2	511-0280
1	25	35	2	511-0281
2	25	35	2	511-0282
3	25	35	2	511-0283
1	35	40	2	511-0284
2	35	40	2	511-0285
3	35	40	2	511-0286
1	50	45	2	511-0287
2	50	45	2	511-0288
3	50	45	2	511-0289

Filtration crucibles
ROBU®

Borosilicate glass 3.3

With integrated sintered glass filter plate.

Porosity	Capacity (ml)	Plate Ø (mm)	Pk	Cat. No.
2	8	20	1	511-2102
3	8	20	1	511-2103
4	8	20	1	511-2104
1	15	23	1	511-2201
2	15	23	1	511-2202
3	15	23	1	511-2203
4	15	23	1	511-2204
1	30	30	1	511-2301
2	30	30	1	511-2302
3	30	30	1	511-2303
4	30	30	1	511-2304
5	30	30	1	511-2305
1	50	40	1	511-2401
2	50	40	1	511-2402
3	50	40	1	511-2403
4	50	40	1	511-2404
5	50	40	1	511-2405

Adapters for filtration crucibles
ROBU®

Borosilicate glass 3.3

For	I-Ø top (mm)	Length (mm)	Pk	Cat. No.
511-2102 to 511-2104	27	110	1	**511-2108**
511-2201 to 511-2204	34	110	1	**511-2208**
511-2301 to 511-2305	41	125	1	**511-2308**
511-2401 to 511-2405	50	132	1	**511-2408**

Conical sleeves for vacuum filtration
Saint-Gobain

Grey-Blue rubber

Set of 7 sleeves of different size

Height (mm)	44; 39; 34; 30; 29; 19; 19
I/O -Ø min. (mm)	46/57; 39/46; 29/38; 23/29; 16/23; 11/16; 4/11
I/O-Ø max. (mm)	72/84; 61/71; 51/58; 40/47; 31/37; 22/28; 16/22

Description	Pk	Cat. No.
Rubber cone set of 7 pieces	7	**511-0873**

Conical sleeves for vacuum filtration

Grey rubber, autoclavable

Conical, for use with filtering flasks.

Nominal Ø bottom (mm)	Nominal Ø top (mm)	Pk	Cat. No.
12	21	1	**519-4405**
17	27	1	**519-4410**
21	33	1	**519-4415**
27.5	41	1	**519-4420**
33	53	1	**519-4425**
48	68	1	**519-4430**
58	78	1	**519-4435**
66	89	1	**519-4440**

Description	Pk	Cat. No.
Set of 8 sleeves		
Set of 8 pieces ext. Ø 21 to 89 mm	1 SET	**519-4400**

Conical sleeves for vacuum filtration, Sterilin®
Thermo Scientific

Red natural rubber

Rubber cone, set of six pieces. Conical, for use with filtering flasks.

Set includes each one of 7/15 mm, 10/22 mm, 15/28 mm, 16/36 mm, 22/42 mm and 26/52 mm (inner diamater at low end/inner diameter at top end)

Pk	Cat. No.
1 SET	**511-0098**

Filter holders
Sartorius

PC, autoclavable

For filtration of aqueous solutions, ideal for use with peristaltic pumps or syringes.

Max. Pressure 7 bar

For Ø (mm)	Pk	Cat. No.
13	12	**611-0688**
25	12	**611-0689**
50/40*	5	**611-0687**

* filter/prefilter

PALL Life Sciences

Filter holders

300-0001

300-0002

516-9031

Material	For Ø (mm)	Pk	Cat. No.
In-line			
Delrin®/stainless steel 316	25	6	**300-0001**
PC/polysulfone	47	1	**300-0002**
Stainless steel 316/303	25	1	**516-9031**
Stainless steel 316/303	47	1	**516-9064**
Aluminium/stainless steel	47	1	**300-0009**
Open face			
Delrin®/stainless steel 316	25	6	**300-0000**
Aluminium/stainless steel 304	37	1	**300-0007**
Aluminium/stainless steel 304	47	1	**300-0008**

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Vacuum filter holders
Sartorius

Stainless steel

For colony counting and particle collection, specially designed for applications in which the particles or microorganisms retained on the membrane filter surface are of interest. The stainless steel frit filter support ensures a uniform distribution of the residues.

Autoclavable at +134 °C

Outlet diameter: 10 mm

Composition: with cover, clamp and tap in stainless steel

Capacity (ml)	For Ø (mm)	Pk	Cat. No.
40	50	1	**512-3302**
100	50	1	**512-3301**
500	50	1	**512-3300**

Pressure filtration holders
Sartorius

Stainless steel

200 ml

For the filtration of small volumes the holder is connected directly to a pressure source. For the filtration of up to 5 litre volumes of relatively easily filtrable liquids (e.g. buffer solutions, solutions for cell counters and tissue culture solutions), it is used in combination with a pressure tank. Large filling opening to simplify addition of sample. Can be attached to a tripod and clamped down.

With hose nipples

Autoclavable at max. +134 °C

Max. pressure: 10 bar

2000 ml

For sample preparation and sterile filtration of serum. Suitable for the removal of insoluble components from samples.

Prefilter: 130 mm

Autoclavable at max.: +134 °C

Max. pressure: 7 bar

Capacity (ml)	For Ø (mm)	Type	Pk	Cat. No.
200	47	16249	1	**512-3420**
2000	142	16274	1	**512-3400**

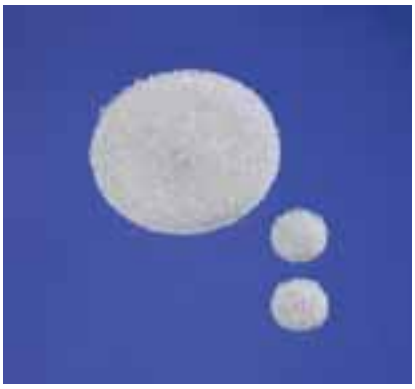
Glass wool

Extra fine

Pk	Cat. No.
30 g	**519-3101**
1 kg	**519-3102**

Filter discs

ROBU®



DURAN®, borosilicate glass

Edges not fused and centred, surface untreated.

Application	Nominal pore size (µm)	Porosity
Gas distribution in liquids at low pressure, coarse filtration	160 - 250	0
Coarse filtration, gas distribution, liquid distribution, gas cleaning	100 - 160	1
Preparative fine filtration, mercury filtration, preparative work with coarse crystalline products	40 - 100	2
Analytical work with medium fine precipitates, fine gas filtration, analytical filtration, special filtration	16 - 40	3
Analytical fine filtration, analytical and preparative work with the finest precipitates, return and stop valve for mercury	10 - 16	4

Porosity	Ø (mm)	Pk	Cat. No.
0	10	1	**511-0010**
0	20	1	**511-0020**
0	30	1	**511-0040**
0	40	1	**511-0050**
0	50	1	**511-0060**
0	60	1	**511-0070**
0	120	1	**511-0110**
1	10	1	**511-0011**
1	20	1	**511-0021**
1	30	1	**511-0041**
1	40	1	**511-0051**
1	50	1	**511-0061**
1	60	1	**511-0071**
1	70	1	**511-0081**
1	90	1	**511-0101**
1	120	1	**511-0111**
2	10	1	**511-0012**
2	20	1	**511-0022**
2	30	1	**511-0042**
2	40	1	**511-0052**
2	50	1	**511-0062**
2	60	1	**511-0072**
2	70	1	**511-0082**
2	90	1	**511-0102**
2	120	1	**511-0112**
3	10	1	**511-0013**
3	20	1	**511-0023**
3	30	1	**511-0043**
3	40	1	**511-0053**
3	50	1	**511-0063**
3	60	1	**511-0073**
3	90	1	**511-0103**
3	120	1	**511-0113**
4	10	1	**511-0014**
4	20	1	**511-0024**
4	30	1	**511-0044**
4	40	1	**511-0054**
4	50	1	**511-0064**
4	60	1	**511-0074**
4	90	1	**511-0104**
4	120	1	**511-0114**

Funnels according to Dr. Hirsch
Haldenwanger

White glazed porcelain

Funnel with integral perforated filter plate can be used with paper or membrane discs.

DIN 12 905 (except 519-2392 and 519-2393)

Funnel O-Ø (mm)	Length (mm)	Plate Ø (mm)	Stem length (mm)	Pk	Cat. No.
30	40	9	18	1	**519-2391**
40	55	11	25	1	**519-2392**
45	60	13	25	1	**519-2393**
50	70	17	22	1	**519-2394**
70	90	28	37	1	**519-2395**

Büchner funnels
DURAN Group

DURAN®, borosilicate glass

With slotted sieve support. For filter papers or membrane filtration discs.

Capacity (ml)	For filter Ø (mm)	Plate Ø (mm)	Pk	Cat. No.
70	45	48	1	**511-0335**
125	55	60	1	**511-0336**
220	70	73	1	**511-0337**
500	90	95	1	**511-0338**
1000	110	120	1	**511-0339**

Büchner funnels
Haldenwanger

White glazed porcelain

For filter paper or membrane filtration discs.

DIN 12 905 (511-2502, 511-2501 and 511-2500 not according to DIN)

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
3	18	1	**511-2502**
10	27	1	**511-2501**
25	40	1	**511-2500**
50	45	1	**511-2503**
75	55	1	**511-2504**
135	70	1	**511-2505**
290	90	1	**511-2506**
580	110	1	**511-2507**
795	125	1	**511-2508**
1250	150	1	**511-2509**
1900	185	1	**511-2510**
4300	240	1	**511-2511**
5800	270	1	**511-2512**
10600	320	1	**511-2513**

Büchner funnels, Nalgene®
Thermo Scientific

PP

For filter paper or membrane filtration discs.

- Robust and lightweight
- Top and bottom can be separated for easy cleaning
- Autoclavable

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
83	55	1	**221-0100**
186	70	1	**221-0101**
358	90	1	**221-0102**
919	110	1	**221-0103**
2906	150	1	**221-0104**

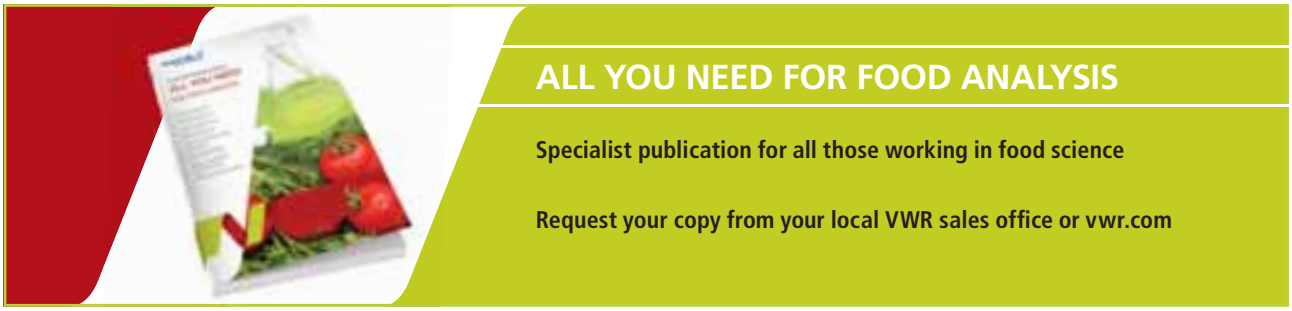
Büchner funnels
Kartell

PP, autoclavable

For filter paper or membrane filtration discs.

- Robust and lightweight
- Top and bottom can be separated for easy cleaning

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
40	42,5	1	**519-2361**
70	55	1	**519-2362**
180	70	1	**519-2363**
235	80	1	**511-0008**
390	90	1	**519-2364**
810	110	1	**519-2365**
2100	150	1	**519-2366**
6000	240	1	**519-2367**



Büchner funnels, Hartley pattern

Top and base: Borosilicate glass with support plate

Three piece construction.

- Available with choice of perforated disc material
- Complete with three PE coated clips
- Available for 4 filter sizes

For filter Ø (mm)	Pk	Cat. No.
With Perspex disc		
70	1	**511-0827**
90	1	**511-0828**
125	1	**511-0829**
150	1	**511-0830**
With Polypropylene disc		
70	1	**511-0831**
90	1	**511-0832**
125	1	**511-0833**
150	1	**511-0834**
With Nylon disc		
70	1	**511-0835**
90	1	**511-0836**
With PTFE disc		
70	1	**511-0837**
90	1	**511-0838**
125	1	**511-0839**

Ø (mm)	Pk	Cat. No.
Spare base		
70	1	**511-0840**
90	1	**511-0841**
125	1	**511-0842**
150	1	**511-0843**

Buchner funnels, Quickfit®

PYREX®, borosilicate glass

With sintered glass disc.

Cone connection.

Cone size (NS)	Porosity	Pk	Cat. No.
19/26	P40	1	**201-8681**
24/29	P40	1	**201-8682**

Filtering beakers
DURAN Group

DURAN®, borosilicate glass

Thick walled, with spout, easy to read scale and large labelling field.

- Increased wall thickness for better mechanical properties
- Reduced thermal shock resistance
- Limited application for heating

Above 10 000 ml without graduation

Capacity (ml)	Height (mm)	Ø ext. (mm)	Pk	Cat. No.
100	85	52	1	**511-0315**
150	93	54	1	**511-0316**
250	94	70	1	**511-0340**
500	124	89	1	**511-0317**
1000	160	105	1	**511-0318**
2000	195	135	1	**511-0319**
3000	205	157	1	**511-0320**
5000	256	182	1	**511-0321**
10000	340	225	1	**511-0322**
15000	390	260	1	**511-0323**
20000	430	285	1	**511-0324**

Vacuum filtering flasks, Büchner, with side arm socket
DURAN Group

DURAN®, borosilicate glass

For vacuum use. Filtration flasks with side arm socket have not only made work in preparation and analytical laboratories easier and simpler, but have also reduced accident risk.

- Up to 2000 ml in Erlenmeyer shape, from 3000 ml in bottle shape
- Ground socket to accommodate vacuum tubing of 15 to 18 mm external diameter (e.g. 6×5 or 8×5 mm)
- Fulfil the regulations of the "Equipment and product safety regulations"

DIN 12476 and ISO 6556 (only Erlenmeyer shape)

Capacity (ml)	Height (mm)	Ø ext. (mm)	Neck I-Ø (mm)	Pk	Cat. No.
250	155	85	34	1	**519-4132**
500	185	105	34	1	**519-4133**
1000	230	135	45	1	**519-4134**
2000	255	166	60	1	**519-4135**
3000	295	170	58	1	**519-4231**
5000	360	185	68	1	**519-4232**
10000	420	240	70	1	**519-4233**
15000	500	255	70	1	**519-4234**
20000	535	290	70	1	**519-4235**

Vacuum filtering flasks, Büchner, with KECK™ assembly set
DURAN Group

DURAN®, borosilicate glass

For vacuum use.

- Up to 2000 ml in Erlenmeyer shape, from 3000 ml bottle shape
- Inclusive assembly set with removable hose connection, screw and seals
- Fulfil the regulations of the "Equipment and product safety regulations"
- USP Standard

DIN 12476 and ISO 6556 (only Erlenmeyer shape)

Capacity (ml)	Height (mm)	Ø ext. (mm)	Neck I-Ø (mm)	Pk	Cat. No.
100	105	65	24	1	**511-0330**
250	155	85	34	1	**511-0331**
500	185	105	34	1	**511-0332**
1000	230	135	45	1	**511-0333**
2000	255	166	60	1	**511-0334**
3000	295	170	58	1	**511-0325**
5000	360	185	68	1	**511-0326**
10000	420	240	70	1	**511-0327**
15000	500	257	70	1	**511-0328**
20000	535	290	70	1	**511-0329**

Description	Pk	Cat. No.
Spare parts		
Replacement silicone rubber seal	1	**519-4312**
Assembly set	1	**519-4311**

Vacuum filtering flasks, Büchner, with glass hose connection
DURAN Group

DURAN®, borosilicate glass

For vacuum use.

- Up to 2000 ml in Erlenmeyer shape, from 3000 ml bottle shape
- Olive hose connection 11 mm diameter
- Does not conform to the "Equipment and product safety regulations"

ISO 6556 (only Erlenmeyer shape)

Capacity (ml)	Height (mm)	Ø ext. (mm)	Neck I-Ø (mm)	Pk	Cat. No.
100	105	64	24	1	**215-1011**
250	155	85	34	1	**215-1013**
500	185	105	34	1	**215-1018**
1000	230	135	45	1	**215-1010**
2000	255	166	60	1	**519-4140**

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Capacity (ml)	Height (mm)	Ø ext. (mm)	Neck I-Ø (mm)	Pk	Cat. No.
3000	295	170	58	1	**519-4217**
5000	360	185	68	1	**519-4216**
20000	535	290	70	1	**511-0133**

Vacuum filtering flasks, Büchner, with standard ground joint
SciLabware

PYREX®, borosilicate glass

Büchner flasks with precision-ground Quickfit® socket.

- Heavy wall and base construction for vacuum work
- Side arm features a PTFE screwthread connector for the safe attachment of 9 mm bore vacuum tubing

ISO 1773, BS 6352

Capacity (ml)	Height (mm)	Ø ext. (mm)	Socket size (NS)	Pk	Cat. No.
Plain glass side arm					
100	107	64	19/26	2	**511-0128**
100	107	64	24/29	2	**511-0129**
250	145	85	24/29	2	**511-0130**
250	145	85	29/32	2	**511-0236**
500	172	105	24/29	2	**511-0131**
500	172	105	29/32	2	**511-0239**
1000	227	136	24/29	2	**511-0232**
1000	227	136	29/32	1	**511-0767**
PTFE screwthread tubing connector					
100	107	64	19/26	2	**511-0230**
100	107	64	24/29	2	**511-0231**
250	145	85	24/29	2	**511-0235**
250	145	85	29/32	2	**511-0237**
500	172	105	24/29	2	**511-0238**
500	172	105	29/32	2	**511-0240**
1000	227	136	24/29	2	**511-0233**
1000	227	136	29/32	2	**511-0234**

Vacuum filtering flasks, Büchner, with glass hose connection
SciLabware

PYREX®, borosilicate glass

Büchner filter flasks with integral glass side arm to accept 9 mm bore flexible tubing.

- For vacuum filtration
- Heavy walls provide increased mechanical strength
- "Studded" base to minimise surface abrasion

Complies with ISO 6556

Capacity (ml)	Height (mm)	Ø ext. (mm)	Neck I-Ø (mm)	Pk	Cat. No.
100	105	64	24	1	**511-0734**
250	155	85	35	1	**511-0735**
500	185	105	35	1	**511-0736**
1000	230	135	45	1	**511-0771**
2000	260	166	60	1	**511-0737**
3000	335	187	68	1	**511-0773**
5000	385	220	68	1	**511-0738**

Vacuum filtering flasks, Büchner, with screwthread connector

SciLabware

PYREX®, borosilicate glass

Büchner flasks with heavy wall construction for vacuum filtration applications.

- Side arm features a PTFE screwthread connector for easy and safe fitting of 9 mm bore vacuum tubing
- With tooled neck to accept a rubber stopper or cone

Complies with ISO 6556

Capacity (ml)	Height (mm)	Ø ext. (mm)	Neck I-Ø (mm)	Pk	Cat. No.
100	105	64	24	10	**511-0775**
250	155	85	35	10	**511-0045**
500	185	105	35	10	**511-0046**
1000	230	135	45	5	**511-0047**
2000	260	166	60	1	**511-0777**

Vacuum filtering flasks, Büchner, with side arm, Nalgene®

Thermo Scientific

PP, white

Moulded in one piece to withstand full vacuum to 30-in. Hg.

- Tubulation at 45° angle prevents tipping
- Barbed adapter accepts 6,4 to 9,5 mm internal diameter tubing
- Oval marking area
- 215-8248 is graduated

Capacity (ml)	Pk	Cat. No.
500	1	**516-0579**
1000	1	**516-0580**
1700	1	**215-8248**

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SELECTED FOR YOU

Qualitative filter papers

Grade (plain)	Grade (folded)	Application
402	302	General grade for qualitative tasks. Suitable for most sulphides. Determination of total fat content in dairy products.
403	313	Drugs, pharmaceuticals, liquors, tinctures, chromatography and protein-free filtrations in the clinical laboratory.
410	305	Filtration of copper(I) oxide, lead sulphate, barium sulphate, manganese carbonate and more for analytical work. Suitable for extremely difficult filtration and for clarification of wine.
413	303	For routine laboratory work, suitable for student requirements in general chemistry. Suitable for filtration of aluminium phosphate, barium carbonate, lead chromate and more.
415	301	Coarse precipitates such as aluminium hydroxide, cobalt carbonate, mercury iodide, magnesium hydroxide, and more.
417	NA	Rapid filtrations where fine particle retention is not required.
NA	307	For brewing industry. Embossed surface filter paper 70 g/m² for malt analysis in breweries (according to EBC standard).
600	310	Qualitative filter paper for use in routine laboratories, universities and hospitals. Made of 100% cellulose with no binder.
NA	315	Gelatinous and coarse precipitates.

Grade	Weight	Thickness	Particle retention	Max. pore size	Min. pore size	Filtration speed	Wet burst strength	Dry burst strength
Plain filters								
401	84 g/m²	0,2 mm	12 - 15 µm	50 µm	31 µm	70 s (Herzberg)	2 psi	11 psi
402		0,17 mm	8 - 12 µm	40 µm	23 µm	150 s (Herzberg)	2,5 psi	17 psi
403	87 g/m²		5 - 8 µm	30 µm	15 µm	500 s (Herzberg)	0,5 psi	12,5 psi
410	80 g/m²	0,15 mm	2 - 3 µm	20 µm	9 µm	2500 s (Herzberg)	1 psi	22 psi
413	73 g/m²	0,16 mm	5 - 13 µm	45 µm	20 µm	160 s (Herzberg)	9 psi	28 psi
415	80 g/m²		12 - 15 µm	50 µm	31 µm	70 s (Herzberg)	0,8 psi	8,5 psi
417	110 g/m²	-	35 - 45 µm	-		27 s (Herzberg)	15 psi	35 psi
600	64 g/m²	0,15 mm	13 µm	60 µm	25 µm	110 s (Herzberg)	6,5 psi	19 psi
Folded filters								
301	84 g/m²	0,2 mm	12 - 15 µm	50 µm	31 µm	70 s (Herzberg)	2 psi	11 psi
302		0,17 mm	8 - 12 µm	40 µm	23 µm	150 s (Herzberg)	2,5 psi	17 psi
303	73 g/m²	0,16 mm	5 - 13 µm	45 µm	20 µm	160 s (Herzberg)	9 psi	28 psi
305	84 g/m²	0,14 mm	2 - 3 µm	20 µm	9 µm	2500 s (Herzberg)	3,5 psi	18 psi
307	70 g/m²	-	8 µm	40 µm	23 µm	520 s (Herzberg)	-	
310	64 g/m²	0,15 mm	13 µm	60 µm	25 µm	110 s (Herzberg)	6,5 psi	19 psi
313	87 g/m²	0,17 mm	5 - 8 µm	30 µm	15 µm	500 s (Herzberg)	0,5 psi	12,5 psi
315	73 g/m²		17 - 30 µm	70 µm	40 µm	60 s (Herzberg)	6,5 psi	17,5 psi

Grade	Size (mm)	Pk	Cat. No.
Plain filters			
401	55	100	**516-0349**
401	70	100	**516-0350**
401	125	100	**516-0351**
401	70 mm × 80 m	1 Roll	**516-0282**
402	150	100	**516-0283**
403	150	100	**516-0289**
410	75	100	**516-0800**
410	90	100	**516-0801**
410	110	100	**516-0802**
410	125	100	**516-0803**
410	150	100	**516-0804**
410	185	100	**516-0805**
413	15	100	**516-0810**
413	42,5	100	**516-0811**
413	55	100	**516-0812**

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Grade	Size (mm)	Pk	Cat. No.
Plain filters			
413	75	100	**516-0813**
413	90	100	**516-0814**
413	110	100	**516-0815**
413	125	100	**516-0816**
413	150	100	**516-0817**
413	185	100	**516-0818**
413	205	100	**516-0819**
413	240	100	**516-0820**
415	55	100	**516-0830**
415	75	100	**516-0831**
415	90	100	**516-0832**
415	110	100	**516-0833**
415	125	100	**516-0834**
415	150	100	**516-0835**
415	185	100	**516-0836**
415	205	100	**516-0837**
415	250	100	**516-0838**
415	330	100	**516-0839**
417	90	50	**516-0821**
417	110	50	**516-0822**
417	125	50	**516-0823**
417	150	50	**516-0824**
417	185	50	**516-0825**
417	205	50	**516-0826**
417	250	50	**516-0827**
417	330	50	**516-0828**
417	500	50	**516-0829**
600	420×520	500	**516-0309**
600	460×570	100	**516-0880**
Folded filters			
301	125	100	**516-0276**
301	150	100	**516-0277**
301	185	100	**516-0278**
301	240	100	**516-0279**
301	270	100	**516-0280**
301	320	100	**516-0281**
302	125	100	**516-0284**
302	150	100	**516-0285**
302	185	100	**516-0286**
302	240	100	**516-0287**
302	320	100	**516-0288**
303	100	100	**516-0294**
303	110	100	**516-0295**
303	130	100	**516-0296**
303	150	100	**516-0297**
303	190	100	**516-0298**
303	250	100	**516-0299**
303	270	100	**516-0300**
303	330	100	**516-0301**
305	125	100	**516-0290**
305	150	100	**516-0291**
305	185	100	**516-0292**
305	240	100	**516-0293**
307	320	100	**516-0310**
310	70	100	**516-0302**
310	100	100	**516-0303**
310	130	100	**516-0304**
310	150	100	**516-0305**
310	190	100	**516-0306**
310	250	100	**516-0307**
310	330	100	**516-0308**
313	125	100	**516-0806**
313	150	100	**516-0807**
313	185	100	**516-0808**
313	240	100	**516-0809**
315	130	100	**516-0840**
315	150	100	**516-0841**
315	190	100	**516-0842**
315	250	100	**516-0843**
315	330	100	**516-0844**
315	400	100	**516-0845**

Qualitative filter papers, standard grades
Whatman (GE Healthcare)

Grade (plain)	Grade (folded)	Application
1	–	Used for routine applications with medium retention and flow rate. This grade covers a wide range of laboratory applications and is frequently used for clarifying liquids. Separations of precipitates such as lead sulphate, calcium oxalate (hot) and calcium carbonate. Used for numerous routine techniques to separate solid foodstuffs from associated liquid or extracting liquid. Teaching grade.
2	2V	Slightly more retentive and more absorbent than Grade 1. In addition to general filtration in the 8 µm particle size range, the extra absorbency is utilised, for example, to hold soil nutrient in plant growth trials.
3	–	Double the thickness of Grade 1. The extra thickness gives increased wet strength and makes this grade highly suitable for use in Büchner funnels. The high absorbency is particularly valuable when the paper is used as a sample carrier.
4	–	Extremely fast filtering with excellent retention of coarse particles and gelatinous precipitates such as ferric hydroxide and aluminium hydroxide. Very useful as a rapid filter for routine clean up of biological fluids or organic extracts during analysis.
5	5V	The maximum degree of fine particle filtration in the qualitative range. Capable of retaining the fine precipitates encountered in chemical analysis. Slow flow rate. Excellent clarifying filter for cloudy suspensions and for water and soil analysis.
6	–	Twice as fast as Grade 5 with similar fine particle retention. Often specified for boiler water analysis applications.
591	591 1/2	A thick filter paper with very high loading capacity for fast filtration of medium-to-coarse precipitates. Offers high absorbency and increased wet strength.
595	595 1/2	Very popular, thin filter paper, medium fast with medium-to-fine particle retention. Used for many routine analytical applications in different industries, (e.g. particle separation from food extracts or filtration of solids from digested environmental samples, e.g. for ICP/AAS analysis).
597	597 1/2	A medium fast filter paper with medium-to-fine particle retention. Used for a wide variety of analytical routine applications in different industries like food testing (e.g. determination of fat content acc. to Section 35 LMBG) or removal of carbon dioxide and turbidity from beverages (e.g. beer analysis).
598	598 1/2	A thick filter paper with high loading capacity. Combines medium retention with medium fast to fast filtration speed.
602 h	602 h 1/2	A dense filter paper for collecting very small particles and removing fine precipitates. Used in sample preparation, e.g. in the beverage industry for residual sugar determination, acidic spectra, refractometric analysis and HPLC.

Grade	Weight	Thickness	Particle retention	Filtration speed
Plain filters				
1	88 g/m²	0,18 mm	11 µm	150 s (Herzberg)
2	103 g/m²	0,19 mm	8 µm	240 s (Herzberg)
3	187 g/m²	0,39 mm	6 µm	325 s (Herzberg)
4	96 g/m²	0,20 mm	20 - 25 µm	37 s (Herzberg)
5	98 g/m²		2,5 µm	1420 s (Herzberg)
6	105 g/m²	0,18 mm	3 µm	715 s (Herzberg)
591	161 g/m²	0,35 mm	7 - 12 µm	45 s (Herzberg)
595	68 g/m²	0,15 mm	4 - 7 µm	80 s (Herzberg)
597	85 g/m²	0,18 mm		140 s (Herzberg)
602 h	84 g/m²	0,16 mm	<2 µm	375 s (Herzberg)
Folded filters				
2V	103 g/m²	0,19 mm	8 µm	240 s (Herzberg)
595 ½	68 g/m²	0,15 mm	4 - 7 µm	80 s (Herzberg)
597 ½	85 g/m²	0,18 mm		140 s (Herzberg)
602 h ½	84 g/m²	0,16 mm	<2 µm	375 s (Herzberg)

Grade	Size (mm)	Pk	Cat. No.
Plain filters			
1	42,5	100	**512-1000**
1	47	100	**516-3104**
1	55	100	**512-1001**
1	70	100	**512-1002**
1	85	100	**516-0593**
1	90	100	**512-1003**
1	110	100	**512-1004**

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Grade	Size (mm)	Pk	Cat. No.
Plain filters			
1	125	100	**512-1005**
1	150	100	**512-1006**
1	185	100	**512-1007**
1	240	100	**516-0594**
1	270	100	**516-0595**
1	320	100	**516-0596**
1	400	100	**516-0597**
1	460×570	100	**512-1008**
1	460×570	500	**516-0598**
1	580×680	100	**516-3135**
2	42,5	100	**512-0381**
2	55	100	**512-1009**
2	70	100	**512-1010**
2	90	100	**512-1011**
2	110	100	**512-1012**
2	125	100	**512-1013**
2	150	100	**512-1014**
2	185	100	**512-1015**
2	240	100	**516-0599**
2	460×570	100	**516-0600**
3	55	100	**512-1016**
3	70	100	**512-1017**
3	90	100	**512-1018**
3	110	100	**512-1019**
3	125	100	**512-1020**
3	150	100	**512-1021**
3	185	100	**512-1022**
3	240	100	**512-0383**
3	460×570	100	**512-1023**
4	47	100	**512-0412**
4	55	100	**512-1024**
4	70	100	**512-1025**
4	90	100	**512-1026**
4	110	100	**512-1027**
4	125	100	**512-1028**
4	150	100	**512-1029**
4	185	100	**512-1030**
4	240	100	**516-0601**
5	55	100	**516-3505**
5	70	100	**512-1031**
5	90	100	**516-3508**
5	110	100	**512-1032**
5	125	100	**512-1033**
5	150	100	**512-1034**
5	185	100	**512-1035**
5	240	100	**516-0602**
6	70	100	**516-3606**
6	90	100	**512-1036**
6	110	100	**512-1037**
6	125	100	**516-3610**
6	150	100	**516-3611**
6	185	100	**512-1038**
591	580×580	250	**515-4115**
595	110	100	**512-3618**
595	125	100	**512-3619**
595	150	100	**515-4505**
597	45	100	**515-4299**
597	55	100	**515-4300**
597	70	100	**515-4301**
597	90	100	**515-4302**
597	110	100	**515-4303**
597	125	100	**515-4304**
597	150	100	**515-4305**
597	185	100	**515-4306**
597	240	100	**515-4307**
597	320	100	**515-4309**
602 h	125	100	**515-4804**
602 h	150	100	**515-4805**
602 h	185	100	**515-4806**
602 h	240	100	**515-4807**
Folded filters			
2V	125	100	**512-1039**
2V	150	100	**512-1040**
2V	185	100	**512-1041**

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Grade	Size (mm)	Pk	Cat. No.
Folded filters			
2V	240	100	**512-0415**
2V	270	100	**512-0302**
2V	320	100	**512-0303**
2V	500	100	**512-0416**
595 ½	70	100	**515-5501**
595 ½	90	100	**512-3620**
595 ½	110	100	**512-3621**
595 ½	125	100	**512-3622**
595 ½	150	100	**512-3623**
595 ½	185	100	**512-3624**
595 ½	210	100	**512-0002**
595 ½	240	100	**512-3625**
595 ½	270	100	**512-3626**
595 ½	320	100	**512-3627**
595 ½	385	100	**515-5510**
597 ½	70	100	**515-5301**
597 ½	90	100	**515-5302**
597 ½	110	100	**515-5303**
597 ½	125	100	**512-3628**
597 ½	150	100	**512-3629**
597 ½	185	100	**512-3630**
597 ½	240	100	**512-3631**
597 ½	270	100	**512-3632**
597 ½	320	100	**512-3633**
597 ½	385	100	**512-3634**
597 ½	500	100	**515-5311**
602 h ½	90	100	**515-5802**
602 h ½	125	100	**515-5804**
602 h ½	150	100	**515-5805**
602 h ½	185	100	**515-5806**
602 h ½	240	100	**515-5807**

Other grades and sizes are available, please check www.vwr.com.

Qualitative filter papers, wet strengthened grades
Whatman (GE Healthcare)

These extremely strong filter papers have a high wet strength due to the addition of a small quantity of chemically stable resin. Normal qualitative applications will not introduce any significant impurities into the filtrate. The resins do, however, contain nitrogen so these grades should not be used in Kjeldahl estimations, etc.

Grade (plain)	Grade (folded)	Application
91	–	A general purpose creped filter for less critical routine analysis. Widely used to assay sucrose in cane sugar and within pharmaceutical laboratories for routine filtration.
93	–	This filter paper is intermediate in speed and retention between grades 1 and 4.
113	113V	Ultra-high loading capacity with a particle retention making it ideal for use with coarse or gelatinous precipitates. Fastest flow rate of the qualitative grades. Creped surface. Thickest filter paper in the Whatman range.
114	114V	Half the thickness of Grade 113 and suitable for coarse or gelatinous precipitates. Smooth surface for easy recovery of precipitates.
1573	1573 ½	A fast filter paper with high wet strength. It has a very smooth surface making it easy to scrape or wash off precipitate.
1575	–	Slow filter paper with high wet strength.

Grade	Weight	Thickness	Particle retention	Filtration speed
Plain filters				
91	71 g/m²	0,20 mm	10 µm	70 s (Herzberg)
93	67 g/m²	0,14 mm		80 s (Herzberg)
113	125 g/m²	0,42 mm	30 µm	28 s (Herzberg)
Folded filters				
113V	125 g/m²	0,42 mm	30 µm	28 s (Herzberg)
114V	77 g/m²	0,19 mm	25 µm	38 s (Herzberg)
Folded filters				
1573 1/2	88 g/m²	170 µm	12 - 25 µm	25 s (Herzberg)

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Grade	Size (mm)	Pk	Cat. No.
Plain filters			
91	110	4.000	**512-0386**
91	125	4.000	**512-0387**
91	150	1.000	**512-0388**
93	110	100	**512-0605**
93	150	1.000	**515-2503**
113	90	100	**512-0391**
113	125	100	**512-0298**
113	150	100	**512-0299**
113	185	100	**512-0300**
113	240	100	**512-0301**
Folded filters			
113V	125	100	**512-0417**
113V	150	100	**512-0304**
113V	185	100	**512-0305**
113V	240	100	**512-0306**
113V	270	100	**512-0418**
113V	320	100	**512-0307**
113V	500	100	**512-0419**
114V	125	100	**512-0420**
114V	150	100	**512-0421**
114V	185	100	**512-0422**
1573 ½	125	100	**515-7004**
1573 ½	150	100	**515-7005**
1573 ½	185	100	**515-7006**
1573 ½	270	100	**515-7008**
1573 ½	320	100	**515-7009**

Other grades and sizes are available, please check www.vwr.com.

Filter papers for malt and beer analysis
Whatman (GE Healthcare)

Grade 2555 ½, folded

For filtration of the mash when determining the extract in malt and wort according to the analytical regulations of the EBC. Also used for removal of carbon dioxide from beer.

Grade	2555 ½
Weight	75 g/m²
Thickness	0,17 mm
Particle retention	7 - 12 µm
Filtration speed	55 s (Herzberg)

Grade	Size (mm)	Pk	Cat. No.
2555 ½	185	100	**512-0453**
2555 ½	240	100	**512-0454**
2555 ½	320	100	**512-3639**

Qualitative filter papers
Whatman (GE Healthcare)

Grade 0858 ½, folded

Grained, with medium fast flow rate and medium retention. A universal filter paper, used for the filtration of extracts, oils, beer, syrups etc., also applied in filter presses or for the aspiration of liquids.

Grade 0860 ½, folded

Comparable to Grade 0858 ½ but with a smooth surface, slightly thinner and faster.

Grade	0858 ½	0860 ½
Weight	75 g/m²	
Thickness	170 µm	
Particle retention	7 - 12 µm	
Filtration speed	55 s (Herzberg)	60 s (Herzberg)

Grade	Size (mm)	Pk	Cat. No.
Grade 0858 ½, folded			
0858 ½	150	100	**512-0520**
0858 ½	185	100	**512-0521**
0858 ½	240	100	**512-0522**
0858 ½	270	100	**512-0523**
0858 ½	320	100	**512-0409**

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Grade	Size (mm)	Pk	Cat. No.
Grade 0860 ½, folded			
0860 ½	185	100	**512-0524**
0860 ½	240	100	**512-0525**
0860 ½	320	100	**512-0526**

Seed testing papers
Whatman (GE Healthcare)

Grade	Application
3645	For testing seeds with small white rootlets.
3014	For testing particulalry sensitive seeds. Medium-large and coated seeds (e.g. sugar beet, fodder beet, grain, sunflower, rapeseed, mustard).
3236	For testing medium-large and coated seeds (e.g. sugar beet, fodder beet, grain, sunflower, rapeseed, mustard).

Grade	3645	3644	3014	3236
Weight	165 g/m²	720 g/m²	113 g/m²	110 g/m²
Thickness	0,35 mm	1,40 mm	0,22 mm	

Description	Grade	Size (mm)	Pk	Cat. No.
Sheets				
Yellow	3645	110×170	100	**515-5015**
Blue	3644	140×200	1.000	**515-5014**
Pleated strips				
White, 25 double pleats	3014	110×20	1.000	**515-8115**
White, 50 double pleats	3014	110×20	1.000	**512-1165**
Grey, 25 double pleats	3236	110×20	1.000	**512-1166**
Grey, 50 double pleats	3236	110×20	1.000	**512-1167**

Quantitative filter papers

Grade	Application
424	Filtration of lead sulphide, iron sulphide, silver sulphide, alkali carbonate, lead chromate, arsenic, antimony, cadmium and food stuffs. Determination of sand content in dairy products. Determination of whiteness in pulp in paper mills.
434	Analysis of very fine precipitates such as lead dioxide, calcium fluoride, nickel sulphide, zinc sulphide, cold barium sulphate and cuprous oxide. Determination of insoluble impurities in greases, animal and vegetable oils.
454	Retention of zirconium hydroxide, aluminium hydroxide, cobalt sulphide and other coarse or gelatinous precipitate.
474	General quantitative analyses. Also for filtration of aluminium phosphate, zinc ammonium phosphate and silver chromate.

Grade	424	434	454	474
Weight	84 g/m²			
Thickness	0,17 mm	0,14 mm	0,18 mm	0,16 mm
Particle retention	8 - 12 µm	2 - 3 µm	15 - 12 µm	5 - 8 µm
Max. pore size	40 µm	20 µm	50 µm	30 µm
Min. pore size	23 µm	9 µm	31 µm	15 µm
Filtration speed	150 s (Herzberg)	2500 s (Herzberg)	70 s (Herzberg)	450 s (Herzberg)
Wet burst strength	2,5 psi	3,5 psi	2 psi	3 psi
Dry burst strength	17 psi	18 psi	11 psi	12 psi

Grade	Size (mm)	Pk	Cat. No.
424	70	100	**516-0264**
424	90	100	**516-0265**
424	110	100	**516-0266**
424	125	100	**516-0267**
424	150	100	**516-0268**
424	185	100	**516-0269**
434	70	100	**516-0270**
434	90	100	**516-0271**
434	110	100	**516-0272**
434	125	100	**516-0273**
434	150	100	**516-0274**
434	185	100	**516-0275**
454	90	100	**516-0853**
454	110	100	**516-0854**
454	125	100	**516-0855**
454	150	100	**516-0856**
454	185	100	**516-0857**
474	90	100	**516-0847**
474	110	100	**516-0848**
474	125	100	**516-0849**
474	150	100	**516-0850**
474	185	100	**516-0263**

Quantitative filter papers
Whatman (GE Healthcare)

Whatman quantitative filters are designed for gravimetric analysis and the preparation of samples for instrumental analysis. They are available in three formats designed to meet your specific needs:

- **Ashless:** 0,007% ash maximum for grades 40 to 44 and a maximum of 0,01% for the 589 grades – very pure filters suitable for a wide range of critical analytical filtration procedures
- **Hardened low ash:** 0,015% ash maximum – treated with a strong acid to remove trace metals and produce high wet strength and chemical resistance. These filters are particularly suitable for Büchner filtration where the tough smooth surface of the filter makes it easy to recover precipitates
- **Hardened ashless:** 0,006% ash maximum – acid hardened to give high wet strength and chemical resistance with extremely low ash content. The tough surface makes these filters suitable for a wide range of critical filtration procedures

Hardened low ash grades

The maximum ash content of these grades is intermediate between ashless and qualitative. They are particularly suitable for Büchner filtrations where it is desirable to recover the precipitate from the filter surface after filtration. Other characteristics include high wet strength and chemical resistance which are similar to the acid hardened ashless filter papers.

Hardened ashless grades

Quantitative filter papers featuring high wet strength and chemical resistance. These papers are acid hardened, which reduces ash to an extremely low level. Their tough surfaces make them suitable for a wide range of critical analytical filtration operations. Each grade offers a convenient combination of filtration speed and particle retention.

Grade	Application
40	General purpose gravimetric filter paper with medium speed and retention.
41	Fast filtration of coarse or gelatinous precipitates, e.g. iron or aluminium hydroxides. Also used for quantitative air pollution analysis.
42	For critical gravimetric analysis with the finest particle retention of all Whatman cellulose filter papers. Typical analytical precipitates include barium sulphate, metastannic acid and finely precipitated calcium carbonate.
43	Moderately fast filter. Typical applications include foodstuffs analysis; soil analysis; particle collection in air pollution monitoring and inorganic analysis in the construction, mining and steel industries.
44	Thin version of grade 42, retaining very fine particles but with lower ash weight per sample and almost twice the flow rate of grade 42.
589/1	"Black Ribbon Filter". Filtration of coarse precipitates (Class 2a acc. to DIN 53135). Ashless filter paper with very high flow rate. Used for many quantitative standard methods, especially for gravimetric applications.
589/2	"White Ribbon Filter". Filtration for medium fine precipitates (Class 2b acc. to DIN 53135) offering medium filtration speeds. Applied in a variety of routine methods in quantitative analysis, e.g. determination of the sand content in foodstuffs acc. to Section 35 LMBG; or analysis of aqueous suspensions in the paper industry.
589/3	"Blue Ribbon Filter" – ashless standard filter paper for very fine precipitates (Class 2d acc. to DIN 53135). Slow filter paper with highest efficiency for collecting very small particles. Also used for many analytical routine methods in different industries.
50	Hardened and highly glazed surface. Retention of the finest crystalline precipitates. Slow flow rate. Highly suitable for qualitative or quantitative filtrations requiring vacuum assistance on Büchner funnels. In the electronics industry, the virtual absence of fibre shedding is utilised in carriers for integrated circuits.
52	The general purpose hardened filter paper with medium retention and flow rate. Very hard surface. Ideal for quantitative and qualitative Büchner work.
54	Very fast filtration for use with coarse and gelatinous precipitates. High wet strength makes this grade very suitable for vacuum-assisted fast filtration of "difficult" coarse or gelatinous precipitates.
540	The general purpose hardened ashless filter paper with medium retention and flow rate. Extremely pure and strong with a hard surface. High chemical resistance to strong acid and alkali. Frequently used in the gravimetric analysis of metals in acid/alkali solutions and in collecting hydroxides after precipitation by strong alkalis.
541	Fast filtration of coarse particles and gelatinous precipitates in acid/alkali solutions during gravimetric analysis. Typical applications include fibre in animal foodstuffs, gelatine in milk and cream, chloride in cement, and chloride and phosphorous in coal and coke.
542	High retention of fine particles under demanding conditions. Slow flow rate. Very hard and strong with excellent chemical resistance. Often used in gravimetric metal determinations.

Grade	Weight	Thickness	Particle retention	Filtration speed	Ash content
Ashless grades					
40	95 g/m²	0,21 mm	8 µm	340 s (Herzberg)	0,007%
41	85 g/m²	0,22 mm	20 - 25 µm	54 s (Herzberg)	
42	100 g/m²	0,20 mm	2,5 µm	1870 s (Herzberg)	
43	95 g/m²	0,22 mm	16 µm	155 s (Herzberg)	
44	80 g/m²	0,18 mm	3 µm	995 s (Herzberg)	
589/1		0,19 mm	12 - 25 µm	25 s (Herzberg)	0,010%
589/2	85 g/m²	0,18 mm	4 - 12 µm	70 s (Herzberg)	
589/3	84 g/m²	0,16 mm	<2 µm	20 s (Herzberg)	
Hardened low ash grades					
50	97 g/m²	0,12 mm	2,7 µm	2685 s (Herzberg)	0,015%
52	101 g/m²	0,18 mm	7 µm	235 s (Herzberg)	
54	92 g/m²	0,19 mm	22 µm	39 s (Herzberg)	
Hardened ashless grades					
540	88 g/m²	0,16 mm	8 µm	200 s (Herzberg)	0,006%
541	82 g/m²		22 µm	34 s (Herzberg)	
542	93 g/m²	0,15 mm	2,7 µm	2510 s (Herzberg)	

Grade	Size (mm)	Pk	Cat. No.
Ashless grades			
40	32	100	**514-0579**
40	42,5	100	**516-4101**
40	47	100	**514-0580**

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Grade	Size (mm)	Pk	Cat. No.
Ashless grades			
40	55	100	**512-0308**
40	70	100	**512-0309**
40	90	100	**512-0310**
40	110	100	**512-0311**
40	125	100	**512-0312**
40	150	100	**512-0313**
40	185	100	**512-0314**
40	240	100	**512-0315**
41	47	100	**512-0591**
41	50	100	**512-0592**
41	55	100	**512-0316**
41	70	100	**512-0317**
41	90	100	**512-0318**
41	110	100	**512-0319**
41	125	100	**512-0320**
41	150	100	**512-0321**
41	185	100	**512-0322**
41	240	100	**512-0323**
42	42,5	100	**516-4301**
42	47	100	**512-0593**
42	55	100	**512-0324**
42	70	100	**512-0325**
42	90	100	**512-0326**
42	110	100	**512-0327**
42	125	100	**512-0328**
42	150	100	**512-0329**
42	185	100	**512-0330**
42	240	100	**512-0009**
43	90	100	**512-0424**
43	110	100	**512-0396**
43	125	100	**512-0397**
43	150	100	**512-0398**
43	185	100	**512-0399**
44	70	100	**512-0331**
44	90	100	**512-0332**
44	110	100	**512-0333**
44	125	100	**512-0334**
44	150	100	**512-0335**
44	185	100	**512-0336**
589/1	90	100	**512-3601**
589/1	110	100	**512-3602**
589/1	125	100	**512-3603**
589/1	150	100	**512-3604**
589/1	185	100	**512-3605**
589/2	12,7	1.000	**515-3214**
589/2	40,5	100	**515-3213**
589/2	55	100	**515-3200**
589/2	70	100	**515-3201**
589/2	90	100	**512-3607**
589/2	110	100	**512-3608**
589/2	125	100	**512-3609**
589/2	150	100	**512-3610**
589/2	185	100	**512-3611**
589/2	240	100	**515-3207**
589/3	110	100	**512-3613**
589/3	125	100	**512-3614**
589/3	150	100	**512-3615**
589/3	185	100	**512-3616**
Hardened low ash grades			
50	55	100	**512-0337**
50	70	100	**512-0338**
50	90	100	**512-0339**
50	110	100	**512-0340**
50	125	100	**512-0341**
50	150	100	**512-0342**
50	185	100	**512-0343**
50	240	100	**512-0344**
52	90	100	**516-5104**
52	110	100	**516-5105**
52	125	100	**516-6281**
52	150	100	**516-4406**
52	240	100	**516-5106**
54	55	100	**512-0345**
54	70	100	**512-0346**

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Grade	Size (mm)	Pk	Cat. No.
Hardened low ash grades			
54	90	100	**512-0347**
54	110	100	**512-0348**
54	125	100	**512-0349**
54	150	100	**512-0350**
54	185	100	**512-0351**
54	240	100	**512-0352**
54	320	100	**516-1150**
Hardened ashless grades			
540	55	100	**512-0425**
540	90	100	**512-0353**
540	110	100	**512-0354**
540	125	100	**512-0355**
540	150	100	**512-0356**
540	185	100	**512-0357**
541	42,5	100	**512-0596**
541	47	100	**512-0597**
541	55	100	**512-0358**
541	70	100	**512-0359**
541	90	100	**512-0360**
541	110	100	**512-0361**
541	125	100	**512-0362**
541	150	100	**512-0363**
541	185	100	**512-0364**
541	240	100	**512-0365**
541	270	100	**512-0598**
541	460×570	100	**512-0599**
542	55	100	**512-0366**
542	70	100	**512-0367**
542	90	100	**512-0368**
542	110	100	**512-0369**
542	125	100	**512-0370**
542	150	100	**512-0371**
542	185	100	**512-0372**
542	240	100	**512-0373**
542	400	100	**512-0594**

VWR COLLECTION

SELECTED FOR YOU

Phase separating paper, grade 511

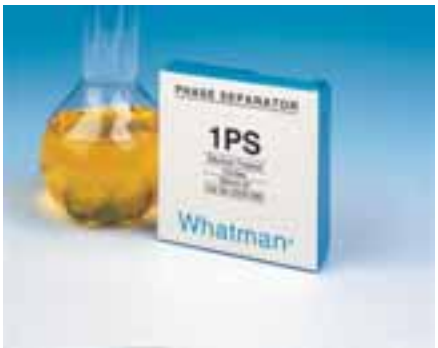
Hydrophobic filter paper used for separation of aqueous solutions from organic solutions.

- Usable as a disposable separating funnel

Filtration speed	200 s (Herzberg)
Thickness	0,2 mm
Weight	85 g/m²

Grade	Size (mm)	Pk	Cat. No.
511	90	100	**516-0311**
511	110	100	**516-0312**
511	125	100	**516-0313**
511	150	100	**516-0314**
511	185	100	**516-0315**

Phase separating paper, grade 1PS
Whatman (GE Healthcare)



High grade filter paper impregnated with a stabilised silicone that renders it hydrophobic, retaining the aqueous phase and passing the solvent phase through.

- Any number of separations can be processed together
- The cut-off is automatic and complete, can replace separating funnels

Size (mm)	Pk	Cat. No.
70	100	**516-5201**
90	100	**515-0086**
110	100	**515-0087**
125	100	**515-0088**
150	100	**515-0089**
185	100	**515-0090**
240	100	**515-5017**
270	100	**515-5018**

VWR COLLECTION

SELECTED FOR YOU

Nitrogen-free filters, grade 521

Nitrogen-free filter for determination of nitrogen content in steel and iron samples dissolved in acid. Filtration of fine precipitates to dissolve according Kjeldahl method.

Weight	85 g/m²
Thickness	0,17 mm
Filtration speed	650 s (Herzberg)

Grade	Size (mm)	Pk	Cat. No.
521	90	100	**516-0316**
521	100×100	100	**516-0317**

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Glass fibre filters

Binder-free glass fibre filters feature fast flow rates, high-loading capacity, wide thermal tolerance, and excellent precipitate retention.

Grade	Application
691	Ideal for radioimmunoassy of weak beta-emitters by scintillation counting and for filtration of precipitated proteins, cells and cell debris. Also used for gravimetric determination of airborne particulates and air pollution monitoring.
692	Recommended for use in filtration of suspended solids in industrial effluents, and also as prefilters for membranes.
693	Used for clarification and monitoring of suspended solids in wastewater and water, and in marine chemistry to filter particulate components in sea water, and in biochemistry for cell harvesting in radioimmunoassy procedures and for binders analysis.
696	Used for filtration and monitoring of air pollution and water, and also cell harvesting.
698	Due to its higher efficiency, in particle retention for smaller particles, than other glass fibre grades, 698 is suitable for the clarification of protein solutions, filtration of liquids prior to HPLC and critical applications.

Grade	Weight	Thickness	Particle retention	Filtration speed	Dry burst strength
691	52 g/m^2	0,26 mm	1,6 µm	60 s (Herzberg)	1,75 psi
692	143 g/m^2	0,7 mm	1,0 µm	200 s (Herzberg)	7 psi
693	52 g/m^2	0,26 mm	1,2 µm	100 s (Herzberg)	2,2 psi
696	65 g/m^2	0,28 mm	1,5 µm	60 s (Herzberg)	2,5 psi
698	75 g/m^2	0,45 mm	0,7 µm	310 s (Herzberg)	5 psi

Grade	Size (mm)	Pk	Cat. No.
691	21	100	**516-0858**
691	24	100	**516-0859**
691	42,5	100	**516-0860**
691	47	100	**516-0861**
691	55	100	**516-0862**
691	70	100	**516-0863**
691	90	100	**516-0864**
691	110	100	**516-0865**
691	125	100	**516-0866**
691	150	100	**516-0867**
692	24	100	**516-0881**
692	47	100	**516-0882**
692	55	100	**516-0883**
692	70	100	**516-0884**
692	90	100	**516-0885**
693	21	100	**516-0886**
693	24	100	**516-0868**
693	42,5	100	**516-0887**
693	47	100	**516-0869**
693	55	100	**516-0870**
693	70	100	**516-0871**
693	90	100	**516-0872**
693	110	100	**516-0888**
693	125	100	**516-0889**
693	150	100	**516-0890**
696	24	100	**516-0873**
696	42,5	100	**516-0874**
696	47	100	**516-0875**
696	55	100	**516-0876**
696	90	100	**516-0877**
696	110	100	**516-0878**
696	125	100	**516-0879**
698	25	100	**516-0343**
698	42,5	100	**516-0344**
698	47	100	**516-0345**
698	55	100	**516-0346**
698	70	100	**516-0347**
698	90	25	**516-0348**

PALL Life Sciences

TCLP glass fibre filters

Low extractable, binder-free borosilicate glass fibre filters. Suitable for use of the EPA 1311 Toxicity Characteristics Leaching Procedure and for prefiltration of dirty HPLC samples.

Thickness	432 µm
Pore size	0,7 µm

Size (mm)	Pk	Cat. No.
13	100	**516-9126**
47	50	**513-0026**
90	50	**513-0024**
110	50	**513-0027**
142	50	**513-0025**

Glass microfibre filters
Whatman (GE Healthcare)

These depth filters combine fast flow rates with high loading capacity and the retention of very fine particles, extending into the submicron range. Can be used at temperatures up to 500 °C and are ideal for use in applications involving air filtration and for gravimetric analysis of volatile materials where ignition is involved.

Grade	Application
GF/A	Efficient general filters, widely used for air pollution monitoring.
GF/B	Three times thicker than GF/A with higher wet strength and increased loading capacity. Recommended for concentrated suspensions and retention of small particles. Suitable for suspended solids in industrial effluents, especially at high loading.
GF/C	Combines fine particle retention with good flow rate. Used for collection of suspended solids in potable water and natural and industrial waste. Widely used in biochemistry for cell harvesting, liquid scintillation counting and binding assays.
GF/D	General purpose membrane prefilter with high loading capacity.
GF/F	Very high retention for filtering fine particles. EPA standard for toxicity Characteristic Leaching Procedure, method 1311. Recommended for DNA binding and purification.
QM-A	Ultra-fine quartz (SiO_2) microfibre filter for critical work in air pollution monitoring in stacks, flues and aerosols up to 500 °C. The filter contains 5% borosilicate glass as a binder and is extremely low in heavy metals and alkaline earth metals.
934-AH	Specified for water pollution monitoring, cell harvesting, liquid scintillation counting and air pollution monitoring.
QM-H	Pure quartz fibre filter with low heavy metal content, which can be used at temperatures up to 900 °C.
EPM 2000	For use in high volume PM-10 air sampling equipment that collects atmospheric particulates and aerosols. Manufactured from 100% pure borosilicate glass of special purity enabling detailed chemical analysis of trace pollutants to take place with the minimum of interference or background. Sheets are individually numbered to facilitate identification.
GMF 150	Multilayer glass microfibre filter with a course top layer (10 µm) and meshed with a final layer of 1 or 2 µm. Manufactured from 100% borosilicate glass microfibre, the filter is binder free. It is an excellent prefilter for higher particulate loading capacity with faster flow rates.

Grade	Weight	Thickness	Particle retention	Filtration speed	Airflow rate
GF/A	53 g/m²	260 µm	1,6 µm	62 s (Herzberg)	4,3 s/100 ml/6,5 cm²
GF/B	143 g/m²	675 µm	1,0 µm	195 s (Herzberg)	12 s/100 ml/6,5 cm²
GF/C	53 g/m²	260 µm	1,2 µm	100 s (Herzberg)	6,7 s/100 ml/6,5 cm²
GF/D	121 g/m²	675 µm	2,7 µm	41 s (Herzberg)	2,2 s/100 ml/6,5 cm²
GF/F	75 g/m²	420 µm	0,7 µm	325 s (Herzberg)	19 s/100 ml/6,5 cm²
934-AH	64 g/m²	435 µm	1,5 µm	47 s (Herzberg)	3,7 s/100 ml/6,5 cm²
QM-A	85 g/m²	450 µm	2,2 µm	-	6,4 s/100 ml/6,5 cm²
QM-H		430 µm	-		
EPM 2000		450 µm	2,0 µm	-	4,7 s/100 ml/6,5 cm²

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Grade	Size (mm)	Pk	Cat. No.
GF/A	21	100	**513-5200**
GF/A	24	100	**513-5201**
GF/A	25	100	**513-5202**
GF/A	37	100	**516-2108**
GF/A	42,5	100	**513-5203**
GF/A	47	100	**513-5204**
GF/A	50	100	**516-2112**
GF/A	55	100	**513-5205**
GF/A	60 *	50	**513-5260**
GF/A	60	100	**513-5206**
GF/A	70	100	**513-5207**
GF/A	81	100	**513-5258**
GF/A	90	100	**513-5208**
GF/A	110	100	**513-5209**
GF/A	125	100	**513-5210**
GF/A	150	100	**513-5211**
GF/A	240	100	**513-5257**
GF/A	460×570	25	**513-5212**
GF/B	21	100	**513-5262**
GF/B	25	100	**513-5213**
GF/B	37	100	**513-5214**
GF/B	42,5	100	**513-5215**
GF/B	47	100	**513-5216**
GF/B	55	100	**513-5217**
GF/B	70	100	**513-5218**
GF/B	90	25	**513-5219**
GF/B	110	25	**513-5220**
GF/B	125	25	**513-5221**
GF/B	150	25	**513-5222**
GF/B	185	25	**516-2222**
GF/B	460×570	25	**513-5223**
GF/C	21	100	**516-2302**
GF/C	24	100	**513-5224**
GF/C	25	100	**513-5225**
GF/C	37	100	**513-5264**
GF/C	42,5	100	**513-5226**
GF/C	47	100	**513-5227**
GF/C	50 m	100	**515-2527**
GF/C	55	100	**513-5228**
GF/C	70	100	**513-5229**
GF/C	90	100	**513-5230**
GF/C	100	100	**513-0090**
GF/C	110	100	**513-5231**
GF/C	125	100	**513-5232**
GF/C	150	100	**513-5233**
GF/C	460×570	25	**513-5234**
GF/D	10	100	**512-0427**
GF/D	21	100	**513-5251**
GF/D	25	100	**513-5235**
GF/D	35	100	**513-5253**
GF/D	42	100	**513-5254**
GF/D	47	100	**513-5236**
GF/D	55	100	**513-5255**
GF/D	70	100	**513-5237**
GF/D	90	25	**513-5238**
GF/D	110	25	**513-5239**
GF/D	125	25	**513-5240**
GF/D	142	25	**513-0091**
GF/D	150	25	**516-2421**
GF/F	24	100	**513-5241**
GF/F	25	100	**513-5242**
GF/F	37	100	**513-0092**
GF/F	42,5	100	**513-5243**
GF/F	47	100	**513-5244**
GF/F	55	100	**513-5245**
GF/F	70	100	**513-5246**
GF/F	90	25	**513-5247**
GF/F	110	25	**513-5248**
GF/F	125	25	**513-5249**
GF/F	142	25	**513-0093**
GF/F	150	25	**513-5250**
GF/F	460×570	25	**516-2531**
934-AH	21	100	**513-5273**
934-AH	24	100	**516-2704**
934-AH	25	100	**513-5274**

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Grade	Size (mm)	Pk	Cat. No.
934-AH	32	100	**512-0428**
934-AH	42	100	**513-5275**
934-AH	47	100	**516-2711**
934-AH	55	100	**516-2713**
934-AH	70	100	**516-2715**
934-AH	90	100	**516-2716**
934-AH	110	100	**516-2717**
934-AH	125	100	**512-0429**
934-AH	185	100	**516-5109**
QM-A	25	100	**512-0430**
QM-A	37	100	**516-2608**
QM-A	47	100	**516-2611**
QM-A	50	100	**516-5116**
QM-A	90	100	**513-0086**
QM-A	110	100	**516-5120**
QM-A	150	100	**516-5122**
QM-A	203×254	25	**512-0431**
QM-H	47	50	**513-0094**
QM-H	150	25	**513-0085**
EPM 2000	47	100	**513-0087**
EPM 2000	203×254	100	**513-0088**

* with reinforced rim

Glass microfibre filters with binder

Whatman (GE Healthcare)

100% borosilicate glass with inorganic binder; grade GF 10 with organic binder

These depth filters combine fast flow rates with high loading capacity and the retention of very fine particles, extending into the sub-micron range. Can be used at temperatures up to 500 °C and are ideal for use in applications involving air filtration and for gravimetric analysis of volatile materials where ignition is involved.

Grade	Application
GF 6	For water testing, food and beverage analysis and gravimetric testing.
GF 8	For the determination of PCB, DDE, DDT, furans and dioxins in air.
GF 92	Universal prefilter for membrane filtration.
GF 10	Used as a weighing aid for infrared weighing and as a roll filter in automatic air filtration units.

Grade	Weight	Thickness	Airflow rate
GF 6	80 g/m²	350 µm	40 s/100 ml/1,56 cm²
GF 8			12 s/100 ml/1,56 cm²
GF 10	70 g/m²		
GF 92			27 s/100 ml/1,56 cm²

Grade	Size (mm)	Pk	Cat. No.
GF 6	47	200	**515-9115**
GF 6	50	200	**515-0085**
GF 6	55	100	**515-9102**
GF 6	70	100	**515-9103**
GF 6	90	100	**513-5000**
GF 6	110	100	**515-9105**
GF 6	125	100	**515-9106**
GF 6	150	100	**515-9107**
GF 6	185	100	**515-9108**
GF 6	200	100	**515-9114**
GF 6	240	100	**513-0068**
GF 8	90	100	**515-9204**
GF 10	47	200	**513-1003**
GF 10	50	200	**513-1000**
GF 10	90	100	**513-1001**
GF 10	100	100	**513-1004**
GF 10	150	100	**513-1002**
GF 10	50 mm × 100 m	1	**513-0089**
GF 92	47	200	**514-3816**
GF 92	50	200	**514-3817**
GF 92	100	100	**514-3818**
GF 92	135	100	**514-3819**
GF 92	142	100	**514-3821**

PALL Life Sciences

Membrane filters

Type	Material type	Applications
Supor®	Hydrophilic polyethersulfone, autoclavable	Reduce filtration time, optimised for biological, pharmaceutical and sterilising filtration requirements. Low protein binding and extensive drug compatibility for critical applications.
HT Tuffryn®	Hydrophilic polysulfone, autoclavable	Ideal for biological, pharmaceutical and sterilising filtration requirements. Suitable for applications requiring low protein binding, maximises recovery of critical media components. Chemically compatible with harsh aqueous solutions and alcohols.
Versapor®	Hydrophilic acrylic polymer on non woven support	Ideal for pre-filtration of difficult to filter solutions and serum. Reduces clogging of final filters, strong and flexible both wet and dry. UV or gamma sterilisable.
GLA-5000	PVC	Inherently low ash membrane ideally suited for multiple NIOSH and OSHA analytical methods. Excellent for sampling airborne metals, silica and dust.
Nylaflo™	Hydrophilic nylon	Highly versatile laboratory membrane filter. Excellent chemical compatibility with esters, bases and alcohols. HPLC certified.
Zefluor™	Hydrophobic PTFE with PTFE support	Strong, chemically resistant membranes for air monitoring and sampling in aggressive environments. Ensures gravimetric determinations with low tare mass. Aerosol retention: 0,3 µm (DOP): 99,99%.
GH Polypro	PP hydrophilic	Universal membrane for aqueous and aggressive organic solvents. Low protein binding and low level of extractables. HPLC certified.
GN-4 Metricel®	Hydrophilic mixed cellulose esters	Economical membrane for air monitoring applications. Dissolves completely using standard digestion procedures and meets NIOSH requirements for airborne metals and asbestos monitoring.

Type	Pore size	Thickness	Water flow rate	Airflow rate	Max. temperature (°C)	Weight	Ash content
Supor®	0,1 µm	132 µm	5 ml/min/cm² (0,7 bar)	-	100	-	
	0,2 µm	145 µm	26 ml/min/cm² (0,7 bar)				
	0,45 µm	140 µm	58 ml/min/cm² (0,7 bar)				
	0,8 µm		165 ml/min/cm² (0,7 bar)				
HT Tuffryn®	0,2 µm	152 µm	14 ml/min/cm² (0,7 bar)		121		
	0,45 µm	145 µm	33 ml/min/cm² (0,7 bar)				
Versapor®	0,2 µm	94 µm	16 ml/min/cm² (0,7 bar)		88		
	0,45 µm		75 ml/min/cm² (0,7 bar)				
	0,8 µm		142 ml/min/cm² (0,7 bar)				
	1,2 µm		315 ml/min/cm² (0,7 bar)				
	3 µm		518 ml/min/cm² (0,7 bar)				
	5 µm		778 ml/min/cm² (0,7 bar)				
GLA-5000		-		53 ml/min/cm² (0,7 bar)	52	-	<1%
Nylaflo™	0,2 µm	127 µm	12 ml/min/cm² (0,7 bar)	-	100	-	
	0,45 µm		16 ml/min/cm² (0,7 bar)				
GH Polypro	0,2 µm	101 µm	20 ml/min/cm² (0,7 bar)		55		
	0,45 µm	114 µm	31 ml/min/cm² (0,7 bar)				
GN-4 Metricel®	0,8 µm	152 µm	129 ml/min/cm² (0,7 bar)	55 l/min/3,7 cm² (0,9 bar)	74	4 mg/cm²	-

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Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Supor® 100, plain	0,1	25	100	**514-4165**
Supor® 100, plain	0,1	47	100	**514-4166**
Supor® 100, plain	0,1	90	100	**514-4167**
Supor® 100, with printed tab	0,1	142	25	**514-4168**
Supor® 100, no tab	0,1	142	25	**516-7933**
Supor® 100, with printed tab	0,1	293	25	**516-7761**
Supor® 100, no tab	0,1	293	25	**516-7934**
Supor® 200, plain	0,2	13	100	**514-4161**
Supor® 200, plain	0,2	25	100	**514-4162**
Supor® 200, plain	0,2	47	100	**514-4163**
Supor® 200, grid, individual sterile pack (S-Pack)	0,2	47	200	**514-4201**
Supor® 200, plain	0,2	90	100	**514-4169**
Supor® 200, no tab	0,2	142	25	**516-7931**
Supor® 200, with printed tab	0,2	142	25	**514-4164**
Supor® 200, with printed tab	0,2	293	25	**516-7757**
Supor® 200, no tab	0,2	293	25	**516-7932**
Supor® 450, plain	0,45	13	100	**514-4155**
Supor® 450, plain	0,45	25	100	**514-4156**
Supor® 450, plain	0,45	47	100	**514-4157**
Supor® 450, plain	0,45	102	100	**514-4158**
Supor® 450, grid	0,45	47	100	**514-4174**
Supor® 450, grid, individual sterile pack (S-Pack)	0,45	47	200	**514-0377**
Supor® 450, plain	0,45	50	100	**516-7743**
Supor® 450, plain	0,45	90	100	**514-4160**
Supor® 450, with printed tab	0,45	142	25	**514-4159**
Supor® 450, no tab	0,45	142	25	**516-7935**
Supor® 450, with printed tab	0,45	293	25	**516-7746**
Supor® 450, no tab	0,45	293	25	**516-7936**
Supor® 800, plain	0,8	25	100	**514-4151**
Supor® 800, grid, individual sterile pack (S-Pack)	0,8	47	200	**516-7826**
Supor® 800, plain	0,8	47	100	**514-4152**
Supor® 800, plain	0,8	90	100	**514-4153**
Supor® 800, with printed tab	0,8	142	25	**514-4154**
Supor® 800, no tab	0,8	142	25	**516-7937**
Supor® 800, with printed tab	0,8	293	25	**516-7739**
Supor® 800, no tab	0,8	293	25	**516-7938**
HT Tuffryn®	0,2	25	100	**514-4194**
HT Tuffryn®	0,2	47	100	**514-4195**
HT Tuffryn®	0,2	142	25	**514-4196**
HT Tuffryn®	0,2	293	25	**516-7859**
HT Tuffryn®	0,45	25	100	**514-4197**
HT Tuffryn®	0,45	47	100	**514-4198**
HT Tuffryn®	0,45	142	25	**514-4199**
HT Tuffryn®	0,45	293	25	**514-4200**
Versapor®	0,2	25	100	**514-4216**
Versapor®	0,2	47	100	**514-4217**
Versapor®	0,45	25	100	**514-4213**
Versapor®	0,45	47	100	**514-4214**
Versapor®	0,45	142	25	**514-4215**
Versapor®	0,45	293	25	**516-9020**
Versapor®	0,8	25	100	**514-4209**
Versapor®	0,8	37	100	**516-7727**
Versapor®	0,8	47	100	**514-4210**
Versapor®	0,8	142	25	**514-4211**
Versapor®	0,8	293	25	**514-4212**
Versapor®	1,2	25	100	**514-4206**
Versapor®	1,2	47	100	**514-4207**
Versapor®	1,2	142	25	**514-4208**
Versapor®	1,2	293	25	**516-9018**
Versapor®	3	25	100	**514-4203**
Versapor®	3	47	100	**514-4204**
Versapor®	3	142	25	**514-4205**
Versapor®	5	37	100	**516-7890**
GLA-5000	5	25	100	**514-0466**
GLA-5000	5	37	100	**514-0469**
GLA-5000, with pads	5	37	100	**514-0467**
GLA-5000	5	47	100	**514-0468**
Nylaflo™	0,2	13	100	**516-7946**
Nylaflo™	0,2	25	100	**514-4054**
Nylaflo™	0,2	47	100	**514-4055**
Nylaflo™	0,2	90	100	**516-7949**
Nylaflo™	0,2	142	25	**516-7950**
Nylaflo™	0,45	13	100	**516-7951**
Nylaflo™	0,45	25	100	**514-4056**
Nylaflo™	0,45	47	100	**514-4057**

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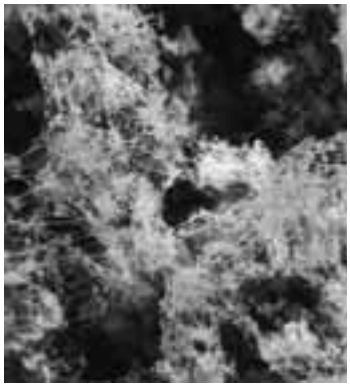
Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Nylaflo™	0,45	90	100	**516-7954**
Nylaflo™	0,45	142	25	**516-7955**
Zefluor™	0,5	25	100	**516-8907**
Zefluor™	0,5	47	50	**516-8908**
Zefluor™	1,0	25	100	**516-9646**
Zefluor™ with support pads	1,0	37	50	**516-8905**
Zefluor™	1,0	47	50	**516-8906**
Zefluor™	1,0	90	50	**516-9647**
Zefluor™ with support pads	2,0	37	50	**516-8902**
Zefluor™	2,0	47	50	**516-8903**
GH Polypro	0,2	25	100	**514-0294**
GH Polypro	0,2	47	100	**514-4053**
GH Polypro	0,2	50	100	**514-4059**
GH Polypro	0,45	13	100	**514-4060**
GH Polypro	0,45	25	100	**514-4047**
GH Polypro	0,45	37	100	**516-7959**
GH Polypro	0,45	47	100	**514-4052**
GH Polypro	0,45	50	100	**514-4058**
GH Polypro	0,45	90	100	**516-6938**
GN-4 Metricel®, plain, with support pads	0,8	25	100	**514-0462**
GN-4 Metricel®, plain	0,8	25	100	**514-0465**
GN-4 Metricel®, grid, packaged in 4 cavities	0,8	25	100	**516-9017**
GN-4 Metricel®, plain, with support pads	0,8	37	100	**514-0463**
GN-4 Metricel®, plain	0,8	47	100	**514-0464**
GN-4 Metricel®, grid	0,8	47	100	**514-4192**

PALL Life Sciences

Membrane disc filters



Strong, chemically resistant membranes for air monitoring and sampling in aggressive environments.

- Ensures gravimetric determinations with low tare mass
- Ideal for filtration of gas and/or organic solvents
- Supported membranes offer increased durability for hostile testing environments or acid aerosol monitoring

Zefluor™ membrane

PTFE with PTFE support

Typical aerosol retention: 0,5; 1 and 2 µm: 99,99%

Teflo membrane

PTFE with PMP support ring

Typical aerosol retention: 1 and 2 µm: 99,99%; 3 µm: 99,79%

TF (PTFE) membrane

PTFE on a PP support

Type	Pore size	Thickness	Airflow rate
Zefluor™ membrane			
Zefluor™	0,5 µm	178 µm	1 l/min/cm² (0,7 bar)
	1,0 µm	165 µm	14,6 l/min/cm² (0,7 bar)
	2,0 µm	152 µm	25,3 l/min/cm² (0,7 bar)
Teflo membrane			
Teflo	1 µm	76 µm	17 l/min/cm² (0,7 bar)
	2 µm	46 µm	53 l/min/cm² (0,7 bar)
	3 µm	30,4 µm	90 l/min/cm² (0,7 bar)
TF (PTFE) membrane			
TF	0,2 µm	139 µm	2 l/min/cm² (0,7 bar)
	0,45 µm	135 µm	3 l/min/cm² (0,7 bar)
	1,0 µm		7 l/min/cm² (0,7 bar)

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Zefluor™ membrane				
Zefluor™	0,5	25	100	**516-8907**
Zefluor™	0,5	47	50	**516-8908**
Zefluor™	1,0	25	100	**516-9646**
Zefluor™ with support pads	1,0	37	50	**516-8905**
Zefluor™	1,0	47	50	**516-8906**
Zefluor™	1,0	90	50	**516-9647**
Zefluor™ with support pads	2,0	37	50	**516-8902**
Zefluor™	2,0	47	50	**516-8903**
Teflo membrane				
Teflo	1	37	50	**516-8913**
Teflo	1	47	50	**516-8914**
Teflo	2	37	50	**516-8910**

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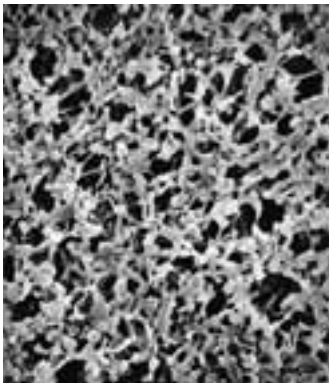
Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Teflo membrane				
Teflo	2	41	50	**516-8911**
Teflo	2	47	50	**516-8912**
Teflo	3	25	50	**516-8909**
Teflo	3	47	50	**514-0262**
TF (PTFE) membrane				
TF 200	0,2	13	100	**514-4186**
TF 200	0,2	25	100	**514-4041**
TF 200	0,2	47	100	**514-4042**
TF 200	0,2	142	25	**514-4187**
TF 450	0,45	13	100	**514-4188**
TF 450	0,45	25	100	**514-4043**
TF 450	0,45	47	100	**514-4044**
TF 450	0,45	142	25	**514-4189**
TF 1000	1,0	13	100	**514-4190**
TF 1000	1,0	25	100	**514-4045**
TF 1000 with support pads	1,0	37	100	**514-4191**
TF 1000	1,0	47	100	**514-4046**

PALL Life Sciences

Membrane disc filters, FP Vericel™



Hydrophilic PVDF

Compatible with aggressive and non aggressive solvent-based solutions.

- HPLC certified. Provide assurance that the filter will not add artifacts to your analysis
- Excellent chemical compatibility, even with aggressive acids and alcohols
- Membrane is autoclavable
- Not recommended for acetone, DMF, DMSO, or bases >6 N

Pore size	0,2 µm	0,45 µm
Thickness	140 µm	127 µm
Water flow rate	5 ml/min/cm² (0,7 bar)	26 ml/min/cm² (0,7 bar)
Max. temperature (°C)	100	

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
FP200	0,2	13	100	**516-7910**
FP200	0,2	25	100	**514-4048**
FP200	0,2	47	100	**514-4049**
FP450	0,45	13	100	**516-7913**
FP450	0,45	25	100	**514-4050**
FP450	0,45	47	100	**514-4051**

Membrane filters
Whatman (GE Healthcare)

Material type	Applications
White cellulose nitrate, autoclavable	For routine laboratory applications involving aqueous solutions. Low levels of extractables.
Nylon, hydrophilic, autoclavable	For filtration of aqueous and organic mobile phase, for cell culture media and vacuum degassing.
PTFE, hydrophobic with PP support, autoclavable	Ideal as venting filter for all applications, for aggressive organic solvents and cryo-solutions, for separating free water from organic solutions. Outstanding suitability as gas/liquid barrier, filtration of air and (heat) gases. Chemically inert. Sterilisable with all methods except gamma sterilisation.

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Cellulose acetate, hydrophilic, autoclavable	Ideal for biological and clinical analysis, sterility tests and scintillation measurements. Very low protein binding capacity, suitable for aqueous, alcoholic media and hot gases. Can be sterilised by all methods.
Cellulose nitrate, hydrophilic, autoclavable	For clarification and sterilisation filtration of aqueous solutions. Very good wettability.

Pore size	Thickness	Water flow rate	Airflow rate	Max. temperature (°C)	Weight
White cellulose nitrate, autoclavable					
0,1 µm	105 - 140 µm	-		80	3,6 - 5,5 mg/cm²
0,2 µm					
0,45 µm					
0,65 µm					
0,8 µm					
1,2 µm					
1 µm					
3 µm					
5 µm					
8 µm					
12 µm					
Nylon, hydrophilic, autoclavable					
0,2 µm	150 - 187 µm	>50 ml/min (0,35 bar)	-	135	-
0,45 µm		>60 ml/min (0,35 bar)			
0,8 µm	137 - 200 µm	>180 ml/min (0,35 bar)			
PTFE, hydrophobic with PP support, autoclavable					
0,2 µm	240 µm	24 s/100 ml/12,5 cm² (0,9 bar)	70 s/100 ml (3 mbar)	100	-
0,45 µm	220 µm	12 s/100 ml/12,5 cm² (0,9 bar)	60 s/100 ml (3 mbar)		
1,0 µm	275 µm	5,4 s/100 ml/12,5 cm² (0,9 bar)	24 s/100 ml (3 mbar)		
5,0 µm	265 µm	2,2 s/100 ml/12,5 cm² (0,9 bar)	3,5 s/100 ml (3 mbar)		
Cellulose acetate, hydrophilic, autoclavable					
0,2 µm	115 µm	26 s/100 ml/12,5 cm²	-	180	-
			25 ml/min/cm² (3 mbar)		
0,45 µm		12 s/100 ml/12,5 cm²	-		
			25 ml/min/cm² (3 mbar)		
0,8 µm	140 µm	16 s/100 ml/12,5 cm²	-		
1,2 µm		12 s/100 ml/12,5 cm²			
Cellulose nitrate, hydrophilic, autoclavable					
-	125 µm	-		80	3,6 - 5,5 mg/cm²

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
White cellulose nitrate, autoclavable				
	0,1	25	100	**514-0544**
	0,1	47	100	**514-0545**
	0,1	50	100	**514-2273**
	0,2	13	100	**514-0546**
	0,2	25	100	**514-0547**
	0,2	47	100	**514-8072**
	0,2	50	100	**514-2263**
	0,2	90	25	**514-0548**
	0,2	142	25	**514-0549**
	0,45	13	100	**514-0550**
	0,45	25	100	**514-0551**
	0,45	47	100	**514-8073**
	0,45	50	100	**514-2253**
	0,45	50	100	**514-0104**
	0,45	90	25	**514-0553**
	0,45	142	25	**514-0554**
	0,65	47	100	**514-0556**
	0,8	25	100	**514-0557**
	0,8	37	100	**514-0558**
	0,8	47	100	**514-0559**
	0,8	90	25	**514-0560**
	1,2	50	100	**514-0564**
	1	25	100	**514-0561**
	1	47	100	**514-0562**
	3	25	100	**514-0565**
	3	47	100	**514-0566**
	5	25	100	**514-0567**
	5	47	100	**514-0568**
	5	50	100	**514-2223**
	5	90	25	**514-0569**
	8	47	100	**514-2212**
	12	47	100	**514-2202**
	12	50	100	**514-2203**

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Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Nylon, hydrophilic, autoclavable				
	0,2	47	100	**514-0570**
	0,45	25	100	**514-0107**
	0,45	47	100	**516-1746**
	0,45	90	50	**514-0108**
	0,8	47	100	**514-0571**
PTFE, hydrophobic with PP support, autoclavable				
TE 35	0,2	25	50	**514-3142**
TE 35	0,2	47	50	**514-3143**
TE 35	0,2	50	50	**514-3144**
TE 36	0,45	25	50	**514-3132**
TE 36	0,45	47	50	**514-3133**
TE 36	0,45	50	50	**514-3134**
TE 37	1,0	25	50	**514-3122**
TE 37	1,0	47	50	**514-3123**
TE 37	1,0	50	50	**514-3124**
TE 38	5,0	37	50	**516-5022**
TE 38	5,0	47	50	**514-3113**
TE 38	5,0	50	50	**514-3114**
TE 38	5,0	90	25	**516-5023**
TE 38	5,0	100	25	**514-0384**
TE 38	5,0	150	25	**516-5024**
Cellulose acetate, hydrophilic, autoclavable				
OE 66	0,2	25	100	**514-2361**
OE 66	0,2	47	100	**514-2362**
OE 66	0,2	50	100	**514-2363**
OE 67	0,45	25	100	**514-2351**
OE 67	0,45	47	100	**514-2352**
OE 67	0,45	50	100	**514-2353**
OE 67	0,45	142	25	**514-2354**
ST 68	0,8	47	100	**514-0100**
ST 69	1,2	47	100	**514-2322**
Cellulose nitrate, hydrophilic, autoclavable				
	0,1	47	100	**514-2272**
	0,2	25	100	**514-2261**
	0,45	25	100	**514-2251**
	0,45	47	100	**514-2252**
	5,0	47	100	**514-2222**

Membrane filters

Whatman (GE Healthcare)

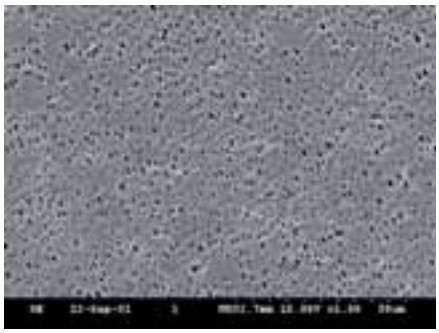
Membrane: PTFE, autoclavable

Virtually inert to chemical and biological agents. Good prefilter for heavily particulate laden and viscous fluids. Can be folded or handled as laboratory paper. Resistant to concentrated acids, alkalis and oxidisers.

Pore size	0,2 µm	0,5 µm
Thickness	130 µm	120 µm
Airflow rate	4,5 l/min/cm² (0,7 bar)	7,5 l/min/cm² (0,7 bar)
Max. temperature (°C)	120	

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
WTP	0,2	47	100	**516-1741**
WTP	0,5	47	100	**516-1742**

Membrane filters
Whatman (GE Healthcare)



Regenerated cellulose, hydrophilic, without wetting agents

For sterile and particle filtration of aqueous and organic solutions.

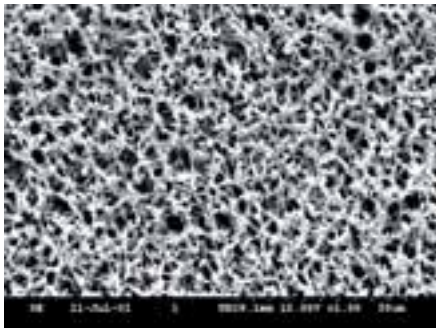
- Spontaneously wetting, very good wet strength
- Sterilisable by all methods

Suitable for use as sterile filter to ASTM-D 3862-80

Type	RC 58	RC 55
Pore size	0,2 µm	0,45 µm
Thickness	75 µm	
Water flow rate	14 s/100 ml/12,5 cm² (0,9 bar)	26 s/100 ml/12,5 cm² (0,9 bar)

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
RC 58	0,2	47	100	**514-2462**
RC 58	0,2	50	100	**514-2463**
RC 58	0,2	100	25	**514-2464**
RC 58	0,2	300×600	5	**514-0681**
RC 55	0,45	25	100	**514-2451**
RC 55	0,45	47	100	**514-2452**
RC 55	0,45	50	100	**514-0487**
RC 55	0,45	100	25	**514-2454**
RC 55	0,45	110	25	**514-0488**
RC 55	0,45	142	25	**514-0489**

Membrane filters
Whatman (GE Healthcare)



Mixed cellulose ester, hydrophilic, autoclavable

The membrane is particularly effective in applications requiring higher flow rates and larger volume filtration including clarification or sterilisation of aqueous solutions, particulate analysis and removal, air monitoring and microbial analysis. Low protein binding.

Type	Pore size	Thickness	Water flow rate	Airflow rate	Max. temperature (°C)	Weight
WME	0,2 µm	140 µm	-		130	4,3 - 5,0 mg/cm²
	0,45 µm					
ME 24	0,2 µm	135 µm	20 s/100 ml/12,5 cm² (0,9 bar)	-		
ME 25	0,45 µm	145 µm	12,5 s/100 ml/12,5 cm² (0,9 bar)			
ME 24	0,2 µm	135 µm	20 s/100 ml/12,5 cm² (0,9 bar)			
ME 27	0,8 µm	140 µm	2,8 s/100 ml/12,5 cm² (0,9 bar)	11,6 s/100 ml (3 mbar)		
ME 25	0,45 µm	145 µm	12,5 s/100 ml/12,5 cm² (0,9 bar)	-		
ME 26	0,6 µm	135 µm	48 s/100 ml/12,5 cm² (0,9 bar)	21 s/100 ml (3 mbar)		
ME 29	3 µm	150 µm	1,2 s/100 ml/12,5 cm² (0,9 bar)	6,7 s/100 ml (3 mbar)		
ME 28	1,2 µm	140 µm	2 s/100 ml/12,5 cm² (0,9 bar)	9,3 s/100 ml (3 mbar)		
ME 27	0,8 µm		2,8 s/100 ml/12,5 cm² (0,9 bar)	11,6 s/100 ml (3 mbar)		

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Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
WME, white/black grid 3,1 mm	0,2	47	100	**514-0106**
WME, white/black grid 3,1 mm, autoclave pack, sterile	0,45	47	100	**514-0543**
WME, white/black grid 3,1 mm, sterile	0,45	47	100	**514-8070**
WME, white/black grid 3,1 mm, sterile, without pad	0,45	47	100	**514-8071**
ME 24	0,2	25	100	**514-2161**
ME 24	0,2	47	100	**514-2162**
ME 24, sterile	0,2	47	100	**514-2662**
ME 24	0,2	50	100	**514-2163**
ME 25	0,45	25	100	**514-2151**
ME 25	0,45	47	100	**514-2152**
ME 25, sterile	0,45	47	100	**514-2652**
ME 25	0,45	50	100	**514-2153**
ME 25	0,45	90	50	**514-0099**
ME 25	0,45	100	50	**514-2155**
ME 25	0,45	142	25	**514-2154**
ME 25, white/black grid 3,1 mm	0,45	47	100	**514-3342**
ME 25, white/black grid 3,1 mm, sterile	0,45	47	1.000	**514-0379**
ME 24, white/black grid 3,1 mm, sterile	0,2	47	100	**514-3363**
ME 24, white/black grid 3,1 mm, sterile	0,2	50	100	**514-3373**
ME 27, white/black grid 3,1 mm, sterile	0,8	47	100	**514-1009**
ME 25, green/black grid 3,1 mm	0,45	47	100	**514-3393**
ME 25, black/white grid 3,1 mm, sterile	0,45	47	100	**514-3386**
ME 25, black/white grid 3,1 mm, sterile	0,45	50	100	**514-3388**
ME 26, black/white grid 3,1 mm	0,6	50	100	**514-3383**
ME 29	3	25	100	**514-2111**
ME 29	3	50	100	**514-2113**
ME 28	1,2	47	100	**514-2122**
ME 27	0,8	47	100	**514-2132**

Membrane filters, Cyclopore™ track etched
Whatman (GE Healthcare)
Hydrophilic PC, autoclavable

For air monitoring, analytical methods, water analysis, blood filtration and cell analysis, general filtration, microscopy, microorganisms analysis, nucleic acid studies and oceanographic studies. The smooth flat microporous membrane ensures particles are retained on the surface so that they are easily visible under a microscope.

- Free of contaminants, low tare weight
- Minimum water adsorption
- Very low levels of non specific protein binding

Thickness	7 - 20 µm
Max. temperature (°C)	140
Weight	0,7 - 2,0 mg/cm²

Pore size (µm)	Ø (mm)	Pk	Cat. No.
0,2	25	100	**516-4532**
0,4	25	100	**516-4533**
0,2	47	100	**514-0049**
0,4	47	100	**516-4549**
1,0	47	100	**516-4552**

Membrane filters Nuclepore™ track etched
Whatman (GE Healthcare)

PC

These filters are made from high quality PC film and have sharply defined pore sizes, high flow rates and excellent chemical and thermal resistance. Suitable for epifluorescence microscopy, environmental analysis, cell biology, EPA testing, fuel testing, bioassays, parasitology, air analysis and water microbiology.

- Low protein binding and low extractables
- High chemical resistance and good thermal stability
- Low, consistent ash and tare weights
- Smooth flat surface for good visibility of particles

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Type	Pore size (µm)	Size (mm)	Pk	Cat. No.
PC	0,015	13	100	**515-2001**
PC	0,1	13	100	**515-2005**
PC	0,2	13	100	**515-2006**
PC	0,4	13	100	**515-2007**
PC	0,8	13	100	**515-2009**
PC	1,0	13	100	**515-2010**
PC	3,0	13	100	**515-2012**
PC	5,0	13	100	**515-2013**
PC	8,0	13	100	**515-2014**
PC	10,0	13	100	**515-2015**
PC	0,015	25	100	**515-2024**
PC	0,03	25	100	**515-2025**
PC	0,05	25	100	**515-2026**
PC	0,08	25	100	**515-2027**
PC	0,1	25	100	**515-2028**
PC	0,2	25	100	**515-2029**
PC	0,4	25	100	**515-2030**
PC	0,6	25	100	**515-2031**
PC	0,8	25	100	**515-2032**
PC	1,0	25	100	**515-2034**
PC	2,0	25	100	**515-2035**
PC	3,0	25	100	**515-2036**
PC	5,0	25	100	**515-2037**
PC	8,0	25	100	**515-2038**
PC	10,0	25	100	**515-2039**
PC	12,0	25	100	**515-2040**
PC AOX **	0,4	25	100	**515-2046**
PC	0,4	37	100	**515-2057**
PC	0,8	37	100	**515-2059**
PC	0,015	47	100	**515-2075**
PC	0,05	47	100	**515-2077**
PC	0,08	47	100	**515-2078**
PC	0,1	47	100	**515-2079**
PC	0,2	47	100	**515-2080**
PC	0,4	47	100	**515-2081**
PC	0,6	47	100	**515-2082**
PC	0,8	47	100	**515-2083**
PC	1,0	47	100	**515-2084**
PC	2,0	47	100	**515-2085**
PC	3,0	47	100	**515-2086**
PC	5,0	47	100	**515-2087**
PC	8,0	47	100	**515-2088**
PC	10,0	47	100	**515-2089**
PC	12,0	47	100	**515-2090**
PC AOX **	0,4	47	100	**515-2095**
PC	0,2	50	100	**515-2103**
PC	0,4	50	100	**515-2104**
PC	5,0	50	100	**515-2111**
PC	12,0	50	100	**515-2114**
PC	0,05	76	100	**515-2117**
PC	0,1	76	100	**515-2118**
PC	0,05	90	25	**515-2132**
PC	0,1	90	25	**515-2134**
PC	0,2	90	25	**515-2135**
PC	0,4	90	25	**515-2136**
PC	1,0	90	25	**515-2139**
PC	2,0	90	25	**515-2140**
PC	3,0	90	25	**515-2141**
PC	0,08	142	25	**514-0660**
PC	0,1	142	25	**515-2146**
PC	0,2	142	25	**515-2147**
PC	1,0	142	25	**515-2151**
PC	1,0	293	25	**514-0661**
PC	5,0	19×42	100	**515-2197**
PC	0,03	203×254	25	**515-2171**
PC	0,2	203×254	25	**515-2174**
PC	12,0	203×254	25	**515-2183**
Gold coated PC	0,8	25	50	**515-2033**
PC PVP-free *	8,0	13	100	**515-2280**
PC PVP-free *	8,0	635×2032	100	**515-2292**
Gold coated PC	0,4	25	50	**514-0381**
Gold coated PC	0,8	13	10	**514-0664**
PC	0,2	19	100	**514-0665**
PC	0,4	19	100	**514-0666**
PC	0,8	19	100	**514-0667**

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Type	Pore size (µm)	Size (mm)	Pk	Cat. No.
PC	0,03	19	100	**514-0668**
PC	0,05	19	100	**514-0669**
PC	0,1	19	100	**514-0670**
PC	1,0	19	100	**514-0671**

* hydrophobic
** suitable for AOX analysis

Membrane filters, Anodisc™
Whatman (GE Healthcare)

Anopore™ inorganic membrane (Anodisc™) is well suited for a wide range of laboratory filtration applications. This novel material has a precise, non deformable honeycomb pore structure with no lateral crossovers between individual pores, that filters at precisely the stated cut-off, allowing no larger sized particles to pass through the membrane. The Anopore™ inorganic membrane is composed of a high purity alumina matrix that is manufactured electrochemically. The membrane also exhibits low protein binding, has minimal autofluorescence, is non toxic, and supports cellular growth.

The precise pore structure and narrow pore size distribution of the Anopore™ membrane ensure a high level of particle removal efficiency. Microorganisms and particulate material are captured on the surface of the membrane for subsequent analysis by light or electron microscopy. When wet, the membrane is virtually transparent, which means that retained particles do not need to be transferred to another surface before microscopic examination.

- High pore density and narrow pore size distribution
- Wide solvent compatibility
- No monomers, plasticizers, adhesives, surfactants or wetting agents used in the manufacturing process
- Extremely low protein binding
- Virtually transparent when wet making it ideal for microscopy studies

The membrane is peripherally bonded to an annular PP ring (except the 13 mm diameter disc) for ease of handling and is suitable for both vacuum and pressure filtration.

Type	Anodisc™ 13	Anodisc™ 25	Anodisc™ 47
Thickness	60 µm		
Max. temperature (°C)	400	40	

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Anodisc™ 13, unsupported	0,02	13	100	**514-0521**
Anodisc™ 13, unsupported	0,1	13	100	**514-0522**
Anodisc™ 13, unsupported	0,2	13	100	**514-0523**
Anodisc™ 25	0,02	25	50	**514-0519**
Anodisc™ 25	0,1	25	50	**514-0597**
Anodisc™ 25	0,2	25	50	**514-0520**
Anodisc™ 47, unsupported	0,02	47	50	**514-0662**
Anodisc™ 47	0,02	47	50	**514-0516**
Anodisc™ 47	0,1	47	50	**514-0517**
Anodisc™ 47, unsupported	0,2	47	50	**514-0663**
Anodisc™ 47	0,2	47	50	**514-0518**

Membrane filters
Sartorius

	Material type	Applications
Type 111	Cellulose acetate hydrophilic, autoclavable	Ideal for biological and clinical analysis, sterility tests and scintillation measurements. Very low protein binding capacity, suitable for aqueous, alcoholic media and hot gases. Can be sterilised by all methods.
Type 113	Cellulose nitrate hydrophilic, autoclavable	For sample pretreatment, particle testing and chemotaxis. Can be sterilised by all methods.
Type 118	PTFE hydrophobic, autoclavable	For filtration of air, gases, solvents and acids. Sterilisation by autoclaving or ethylene oxide.

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Type 184	Regenerated cellulose hydrophilic, autoclavable	For filtration of organic solvents. Suitable for particle removal from aqueous solutions and solvents. Low adsorption. Can be sterilised by all methods.
Type 250	Hydrophilic polyamide (nylon), autoclavable	For the filtration of alkaline solutions and organic solvents.

Type	Pore size	Thickness	Water flow rate	Airflow rate	Max. temperature (°C)
111	0,2 µm	120 µm	25 ml/min/cm² (1 bar)	-	180
	0,45 µm		69 ml/min/cm² (1 bar)		
	0,2 µm				
113	0,45 µm	130 µm			130
	0,65 µm		130 ml/min/cm² (1 bar)		
	0,8 µm		200 ml/min/cm² (1 bar)		
	1,2 µm		320 ml/min/cm² (1 bar)		
	3 µm		430 ml/min/cm² (1 bar)		
	5 µm		570 ml/min/cm² (1 bar)		
	8 µm		750 ml/min/cm² (1 bar)		
118	0,2 µm	65 µm	-	0,2 l/min/cm² (0,05 bar)	200
	0,45 µm	80 µm		0,3 l/min/cm² (0,05 bar)	
	1,2 µm	-		1,6 l/min/cm² (0,05 bar)	145
	5 µm	100 µm	-	4 l/min/cm² (0,05 bar)	
184	0,2 µm	160 - 200 µm	16 ml/min/cm² (1 bar)	-	180
	0,45 µm		28 ml/min/cm² (1 bar)		
250	0,2 µm	125 µm	>12 ml/min/cm² (1 bar)	-	
	0,45 µm		>26 ml/min/cm² (1 bar)		

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
111	0,2	13	100	**512-4118**
111	0,2	25	100	**512-4218**
111	0,2	47	100	**512-4318**
111	0,2*	47	100	**512-4863**
111	0,2	50	100	**512-4418**
111	0,2	142	100	**611-0673**
111	0,45	25	100	**512-4216**
111	0,45	47	100	**512-4316**
111	0,45*	47	100	**611-0668**
111	0,45	50	100	**512-4416**
111	0,45	85	100	**611-0670**
111	0,45	142	25	**512-4616**
113	0,45	25	100	**512-5216**
113	0,45	47	100	**512-5316**
113	0,45*	47	100	**611-0675**
113	0,45	85	100	**611-0677**
113	0,45	100	25	**512-5516**
113	0,45	142	25	**512-5616**
113	0,65	50	100	**512-5415**
113	0,8	47	100	**512-5314**
113	0,8	50	100	**512-5414**
113	1,2	50	100	**512-5413**
113	3	50	100	**512-5412**
113	5	50	100	**512-5411**
113	8	50	100	**512-5410**
118	0,2	25	100	**512-8218**
118	0,2	47	100	**512-8318**
118	0,2	50	100	**512-8418**
118	0,2	100	25	**512-8518**
118	0,45	25	100	**512-8216**
118	0,45	47	100	**512-8316**
118	0,45	50	100	**512-8416**
118	0,45	100	25	**512-8516**
118	1,2	13	100	**512-8113**
118	1,2	25	100	**512-8213**
118	1,2	50	100	**512-8413**
118	5	47	100	**512-8311**
118	5	50	100	**512-8411**
184	0,2	13	100	**512-6118**
184	0,2	47	100	**512-6318**
184	0,2	50	100	**512-6418**
184	0,2	100	25	**512-6518**
184	0,2	142	25	**512-6618**
184	0,45	13	100	**512-6116**
184	0,45	47	100	**512-6316**
184	0,45	50	100	**512-6416**
184	0,45	100	25	**512-6516**
184	0,45	142	25	**512-6616**
250	0,2	25	100	**611-0723**

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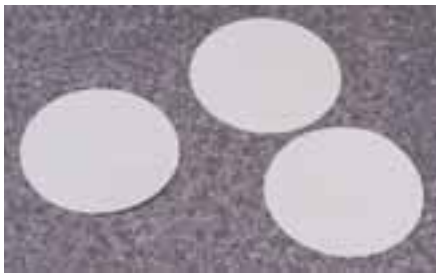
Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
250	0,2	47	100	**611-0724**
250	0,45	25	100	**611-0721**
250	0,45	47	100	**611-0722**

* Sterile

Membrane filters, Nalgene®
Thermo Scientific



Type	Material type	Applications
205	Cellulose nitrate, sterile	Certified to meet requirements of standard methods for water quality control for microbiological analysis, sterility tests, food and beverage testing. Individually wrapped.
210	Cellulose acetate, non sterile, autoclavable	Filter for sterilisation of proteinaceous solutions. Low adsorption of proteins from serum or culture media. Resistant to alcohol and oil, can be used in short-term contact with methyl ethyl ketone, suitable for liquid scintillation counting. Must be wet when autoclaved.
215	Nylon, hydrophilic, non sterile, autoclavable	For both aqueous and organic solvent filtrations. Usefull for sterilisation and clarification of buffers and culture media, ideal for HPLC solvents and ultracleaning solutions for electronics laboratories. Low levels of extractables, contain no wetting agents. Less brittle and easier to handle than cellulose.

Type	205	210		215	
Pore size	0,45 µm	0,2 µm	0,45 µm	0,2 µm	0,45 µm
Water flow rate	>51 ml/min/cm² (1 bar)	>21 ml/min/cm² (1 bar)	>51 ml/min/cm² (1 bar)	>19 ml/min/cm² (1 bar)	>37 ml/min/cm² (1 bar)
Max. temperature (°C)	130	120		125	

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
205	0,45*	47	100	**513-2052**
210	0,2	47	100	**513-2101**
210	0,45	47	100	**513-2102**
215	0,2	47	100	**513-2151**
215	0,45	47	100	**513-2152**

* with green grid

Dialysis membrane Spectra/Por® 1
Spectrum

MWCO 6 - 8 kD, regenerated cellulose

- Transparent and flexible

This economical membrane is ideal for a broad range of applications in which there is a significant size difference between the MW species being separated; including sample prep, desalting, buffer exchange, pH change, protein purification. Offering a good chemical compatibility, Standard Grade RC can be used with dilute strong acids and bases, concentrated weak acids and bases, most alcohols and some mild or dilute organics, including DMSO. Standard RC can tolerate pH 2 to 12 and temperatures +4 to +121 °C. Supplied dry, preservative: glycerol.

MWCO (kD)	Width flat (mm)	Ø (mm)	Vol./ length (ml/cm)	Pk	Cat. No.
6 - 8	10	6,4	0,32	15 m	**734-0662**
6 - 8	23	14,6	1,7	30 m	**734-0663**
6 - 8	32	20,4	3,3	30 m	**734-0665**
6 - 8	40	25,5	5,1	30 m	**734-0666**
6 - 8	50	32	8	30 m	**734-0667**
6 - 8	100	64	32	15 m	**734-0669**
6 - 8	120	76	16	15 m	**734-0670**

Dialysis membrane Spectra/Por® 2
Spectrum

MWCO 12 - 14 kD, regenerated cellulose

- Transparent and flexible

This economical membrane is ideal for a broad range of applications in which there is a significant size difference between the MW species being separated; including sample prep, desalting, buffer exchange, pH change, protein purification. Offering a good chemical compatibility, Standard Grade RC can be used with dilute strong acids and bases, concentrated weak acids and bases, most alcohols and some mild or dilute organics, including DMSO. Standard RC can tolerate pH 2 to 12 and temperatures +4 to +121 °C. Supplied dry, preservative: glycerol.

MWCO (kD)	Width flat (mm)	Ø (mm)	Vol./ length (ml/cm)	Pk	Cat. No.
12 - 14	10	6,4	0,32	15 m	**734-0671**
12 - 14	25	16	2	15 m	**734-0672**
12 - 14	45	29	6,4	15 m	**734-0673**
12 - 14	105	67	34	15 m	**734-0675**
12 - 14	120	76	46	15 m	**734-0676**

Dialysis membrane Spectra/Por® 3
Spectrum

MWCO 3,5 kD, regenerated cellulose

- Transparent and flexible

This economical membrane is ideal for a broad range of applications in which there is a significant size difference between the MW species being separated; including sample prep, desalting, buffer exchange, pH change, protein purification. Offering a good chemical compatibility, Standard Grade RC can be used with dilute strong acids and bases, concentrated weak acids and bases, most alcohols and some mild or dilute organics, including DMSO. Standard RC can tolerate pH 2 to 12 and temperatures +4 to +121 °C. Supplied dry, preservative: glycerol.

MWCO (kD)	Width flat (mm)	Ø (mm)	Vol./ length (ml/cm)	Pk	Cat. No.
3,5	18	11,5	1	15 m	**734-0684**
3,5	45	29	6,4	15 m	**734-0686**
3,5	54	34	9,3	15 m	**734-0687**

Dialysis membrane Spectra/Por® 4
Spectrum

MWCO 12 - 14 kD, regenerated cellulose

- Transparent and flexible

This economical membrane is ideal for a broad range of applications in which there is a significant size difference between the MW species being separated; including sample prep, desalting, buffer exchange, pH change, protein purification. Offering a good chemical compatibility, Standard Grade RC can be used with dilute strong acids and bases, concentrated weak acids and bases, most alcohols and some mild or dilute organics, including DMSO. Standard RC can tolerate pH 2 to 12 and temperatures +4 to +121 °C. Supplied dry, preservative: glycerol.

MWCO (kD)	Width flat (mm)	Ø (mm)	Vol./ length (ml/cm)	Pk	Cat. No.
12 - 14	10	6,4	0,32	30 m	**734-0677**
12 - 14	25	16	2	30 m	**734-0678**
12 - 14	32	20,4	3,3	30 m	**734-0680**
12 - 14	45	29	6,4	30 m	**734-0681**
12 - 14	75	48	18	15 m	**734-0683**

Dialysis membrane tubing Spectra/Por® 6

Spectrum

MWCO 1 - 50 kD, hydrophilic cellulose

- Transparent and flexible

This economical membrane is ideal for a broad range of applications in which there is a significant size difference between the MW species being separated; including sample prep, desalting, buffer exchange, pH change, protein purification. Offering a good chemical compatibility, Standard Grade RC can be used with dilute strong acids and bases, concentrated weak acids and bases, most alcohols and some mild or dilute organics, including DMSO. Standard RC can tolerate pH 2 to 12 and temperatures +4 to +121 °C. Should not be exposed to organic solvents at concentrations exceeding 5%.

Supplied wet in 0,1% sodium azide

MWCO (kD)	Width flat (mm)	Ø (mm)	Vol./ length (ml/cm)	Length (m)	Pk	Cat. No.
8	18	11,5	1	10	10 m	**734-0498**
10	6	3,8	0,1	10	10 m	**734-0499**
10	18	11,5	1	10	10 m	**734-0500**
15	6	3,8	0,1	10	10 m	**734-0501**
15	18	11,5	1	10	10 m	**734-0502**
25	6	3,8	0,1	10	10 m	**734-0503**
25	18	11,5	1	10	10 m	**734-0504**
25	24	15	1,8	10	10 m	**734-0505**
50	10	6,4	0,32	10	10 m	**734-3506**
50	12	7,5	0,45	10	10 m	**734-0633**
50	28	18	2,5	10	10 m	**734-0634**
50	34	22	3,7	10	10 m	**734-0635**
25	12	7,5	0,45	10	10 m	**734-0636**
25	28	18	2,5	10	10 m	**734-0637**
25	34	22	3,7	10	10 m	**734-0638**
15	12	7,5	0,45	10	10 m	**734-0639**
15	24	15	1,8	10	10 m	**734-0640**
15	32	20,4	3,3	10	10 m	**734-0641**
15	45	29	6,4	10	10 m	**734-0642**
10	12	7,5	0,45	10	10 m	**734-0643**
10	24	15	1,8	10	10 m	**734-0644**
10	32	20,4	3,3	10	10 m	**734-0645**
10	45	29	6,4	10	10 m	**734-0646**
8	12	7,5	0,45	10	10 m	**734-0647**
8	24	15	1,8	10	10 m	**734-0648**
8	32	20,4	3,3	10	10 m	**734-0649**
8	40	25,5	5,1	10	10 m	**734-0650**
8	50	32	8	10	10 m	**734-0651**
3,5	18	11,5	1	10	10 m	**734-0652**
3,5	45	29	6,4	10	10 m	**734-0653**
3,5	54	34	9,3	10	10 m	**734-0654**
2	18	11,5	1	10	10 m	**734-0656**
2	38	24	4,6	10	10 m	**734-0657**
2	45	29	6,4	10	10 m	**734-0658**
1	18	11,5	1	10	10 m	**734-0659**
1	38	24	4,6	10	10 m	**734-0660**
1	45	29	6,4	10	10 m	**734-0661**

Dialysis membrane tubing Spectra/Por® 7

Spectrum

MWCO 1 - 50 kD, regenerated cellulose

- Transparent and flexible
- Minimum sulphur and heavy metal contamination

Chemically treated to remove any trace levels of heavy metals and sulfide compounds that may be present in dry Spectra/Por® 1 to 5 and pre-wetted Spectra/Por® 6 Standard RC membranes. Supplied wet in 0,1% sodium azide.

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MWCO (kD)	Width flat (mm)	Ø (mm)	Vol./ length (ml/cm)	Pk	Cat. No.
1	18	11,5	1	5 m	**734-0605**
1	38	24	4,6	5 m	**734-0606**
1	45	29	6,4	5 m	**734-0607**
2	18	11,5	1	5 m	**734-0608**
2	38	24	4,6	5 m	**734-0609**
2	45	29	6,4	5 m	**734-0610**
3,5	18	1,5	1	5 m	**734-0611**
3,5	45	29	6,4	5 m	**734-0612**
3,5	54	34	9,3	5 m	**734-0613**
8	12	7,5	0,45	5 m	**734-0614**
8	24	15	1,8	5 m	**734-0615**
8	32	20,4	3,3	5 m	**734-0616**
8	40	25,5	5,1	5 m	**734-0617**
8	50	32	8	5 m	**734-0632**
10	12	7,5	0,45	5 m	**734-0618**
10	18	11,5	1	5 m	**734-0506**
10	24	15	1,8	5 m	**734-0619**
10	32	20,4	3,3	5 m	**734-0620**
10	45	29	6,4	5 m	**734-0621**
15	12	7,5	0,45	5 m	**734-0622**
15	18	11,5	1	5 m	**734-0507**
15	24	15	1,8	5 m	**734-0623**
15	32	20,4	3,3	5 m	**734-0624**
15	45	29	6,4	5 m	**734-0625**
25	12	7,5	0,45	5 m	**734-0626**
25	18	11,5	1	5 m	**734-0508**
25	24	15	1,8	5 m	**734-0509**
25	28	18	2,5	5 m	**734-0627**
25	34	22	3,7	5 m	**734-0628**
50	12	7,5	0,45	5 m	**734-0629**
50	28	18	2,5	5 m	**734-0630**
50	34	22	3,7	5 m	**734-0631**

Dialysis tubing Biotech CE

Spectrum

Hydrophilic cellulose ester

- No pre-treatment required

Biologically inert and ultra-pure, Biotech CE membrane offers the largest range of concise MWCO's for desalting, isolating ionic species and macromolecular purifications. Biotech CE membrane is more sensitive to harsh conditions and solvents and generally tolerates weak or dilute acids and bases and mild alcohols with only a slight change to the MWCO. Exposure to most organic solvents may damage CE membranes. Use with pH 2-9 and temp 4 - 37 °C. Should not be exposed to organic solvents at concentrations exceeding 5%.

Supplied wet in 0,1% sodium azide

MWCO (kD)	Width flat (mm)	Ø (mm)	Vol./ length (ml/cm)	Pk	Cat. No.
0,5	10	6,4	0,32	10 m	**734-0540**
0,5	16	10	0,79	10 m	**734-0542**
0,5	24	15	1,8	10 m	**734-0543**
0,5	31	20	3,1	10 m	**734-0544**
1	10	6,4	0,32	10 m	**734-0546**
1	16	10	0,79	10 m	**734-0548**
1	24	15	1,8	10 m	**734-0549**
1	31	20	3,1	10 m	**734-2278**
5	10	6,4	0,32	10 m	**734-0564**
5	16	10	0,79	10 m	**734-0566**
5	24	15	1,8	10 m	**734-0567**
5	31	20	3,1	10 m	**734-0568**
10	10	6,4	0,32	10 m	**734-0572**
10	16	10	0,79	10 m	**734-0574**
10	24	15	1,8	10 m	**734-0575**
10	31	20	3,1	10 m	**734-0576**
25	10	6,4	0,32	10 m	**734-0584**
25	16	10	0,79	10 m	**734-0585**
25	24	15	1,8	10 m	**734-0586**
20	31	20	3,1	10 m	**734-2279**
50	10	6,4	0,32	10 m	**734-0589**
50	16	10	0,79	10 m	**734-0590**
50	24	15	1,8	10 m	**734-0591**
50	31	20	3,1	10 m	**734-2280**
100	10	6,4	0,32	10 m	**734-0594**
100	16	10,2	0,79	10 m	**734-0596**

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MWCO (kD)	Width flat (mm)	Ø (mm)	Vol./ length (ml/cm)	Pk	Cat. No.
100	24	15	1,8	10 m	**734-0597**
100	31	20	3,1	10 m	**734-0598**
300	16	10	0,79	10 m	**734-2276**
1000	16	10	0,79	10 m	**734-2277**

Closures for dialysis membrane tubing, Spectra/Por®
Spectrum

Standard closures

PP, autoclavable

Only for regenerated cellulose membranes.

Lighter than water, normally used in combination with weighted closures.

Choose a closure 4 to 10 mm larger than the flat width of the tubing.

Weighted closures

PP with fluorocarbon coated stainless steel bar

Only for regenerated cellulose membranes.

Used in combination with a standard closure for a vertical use of the dialysis tubing.

Choose a closure 4 to 10 mm larger than the flat width of the tubing.

Magnetic weighted closures

PP with PTFE coated magnetic weight

Only for regenerated cellulose membranes.

Used in combination with a standard closure for a vertical use of the dialysis tubing and a magnetic stirrer for continuous stirring of the tubing.

Choose a closure 4 to 10 mm larger than the flat width of the tubing.

Width (mm)	Colour	Pk	Cat. No.
Standard closures			
12	White	10	**734-0736**
12	Green	10	**734-0739**
12	Blue	10	**734-0742**
12	Orange	10	**734-0689**
23	White	10	**516-0195**
23	Green	10	**514-0624**
23	Blue	10	**514-0626**
23	Orange	10	**516-0189**
35	White	10	**514-0622**
35	Green	10	**734-0740**
35	Blue	10	**516-0196**
35	Orange	10	**734-0690**
55	White	10	**514-0623**
55	Green	10	**514-0625**
55	Blue	10	**516-0197**
55	Orange	10	**516-0190**
75	White	10	**734-0738**
75	Green	10	**734-0741**
75	Blue	10	**734-0743**
75	Orange	10	**734-0691**
Weighted closures			
12	White	10	**734-0692**
23	White	10	**734-0693**
35	White	10	**734-0694**
55	White	10	**734-0695**
75	White	10	**734-0696**
Magnetic weighted closures			
23	Red	2	**514-0621**
35	Red	2	**734-0699**
55	Red	2	**734-0700**
75	Red	2	**734-0701**
Sets of 10 standard and 10 weighted closures			
12	Orange/White	20	**516-2001**
23	Orange/White	20	**516-0191**
35	Orange/White	20	**516-0192**
55	Orange/White	20	**516-2002**
75	Orange/White	20	**516-0193**

Absorbent for dialysing tubing Spectra/Gel®

Spectrum

Spectra/Gel® makes the concentration of protein sample solutions quick and efficient. Made of polyacrylate-polyalcohol it has the property of expanding as it absorbs water. The high molecular weight polymer can be used with dialysis membranes of molecular weight cut-offs (MWCO) from 100 to 300 000 Daltons without contaminating the sample. After dialysis, simply remove the dialysis tubing containing the sample and coat it with Spectra/Gel®. Water and smaller molecules diffuse through the membrane and are absorbed by Spectra/Gel® Absorbent. Concentration continues unattended until a certain volume of water is removed from the sample. The insoluble characteristic makes Spectra/Gel® easy to remove after absorbancy.

- High water absorbent capacity
- Easy to use with any MWCO dialysis membrane

Pk	Cat. No.
500 g	**734-0858**

Dialysis devices, ready-to-use, Float-A-Lyzer® G2

Spectrum

Ready-to-use laboratory dialysis devices featuring proprietary Ultra-pure Biotech Cellulose Ester (CE) Membrane. Biotech Grade CE is a low protein-binding synthetic membrane available in 9 precise MWCO's with no heavy metal and sulfide contaminants. The cylindrical tubing geometry prevents sample dilution (associated with cassette-type devices) and provides open access for total volume retrieval by pipette. Only the Float-A-Lyzer® G2 assures a 95 to 98% sample recovery while maintaining 99% sample purity and <1% sample dilution. The leakproof screw-on cap with sealing o-ring provides easy access with included pipette for loading, in-process testing and sample retrieval, without the risk of needle punctures. The included floatation ring improves sample buoyancy and vertical orientation during dialysis. The sleek design allows multiple samples to be dialysed in the same reservoir.

- Superior handling and leak prevention
- Volume specific dilution control
- Perfect for dialysing electro-eluted proteins or chromatography fractions

Packaging: Individually wrapped (dry with glycerol)

MWCO (kD)	Colour	Sample volume (ml)	Pk	Cat. No.
0,1 - 0,5	Green	0,4 - 1	12	**734-1494**
0,1 - 0,5	Green	2 - 5	12	**734-1496**
0,1 - 0,5	Green	5 - 10	12	**734-1498**
0,5 - 1	Orange	0,4 - 1	12	**734-2363**
0,5 - 1	Orange	2 - 5	12	**734-2366**
0,5 - 1	Orange	5 - 10	12	**734-2606**
3,5 - 5	Black	0,4 - 1	12	**734-3573**
3,5 - 5	Black	2 - 5	12	**734-3577**
3,5 - 5	Black	5 - 10	12	**734-3581**
8 - 10	Yellow	0,4 - 1	12	**734-3574**
8 - 10	Yellow	2 - 5	12	**734-3578**
8 - 10	Yellow	5 - 10	12	**734-3582**
20	Red	0,4 - 1	12	**734-3575**
20	Red	2 - 5	12	**734-3579**
20	Red	5 - 10	12	**734-3583**
50	Violet	0,4 - 1	12	**734-1495**
50	Violet	2 - 5	12	**734-1497**
50	Violet	5 - 10	12	**734-1499**
100	Blue	0,4 - 1	12	**734-3576**
100	Blue	2 - 5	12	**734-3580**
100	Blue	5 - 10	12	**734-3584**
300	Amber	0,4 - 1	12	**734-2364**
300	Amber	2 - 5	12	**734-2367**
300	Amber	5 - 10	12	**734-2369**
1000	Pink	0,4 - 1	12	**734-2365**
1000	Pink	2 - 5	12	**734-2368**
1000	Pink	5 - 10	12	**734-2370**

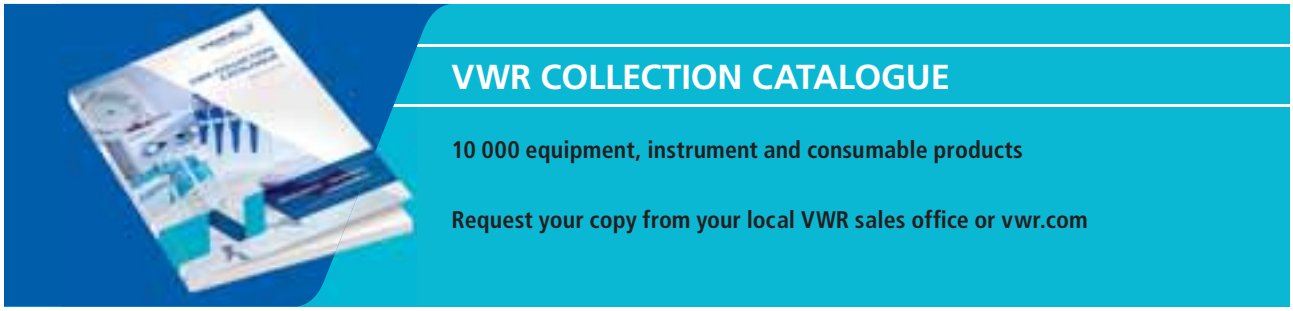
Microdialysis devices, ready-to-use, Micro Float-A-Lyzer®
Spectrum

Designed to maximise convenience and efficiency, the ready-to-use Micro Float-A-Lyzer® is ideal for the dialysis of very small sample volumes. Available in two volume sizes, 100 to 200 µl and 400 to 500 µl, the Micro Float-A-Lyzer® features a proprietary biotech grade cellulose ester (CE) membrane incorporated into a pre-assembled, leakproof microdialysis device. Available in 7 concise MWCO's with colour-coded caps, CE is a synthetic, low-protein binding membrane with no heavy metal and sulfide contaminants. The pre-formed tubular geometry also limits volume increase and sample dilution. The self-standing and self-floating device is designed with a Luer-lok® sample port to provide quick and easy access for loading, in-process testing and total sample recovery using a 1 ml syringe (included). Available in packs of 12, individual units can interlock to form a "flotilla" for the simultaneous dialysis of multiple samples. Only Micro Float-A-Lyzer® and Float-A-Lyzer® G2 assure a 95 to 98% sample recovery, 98% sample purity and <10% sample dilution; all in an easy to use, convenient dialysis device.

- Colour coded caps
- Available in two volume sizes
- Complete with 1 ml syringes

Packaging: Packaged dry with glycerin. Supplied in packs of 12.

MWCO (kD)	Colour code	Pk	Cat. No.
Sample volume sizes 100 to 200 µl			
0,1 - 0,5	Green	12	**734-2586**
0,5 - 1,0	Orange	12	**734-2587**
3,5 - 5,0	Black	12	**734-2588**
8 - 10	Yellow	12	**734-2589**
20	Red	12	**734-2590**
50	White	12	**734-2591**
100	Blue	12	**734-2592**
Sample volume sizes 400 to 500 µl			
0,1 - 0,5	Green	12	**734-2593**
0,5 - 1,0	Orange	12	**734-2594**
3,5 - 5,0	Black	12	**734-2595**
8 - 10	Yellow	12	**734-2596**
20	Red	12	**734-2597**
50	White	12	**734-2598**
100	Blue	12	**734-2599**



PALL Life Sciences

Membrane disc filters for microbiology

All membranes are certified for use in microbiological analysis. Sterile versions are sterilised by gamma irradiation.

Filter media: GN-6 Metricel®, hydrophilic mixed cellulose esters

Applications: Analysis of potable, waste, process and natural waters, ideal for isolation and enumeration of total and faecal coliforms, *E. coli*, faecal streptococcus, fungi and other heterotrophic organisms.

- Provides maximum recovery of organisms
- Unique dot grid for quantification of bacterial colonies

Meets and surpasses US EPA and ASTM specifications.

Filter media: Metricel® Black, hydrophilic modified PES (polyethersulphone)

Applications: Isolation and enumeration of yeast and mould colonies, spoilage organism monitoring and identification in food and beverage quality control laboratories, ideal for monitoring particulate contamination of process fluids in the microelectronic industry.

- Dark background provides excellent contrast for counting colonies
- Exclusive dot grid neither inhibits nor enhances microbial growth

Pore size	Thickness	Water flow rate	Max. temperature (°C)	Weight
Filter media: GN-6 Metricel®, hydrophilic mixed cellulose esters				
0,45 µm	152 µm	>65 ml/min/cm² (0,7 bar)	74	4 mg/cm²
Filter media: Metricel® Black, hydrophilic modified PES (polyethersulphone)				
0,8 µm	147 µm	>102 ml/min/cm² (0,7 bar)	-	
0,45 µm	130 µm	>34 ml/min/cm² (0,7 bar)		
0,8 µm	147 µm	>102 ml/min/cm² (0,7 bar)		

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Filter media: GN-6 Metricel®, hydrophilic mixed cellulose esters				
GN-6, plain	0,45	13	100	**514-4177**
GN-6, grid	0,45	25	100	**514-4181**
GN-6, plain	0,45	25	100	**514-4178**
GN-6, plain, with support pads	0,45	37	100	**514-4182**
GN-6, grid	0,45	47	100	**514-4175**
GN-6, grid, individual sterile pack (S-Pack)	0,45	47	200	**514-4202**
GN-6, grid, individual sterile pack (S-Pack)	0,45	47	1.000	**514-4185**
GN-6, grid, individual sterile pack (S-Pack)	0,45	47	2.000	**514-4193**
GN-6, plain	0,45	47	100	**514-4179**
GN-6, plain, individual sterile pack (S-Pack)	0,45	47	200	**516-7888**
GN-6, grid, individual sterile pack (S-Pack)	0,45	50	200	**516-7927**
GN-6, grid, not individually packed (S-Pack)	0,45	85	50	**516-7728**
GN-6, plain	0,45	142	25	**514-4222**
Filter media: Metricel® Black, hydrophilic modified PES (polyethersulphone)				
Black, white grid	0,8	25	100	**515-0159**
Black, white grid, individual sterile pack (S-Pack)	0,45	47	200	**514-4223**
Black, white grid	0,45	47	100	**514-4224**
Black, white grid, individual sterile pack (S-Pack)	0,8	47	200	**514-4225**
Black, white grid	0,8	47	100	**514-4226**

STERILE

Membrane filters, MicroPlus and ME

Whatman (GE Healthcare)

Membranes for microbiological control

Developed for microbiological quality control of foods and beverages, pharmaceuticals and cosmetics.

- Sterile, individually packed
- All membrane filters have a high contrast grid (3,1 mm)
- Type STL in dispenser boxes with 100 numbered membrane filters for easy removal and safe handling with the Membrane-Butler

MicroPlus membranes

Cellulose nitrate

- High mechanical strength
- High flow rate

ME membranes

Mixed cellulose ester, hydrophilic

- Specifically for aqueous solutions
- For use up to 125 °C

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Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
MicroPlus membranes				
MicroPlus-21 ST white, black grid	0,45	47	100	**514-1153**
MicroPlus-21 ST white, black grid	0,45	50	100	**514-1154**
MicroPlus-21 STL white, black grid	0,45	47	400	**514-1142**
MicroPlus-21 STL white, black grid	0,45	50	400	**514-1143**
MicroPlus-31 ST black, white grid	0,45	50	100	**514-0084**
MicroPlus-31 STL black, white grid	0,45	47	400	**514-1144**
MicroPlus-31 STL black, white grid	0,45	50	400	**514-1145**
MicroPlus-41 STL green, black grid	0,45	47	400	**514-1146**
MicroPlus-41 STL green, black grid	0,45	50	400	**514-1147**
ME membranes				
ME24 white, black grid	0,2	47	400	**511-0138**
ME24 white, black grid	0,2	50	400	**514-1156**
ME25/21 ST white, black grid	0,45	47	100	**514-3362**
ME25/21 ST white, black grid	0,45	50	100	**514-3372**
ME25/21 STL white, black grid	0,45	47	400	**514-1148**
ME25/21 STL white, black grid	0,45	50	400	**514-2164**
ME25/31 STL black, white grid	0,45	47	400	**514-1149**
ME25/31 STL black, white grid	0,45	50	400	**514-1150**
ME25/41 ST green, black grid	0,45	47	100	**514-3395**
ME25/41 ST green, black grid	0,45	50	100	**514-3397**
ME25/41 STL green, black grid	0,45	47	400	**514-1151**
ME25/41 STL green, black grid	0,45	50	400	**514-1152**

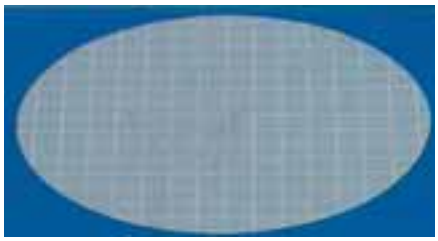
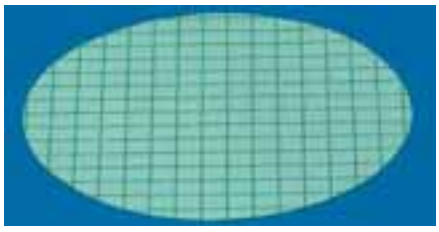
Membrane filters, ME Select
Whatman (GE Healthcare)

Mixed cellulose ester, hydrophilic

- Specifically for aqueous solutions
- For use up to 125 °C
- Sterile, individually packed
- All membrane filters have a high contrast grid (3,1 mm)
- Type STL in dispenser boxes with 100 numbered membrane filters for easy removal and safe handling with the Membrane-Butler

Type	Pore size (µm)	Ø (mm)	Pk	Cat. No.
ME25/Select 21 ST white, black grid	0,45	47	100	**514-0598**
ME25/Select 21 STL white, black grid	0,45	47	400	**514-0619**
ME25/Select 21 ST white, black grid	0,45	50	100	**514-0599**
ME25/Select 21 STL white, black grid	0,45	50	400	**514-0618**

Membrane filters with grid
Sartorius

Cellulose nitrate hydrophilic, gridded, autoclavable

Membrane filters for colony counting, particle testing and microscopy, with outstanding recovery rates for microorganisms.

Sterile membranes with 0,45 µm pore size are tested and released according to ISO 7704.

Pore size	Thickness	Water flow rate	Max. temperature (°C)
Sterile, individually packaged			
0,2 µm	115 - 145 µm	20 ml/min (1 bar)	130
0,45 µm		70 ml/min (1 bar)	
0,65 µm		130 ml/min (1 bar)	
Non sterile			
0,45 µm	115 - 145 µm	70 ml/min (1 bar)	130
0,65 µm		130 ml/min (1 bar)	
1,2 µm		320 ml/min (1 bar)	

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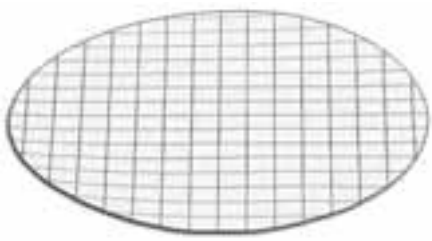
Description	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Sterile, individually packaged				
White with black grid	0,2	47	100	**512-5017**
White with black grid	0,2	47	1.000	**514-0576**
White with black grid	0,2	50	100	**512-5027**
Green with dark green grid	0,45	47	1.000	**611-0684**
Green with dark green grid	0,45	50	100	**512-5073**
Green with dark green grid	0,45	50	1.000	**512-5075**
Grey with white grid	0,45	47	100	**512-5035**
Grey with white grid	0,45	50	100	**514-7005**
White with black grid	0,45	47	100	**514-7001**
White with black grid	0,45	47	1.000	**611-0679**
White with black grid	0,45	50	100	**514-7003**
White with green grid	0,45	47	100	**514-7008**
White with green grid	0,45	47	1.000	**611-0685**
White with green grid	0,45	50	100	**514-7009**
Grey with white grid	0,65	47	100	**611-0681**
Grey with white grid	0,65	50	100	**512-5052**
White with black grid	0,65	47	100	**514-0575**
Non sterile				
Green with dark green grid	0,45	47	100	**512-5071**
Green with dark green grid	0,45	47	1.000	**512-5074**
Grey with white grid	0,45	47	100	**512-5034**
White with black grid	0,45	47	100	**512-5014**
White with green grid	0,45	47	100	**512-5081**
Grey with white grid	0,45	50	100	**512-5054**
White with black grid	0,45	50	100	**512-5024**
White with green grid	0,45	50	100	**512-5082**
Grey with white grid	0,65	50	100	**512-5051**
White with black grid	1,2	47	100	**512-5010**
White with black grid	1,2	50	100	**512-5020**

Membrane filters with grid
Sartorius



Hydrophobic cellulose nitrate and cellulose acetate, gridded, autoclavable

Membrane filters for colony count and sterility testing, with outstanding retention rates for microorganisms.

Membranes with 0,45 µm pore size are tested and released according to ISO 7704.

Type	131	135	131	135
Max. temperature (°C)	130	180	130	180
Thickness	115 - 145 µm	120 µm	115 - 145 µm	120 µm

Type	Description	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Sterile, individually packaged					
131	White with black grid, cellulose nitrate, 3 mm hydrophobic edge	0,45	47	100	**611-0683**
135	White with black grid, cellulose acetate, 3 mm hydrophobic edge	0,45	47	100	**515-0173**
135	White with black grid, cellulose acetate, 3 mm hydrophobic edge	0,45	50	1	**515-0176**
Non sterile					
131	White with black grid, cellulose nitrate, 3 mm hydrophobic edge	8	47	100	**512-5091**
131	White with black grid, cellulose nitrate, 3 mm hydrophobic edge	0,45	50	100	**512-5060**
135	White with black grid, cellulose acetate, 3 mm hydrophobic edge	0,45	47	100	**515-0175**
135	White with black grid, cellulose acetate, 6 mm hydrophobic edge	0,45	47	100	**515-0174**

Membrane dispenser for microbiological control, Membrane-Butler
Whatman (GE Healthcare)

The Membrane-Butler dispenses individual sterile MicroPlus and ME membrane filters (type 'STL'). The sterile packaging is inserted into the roller system and the system is ready to be used.

- Compact dimensions for portable use
- Stainless steel housing, ideal for use on sterile benches
- Cross-contamination risks are minimised

Description	Pk	Cat. No.
Membrane-Butler membrane dispenser, manual	1	**511-5500**

Membrane dispenser for microbiological filtration, Microsart® e.motion
Sartorius

The dispenser releases membrane filters from their packaging. Two modes of fully automatic operation: Touch-button or hands-free. An optical sensor detects approaching tweezers.

- Compact design, easy to clean
- Easy insertion of the filter band
- Low weight

Membranes Microsart® e.motion

Cellulose nitrate, sterile

The membrane filters are sterile-sealed, without protective paper on top of each filter, in a specially designed individual package in a fanfold format.

Description	Pk	Cat. No.
Automatic dispenser for Microsart® e.motion	1	**511-0009**

Description	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Membranes Microsart® e.motion				
Green with dark green grid	0,45	47	300	**514-0078**
Grey with white grid	0,45	47	300	**514-0077**
Grey with white grid	0,65	47	300	**514-0058**
White with black grid	0,45	47	300	**514-0076**
White with black grid	0,45 high flow	47	300	**514-7015**
White with green grid	0,45	47	300	**514-0079**
White with green grid	0,45 high flow	47	300	**514-0057**

PALL Life Sciences

Membrane filter dispenser, Sentino™

Filter dispensers are ideal for high throughput microbiology testing laboratories looking for more ergonomic, faster ways to handle individual membranes. The Sentino™ filter dispenser is designed to aseptically dispense one disc of membrane at the touch of a button. The Sentino™ filter dispenser can be used for:

- Drinking and wastewater analysis
- Environmental and recreational water monitoring
- Personal care product manufacturing
- Beverage monitoring
- Pharmaceutical and industrial water system monitoring
- Pharmaceutical raw materials, intermediates and final product

Delivery information: Supplied with power transformer, EU-plug, UK-plug and user guide CD.

Description	Pk	Cat. No.
Membrane filter dispenser, Sentino™, EU/UK-plug	1	**516-0665**

Type	Pore size (µm)	Pk	Cat. No.
Dispenser pack refills for membrane filter dispenser, Sentino™			
Supor®	0,2	1.000	**514-0629**
GN-6 Metricel®	0,45	1.000	**514-0628**
Metricel® Black	0,45	1.000	**514-0630**
Metricel® Black	0,8	1.000	**514-0631**

PALL Life Sciences

STERILE

Filter funnels, MicroFunnel™

Ready to use disposable filter funnels with 47 mm diameter filtration membrane for microbiological analysis. Eliminates the cleaning and sterilisation required with reusable funnels. Membrane easily removed for culturing on agar or broth medium.

Membranes:

GN-6 Metricel®: Mixed cellulose esters, white

Supor®: Polyethersulfone, white

Metricel® Black: Modified polyethersulfone, black

Filtration area: 13,46 cm^2

Ø×H: 100 ml: 61×76 mm with cover; 300 ml: 88×91 mm with cover

Packaging: Sterile, individually bagged.

Capacity (ml)	Description	Membrane	Packed	Pore size (µm)	Pk	Cat. No.
100	MicroFunnel™	GN-6 Metricel®, gridded	Single	0,45	50	**516-8958**
100	MicroFunnel™ NB	GN-6 Metricel®, gridded **	Bulk	0,45	50	**515-0048**
100	MicroFunnel™ SP	Supor® 200, gridded	Single	0,2	50	**516-8960**
100	MicroFunnel™	GN-6 Metricel®, gridded	Single	0,45	200	**515-0050**
100	MicroFunnel™ YMB	Metricel® Black, gridded	Single	0,45	50	**516-8962**
100	MicroFunnel™ SNG	Supor® 200	Single	0,2	50	**516-8963**
100	MicroFunnel™ LP*	GN-6 Metricel®, gridded *	Single	0,45	50	**516-8965**
300	MicroFunnel™ 300	GN-6 Metricel®, gridded	Single	0,45	20	**516-8966**
300	MicroFunnel™ 300 YMB	Metricel® Black	Single	0,45	20	**516-8968**
300	MicroFunnel™ 300 SP	Supor®, gridded	Single	0,2	20	**516-8969**
300	MicroFunnel™ YMB	Metricel® Black, gridded	Single	0,45	20	**515-0054**
300	MicroFunnel™	Supor®, gridded	Single	0,45	20	**515-0158**

* with Petri dish lid kit; ** bulk packed

PALL Life Sciences

STERILE

Filter funnels, MicroFunnel™ Plus

Product includes sample container and filter funnel all-in-one. No need to transfer sample from cup to disposable funnel and risk introducing contamination. Vented lid snaps on to the funnel to give a liquid-tight seal and allows filtration without having to open the funnel.

Filtration area: 13,46 cm^2

Max. temperature: GN-6 Metricel® and Metricel® Black: ambient;
Supor®: 90 °C

Ø×H: 100 ml: 61×76 mm with cover; 300 ml: 87×89 mm with cover

Membranes:

GN-6 Metricel®: Mixed cellulose esters, white

Supor®: Hydrophilic polyethersulfone, white

Metricel® Black: Modified polyethersulfone, black

Packaging: Sterile, individually bagged.

Capacity (ml)	Description	Membrane	Pore size (µm)	Pk	Cat. No.
100	MicroFunnel™ Plus	GN-6 Metricel®, gridded	0,45	50	**516-8964**
100	MicroFunnel™ Plus	Metricel Black, gridded	0,45	50	**516-9890**
100	MicroFunnel™ Plus	Supor®, gridded	0,2	50	**516-9891**
100	MicroFunnel™ Plus	Supor®, gridded	0,45	50	**515-0055**
100	MicroFunnel™ Plus	Supor®, gridded (Plus AP)	0,45	50	**515-0157**
300	MicroFunnel™ Plus	Supor®, gridded	0,2	20	**515-0051**
300	MicroFunnel™ Plus	Supor®, gridded	0,45	20	**515-0052**
300	MicroFunnel™ Plus	GN-6 Metricel®, gridded	0,45	20	**516-9337**

PALL Life Sciences

Disposable filter funnels, MicroFunnel™ ST

Convenient and economical choice for sterility testing within isolators. Ideal for quality control analysis of aqueous fluids used in pharmaceutical production and for testing microbial contamination.

Filtration area: 13,46 cm^2

Max. temperature: GN-6 Metricel®: Ambient

Supor®: 90 °C

Ø×H: 100 ml: 61×76 mm with cover

300 ml: 87×89 mm with cover

Membranes:

GN-6 Metricel®: Mixed cellulose esters, white

Supor®: hydrophilic polyethersulphone, white

Capacity (ml)	Membrane	Packed	Pore size (µm)	Pk	Cat. No.
100	Supor®	Double bagged: 4 overpacks with 10 individual bagged funnels in each	0,45	40	**516-9094**
300	Supor®	Double bagged: 4 overpacks with 5 individual bagged funnels in each	0,45	20	**516-9095**
100	GN-6 Metricel®, gridded	Double bagged: 4 overpacks with 10 individual bagged funnels in each	0,45	40	**516-9096**
300	GN-6 Metricel®, gridded	Double bagged: 4 overpacks with 5 individual bagged funnels in each	0,45	20	**516-9097**

PALL Life Sciences

Microbiology pump system, Sentino™

The Sentino™ pump system is ideal for microbiological MF technique using Pall MicroFunnel™ filtration units. Designed to use peristaltic action to draw the sample through the filter and send filtrate directly to drain or waste collection. The housing is a PC ABS-blended polymer, the keypad and label PE, the pump head PEI with PTFE-filled PBT rollers. The fluid path adaptor is PP.

The peristaltic flow design pulls sample through the filter and fluid path eliminating the need for a vacuum source. It also ensures the fluid flows in one direction without the potential for back-up and contamination of analysis. Operating parameters are preset and fixed to best satisfy published requirements for MF technique in US EPA, ISO, and ASTM methods; thereby eliminating the need for extensive validations. Fixed conditions also prevent changes to filtration parameters that may adversely affect colony recoveries and integrity of results.

- Safety: The system eliminates the need for a fluid trap under vacuum, preventing implosion accidents
- The disposable design also eliminates the need to clean and autoclave manifold set-up, saving valuable time
- Easy to clean: Shape of unit and construction materials are easy to wipe down with standard laboratory disinfectants
- EasySoft-touch keypad has simple on/off function and pulse features to control filtration, no complicated programming

Delivery information: Sentino microbiology pump system contains one pump, one disposable fluid path, one power transformer (compatible with 120 or 240 V), one power cord with IEC-320 connection and a European Shuko plug, one power cord with IEC-320 connection and a UK BS1363 plug, plus one user guide CD.
Replacement disposable fluid paths (PN PALL4861 - 10/pk) have to be ordered separately.

Description	W×D×H (mm)	Weight (kg)	Pk	Cat. No.
Microbiology pump system, Sentino™, including pump, disposable fluid path, power transformer, power cord with IEC-320 connection and user guide	95×136×104	0,680	1	**516-0416**

Description	Pk	Cat. No.
Microbiology Pump System, Sentino™		
Fluid path for Sentino™ pump	10	**516-0417**

PALL Life Sciences

Microcheck® II beverage monitors

Membrane: GN Metricel® (mixed cellulose esters), Metricel® Black (modified polyethersulfone), sterile

Easy to use disposable filter funnel with versatility to meet all microbial analysis needs.

Applications include finished product testing of beverages for microbial contamination prior to release, monitoring process conditions for bioburden levels, evaluation of raw materials such as syrups, flavourings, water, and other liquid additives for microbial content.

- Squeeze to separate funnel from base
- Can convert to a Petri dish for culturing
- Ready to use directly on a filter manifold without adapters
- Gamma irradiated

External graduation marks according to standard methods for the analysis of water and wastewater.

Capacity (ml)	Membrane	Pore size (µm)	Pk	Cat. No.
100	GN-6 Metricel®, white, with grid	0,45	50	**516-0201**
100	GN-4 Metricel®, white, with grid	0,8	50	**516-0202**
100	Metricel® Black, with grid	0,45	50	**516-0203**
100	Metricel® Black, with grid	0,8	50	**516-0204**

Analytical test filter funnel, Nalgene®
Thermo Scientific

Upper: PP, collar: PS

Low-cost disposable, sterile filter funnel for microbiological analysis testing, food/beverages, raw material, sterility testing and finishing product quality.

- Adapters accommodate No. 8 stoppers for use with vacuum manifolds or filter flasks
- 250 ml sizes are useful when testing beverages that may foam
- 513-1471: Membrane turns black when wet, making it easier to detect and count growing colonies
- Upper separates easily from lower for easy membrane access

Delivery information: Supplied with six funnel adapters in each case.

Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
Cellulose nitrate, grey with black grid	100	0,45	47	50	**513-1471**

Vacuum filtration systems, Nalgene®
Thermo Scientific

Cellulose nitrate membrane, upper: PP, lower: PS, sterile

Ready to use for microbial analysis, water quality or environmental testing

- Graduation on upper and lower parts
- Easy retrieval of the membrane

Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
150	0,2	47	12	**513-1301**
150 *	0,45	47	12	**513-1302**

* with gray grid

Vacuum membrane filter holder
Whatman (GE Healthcare)

Borosilicate glass 3.3

Suitable for aqueous and organic solvent filtration.

The funnel seal ensures that the sample does not bypass the membrane and that particulates are retained on the surface of the membrane.

Capacity (ml)	Ø (mm)	Pk	Cat. No.
With sintered glass support, recommended for filtration and biological analysis			
25	25	1	**516-0613**
300	47	1	**516-0614**
1000	90	1	**516-0615**
With stainless steel support suitable for use with proteinaceous solutions			
50	25	1	**511-0137**
300	47	1	**516-0616**

PALL Life Sciences

Filter funnel manifolds

Aluminium or polyurethane, autoclavable

For microbiology and other applications. Each place has an individual port control valve. For 25 and 47 mm filter funnels.

Description	W×D×H (mm)	Pk	Cat. No.
3 places, aluminium	406×152×157	1	**516-9056**
6 places, aluminium	826×152×157	1	**516-9057**
3 places, polyurethane	279×152×102	1	**516-7581**

PALL Life Sciences

Filter funnel manifolds for MicroFunnel™ filter funnels

Aluminium, autoclavable

Only for MicroFunnel™ filtration systems.

Description	Pk	Cat. No.
1 place, for MicroFunnel™ and Microcheck®	1	**516-0079**
3 places, for MicroFunnel™ and Microcheck®	1	**516-6940**
6 places, for MicroFunnel™ and Microcheck®	1	**516-6941**

PALL Life Sciences

Membrane filter funnels, magnetic

Polyphenylsulfone, autoclavable

For membrane filtration techniques for water testing

- Leakproof magnetic seal allows one handed operation
- Compatible with anti-foaming agents and many other solvents

Effective filtration area: 150 and 300 ml: 9,6 cm^2; 500 ml: 13,1 cm^2

Overall Ø×H: 150 ml: 76×178 mm; 300 ml: 76×229 mm; 500 ml: 89×196 mm

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
500	47	1	**516-7590**
300*	47	1	**516-7593**
300	47	1	**516-7594**
150	47	1	**516-7597**

* with lid

PALL Life Sciences

Membrane filter funnels, magnetic, Sentino™

Polyphenylsulfone, autoclavable

Designed for use with the Sentino™ microbiology pump.

- Accepts 47 mm membrane filters
- Leakproof magnetic seal allows one-handed operation
- Graduated at 50 ml increments for accurate sample measurement

Effective filtration area: 150 and 300 ml: 9,6 cm^2; 500 ml: 13,1 cm^2

Overall Ø×H: 150 ml: 76×118 mm; 300 ml: 76×168 mm; 500 ml: 89×166 mm

Capacity (ml)	Description	For filter Ø (mm)	Pk	Cat. No.
150	Sentino™ funnel	47	1	**516-0437**
300	Sentino™ funnel	47	1	**516-0438**
500	Sentino™ funnel	47	1	**516-0439**

Description	Pk	Cat. No.
Accessories		
Base with support screen for use with Sentino™ pump	1	**515-1000**
Adapter for use with Sentino™ pump	1	**516-0440**

STERILE

BioSart® 100 monitors
Sartorius

PC housing, cellulose nitrate gridded membrane

Sterile disposable devices with integrated membrane filter and pad. Designed for microbiological testing of pharmaceuticals, cosmetics, water and other liquids and colony counting.

- Ready to connect to the stainless steel manifolds

Capacity: 100 ml

Description	Pore size (µm)	Ø (mm)	Pk	Cat. No.
White membrane, black grid	0,2*	47	48	**611-1159**
White membrane, black grid	0,45	47	48	**516-7022**
White membrane, black grid	0,45*	47	48	**611-1158**
Grey membrane, white grid	0,45*	47	48	**611-1161**
Green membrane, dark green grid	0,45	47	48	**516-7023**
Green membrane, dark green grid	0,45*	47	48	**611-1160**

* Individually packed

STERILE

Funnels, BioSart® 250
Sartorius

Sterile disposable plastic funnels for colony and particle counting. To use with Sartorius membranes and culture media discs.

Capacity (ml)	Packed	Pk	Cat. No.
250	individually packed	50	**512-3558**
250	pack of 50	50	**516-7024**

Filter funnel heads
DURAN Group

511-5120

511-5127

Filter head in DURAN® glass, PP funnel and two fluorinated rubber sealing rings

- Easily interchangeable discs
- Safe and simple removal of filtered material
- Discs easily cleaned on both sides

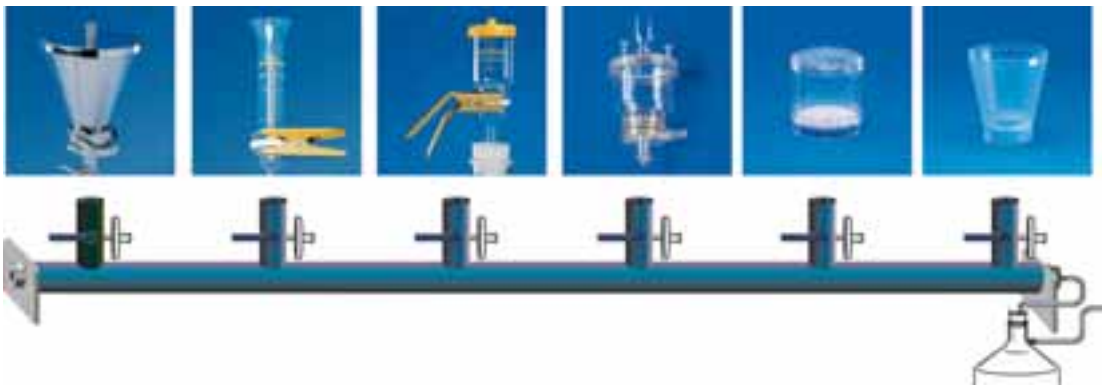
Slit sieve 511-5126 (48 mm Ø) suitable as paper filter or membrane support on the 250 ml model.

Threaded filter head with funnel and two sealing rings, without filter disc.

For	Capacity (ml)	Pk	Cat. No.
Plate Ø 24 mm	30	1	**511-5110**
Plate Ø 50 mm	250	1	**511-5120**
Plate Ø 90 mm	1000	1	**511-5130**

Capacity (ml)	Thread O-Ø (mm)	For	Porosity	Pk	Cat. No.
Filter discs with glass rim					
-		Disc 24 mm Ø	1	1	**511-5111**
-		Disc 24 mm Ø	2	1	**511-5112**
-		Disc 24 mm Ø	3	1	**511-5113**
-		Disc 24 mm Ø	4	1	**511-5114**
-		Disc 50 mm Ø	1	1	**511-5121**
-		Disc 50 mm Ø	2	1	**511-5122**
-		Disc 50 mm Ø	3	1	**511-5123**
-		Disc 50 mm Ø	4	1	**511-5124**
-		Disc 90 mm Ø	1	1	**511-5131**
-		Disc 90 mm Ø	2	1	**511-5132**
-		Disc 90 mm Ø	3	1	**511-5133**
-		Disc 90 mm Ø	4	1	**511-5134**
Filter heads threaded					
30	28	Plate Ø 24 mm		1	**511-5117**
250	54	Plate Ø 50 mm		1	**511-5127**
1000	95	Plate Ø 90 mm		1	**511-5137**
Seals, FKM fluorinated rubber					
-		Plate Ø 24 mm		1	**511-5118**
-		Plate Ø 50 mm		1	**511-5128**
-		Plate Ø 90 mm		1	**511-5138**
Slit sieve membrane support					
-		plate 48 mm Ø		1	**511-5126**

Vacuum filtration manifold
Sartorius



Combisart® manifolds

The Combisart® system enables you to select the optimal hardware and consumables for your needs in quality assurance. It features a modular design and field proven standard accessories to make your choice easier.

At the heart of the system is a stainless steel manifold designed to accommodate all types of filter holders and funnels such as:

- ready to use units, BioSart® 100 monitors and BioSart® 250 funnels

- stainless steel funnels that can be flame sterilised and used for colony counting

- autoclavable polycarbonate and glass filter holders

Vacuum filtration manifold

Stainless steel, autoclavable

Continued on next page

Continued from previous page

For colony and particle counting.

Filtration area: 12,5 cm^2

For filter diameter: 47 or 50 mm

Manifold with funnels, lids, taps and connectors.

Description	Type	Capacity (ml)	Pk	Cat. No.
Combisart® manifolds				
Single base for funnels	Screw support of stainless steel for manifold	-	1	**516-7030**
Basic 3-branch manifold for funnels	Base unit 3-place manifold	-	1	**516-7031**
Basic 6-branch manifold for funnels	Base unit 6-place manifold	-	1	**516-7032**
Vacuum filtration manifold				
3-branch manifold with 3 funnels 100 ml	Manifold (3 place)	3×100	1	**516-7025**
3-branch manifold with 3 funnels 500 ml	Manifold (3 place)	3×500	1	**516-7026**
6-branch manifold with 3 funnels 500 ml	Manifold (6-place), funnels	6×500	1	**516-7027**
6-branch manifold with 3 funnels 100 ml	Manifold (6-place), funnels	6×100	1	**516-7028**

Funnel
Sartorius

Stainless steel, autoclavable

To use with filter holders for colony counting.

Ordering information: Supplied with funnel and clamp (lid and seal must be ordered seperately).

Capacity (ml)	Description	Pk	Cat. No.
500	funnel with clamp	1	**516-7033**
100	funnel with clamp	1	**516-7034**

Description	Pk	Cat. No.
Lids for funnels		
Lid for 100 ml funnel	1	**512-3426**
Silicone seal for 100 ml lid	1	**512-3427**
Lid for 500 ml funnel	1	**512-3423**
Silicone seal for 500 ml lid	1	**512-3425**

Vacuum filtration units
Sartorius

Borosilicate glass, anodised aluminium clamp, silicone lid, autoclavable

Compact holder for easy particle testing and colony counting, clarification and sterile filtration.

516-7016: With glass frit filter support

512-3321: With PTFE-coated stainless steel screen filter support

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
250	50/47	1	**516-7016**
250	50/47	1	**512-3321**

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Vacuum filtration units
Sartorius

Borosilicate glass, aluminium clamp, autoclavable

Vacuum filtration unit for clarification, particle testing and hybridisation tests.

516-7015: With glass frit filter support

511-0132: With PTFE-coated stainless steel screen filter support

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
30	25	1	**516-7015**
30	25	1	**511-0132**

Vacuum filtration units
Sartorius

PC, autoclavable

For the clarification or sterile filtration of up to about 200 ml of aqueous solutions.

512-3310 is complete with receiver flask of ±250 ml for sub-pressure as well as with slight over-pressure.

512-3311 without receiver, can be used in combination with Combisart manifolds.

For sterile filtrations- the filter holder includes a glass fibre filter that enables sterile venting, thus avoiding contamination of the sterile filtrate.

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
250	47	1	**512-3310**
250	47	1	**512-3311**

PALL Life Sciences

Filter funnel

Stainless steel, autoclavable

For vacuum filtration, ultimate chemical resistance and easy assembly.

Filtration area: 9,6 cm^2

Overall Ø×L: 66×163 mm

Note: not recommended for use with volatile liquids or high purity fuels as explosion may result from the static discharge.

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
50 - 100	47 - 50	1	**516-8929**

Pressure filter units, Sartobran®-P
Sartorius

PP housing, double layer cellulose acetate membrane, autoclavable

For filtration of protein containing solutions. Compatible with aqueous solutions of pH 4 - 8 and most alcohols and hydrocarbons.

- Integrity tested

Inlet/outlet: hose nipple

Max. pressure: 4 bar at 20 °C

Also available with sanitary flange on request.

Pore size (µm)	Filtration area (cm^2)	Pk	Cat. No.
0,45/0,2	500	4	**515-0164**
0,45/0,2	1000	4	**515-0165**
0,45/0,2	2000	4	**515-0166**

Vacuum filtration unit, GV 050
Whatman (GE Healthcare)

Borosilicate glass with silicone cover

For analyses of residues, contamination tests and particulate analyses.

- With clamp
- Reproducible results and increased longevity

Capacity	250 ml
Filters	Ø 47/50 mm
Filtration area (cm^2)	12,5
Max. temperature (°C)	200
Pre-filter	Ø 40 mm

Type	Description	Pk	Cat. No.
GV 050/0	Glass frit filter, aluminium clamp, connection for rubber stopper	1	**514-0114**
GV 050/1	Sieve filter, aluminium clamp, connection for rubber stopper	1	**514-0115**
GV 050/2	Glass frit filter, aluminium clamp, hose coupling connection, Erlenmeyer flask 1000 ml (NS45)	1	**514-0116**
GV 050/3	Sieve filter, aluminium clamp, hose coupling connection, Erlenmeyer flask 1000 ml (NS45)	1	**514-0117**

Filtration apparatus
DURAN Group

DURAN® borosilicate glass unit, PTFE insert and anodised aluminium clamp, autoclavable

Typical applications: Coarse and ultrafine filtration, filtration of HPLC media, residue analysis. Filter paper, membrane filters (47 mm) or glass filters can be used for filtration.

- Scaled funnel
- All components are available as spare parts

Description	Pk	Cat. No.
Complete with 1000 ml filtration bottle, PTFE insert and clamp	1	**516-0431**

Vacuum filtration unit
Sartorius

Borosilicate glass, with PTFE ring, autoclavable

For particle removal from solvents for analytical determinations and purification of solutions. In combination with solvent resistant, hydrophilic RC-membranes with diameters of 50 or 47 mm, ideal for ultra cleaning and degassing solvents and solvent mixtures for HPLC, GC and AA.

Funnel capacity of 250 ml, with filtrate flask of 1000 ml.

Capacity (ml)	For filter Ø (mm)	Pk	Cat. No.
250	47/50	1	**516-7017**

PALL Life Sciences

Vacuum membrane filter holder

Borosilicate glass, aluminium clamp

Ideal for vacuum filtration of liquids and degassing of HPLC solvents and mobile phase.

With graduation

Filtration area: 9,6 cm²

Delivery information: Filtration funnel with No. 8 stopper support base (514-4000); filtration unit with side arm support assembly NS 40/35, with flask (516-8921)

Capacity (ml)	Description	For filter Ø (mm)	Pk	Cat. No.
300*	Glass filter funnel with No. 8 silicone stopper and support base	47	1	**514-4000**
300	Glass filter funnel with side arm support assembly and flask 1000 ml	47	1	**516-8921**

* with stopper support base, without flask

PALL Life Sciences

Air monitoring cassettes

Membrane: 0,8 µm GN-4 Metricel® (mixed cellulose esters) with cellulose support pad

- Leakproof and tamper-proof

Filter size: 25 mm	Filter size: 37 mm
Housing: carbon filled PP	Housing: SAN (styrene acrylonitrile)
Used to monitor respirable constituents such as silica, metal and dusts.	Used to monitor respirable constituents such as nuisance dust, silica, aerosols and airborne particulates.
Effective filtration area: 3,85 cm²	Effective filtration area: 9,1 cm²
Overall Ø×L: 28×79 mm	Overall Ø×L: 2-piece: 42×28 mm; 3-piece: 42×38 mm
Inlet/outlet: Luer female/Luer female, built-in hose adapter	Inlet/outlet: Luer female
Max. temperature: 60 °C	Max. temperature: 60 °C

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Description	Pk	Cat. No.
Filter size: 25 mm		
3-piece, assembled	50	**300-0012**
3-piece, assembled and banded	50	**300-0013**
3-piece, unassembled	50	**516-7620**
Support pad 25 mm	100	**516-7880**
Filter size: 37 mm		
2-piece, unassembled	100	**515-0007**
3-piece, assembled	50	**515-0006**
3-piece, unassembled	100	**515-0008**
Support pad 37 mm	500	**300-0014**

PALL Life Sciences

Sampling capsules, Envirochek® and Envirochek® HV

Filter media:

Envirochek®: hydrophilic PES, Envirochek® HV: hydrophilic polyester; housing: PC

For the concentration and recovery of Cryptosporidium oocysts and Giardia cysts from source or finished water.

HV (high volume) capsule is designed for sampling up to 1000 litres of treated water and is validated for up to 50 litres of source water.

Inlet/outlet	12,7 mm Ø straight hose barb
Ø×L (mm)	61×216

Type	Filtration area (cm^2)	Pk	Cat. No.
Envirochek®	1300	1	**514-4090**
Envirochek®	1300	25	**514-4089**
Envirochek® HV	1300	1	**514-4088**
Envirochek® HV	1300	25	**514-4087**

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SELECTED FOR YOU

Syringe filters

Membranes with pore size of 0,2 µm are used for filtration of fine particles, those of 0,45 µm are appropriate for clarifications.

According to USP Class VI

Cellulose acetate membrane	Surface not treated by wetting agents. Especially useful for cell culture applications.
	Certified non pyrogenic and non cytotoxic.
	Delivered with certificate.
	-
PES membrane	Very low level of extractables and high flow rate. For cell culture applications.
	Certified non pyrogenic and non cytotoxic.
	Delivered with certificate.
	-
PP membrane	These polyvalent filters are designed for the preparation of mixed samples.
	They fulfill a broad range of chemical compatibility for aqueous/organic mixtures.
	Suitable for HPLC: Low levels of UV-detectable extractables.
	-
PTFE membrane	These PTFE membranes are designed for filtration of corrosive gases and organic solvents.
	Excellent chemical resistance.
	Suitable HPLC: Low levels of detectable UV extractables.
	Ultimate compatibility for filtering harsh chemicals.
Nylon membrane	These versatile filters are suitable for the preparation of aqueous and solvent-based samples.
	Chemical compatibility with esters, bases, and alcohols.
	Suitable for HPLC: Low levels of UV-detectable extractables.
	Offers a broad chemical resistance to common solvents. Not recommended for acids >1N or halogenated solvents.

Pore size (µm)	Ø (mm)	Pk	Cat. No.
Cellulose acetate membrane			
0,2* **	25	50	**514-0061**
0,2 **	25	100	**514-0060**
0,45	25	100	**514-0062**
0,45 *	25	50	**514-0063**
PES membrane			
0,2	25	100	**514-0072**
0,2*	25	50	**514-0073**
0,45	25	100	**514-0074**
0,45 *	25	50	**514-0075**
PP membrane			
0,2	25	100	**514-0064**
0,45	25	100	**514-0065**
PTFE membrane			
0,2	13	100	**514-0068**
0,2	25	100	**514-0070**
0,45	13	100	**514-0069**
0,45	25	100	**514-0071**
Nylon membrane			
0,2	25	100	**514-0066**
0,45	25	100	**514-0067**

* Sterile, individually wrapped
** Retains 10^7 *brevundimonas diminuta* per cm^2 according to modified ASTM F838

PALL Life Sciences

Prefilters for sample preparation, Acrodisc®

- With their 3,9 cm² filtration area (larger than that of conventional 25 mm syringe filters), Acrodisc® PSFs offer significantly enhanced filtration performance
- Acrodisc® PSFs are automation certified. They are designed specifically for reliable use in automated analytical systems and dissolution systems
- The pore width and membrane type of all Acrodisc® syringe filters is imprinted as a colour code
- Significantly increased throughput in Acrodisc® version with GxF glass fibre prefilter. The multi layered GxF glass fibre prefilter enables throughputs twice to four times higher than those of conventional glass fibre prefilters
- The 13 mm Acrodisc® with minispike outlet has a low dead volume and facilitates filtration in autosampler vials

Selection of filter medium

GHP membrane, hydrophilic - universal membrane for aqueous, acidic, alkaline, organic and aggressive organic solutions. It offers low protein binding, low UV absorbing, extractable content and has fast flow rates.

PVDF membrane - compatible with a wide range of organic and inorganic solvents, making it suitable for a wide range of applications. Not recommended for acetone, DMF, DMSO and alkaline substances > 6N.

Nylon membrane - this versatile filter for aqueous and solvent-containing samples is highly compatible with esters, alkaline substances and alcohols. Not recommended for acids > 1 N and halogenated solvents.

PTFE membrane, hydrophobic - due to its excellent chemical and thermal resistance, this membrane is particularly suitable for aggressive chemical substances that would destroy other membrane materials.

Supor® (PES) membrane for ion chromatography (IC). Optimises reproducible results in highly sensitive ion analyses. Certified for low, extractable content that is detectable via conductivity.

Glass fibre filter - maximum throughput of extremely viscous or heavily particle-laden samples.

	Protein-containing	Aqueous	Organic, non aggressive	Organic, aggressive
GHP	++	++	++	++
PVDF	++	++	+	--
Nylon	+	++	+	--
PTFE	--	--	++	++
PES	+	++	+	--
Glass fibre	++	++	+	--

+ suitable
++ very suitable
-- not suitable

Selection of filter size

Volume to be filtered	Filter type	Typical dead volume
<500 µl	Nanosep® MF	<2 µl
<2 ml	Acrodisc® 4 mm	<10 µl
<10 ml	Acrodisc® 13 mm (Minispike)	<14 µl
<10 ml	Acrodisc® 13 mm	<30 µl
<125 ml	Acrodisc® 25 mm PSF	<200 µl

PALL Life Sciences

Syringe filters, Acrodisc® GHP

Hydrophilic PP membrane with PP housing

The universal membrane filter for all analytical filtration requirements. For aqueous and aggressive organic solvent-based solutions. Low protein binding, HPLC certified for low levels of extractables.

Ø (mm)	Pore size	Inlet/outlet	Max. temperature (°C)	Max. pressure (bar)	Water flow rate
13	0,2 µm	Female Luer lock/minispike	55	6,3	17 ml/min (0,7 bar)
	0,45 µm				28 ml/min (0,7 bar)
25	0,2 µm	Female Luer lock/male slip Luer		4,1 at 21 – 24 °C; 2,1 at 55 °C	215 ml/min (2,1 bar)
	0,45 µm				300 ml/min (2,1 bar)
	GF/0,45 µm				
	PSF/0,2 µm				215 ml/min (2,1 bar)
	PSF/0,45 µm				300 ml/min (2,1 bar)
	PSF/GxF/0,2 µm				175 ml/min (2,1 bar)
	PSF/GxF/0,45 µm				195 ml/min (2,1 bar)

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Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
0,2	1	13	100	**514-4121**
0,2	1	13	1.000	**516-6916**
0,45	1	13	100	**514-4034**
0,45	1	13	1.000	**516-6913**
0,2	3,9	25	50	**514-4037**
0,2	3,9	25	1.000	**516-6915**
0,45	3,9	25	50	**514-4036**
0,45	3,9	25	1.000	**516-6912**
GF/0,45	3,9	25	50	**514-4035**
GF/0,45	3,9	25	1.000	**516-6909**
PSF/0,2	3,9	25	50	**514-4082**
PSF/0,2 **	3,9	25	200	**514-4065**
PSF/0,2	3,9	25	1.000	**514-4083**
PSF/0,45	3,9	25	50	**514-4080**
PSF/0,45 **	3,9	25	200	**514-4064**
PSF/0,45	3,9	25	1.000	**514-4081**
PSF/GxF/0,2 *	3,9	25	50	**514-4063**
PSF/GxF/0,2 * **	3,9	25	200	**514-4061**
PSF/GxF/0,2 *	3,9	25	1.000	**514-4062**
PSF/GxF/0,45 *	3,9	25	50	**514-4079**
PSF/GxF/0,45 * **	3,9	25	200	**514-4077**
PSF/GxF/0,45 *	3,9	25	1.000	**514-4078**

* with glass fibre prefilter
** in AutoPack™ tubes
Acrodisc® PSF syringe filters are Zymark and SOTAX Automation Certified to assure smooth operation and worry-free performance 24 hours a day in automated workstations.

PALL Life Sciences

Syringe filters, Acrodisc®, PVDF

PVDF (hydrophilic polyvinylidene fluoride); membrane, PP housing

Useful for a wide range of applications, including aggressive and non aggressive solvent-based mobile phase.

The GxF version provides two to four times the throughput of standard prefilter devices.

Ø (mm)	Pore size	Inlet/outlet	Max. temperature (°C)	Max. pressure (bar)	Water flow rate
13	0,2 µm	Female Luer lock/male slip Luer	55	3,5	5 ml/min (3,1 bar)
	0,45 µm				15 ml/min (3,1 bar)
25	0,2 µm		82	4,1 at 21 – 24 °C; 2,1 at 82 °C	144 ml/min (2,1 bar)
	0,45 µm				
	PSF/0,2 µm				
	PSF/0,45 µm				
	PSF/GxF/0,2 µm				
	PSF/GxF/0,45 µm				

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
0,2	1	13	100	**514-4016**
0,2 ***	1	13	100	**514-4014**
0,2 ***	1	13	1.000	**516-7673**
0,45	1	13	100	**514-4017**
0,45 ***	1	13	100	**514-4015**
0,45 ***	1	13	1.000	**516-7674**
0,2	3,9	25	50	**514-4006**
0,2	3,9	25	1.000	**516-7662**
0,45	3,9	25	50	**514-4007**
0,45 **	3,9	25	200	**516-7661**
0,45	3,9	25	1.000	**516-7650**
PSF/0,2	3,9	25	50	**514-0181**
PSF/0,2	3,9	25	1.000	**514-0370**
PSF/0,45	3,9	25	50	**514-0585**
PSF/0,45 **	3,9	25	200	**514-0584**
PSF/0,45	3,9	25	1.000	**514-0583**
PSF/GxF/0,2 * **	3,9	25	200	**516-0433**
PSF/GxF/0,2 *	3,9	25	50	**514-0182**
PSF/GxF/0,2 *	3,9	25	1.000	**514-0369**

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Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
PSF/GxF/0,45 * **	3,9	25	200	**514-0587**
PSF/GxF/0,45 *	3,9	25	50	**514-0588**
PSF/GxF/0,45 *	3,9	25	1.000	**514-0586**

* with glass fibre prefilter
** in AutoPack™ tubes
*** minispike outlet
Acrodisc® PSF syringe filters are Zymark and SOTAX Automation Certified to assure smooth operation and worry-free performance 24 hours a day in automated workstations.

PALL Life Sciences

Syringe filters, Acrodisc®, Nylon

Nylon membrane with PP housing

Versatile filter for both aqueous and solvent-based sample filtration. Excellent chemical compatibility with esters, bases and alcohols.

The GxF version provides two to four times the throughput of standard prefilter devices.

Ø (mm)	Pore size	Inlet/outlet	Max. temperature (°C)	Max. pressure (bar)	Water flow rate
13	0,2 µm	Female Luer lock/male slip Luer	55	6,9	10 ml/min (2,1 bar)
	0,45 µm				15 ml/min (2,1 bar)
	0,2 µm				10 ml/min (2,1 bar)
	0,45 µm				15 ml/min (2,1 bar)
25	0,2 µm			-	
	0,45 µm				
	GF/0,45 µm				
	PSF/0,2 µm			4,1 at 21 – 24 °C; 2,1 at 55 °C	115 ml/min (2,1 bar)
	PSF/0,45 µm				245 ml/min (2,1 bar)
	PSF/GxF/0,2 µm				-
	PSF/GxF/0,45 µm				215 ml/min (2,1 bar)

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
0,2 ***	1	13	100	**514-4030**
0,2 ***	1	13	1.000	**516-0432**
0,45 ***	1	13	100	**514-4031**
0,45 ***	1	13	1.000	**516-7675**
0,2	1	13	100	**516-7635**
0,2	1	13	1.000	**516-7669**
0,45	1	13	100	**514-4010**
0,45	1	13	1.000	**516-7670**
0,2	3,9	25	50	**514-4012**
0,2	3,9	25	1.000	**516-7664**
0,45 **	3,9	25	200	**516-7659**
0,45	3,9	25	50	**514-4013**
0,45	3,9	25	1.000	**516-7652**
GF/0,45 **	3,9	25	200	**514-4120**
GF/0,45	3,9	25	50	**514-4029**
GF/0,45	3,9	25	1.000	**516-7667**
PSF/0,2 **	3,9	25	200	**514-4067**
PSF/0,2	3,9	25	50	**514-4066**
PSF/0,2	3,9	25	1.000	**514-4071**
PSF/0,45 **	3,9	25	200	**514-4070**
PSF/0,45	3,9	25	50	**514-4068**
PSF/0,45	3,9	25	1.000	**514-4069**
PSF/GxF/0,2 * **	3,9	25	200	**515-0178**
PSF/GxF/0,2 *	3,9	25	50	**514-0183**
PSF/GxF/0,2 *	3,9	25	1.000	**514-0368**
PSF/GxF/0,45 * **	3,9	25	200	**514-4075**
PSF/GxF/0,45 *	3,9	25	50	**514-4076**
PSF/GxF/0,45 *	3,9	25	1.000	**514-4073**

* with glass fibre prefilter
** in AutoPack™ tubes
*** minispike outlet
Acrodisc® PSF syringe filters are Zymark and SOTAX Automation Certified to assure smooth operation and worry-free performance 24 hours a day in automated workstations.

PALL Life Sciences

Syringe filters, Acrodisc®, PTFE

Hydrophobic PTFE membrane with PP, autoclavable housing

Exceptional chemical and temperature compatibility. Ideal for filtration of gas and organic solvents. Prevent spurious peaks on chromatograms allowing accurate experimental results. HPLC certified for low level of UV-absorbing extractables.

The GxF version provides two to four times the throughput of standard prefilter devices.

Ø (mm)	Pore size	Inlet/outlet	Max. temperature (°C)	Max. pressure (bar)	Water flow rate
4	0,45 µm	Female Luer lock/male slip Luer	100	5,2	-
13	0,2 µm			6,9	
	0,45 µm				
	0,2 µm				
	0,45 µm				
25	0,2 µm			-	
	0,45 µm				
	1,0 µm				
	PSF/0,2 µm			4,1 at 21 – 24 °C; 2,1 at 100 °C	245 ml/min (1,0 bar)
	PSF/0,45 µm				510 ml/min (1,0 bar)
	PSF/GxF/0,2 µm			-	395 ml/min (1,0 bar)
	PSF/GxF/0,45 µm				

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
0,45	0,2	4	250	**514-4019**
0,2 ***	1	13	100	**514-4032**
0,45 ***	1	13	100	**514-4033**
0,45 ***	1	13	1.000	**514-0086**
0,2	1	13	100	**514-4009**
0,2	1	13	1.000	**516-7671**
0,45	1	13	100	**514-4008**
0,45	1	13	1.000	**516-7672**
0,2	3,9	25	50	**514-4004**
0,2	3,9	25	1.000	**516-7663**
0,45 **	3,9	25	200	**516-7660**
0,45	3,9	25	50	**514-4003**
0,45	3,9	25	1.000	**516-7651**
1,0	3,9	25	50	**514-4005**
1,0	3,9	25	1.000	**516-7653**
PSF/0,2 **	3,9	25	200	**514-0477**
PSF/0,2	3,9	25	50	**514-0472**
PSF/0,2	3,9	25	1.000	**514-0478**
PSF/0,45 **	3,9	25	200	**514-0476**
PSF/0,45	3,9	25	50	**514-4229**
PSF/0,45	3,9	25	1.000	**514-4232**
PSF/GxF/0,2 * **	3,9	25	200	**514-0185**
PSF/GxF/0,2 *	3,9	25	50	**514-0184**
PSF/GxF/0,2 *	3,9	25	1.000	**514-0186**
PSF/GxF/0,45 * **	3,9	25	200	**514-0473**
PSF/GxF/0,45 *	3,9	25	50	**514-4231**
PSF/GxF/0,45 *	3,9	25	1.000	**514-4230**

* with glass fibre prefilter
** in AutoPack™ tubes
*** minispike outlet
Acrodisc® PSF syringe filters are Zymark and SOTAX Automation Certified to assure smooth operation and worry-free performance 24 hours a day in automated workstations.

PALL Life Sciences

Syringe filters, Acrodisc®, glass fibre

Borosilicate glass fibre membrane, PP housing

Maximise throughput for hard to filter samples. Reduce clogging, use alone or in series with final membrane filter to increase flow rate and throughput.

Ø (mm)	25		37
Pore size	1,0 µm	PSF/GxF/40 - 1 µm	1,0 µm
Inlet/outlet	Female Luer lock/male slip Luer		
Max. temperature (°C)	82		135
Max. pressure (bar)	4,1 at 21 – 24 °C; 2,1 at 82 °C		-
Water flow rate	795 ml/min (1 bar)		

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
1,0	3,9	25	50	**514-4027**
1,0	3,9	25	1.000	**516-7668**
1,0 *	3,9	25	200	**516-8955**
PSF/GxF/40 - 1	3,9	25	50	**514-4072**
PSF/GxF/40 - 1	3,9	25	1.000	**514-4074**
PSF/GxF/40 - 1 *	3,9	25	200	**514-0479**
1,0	7,5	37	60	**514-4028**

* in AutoPack™ tubes
Acrodisc® PSF syringe filters are Zymark and SOTAX Automation Certified to assure smooth operation and worry-free performance 24 hours a day in automated workstations.

PALL Life Sciences

Syringe filters, Acrodisc® Versapor®

Hydrophilic acrylic copolymer membrane; PP housing: 4, 13, Acrodisc® PSF 25 mm; acrylic housing: 25 mm

Useful for prefiltration of particulate laden aqueous samples, serum filtration and dissolution testing.

Ø (mm)	Pore size	Inlet/outlet	Filtration area (cm²)	Max. temperature (°C)	Water flow rate
4	0,45 µm	female Luer lock/male slip Luer	0.28	55	3 ml/min (3,1 bar)
13	0,8 µm		1,0		180 ml/min (3,1 bar)
25	0,45 µm		2,8		225 ml/min (3,1 bar)
	0,8 µm				600 ml/min (3,1 bar)
	1,2 µm				660 ml/min (3,1 bar)
	5,0 µm				970 ml/min (3,1 bar)
	PSF/0,8 µm		3,9		905 ml/min (3,1 bar)
	PSF/10 µm			82	1182 ml/min (1,0 bar)

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Pk	Cat. No.
0,45	0,28	4	-	250	**514-4020**
0,8	1	13	-	100	**514-4018**
0,45	2,8	25	-	75	**514-4024**
0,8	2,8	25	+	50	**514-4103**
0,8	2,8	25	-	75	**514-4002**
0,8	2,8	25	-	1.000	**514-4038**
1,2	2,8	25	+	50	**514-4104**
1,2	2,8	25	-	75	**514-4025**
5,0	2,8	25	+	50	**514-4106**
5,0	2,8	25	-	75	**514-4026**
PSF/0,8	3,9	25	-	50	**514-0470**
PSF/0,8	3,9	25	-	1.000	**514-0482**
PSF/10 ***	3,9	25	-	200	**516-1000**
PSF/10	3,9	25	-	50	**516-1001**
PSF/10	3,9	25	-	1.000	**516-1002**

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*** in AutoPack™ tubes

PALL Life Sciences

Syringe filters, Acrodisc® ion chromatography (IC)

Supor® (hydrophilic polyethersulfone); membrane PP housing

Optimised to provide the most consistent results when analysing ionic species. Certified for low level extractables detected by conductivity.

Ø (mm)	Pore size	Inlet/outlet	Max. temperature (°C)	Max. pressure (bar)	Water flow rate
13	0,2 µm	female Luer lock/male slip Luer	55	6,9	15 ml/min (1 bar)
	0,45 µm				20 ml/min (1 bar)
25	0,2 µm		-		
	0,45 µm				
	PSF/0,2 µm		100	4,1 at 21 – 24 °C; 2,1 at 100 °C	-
	PSF/0,45 µm				420 ml/min (2,1 bar)

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
0,2	1	13	100	**514-4021**
0,2	1	13	1.000	**516-7704**
0,45	1	13	100	**514-4023**
0,45	1	13	1.000	**516-7705**
0,2	3,9	25	50	**514-4039**
0,2	3,9	25	1.000	**516-7712**
0,45	3,9	25	50	**514-4040**
0,45	3,9	25	1.000	**516-7714**
PSF/0,2 *	3,9	25	200	**514-0187**
PSF/0,45 *	3,9	25	200	**514-0483**
PSF/0,45	3,9	25	50	**514-4233**
PSF/0,45	3,9	25	1.000	**514-4234**

* in AutoPack™ tubes
Acrodisc® PSF syringe filters are Zymark and SOTAX Automation Certified to assure smooth operation and worry-free performance 24 hours a day in automated workstations.

PALL Life Sciences

Syringe filters, Acrodisc® MS

Water-wettable PTFE membrane with HDPE housing

- Certified syringe filters with extremely low levels of extractables for LC-MS
- Low ion suppression/enhancement
- Excellent chemical resistance, can be used with both organic and aqueous solvents
- Low protein binding

Packaging: Special low extractable tubes with 10 filters each. Each tube is sealed with a cap to protect the filters until they are ready for use.

Ø (mm)	13	25
Inlet/outlet	Female threaded Luer/minispike	Female threaded Luer/male slip Luer
Max. temperature (°C)	55	
Max. pressure (bar)	5,1	
Water flow rate	49 ml/min (2 bar)	140 ml/min (2 bar)

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
0,2	1,0	13	60	**514-0627**
0,2	3,9	25	50	**514-0287**

Syringe filters, GD/X™
Whatman (GE Healthcare)

PP housing, autoclavable

Contain a unique prefiltration stack of GMF 150 and GF/F glass microfibre media, which allows filtration of the most difficult samples with less hand pressure. Compared to an unprotected membrane, these filters can process three to seven times more sample volume. Ideal for hard to filter, heavily particulate laden samples and for dissolution testing.

Inlet/outlet	Max. pressure (bar)	Dimensions	Weight	Ø (mm)
Luer lock female/Luer male	6,9	21,6×29,8 mm	3 g	13
	5,2	20,8×29,8 mm		25

Membrane	Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Pk	Cat. No.
Cellulose acetate	0,2	1,3	13	-	150	**514-8060**
Cellulose acetate	0,45	1,3	13	-	150	**514-8061**
Nylon	0,2	1,3	13	-	150	**514-8039**
Nylon	0,45	1,3	13	-	150	**514-8040**
PES	0,2	1,3	13	-	150	**514-8052**
PES	0,45	1,3	13	-	150	**514-8053**
PVDF	0,2	1,3	13	-	150	**514-8043**
PVDF	0,45	1,3	13	-	150	**514-8044**
PP	0,2	1,3	13	-	150	**514-8056**
PP	0,45	1,3	13	-	150	**514-8057**
PTFE	0,2	1,3	13	-	150	**514-8047**
PTFE	0,45	1,3	13	-	150	**514-8048**
GF/B	1,0 *	1,3	13	-	150	**514-0529**
GF/D	2,7 *	1,3	13	-	150	**514-0532**
GF/F	0,7 *	1,3	13	-	150	**514-0534**
Glass microfibre	0,45 *	1,3	13	-	150	**514-0536**
Cellulose acetate	0,2	4,6	25	+	50	**514-0541**
Cellulose acetate	0,2	4,6	25	-	150	**514-8062**
Cellulose acetate	0,45	4,6	25	+	50	**514-0542**
Cellulose acetate	0,45	4,6	25	-	150	**514-8063**
Cellulose acetate	0,45	4,6	25	-	1.500	**516-6324**
Nylon	0,2	4,6	25	-	150	**514-8041**
Nylon	0,2	4,6	25	-	1.500	**516-6314**
Nylon	0,45	4,6	25	-	150	**514-8042**
Nylon	0,45	4,6	25	-	1.500	**516-6315**
Nylon	5,0	4,6	25	-	150	**514-0680**
PES	0,2	4,6	25	+	50	**514-0537**
PES	0,2	4,6	25	-	150	**514-8054**
PES	0,2	4,6	25	-	1.500	**514-0291**
PES	0,45	4,6	25	+	50	**514-0538**
PES	0,45	4,6	25	-	150	**514-8055**
PES	0,45	4,6	25	-	1.500	**514-0292**
PVDF	0,2	4,6	25	-	150	**514-8045**
PVDF	0,2	4,6	25	-	1.500	**516-6318**
PVDF	0,45	4,6	25	+	50	**514-0540**
PVDF	0,45	4,6	25	-	150	**514-8046**
PVDF	0,45	4,6	25	-	1.500	**516-6319**
PP	0,2	4,6	25	-	150	**514-8058**
PP	0,45	4,6	25	-	150	**514-8059**
PP	0,45	4,6	25	-	1.500	**514-0290**
PTFE	0,2	4,6	25	-	150	**514-8049**
PTFE	0,2	4,6	25	-	1.500	**516-6322**
PTFE	0,45	4,6	25	-	150	**514-8050**
PTFE	0,45	4,6	25	-	1.500	**514-8051**
Regenerated cellulose	0,2	4,6	25	-	150	**511-0162**
Regenerated cellulose	0,45	4,6	25	-	150	**511-0161**
Regenerated cellulose	0,45	4,6	25	-	1.500	**516-0414**
GF/A	1,6 *	4,6	25	-	150	**514-0528**
GF/B	1,0 *	4,6	25	-	150	**514-0530**
GF/C	1,2 *	4,6	25	-	150	**514-0531**

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Membrane	Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Pk	Cat. No.
GF/D	2,7 *	4,6	25	-	150	**514-0533**
GF/F	0,7 *	4,6	25	-	150	**514-0535**
GMF glass fibre	0,45 *	4,6	25	-	150	**514-8064**

* contains GMF 150 but no GF/F prefilter

Syringe filters, GD/XP™
Whatman (GE Healthcare)

PP housing, autoclavable

For HPLC sample preparation, trace analysis

Ideal for use with samples that require inorganic ion analysis, as levels of ion extractables are minimised. Extremely low protein binding. Contain a two layer prefilter stack comprised of 20 µm and 5 µm PP filters, with a choice of membranes.

Inlet/outlet	Female Luer lock/male Luer
Filtration area (cm²)	4,6
Max. pressure (bar)	5,2
Dimensions	20,8×30,0 mm
Weight	3 g

Membrane	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Nylon	0,45	25	150	**514-8065**
Nylon	0,45	25	1.500	**514-0293**
PES	0,45	25	150	**514-8069**
PES	0,45	25	1.500	**516-5124**
PVDF	0,45	25	150	**516-1319**
PVDF	0,45	25	1.500	**516-5115**
PP	0,45	25	150	**514-8067**
PP	0,45	25	1.500	**516-5117**
PTFE	0,45	25	150	**514-8066**

Syringe filters, Puradisc™
Whatman (GE Healthcare)

PP housing

Designed for quick and efficient filtration of HPLC and biological samples.

Sample volume: 4 mm diameter: up to 2 ml; 13 mm diameter: up to 10 ml; 25 mm diameter: up to 100 ml.

Inlet/outlet: Luer lock female/Luer male or tube tip.

Ø (mm)	4	13	4	13	4	13	25
Inlet/outlet	Female Luer lock/male Luer						
Filtration area (cm²)	0,2	1,3	0,2	1,3	0,2	1,3	4,2
Max. pressure (bar)	5,2						

Type	Membrane	Pore size (µm)	Ø (mm)	Sterile	Pk	Cat. No.
Puradisc™ 4	PTFE	0,2	4	-	100	**516-1152**
Puradisc™ 4	PTFE	0,2	4	-	500	**516-1153**
Puradisc™ 4	PTFE	0,45	4	-	100	**516-1154**
Puradisc™ 4	PVDF	0,2	4	+	50	**516-1111**

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Type	Membrane	Pore size (µm)	Ø (mm)	Sterile	Pk	Cat. No.
Puradisc™ 4	PVDF	0,2	4	-	100	**514-0505**
Puradisc™ 13	Glass fibre GF/C	1,2	13	-	100	**514-0525**
Puradisc™ 4	PVDF	0,45	4	-	100	**514-0506**
Puradisc™ 13	Glass fibre GF/D	2,7	13	-	100	**514-0526**
Puradisc™ 4 with tube tip	PVDF	0,2	4	-	50	**516-1102**
Puradisc™ 13	Glass fibre GF/F	0,7	13	-	100	**514-0527**
Puradisc™ 13	Nylon	0,1	13	-	100	**516-0436**
Puradisc™ 13	Nylon	0,2	13	-	100	**516-1271**
Puradisc™ 13	Nylon	0,45	13	-	100	**516-1273**
Puradisc™ 13	Nylon	0,45	13	-	500	**516-1274**
Puradisc™ 13	PES	0,2	13	+	50	**514-8019**
Puradisc™ 13	PES	0,2	13	-	100	**516-1222**
Puradisc™ 13	PES	0,45	13	+	50	**514-0509**
Puradisc™ 13	PES	0,45	13	-	100	**514-0511**
Puradisc™ 13	PP	0,2	13	-	100	**514-0515**
Puradisc™ 13	PP	0,45	13	-	100	**514-8032**
Puradisc™ 13 with tube tip	PTFE	0,1	13	-	100	**516-1251**
Puradisc™ 13 with tube tip	PTFE	0,2	13	-	50	**514-0497**
Puradisc™ 13	PTFE	0,2	13	-	100	**516-1252**
Puradisc™ 13	PTFE	0,2	13	-	500	**514-0512**
Puradisc™ 13 with tube tip	PTFE	0,45	13	-	50	**514-0498**
Puradisc™ 13	PTFE	0,45	13	-	100	**516-1254**
Puradisc™ 13	PTFE	0,45	13	-	500	**514-0513**
Puradisc™ 13	PTFE	1,0	13	-	100	**516-1257**
Puradisc™ 13	PTFE	5,0	13	-	100	**516-0435**
Puradisc™ 13 with tube tip	PVDF	0,2	13	-	50	**514-0499**
Puradisc™ 13	PVDF	0,2	13	-	100	**514-0507**
Puradisc™ 13	PVDF	0,2	13	-	500	**516-1213**
Puradisc™ 13 with tube tip	PVDF	0,45	13	-	50	**514-0500**
Puradisc™ 13	PVDF	0,45	13	-	100	**514-0508**
Puradisc™ 25	Glass fibre GD1	1,0	25	-	100	**516-1441**
Puradisc™ 25	Glass fibre GD2	2,0	25	-	100	**516-1442**
Puradisc™ 25	Glass fibre GF/F	0,7	25	-	200	**516-1452**
Puradisc™ 25	Nylon	0,2	25	-	50	**514-8014**
Puradisc™ 25	Nylon	0,2	25	-	200	**514-8016**
Puradisc™ 25	Nylon	0,2	25	-	1.000	**514-0231**
Puradisc™ 25	Nylon	0,45	25	-	50	**514-8015**
Puradisc™ 25	Nylon	0,45	25	-	200	**514-8017**
Puradisc™ 25	Nylon	1,0	25	-	200	**514-0229**
Puradisc™ 25	PES	0,2	25	+	50	**514-8020**
Puradisc™ 25	PES	0,2	25	-	200	**516-1402**
Puradisc™ 25	PES	0,45	25	+	50	**514-8021**
Puradisc™ 25	PES	0,45	25	-	200	**516-1404**
Puradisc™ 25	PES	1,0	25	-	200	**516-1406**
Puradisc™ 25	PP	0,2	25	-	50	**514-8029**
Puradisc™ 25	PP	0,2	25	-	200	**516-1432**
Puradisc™ 25	PP	0,45	25	-	50	**514-8030**
Puradisc™ 25	PP	0,45	25	-	200	**516-1434**
Puradisc™ 25	PTFE	0,1	25	-	50	**514-8023**
Puradisc™ 25	PTFE	0,2	25	-	50	**514-8024**
Puradisc™ 25	PTFE	0,2	25	-	200	**514-8027**
Puradisc™ 25	PTFE	0,45	25	-	50	**514-8025**
Puradisc™ 25	PTFE	0,45	25	-	200	**514-8028**
Puradisc™ 25	PTFE	1,0	25	-	50	**514-8026**
Puradisc™ 25	PVDF	0,2	25	-	200	**514-0225**
Puradisc™ 25	PVDF	0,45	25	-	200	**514-0226**

Syringe filters, Puradisc™ FP 30
Whatman (GE Healthcare)

PC housing

For filtration of aqueous solutions up to 100 ml.

Hydrophilic cellulose acetate, with extremely low protein binding.

Hydrophilic cellulose nitrate, versatile membranes for the filtration of aqueous solutions.

Pore size	Inlet/outlet	Max. pressure (bar)	Dimensions	Weight
Cellulose acetate				
0,2 µm	Female Luer lock/male Luer	6,9	26×34 mm	4,7 g
0,45 µm				
0,8 µm				
1,2 µm				
Cellulose nitrate				
5,0 µm	Female Luer lock/male Luer	6,9	26×34 mm	4,7 g

Type	Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Colour code	Pk	Cat. No.
Cellulose acetate							
FP 30 CA-S	0,2	5,7	30	+	Red	50	**514-1111**
FP 30 CA	0,2	5,7	30	-	Red	50	**514-1117**
FP 30 CA	0,2	5,7	30	-	Red	100	**514-1141**
FP 30 CA	0,2	5,7	30	-	Red	500	**514-1121**
FP 30 CA-S, Female Luer lock/male Luer lock inlet/outlet connections	0,2	5,7	30	+	Red	50	**514-1112**
FP 30 CA-S	0,45	5,7	30	+	White	50	**514-1113**
FP 30 CA	0,45	5,7	30	-	White	50	**514-1127**
FP 30 CA	0,45	5,7	30	-	White	100	**514-1140**
FP 30 CA	0,45	5,7	30	-	White	500	**514-1123**
FP 30 CA-S	0,8	5,7	30	+	Green	50	**514-1114**
FP 30 CA	0,8	5,7	30	-	Green	50	**514-1124**
FP 30 CA-S	1,2	5,7	30	+	Orange	50	**514-1115**
FP 30 CA	1,2	5,7	30	-	Orange	50	**514-1125**
Cellulose nitrate							
FP 30 CN	5,0	5,7	30	-	Black	50	**514-0490**
FP 30 CN	5,0	5,7	30	-	Black	100	**514-0101**
FP 30 CN	5,0	5,7	30	-	Black	500	**514-1126**

Syringe filters, SPARTAN™
Whatman (GE Healthcare)

Hydrophilic regenerated cellulose membrane, PP housing

HPLC certified filters for the filtration of organic and aqueous solutions in HPLC. Low protein binding and high chemical resistance.

Tested and certified for UV-absorbing substances at wavelengths of 210 and 254 nm with water, methanol and acetonitrile; ensuring consistent quality between batches.

Inlet/outlet: Luer lock female/Luer male.

Pore size (µm)	Ø (mm)	Colour code	Pk	Cat. No.
0,2 *	13	Dark Brown	100	**514-1222**
0,2 *	13	Dark Brown	500	**514-1231**
0,2	13	Dark Brown	100	**514-1223**

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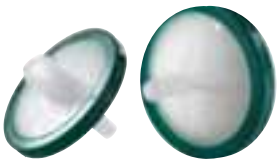
Pore size (µm)	Ø (mm)	Colour code	Pk	Cat. No.
0,2	13	Dark Brown	500	**514-1232**
0,45 *	13	Light Brown	100	**514-1226**
0,45 *	13	Light Brown	500	**514-1234**
0,45	13	Light Brown	100	**514-1227**
0,45	13	Light Brown	500	**514-1157**
0,2	30	Dark Brown	100	**514-1224**
0,2	30	Dark Brown	500	**514-1233**
0,45	30	Light Brown	50	**514-0491**
0,45	30	Light Brown	100	**514-1228**
0,45	30	Light Brown	500	**514-1230**

* mini-tip outlet

Syringe filters, ReZist™
Whatman (GE Healthcare)



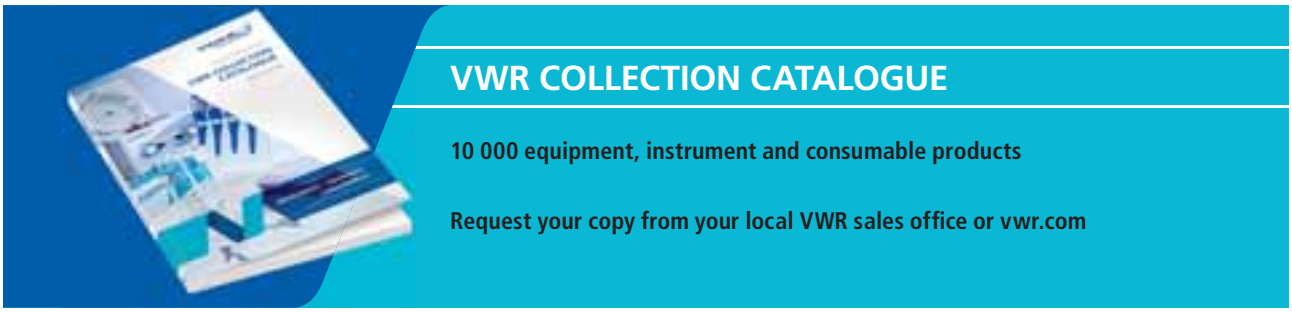
Membrane: Hydrophobic PTFE with PP housing

Used for the clarification of aggressive organic solvents in HPLC preparation.

Inlet/outlet: Luer lock female/Luer male

Pore size (µm)	Ø (mm)	Sterile	Colour code	Pk	Cat. No.
0,2 *	13	-	White	100	**514-1326**
0,45 *	13	-	Green	100	**514-1327**
0,2	30	+	White	50	**514-1311**
0,2	30	-	White	100	**514-1321**
0,2	30	-	White	500	**514-1320**
0,45	30	-	Green	100	**514-1322**
0,45	30	-	Green	500	**514-1328**
>1,0	30	-	Natural	100	**516-0445**
>1,0	30	-	Natural	500	**516-0446**
1,0	30	-	Yellow	100	**514-1323**
1,0	30	-	Yellow	500	**514-1329**
5,0	30	-	Grey	100	**514-1324**
5,0	30	-	Grey	500	**516-0444**

* mini-tip outlet



Syringe filters, Anotop™
Whatman (GE Healthcare)

Anopore™ membrane; PP housing

These filters can be used with most organic solvents and aqueous materials. They are suitable for sample volumes up to 100 ml. The hexagonal housing is manufactured from pigment-free PP to eliminate sample contamination. Anotop™ 10 Plus and Anotop™ 25 Plus filters have a glass microfibre prefilter for samples that are difficult to filter.

Inlet/outlet: Luer lock female/Luer male (except for Anotop™ 10 LC and Anotop™ 25 LC)

Max. pressure: 6,9 bar (except for Anotop™ 10 LC and Anotop™ 25 LC)

Anotop™ 10

- Inorganic membrane
- Capillary pore structure
- Low protein binding
- Filters sample volume up to 10 ml

Anotop™ 10 Plus

Suitable for filtration of heavily particulate loaded samples prior to HPLC and for removal of solids prior to UV/Vis analysis.

Anotop™ 25

Suitable for cold sterilisation of growth media, phage and virus filtration, removal of high molecular weight proteins or polymers, liposome extrusion and filtration of solvents for spectroanalysis and analytical sample preparation.

Anotop™ 25 Plus

Suitable for filtration of tissue culture media, filtration of colloidal material, removal of mycoplasma, HPLC sample preparation and biological sample preparation.

Anotop™ 10 IC

Suitable for ion chromatography sample preparation and HPLC sample preparation.

Anotop™ 25 IC

Suitable for ion chromatography sample preparation and HPLC sample preparation.

Type	Pore size (µm)	Filtration area (cm^2)	Ø (mm)	Sterile	Pk	Cat. No.
Anotop™ 10						
Anotop™ 10	0,02	0,78	10	-	50	**516-1125**
Anotop™ 10	0,1	0,78	10	-	50	**516-1126**
Anotop™ 10	0,2	0,78	10	-	50	**516-1282**
Anotop™ 10	0,02	0,78	10	+	50	**516-1127**
Anotop™ 10	0,1	0,78	10	+	50	**516-1128**
Anotop™ 10	0,2	0,78	10	+	50	**516-1129**
Anotop™ 10 Plus						
Anotop™ 10 Plus	0,02	0,78	10	-	50	**516-1133**
Anotop™ 10 Plus	0,1	0,78	10	-	50	**516-1134**
Anotop™ 10 Plus	0,2	0,78	10	-	50	**516-1281**
Anotop™ 10 Plus	0,02	0,78	10	+	50	**516-1135**
Anotop™ 10 Plus	0,1	0,78	10	+	50	**516-1136**
Anotop™ 10 Plus	0,2	0,78	10	+	50	**516-1137**
Anotop™ 25						
Anotop™ 25	0,02	4,78	25	-	50	**516-1501**
Anotop™ 25	0,1	4,78	25	-	50	**516-6301**
Anotop™ 25	0,2	4,78	25	-	50	**516-1505**
Anotop™ 25	0,02	4,78	25	+	50	**516-1502**
Anotop™ 25 Plus						
Anotop™ 25 Plus	0,2	4,78	25	-	200	**516-1516**
Anotop™ 25 Plus	0,02	4,78	25	+	50	**514-8036**
Anotop™ 10 IC						
Anotop™ 10 IC	0,2	0,78	10	-	50	**514-8004**
Anotop™ 10 IC	0,2	0,78	10	-	100	**514-8005**
Anotop™ 10 IC	0,2	0,78	10	-	200	**514-8006**
Anotop™ 10 IC	0,2	0,78	10	-	250	**514-8007**
Anotop™ 25 IC						
Anotop™ 25 IC	0,2	4,78	25	-	200	**514-8010**
Anotop™ 10 LC						
Anotop™ 10 LC	0,2	0,78	10	-	100	**514-8000**
Anotop™ 25 LC						
Anotop™ 25 LC	0,2	4,78	25	-	100	**514-8002**

Capsule filters, Polycap™
Whatman (GE Healthcare)

High purity PP housing which is free of adhesives or chemicals. Autoclavable.

Capsules with high filtration area suitable for use with large volumes of samples

Applications:

Polycap™ AS (Aqueous Solution) - recommended for filtering aqueous solutions. It combines a glass microfibre (GMF) prefilter and a nylon membrane, prolonging the life of the filter and allowing larger volumes and difficult samples to be filtered easily.

Polycap™ TF - designed for use with organic solvents and chemically aggressive solutions.

Polycap™ HD (Heavy Duty) - offers high filtration efficiency and excellent filtrate purity due to its materials and methods of manufacture.

Polycap™ SPF (Serum Prefilter) - optimised for prefiltration applications and typically used upstream of a Polycap™ AS or a Polycap™ PES capsule.

Polycap™ TC (PES) - disposable, dual layer PES membrane filtration capsules that provide efficient filtration for critical aqueous solutions.

Type	Filtration area (cm^2)	Inlet/outlet	Max. pressure (bar)
Polycap™ AS 36	400	Stepped barb for 6 - 10 mm tubing	4,1
		Stepped barb for 10 - 12 mm tubing	
Polycap™ AS 75	820	Stepped barb for 6 - 10 mm tubing	
		Stepped barb for 10 - 12 mm tubing	
Polycap™ SPF 36	260	Stepped barb for 6 - 10 mm tubing	
Polycap™ SPF 75	535		
Polycap™ TC 36	440		
Polycap™ TC 75	930		
Polycap™ HD 36	400		
Polycap™ HD 75	820	Stepped barb for 10 - 12 mm tubing	
Polycap™ TF 36	500	Stepped barb for 6 - 10 mm tubing	
Polycap™ TF 75	1000	Stepped barb for 10 - 12 mm tubing	

Type	Pore size (µm)	Pk	Cat. No.
Polycap™ AS 36, nylon, with glass fibre prefilter, sterile	0,2	1	**515-0108**
Polycap™ AS 36, nylon, with glass fibre prefilter, sterile	0,45	1	**516-4436**
Polycap™ AS 36, nylon, with glass fibre prefilter and filling bell, sterile	0,2	1	**516-4442**
Polycap™ AS 36, nylon, with glass fibre prefilter, sterile	0,2	1	**516-0443**
Polycap™ AS 75, nylon, with glass fibre prefilter, sterile	0,2	1	**515-0111**
Polycap™ AS 75, nylon, with glass fibre prefilter, sterile	0,45	1	**515-0112**
Polycap™ AS 75, nylon, with glass fibre prefilter, sterile	1,0	1	**516-4441**
Polycap™ SPF 36, PES, with glass fibre prefilter	1,0	1	**515-0107**
Polycap™ SPF 75, PES, with glass fibre prefilter	1,0	1	**515-0110**
Polycap™ TC 36, PES, sterile	0,65/0,45	1	**515-2533**
Polycap™ TC 75, PES, with filling bell, sterile	0,2/0,2	1	**515-2544**
Polycap™ HD 36, PP	1,0	1	**515-0097**
Polycap™ HD 36, PP	10	1	**515-0098**
Polycap™ HD 36, PP	20	1	**515-0099**
Polycap™ HD 36, PP	5,0	1	**515-0100**
Polycap™ HD 75, PP	1,0	1	**515-0101**
Polycap™ HD 75, PP	10	1	**515-0102**
Polycap™ HD 75, PP	20	1	**515-0103**
Polycap™ HD 75, PP	5,0	1	**515-0104**
Polycap™ TF 36, PTFE	0,2	1	**515-0152**
Polycap™ TF 36, PTFE	1,0	5	**516-0442**
Polycap™ TF 36, PTFE	0,2	1	**515-0091**
Polycap™ TF 36, PTFE	1,0	1	**515-0092**
Polycap™ TF 75, PTFE	0,1	1	**515-0093**
Polycap™ TF 75, PTFE	0,2	1	**515-0094**
Polycap™ TF 75, PTFE	0,45	1	**515-0095**
Polycap™ TF 75, PTFE	1,0	1	**515-0096**

IVD

Syringe filters, Minisart®
Sartorius

Hydrophilic cellulose acetate membrane

For small volume sterilisation, particle removal and prefiltration.

Pore size	0,45 µm	0,2 µm	0,45 µm	0,8 µm	1,2 µm	5,0 µm
Inlet/outlet	Luer lock female/Luer lock					
Max. temperature (°C)	50					
Max. pressure (bar)	4,5					
Water flow rate	160 ml/min (1 bar)	60 ml/min (1 bar)	160 ml/min (1 bar)	350 ml/min (1 bar)	400 ml/min (1 bar)	500 ml/min (1 bar)

Type	Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Colour	Pk	Cat. No.
17598-K	0,45 ***	5,3	26	+	Yellow	50	**514-0674**
16534-Q	0,2	5,3	26	-	Blue	500	**514-7012**
16534-K	0,2	5,3	28	+	Blue	50	**514-7011**
17823-K	0,2 **	5,3	26	+	Blue	50	**512-3106**
17597-K	0,2 ***	5,3	26	+	Blue	50	**611-0707**
17823-Q	0,2 **	5,3	26	-	Blue	500	**512-3206**
17597-Q	0,2 ***	5,3	26	-	Blue	500	**611-0708**
16555-Q	0,45	5,3	26	-	Yellow	500	**514-7014**
16555-K	0,45	5,3	26	+	Yellow	50	**514-7013**
17829-K	0,45 **	5,3	26	+	Yellow	50	**512-3108**
17829-Q	0,45 **	5,3	26	-	Yellow	500	**512-3208**
17598-Q	0,45 ***	5,3	26	-	Yellow	500	**514-0673**
16592-Q	0,8	5,3	26	-	Green	500	**512-3214**
16592-K	0,8	5,3	26	+	Green	50	**512-3114**
17593-Q	1,2	5,3	26	-	Red	500	**512-3216**
17593-K	1,2	5,3	26	+	Red	50	**512-3116**
17594-Q	5,0	5,3	26	-	Brown	500	**512-3218**
17594-K	5,0	5,3	26	+	Brown	50	**512-3118**

** with glass fibre prefilter
*** with male luer slip outlet

Syringe filters, Minisart® RC
Sartorius

Hydrophilic regenerated cellulose membrane, PP autoclavable housing

For the filtration of aqueous and organic solutions and preparation of samples for HPLC or GC analysis.

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Ø (mm)	4		15		25	
Pore size	0,2 µm	0,45 µm	0,2 µm	0,45 µm	0,2 µm	0,45 µm
Inlet/outlet	Luer lock female/Luer male					
Max. temperature (°C)	121					
Water flow rate	3,5 ml/min (1 bar)	1,5 ml/min (1 bar)	10 ml/min (1 bar)	30 ml/min (1 bar)	60 ml/min (1 bar)	100 ml/min (1 bar)

Type	Pore size (µm)	Filtration area (cm²)	Ø (mm)	Pk	Cat. No.
Minisart® RC 4	0,2	0,07	4	50	**611-0716**
Minisart® RC 4	0,2	0,07	4	500	**512-3272**
Minisart® RC 4	0,45	0,07	4	50	**512-3174**
Minisart® RC 4	0,45	0,07	4	500	**510-3274**
Minisart® RC 15	0,2	1,7	15	50	**512-3176**
Minisart® RC 15	0,2	1,7	15	500	**512-3276**
Minisart® RC 15	0,45	1,7	15	50	**512-3178**
Minisart® RC 15	0,45	1,7	15	500	**512-3278**
Minisart® RC 25	0,2	4,8	25	50	**512-3180**
Minisart® RC 25	0,2	4,8	25	500	**512-3280**
Minisart® RC 25	0,45	4,8	25	50	**512-3182**
Minisart® RC 25	0,45	4,8	25	500	**512-3282**

Syringe filters, Minisart® SRP
Sartorius

Hydrophobic PP reinforced PTFE membrane, PP autoclavable housing

For the filtration of aggressive aqueous solutions and solvents and preparation for samples before HPLC or GC analysis.

Ø (mm)	4	15		25	
Pore size	0,45 µm	0,2 µm	0,45 µm	0,2 µm	0,45 µm
Inlet/outlet	Luer lock female/Luer male				
Max. temperature (°C)	121				
Airflow rate	0,06 l/min (1 bar)	0,5 l/min (1 bar)	1,1 l/min (1 bar)	1,2 l/min (1 bar)	1,8 l/min (1 bar)

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Colour	Pk	Cat. No.
0,45	0,07	4	-	Yellow	50	**512-3142**
0,45	0,07	4	-	Yellow	500	**512-3284**
0,2 *	1,7	15	-	White	50	**611-0705**
0,2 *	1,7	15	-	White	500	**510-3244**
0,2	1,7	15	-	White	50	**512-3146**
0,2	1,7	15	-	White	500	**512-3246**
0,45 *	1,7	15	-	White	50	**611-0706**
0,45 *	1,7	15	-	White	500	**510-3245**
0,45	1,7	15	-	White	50	**512-3147**
0,45	1,7	15	-	White	500	**510-3247**
0,2	4,8	25	+	White	50	**516-7035**
0,2	4,8	25	-	White	50	**512-3148**
0,2	4,8	25	-	White	500	**512-3248**
0,45	4,8	25	-	White	50	**512-3149**
0,45	4,8	25	-	White	500	**510-3249**

* mini-tip outlet

Syringe filters, Minisart® High-Flow
Sartorius

Polyethersulfone (PES) membrane

For sterile filtration at higher flow rates and higher filtration speed. Low adsorption and excellent chemical resistance.

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Ø (mm)	28	
Pore size	0,1 µm	0,2 µm
Inlet/outlet	Female Luer lock/Male Luer lock	
Max. temperature (°C)	50	
Max. pressure (bar)	4,5	

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Colour	Pk	Cat. No.
0,1	6,2	28	+	Purple	50	**514-0152**
0,2	6,2	28	+	Dark Blue	50	**514-7010**
0,2	6,2	28	-	Dark Blue	500	**512-3225**

* Sterilisation by gamma irradiation

Syringe filters, Minisart® GF
Sartorius

Membrane: glass fibre

For prefiltration

Inlet/outlet	Luer lock female/Luer lock male
Max. temperature (°C)	50
Max. pressure (bar)	4,5
Water flow rate	450 ml/min (1 bar)

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Colour	Pk	Cat. No.
0,7	5,3	26	Opaque	50	**512-3120**

Syringe filters, Nalgene®
Thermo Scientific

Cellulose acetate membrane; acrylic housing

For aqueous solutions, biological and immunological samples and cell culture.

• Low protein binding, low extractables

Sterile versions are non cytotoxic and non pyrogenic

Surfactant free cellulose acetate membrane; acrylic housing

Cellulose contains no wetting agents.

Packaging: 50 items per inner bag, 300 items per package.

PTFE membrane; PP, autoclavable housing

For filtration of aggressive chemicals, including acids and non aqueous solvents, such as those used in GC and HPLC and for filtration of air and gases.

Wet membrane with alcohol before use with aqueous solutions.

Nylon membrane; PP, autoclavable housing

For filtration of organic solvents for HPLC, GC and DMSO

• Hydrophilic
• Low level of extractables

PES membrane; acrylic housing

For sterile filtration and clarification of cell culture media, buffers and additives.

• Higher flowrates, lower protein binding and lower extractables than cellulosic membranes
• Naturally hydrophilic; contains no wetting agents
• Certified sterile, non-cytotoxic and non-pyrogenic

Pore size (µm)	Ø (mm)	Sterile	Pk	Cat. No.
Cellulose acetate membrane; acrylic housing				
0,2	4	-	100	**514-0455**
0,2 **	25	+	50	**513-1921**
0,8	25	+	50	**513-1903**

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Pore size (µm)	Ø (mm)	Sterile	Pk	Cat. No.
Surfactant-free cellulose acetate membrane; acrylic housing				
0,2	25	+	50	**513-1901**
0,2	25	-	50	**513-1911**
0,45	25	+	50	**513-1902**
0,45	25	-	50	**513-1912**
PTFE membrane; PP, autoclavable housing				
0,2	25	-	50	**513-1991**
0,45	25	-	50	**513-1992**
Nylon membrane; PP, autoclavable housing				
0,2	25	-	50	**513-1961**
0,45	25	-	50	**513-1962**

** with glass fibre prefilter

Syringe filters, Econofil™, Chromacol™
Thermo Scientific

The sample distribution rings promote uniform application of the sample across the membrane area. This feature maximises the available filltration area speed and reduces backpressure when filtering highly particulate samples.

- Sample distribution rings distribute sample for maximum speed and uniform filtration across membrane surface
- Membrane type and porosity clearly identified on each filter
- Chemically resistant PP housing minimises extractables

Pore size (µm)	Ø (mm)	Pk	Cat. No.
Cellulose acetate membrane			
0,2	4	100	**516-0653**
0,45	4	100	**516-0659**
0,2	17	100	**516-0486**
0,45	17	100	**516-0493**
0,2	30	100	**516-0629**
0,45	30	100	**516-0642**
Nylon membrane			
0,2	4	100	**516-0654**
0,45	4	100	**516-0660**
0,2	17	100	**516-0487**
0,45	17	100	**516-0494**
0,2 *	30	100	**516-0631**
0,2	30	100	**516-0630**
0,45 *	30	100	**516-0644**
0,45	30	100	**516-0643**
1,5	30	100	**516-0640**
5,0	30	100	**516-0652**
PES membrane			
0,2	17	100	**516-0488**
0,45	17	100	**516-0495**
0,2	30	100	**516-0632**
0,45	30	100	**516-0645**
PP membrane			
0,2	4	100	**516-0655**
0,45	4	100	**516-0661**
0,2	17	100	**516-0489**
0,45	17	100	**516-0496**
0,2	30	100	**516-0633**
0,45 *	30	100	**516-0647**
0,45	30	100	**516-0646**
PVDF membrane			
0,2	4	100	**516-0656**
0,45	4	100	**516-0662**
0,2	17	100	**516-0490**
0,45	17	100	**516-0497**
0,2	30	100	**516-0634**
0,45	30	100	**516-0648**
Regenerated cellulose membrane			
0,2	4	100	**516-0657**
0,45	4	100	**516-0663**
0,2	17	100	**516-0491**
0,45	17	100	**516-0498**
0,2	30	100	**516-0635**
0,45	30	100	**516-0649**

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Pore size (µm)	Ø (mm)	Pk	Cat. No.
PTFE membrane			
0,2	4	100	**516-0658**
0,45	4	100	**516-0664**
0,2	17	100	**516-0492**
0,45	17	100	**516-0499**
0,2	30	100	**516-0636**
0,45 *	30	100	**516-0651**
0,45	30	100	**516-0650**
1,0	30	100	**516-0638**
Glass microfibre membrane			
0,7	30	100	**516-0637**
1,2	30	100	**516-0639**
3,1	30	100	**516-0641**

* with glass fibre prefilter

Syringe filters, hollow fibre, DynaGard®
Spectrum

Applications: Cold sterilisation of aqueous or organic solutions, clarification or filtration of particulates, gas or air filtration, preparation of protein solutions for electrophoresis

- Uniquely designed with looped hollow fibre membrane
- Maximises surface area and reduces fouling
- Narrow housing design minimises hold-up volume and enables easy aspiration and dispensing into ampoules, test tubes and other small vessels

Pore size (µm)	Filtration area (cm^2)	Sterile	Volume (ml)	Pk	Cat. No.
Membrane: mixed cellulose esters for aqueous solutions					
0,2	2,5	+	<5	50	**734-0860**
0,2	2,5	-	<5	200	**734-0859**
0,2	3,4	+	1 - 10	50	**734-0862**
0,2	3,4	-	1 - 10	100	**734-0861**
0,2	5,5	+	5 - 20	50	**734-0864**
0,2	5,5	-	5 - 20	100	**734-0863**
Membrane: PP for organic solutions					
0,45	0,8	-	<5	200	**734-0865**
0,2	3,9	-	5 - 20	100	**734-0866**

PALL Life Sciences

Filter holder, SolVac®

PP housing

Simplifies clean up and degassing of mobile phase solvents and other solutions.

- Reliable and leakproof magnetic seal
- Draws directly from HPLC solvent bottles

Delivery information: Supplied with 610 mm feedline tubing, thumb clamp, sinker, vacuum port adapter, two membrane seal gaskets and two seal gaskets.

Filter area	10,2 cm^2
Inlet/outlet connections	Tapered inlet accepts 3,2 - 6,4 mm ID tubing; outlet seals to bottles with openings 17,8 mm ID to 48,3 mm OD
Max. operating temperature (°C)	38

For Ø (mm)	Pk	Cat. No.
47	1	**514-4001**

Description	Pk	Cat. No.
Accessories		
1220 mm replacement feedline tubing	1	**516-7568**
Flask seal gasket	10	**514-4099**
Membrane seal gasket	10	**514-4100**
Sinker replacement kit	2	**516-7571**
Clamp replacement kit	2	**516-7572**

PALL Life Sciences

AcroPrep™ 24 filtration system

Eliminates the time consuming one at a time syringe filter process by simultaneously filtering up to 24 samples in seconds. Ideal for use with HPLC sample preparation.

- Can be used with any conventional 2 ml, 12×32 mm vials
- No cross-contamination, each 1,9 ml well is individually sealed

Membrane	Description	Pore size (µm)	Filtration area (cm^2)	Pk	Cat. No.
AcroPrep™ 24 manifold					
	Filtration manifold			1	**516-7560**
Filter plates					
GHP		0,2	24×0,94	10	**516-9062**
GHP		0,45	24×0,94	2	**516-9103**
GHP		0,45	24×0,94	10	**516-9058**
GxF/GHP		0,45	24×0,94	10	**516-0447**

Syringeless filters, UniPrep™
Whatman (GE Healthcare)

Preassembled devices for the filtration and storage of laboratory samples.

Device consists of a 5 ml outer test tube and a filter plunger with cap. The sample is placed in the outer tube and the plunger is pressed through the liquid. Positive pressure forces the filtrate up into the reservoir of the filter plunger, which can then be capped for sample storage. Filtered samples can be decanted into an autosampler vial or can be removed by drawing into a syringe for manual injection.

Nylon: Naturally hydrophilic for filtration of samples containing aqueous or organic solvents with a pH range of 3 - 10.

PVDF: Low protein binding membrane for filtration of samples with aqueous or aqueous/organic solvent composition.

PTFE: Chemically inert PTFE membrane for filtration of samples containing >50% organic solvent.

GMF: Layered glass microfibre depth filter for use with samples containing aqueous or organic solvents.

Volume hold up: 50 µl

Membrane	Pore size (µm)	Filtration area (cm^2)	Capacity (ml)	Pk	Cat. No.
Nylon	0,2	0,3	1 - 5	50	**514-0127**
Nylon	0,45	0,3	1 - 5	50	**514-0129**
Nylon	0,45	0,3	1 - 5	1.000	**516-0673**
PVDF	0,2	0,3	1 - 5	50	**514-0126**
PVDF	0,45	0,3	1 - 5	50	**514-0128**
PVDF	0,45	0,3	1 - 5	1.000	**516-0675**
PTFE	0,2	0,3	1 - 5	50	**514-0573**
PTFE	0,2	0,3	1 - 5	1.000	**516-0672**
PTFE	0,45	0,3	1 - 5	50	**514-0130**
PTFE	0,45	0,3	1 - 5	1.000	**516-0674**
GMF	0,45	0,3	1 - 5	50	**514-0574**

Syringeless filters, Mini-UniPrep™
Whatman (GE Healthcare)

PP, PTFE, regenerated cellulose or PVDF membranes

Disposable syringeless filters for particle separation of low sample volumes. A filter membrane is housed at one end of a plunger, with a cap/septum on the other. By pressing the plunger through a liquid placed into the chamber, positive pressure forces the filtrate into the reservoir of the plunger.

For HPLC and UHPLC sample preparation and for use in autosamplers with 2 ml vials, 12×32 mm.

PP for general filtration media/solvent-based samples.

PTFE for aggressive samples, high chemical resistance membrane.

Regenerated cellulose and **PVDF** for aqueous/organic solvents - low non specific protein binding media.

Nylon for aqueous/organic samples in 3 to 10 pH range.

PES for biological samples requiring low protein binding media.

Depth PP for aqueous/organic solvents - high flow and loading capacity.

Filtering capacity: 0,4 ml

Maximum operating temperature: 50 °C

Membrane	Pore size (µm)	Colour	Pk	Cat. No.
Standard cap				
Nylon	0,2	Translucent	100	**514-8090**
Nylon	0,2	Translucent	1.000	**514-8099**
Nylon	0,45	Translucent	100	**514-8097**
Nylon	0,45	Translucent	1.000	**514-8105**
PES	0,2	Translucent	100	**514-8092**
PES	0,2	Translucent	1.000	**514-8101**
PES	0,45	Translucent	100	**514-8098**
PES	0,45	Translucent	1.000	**514-8107**
PP	0,2	Translucent	100	**514-8093**
PP	0,2	Translucent	1.000	**561-6341**
PP	0,45	Translucent	100	**514-8076**
PP	0,45	Translucent	1.000	**516-6355**
Depth PP	0,45	Translucent	100	**514-8095**
PTFE	0,2	Translucent	100	**516-6343**
PTFE	0,2	Translucent	1.000	**514-8100**
PTFE	0,45	Translucent	100	**514-8075**
PTFE	0,45	Translucent	1.000	**516-6356**
PVDF	0,2	Translucent	100	**514-8089**
PVDF	0,2	Translucent	1.000	**514-8091**
PVDF	0,45	Translucent	100	**514-8094**
PVDF	0,45	Translucent	1.000	**514-8102**
Regenerated cellulose	0,2	Translucent	100	**514-0120**
Regenerated cellulose	0,2	Translucent	1.000	**514-0124**
Regenerated cellulose	0,45	Translucent	100	**514-0123**
Regenerated cellulose	0,45	Translucent	1.000	**514-0125**
Nylon	0,2	Amber	100	**514-8078**
Nylon	0,45	Amber	100	**514-8085**
PP	0,2	Amber	100	**514-8081**
PP	0,45	Amber	100	**514-8088**
PTFE	0,2	Amber	100	**514-8079**
PTFE	0,45	Amber	100	**514-8086**
PVDF	0,2	Amber	100	**514-8077**
PVDF	0,45	Amber	100	**514-8082**

Type	Pk	Cat. No.
Accessories		
6-position compressor	1	**516-6351**

Syringeless filters, Mini-UniPrep™ G2

Whatman (GE Healthcare)

Hand compressor

Borosilicate glass and PP housing. PTFE, PVDF, RC, nylon, PP, or glass fibre membrane

These filters prepare samples for HPLC/UHPLC analysis three times faster than the traditional syringe filter method. Like the original Mini-UniPrep™, they also reduce solvent and laboratory waste. Thanks to the glass design, the sample will be as pure as possible with minimal risk of plastic leachables.

Equivalent in size to 12×32 mm vials, these filters are designed to be loaded directly into the autosampler.

Filtering capacity: 0,5 ml

Packs of 1000 are also available, please go to www.vwr.com.

Membrane	Pore size (µm)	Colour	Pk	Cat. No.
Standard cap				
PTFE	0,2	Translucent	100	**514-0390**
PTFE *	0,2	Translucent	100	**514-0391**
PTFE	0,2	Translucent	1.000	**514-8144**
PTFE	0,2	Amber	100	**514-8137**
PTFE *	0,2	Amber	100	**514-0386**
PTFE	0,45	Translucent	100	**514-0396**
PTFE *	0,45	Translucent	100	**514-0397**
PTFE	0,45	Translucent	1.000	**514-8149**
PVDF	0,2	Translucent	100	**514-0387**
PVDF *	0,2	Translucent	100	**514-0388**
PVDF	0,2	Translucent	1.000	**514-8142**
PVDF	0,2	Amber	100	**514-8136**
PVDF *	0,2	Amber	100	**514-0385**
PVDF	0,45	Translucent	100	**514-0394**
PVDF *	0,45	Translucent	100	**514-0395**
PVDF	0,45	Translucent	1.000	**514-8147**
RC	0,2	Translucent	100	**514-7998**
RC *	0,2	Translucent	100	**514-8138**
RC	0,2	Translucent	1.000	**514-8146**
RC	0,45	Translucent	100	**514-7999**
RC *	0,45	Translucent	100	**514-8141**
RC	0,45	Translucent	1.000	**514-8150**
Nylon	0,2	Translucent	100	**514-7997**
Nylon *	0,2	Translucent	100	**514-0389**
Nylon	0,2	Translucent	1.000	**514-8143**
PP	0,2	Translucent	100	**514-0392**
PP *	0,2	Translucent	100	**514-0393**
PP	0,2	Translucent	1.000	**514-8145**
Glass fibre	0,45	Translucent	100	**514-8139**
Glass fibre *	0,45	Translucent	100	**514-8140**
Glass fibre	0,45	Translucent	1.000	**514-8148**
Slit septum cap				
PTFE	0,2	Translucent	100	**516-0470**
PTFE *	0,2	Translucent	100	**514-0398**
PTFE	0,2	Translucent	1.000	**516-0480**
PTFE	0,45	Translucent	100	**516-0477**
PTFE *	0,45	Translucent	100	**514-0399**
PTFE	0,45	Translucent	1.000	**516-0482**
PVDF	0,2	Translucent	100	**516-0466**
PVDF *	0,2	Translucent	100	**516-0467**
PVDF	0,2	Translucent	1.000	**516-0478**
PVDF	0,45	Translucent	100	**516-0473**
PVDF *	0,45	Translucent	100	**516-0474**
PVDF	0,45	Translucent	1.000	**516-0481**
Nylon	0,2	Translucent	100	**516-0468**
Nylon *	0,2	Translucent	100	**516-0469**
Nylon	0,2	Translucent	1.000	**516-0479**
PP	0,2	Translucent	100	**516-0471**
PP *	0,2	Translucent	100	**516-0472**
Glass fibre	0,45	Translucent	100	**516-0475**
Glass fibre *	0,45	Translucent	100	**516-0476**

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Type	Pk	Cat. No.
Accessories for syringeless filters, Mini-UniPrep™ G2		
Hand compressor	1	**514-0620**
Multi compressor - 8 positions (includes 1 tray)	1	**511-0228**
Multi compressor tray	1	**511-0229**

* with hand compressor

Syringeless filters, Autovial™
Whatman (GE Healthcare)

Autovial™ syringeless filters are pre assembled filtration devices for removing particulates from samples. They replace syringe-coupled filtration devices with single, disposable units.

Autovial™ devices are comprised of two parts: a graduated filter barrel and a plunger. The proven design features an integral filter, built-in air purge and a support stand that protects the recessed slip-luer tip. They are available in a 5 ml and 12 ml volume capacity.

- Single unit convenience saves time. No assembly required – easier to load
- Choice of filter media
- Compatible with a wide range of sample types
- Ideal for hazardous samples. Self contained device eliminates risk of filter pop-off
- Built-in air purge maximises sample recovery
- Sterile option available to maintain sample integrity
- Unique prefilter design for difficult to filter samples (no prefilter in Autovial™ 5 and in selected Autovial™ 12)
- Choice of glass fibre or polypropylene prefilters

Autovial™ filter is selected according to membrane compatibility with the sample. In practice, the sample is poured into the 5 ml or 12 ml capacity filter barrel. The plunger is inserted into the barrel until the bottom is securely in place; there is a gap of air between the sample and plunger. Then, the tip of the Autovial™ is placed into the mouth of an autosampler vial or container and the plunger compressed. Filtration begins immediately and, as the plunger is compressed until it reaches the bottom, the membrane is purged with air for maximum sample recovery. For direct instrument injection, a needle is placed on the Autovial™ slip-luer outlet.

Membrane	Pore size (µm)	Filtration area (cm^2)	Capacity (ml)	Pk	Cat. No.
Autovial™ 5 without prefilter					
PTFE	0,2	1,7	5	50	**514-0326**
Glass microfibre	0,45	1,7	5	50	**516-0451**
Nylon	0,45	1,7	5	50	**516-0449**
PTFE	0,45	1,7	5	50	**514-0327**
PVDF	0,45	1,7	5	50	**516-0448**
Autovial™ 12 without prefilter					
PES	0,45	3	12	50	**516-0455**
PVDF	0,45	3	12	50	**516-0454**
Autovial™ 12 with glass prefilter					
Nylon *	0,2	3	12	40	**516-0457**
Nylon	0,2	3	12	50	**516-0452**
PTFE *	0,2	3	12	40	**516-0458**
PTFE	0,2	3	12	50	**514-0014**
PVDF *	0,2	3	12	40	**516-0456**
PVDF	0,2	3	12	50	**514-0013**
Cellulose acetate	0,45	3	12	50	**516-0459**
Glass microfibre	0,45	3	12	50	**514-0016**
Nylon	0,45	3	12	50	**516-0460**
Nylon	0,45	3	12	1.000	**516-0464**
PTFE	0,45	3	12	50	**514-0017**
PTFE	0,45	3	12	1.000	**516-0465**
PVDF	0,45	3	12	50	**514-0015**
PVDF	0,45	3	12	1.000	**516-0463**
Glass fibre/B	1	3	12	1.000	**516-0462**
Autovial™ 12 with polypropylene prefilter					
PP	0,2	3	12	50	**516-0453**
PP	0,45	3	12	50	**516-0461**

* sterile

PALL Life Sciences

Syringe filters optimised for scale up, Acrodisc®

Simplifies scale up and minimises revalidation; no need to change membrane materials during transition to pilot or production. PP housing; four membrane chemistries assure compatibility with a wide range of fluids:

Supor® membrane has high flow rates and throughputs and is ideal for solutions where low protein binding is required. Not recommended with some ketones.

Fluorodyne® II membrane offers high flow rates and is ideal for applications where PVDF membrane is specified. Not recommended with some ethers.

Ultipor® membrane provides broad solvent and chemical compatibility and low extractables.

Posidyne® membrane enhances bioburden and pyrogen removal from aqueous solutions.

- Integrity testable (water bubble point)
- Bacterial retention tested
- Sterilised by gamma irradiation to eliminate potential contamination by ethylene oxide residuals

Applications: Drug development studies, determination of product compatibility and recovery, preliminary filterability testing, small-volume liquid sterilisation.

Inlet/outlet	female luer lock inlet, male slip luer outlet				
Filtration area (cm^2)	2,8				
Max. temperature (°C)	60				
Max. pressure (bar)	5,4				
Water flow rate	130 ml/min (2,1 bar)	78 ml/min (2,1 bar)	130 ml/min (2,1 bar)	77 ml/min (2,1 bar)	-
Membrane	Supor®	Ultipor®	Fluorodyne® II	Posidyne®	Supor® EKV

Membrane	Pore size (µm)	Ø (mm)	Pk	Cat. No.
Supor®	0,8/0,2	25	50	**516-8971**
Ultipor®	0,2	25	50	**516-8972**
Fluorodyne® II	0,2	25	50	**516-8973**
Posidyne®	0,2	25	50	**516-7717**
Supor® EKV	0,2	25	50	**514-4238**

PALL Life Sciences

Syringe filters, Acrodisc®, Supor®

Supor® hydrophilic polyethersulfone (PES) membrane: PP housing (except 25 and 32 mm: Acrylic and Acrodisc Serum: ABS)

Low protein binding filters for sterile filtration of biological samples, serum and cell culture media.

Acrodisc® and Acrodisc® PF syringe filters with 0,2 µm Supor® membrane were challenged with bovine serum or a bacterial culture (10^{-7} cfu/ml) at a constant pressure of 1,4 bar. Built-in prefilter enhances throughput of viscous, particulate-laden or proteinaceous solutions.

Ø (mm)	Pore size	Inlet/outlet	Max. temperature (°C)	Max. pressure (bar)	Water flow rate
Acrodisc Supor®					
13	0,2 µm	Luer lock female/Luer male	55	5,2	22 ml/min (3,1 bar)
	0,45 µm				35 ml/min (3,1 bar)
	0,8 µm				150 ml/min (3,1 bar)
25	0,1 µm				35 ml/min (3,1 bar)
	0,2 µm				175 ml/min (3,1 bar)
	0,45 µm				300 ml/min (3,1 bar)
	0,8 µm				700 ml/min (3,1 bar)
	0,8/0,2 µm				145 ml/min (3,1 bar)
32	0,1 µm				100 ml/min (3,1 bar)
	0,2 µm				490 ml/min (3,1 bar)
	0,45 µm				700 ml/min (3,1 bar)
	0,8/0,2 µm				440 ml/min (3,1 bar)
	1,2 µm				1700 ml/min (3,1 bar)
	1,2/0,45 µm				
	5 µm				1750 ml/min (3,1 bar)
Acrodisc Supor® PF with membrane prefilter					
25	0,8/0,2 µm	Luer lock female/Luer male	55	5,2	145 ml/min (3,1 bar)
32					440 ml/min (3,1 bar)
Serum Acrodisc® with glass fibre prefilter					
37	GF/0,2 µm	Luer lock female/Luer male	55	5,2	425 ml/min (3,1 bar)

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Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Pk	Cat. No.
Acrodisc Supor®					
0,2	1	13	+	75	**514-4122**
0,45	1	13	+	75	**514-4123**
0,8	1	13	+	75	**514-4124**
0,1	2,8	25	+	50	**514-4125**
0,2	2,8	25	-	1.000	**516-7655**
0,2	2,8	25	+	50	**514-4126**
0,45	2,8	25	-	1.000	**516-7656**
0,45	2,8	25	+	50	**514-4127**
0,8	2,8	25	-	1.000	**516-7657**
0,8	2,8	25	+	50	**514-4128**
0,8/0,2	2,8	25	-	1.000	**516-7654**
0,1	5,8	32	+	50	**514-4130**
0,2	5,8	32	-	1.000	**514-4134**
0,2	5,8	32	+	50	**514-4131**
0,45	5,8	32	-	1.000	**514-4132**
0,45	5,8	32	+	50	**514-4133**
0,8/0,2	5,8	32	-	1.000	**516-7701**
1,2	5,8	32	-	1.000	**516-7702**
1,2	5,8	32	+	50	**514-4135**
1,2/0,45	5,8	32	-	1.000	**516-7703**
5,0	5,8	32	-	1.000	**516-9087**
5,0	5,8	32	+	50	**514-4129**
Acrodisc Supor® PF with membrane prefilter					
0,8/0,2	2,8	25	+	50	**514-4102**
0,8/0,2	5,8	32	+	50	**514-4136**
Serum Acrodisc® with glass fibre prefilter					
GF/0,2	7,5	37	+	20	**514-4119**

PALL Life Sciences

Syringe filters, Acrodisc®, HT Tuffryn®

HT Tuffryn® polysulfone membrane; modified acrylic housing: 25 mm; PP housing: 13 mm and Acrodisc® PSF

Suitable for dilute biological fluids. Sterile versions are gamma irradiated and certified non pyrogenic. Low protein binding.

Ø (mm)	Pore size	Inlet/outlet	Filtration area (cm²)	Max. temperature (°C)	Max. pressure (bar)	Water flow rate
13	0,2 µm	female Luer lock/male slip Luer	1	55	5,2	12 ml/min (3,1 bar)
25			2,8			110 ml/min (3,1 bar)
	0,45 µm					250 ml/min (3,1 bar)
	PSF/0,45 µm		3,9			

Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Pk	Cat. No.
0,2	1	13	+	75	**514-4116**
0,2	2,8	25	+	50	**514-4105**
0,2	2,8	25	-	75	**516-8951**
0,2	2,8	25	-	1.000	**516-7583**
0,45	2,8	25	+	50	**514-4101**
0,45	2,8	25	-	75	**514-0457**
0,45	2,8	25	-	1.000	**516-7713**
PSF/0,45	3,9	25	-	50	**514-0474**
PSF/0,45**	3,9	25	-	200	**514-0475**
PSF/0,45	3,9	25	-	1.000	**514-0484**

** AutoPack for robotic use

PALL Life Sciences

Syringe filters, Acrodisc® DMSO-safe

Nylon membrane, PP housing, sterile

For solutions containing dimethylsulfoxide (DMSO). Sterilisation of media used for cell cryopreservation.

Inlet/outlet	Female Luer lock, male slip Luer
Max. temperature (°C)	55
Max. pressure (bar)	6,2
Water flow rate	60 ml/min (2,1 bar)

Type	Pore size (µm)	Filtration area (cm²)	Ø (mm)	Sterile	Pk	Cat. No.
DMSO-Safe	0,2	2,8	25	+	50	**514-4011**

Syringe filters
Corning®

Syringe filters are available with a choice of membrane type: Polyethersulfone (PES) for low protein binding and faster flow rates; surfactant-free cellulose acetate (SFCA), with or without prefilter, for lowest protein binding; Polytetrafluoroethylene (PTFE) for chemical resistance; regenerated cellulose (RC) – the best choice for DMSO compatibility; and nylon (NY) which is hydrophilic, surfactant-free and lowest extractable.

- 100% integrity tested
- Certified non pyrogenic and non cytotoxic

Manufactured in accordance with ISO 9002 standards

Ø (mm)	4	15	25		50	25	26			
Pore size	0,2 µm			0,45 µm	0,2 µm	0,45 µm	0,2 µm	0,45 µm	0,8 µm	0,2 µm
Inlet/outlet	LL/LS				HB/HB	LL/LS				

Membrane	Pore size (µm)	Ø (mm)	Sterile	Pk	Cat. No.
PP housing					
RC	0,2	4	+	50	**516-1950**
RC	0,2	15	+	50	**516-1951**
RC	0,2	25	+	50	**516-1956**
NY	0,2	25	+	50	**516-1957**
NY	0,45	25	+	50	**516-1958**
PTFE	0,2	50 *	+	12	**516-1959**
PTFE	0,45	25	-	50	**516-1961**
Acrylic housing					
SFCA-PF	0,2	26	+	50	**516-1952**
SFCA	0,2	26	+	50	**516-1953**
SFCA	0,45	26	+	50	**516-1954**
SFCA	0,8	26	+	50	**516-1955**
PES	0,2	26	+	50	**516-1960**

* recommended as in-line air filter; with hose barb/hose barb inlet/outlet (all others Luer lock female/Luer slip male)

PALL Life Sciences

STERILE

Positive pressure filters, AcroCap™, Supor®

Supor® hydrophilic polyethersulfone (PES) membrane, acrylic housing: 0,2 µm vent

Positive pressure filtration of aqueous laboratory solutions. For sterilisation or clarification of up to three litres of serum-free cell and tissue culture media, media additives and other aqueous solutions. Ideal for sterilisation of solutions that tend to foam when filtered under vacuum.

- Integral hydrophobic vent prevents air lock
- Reduce mycoplasma using 0,1 µm pore size membrane
- Sterilised by gamma irradiation to eliminate the risk of cytotoxic residuals

Water flow rate at 1 bar: 0,1 µm: 90 ml/min; 0,2 µm: 220 ml/min; 0,45 µm: 500 ml/min

Inlet/outlet 6,4 mm hose barb, inner accepts male Luer, removable filling bell attached to outlet

Max. pressure 2,1 bar

Max. temperature +55 °C

All products include one filter holder per package.

Pore size (µm)	Filtration area (cm^2)	Pk	Cat. No.
0,1	15	10	**515-0010**
0,2	15	10	**515-0009**
0,45	15	10	**515-0011**

PALL Life Sciences

STERILE

Bottle top filters, VacuCap®, Supor®

Supor® hydrophilic polyethersulphone (PES) membrane; PP housing, sterile

VacuCap® filtration device eliminates the need to constantly refill funnel in traditional bottle top filters as it draws directly from the mixing reservoir. The patented small design accepts a variety of collection vessels and reduces laboratory storage space and waste. The Supor® membrane in the VacuCap® 60 and VacuCap® 90 devices provides high flow rates for fast vacuum filtration of 100 ml to 5 litres of aqueous solutions and is available with prefilter to increase throughput of particulate laden solutions.

Excellent for cell culture media preparation and available with 0,1 µm pore size to remove mycoplasma
Pre-sterilised by gamma irradiation to eliminate contamination by EtO residuals, individually packed
Environmentally friendly design with minimal plastic waste

Type	Pore size (µm)	Membrane Ø (mm)	Filtration area (cm^2)	Pk	Cat. No.
VacuCap® 60	0,1	60	30	10	**515-0016**
VacuCap® 60	0,2	60	30	10	**515-0017**
VacuCap® 60	0,45	60	30	10	**515-0018**
VacuCap® 60	0,2 **	60	30	10	**516-9813**
VacuCap® 60 PF	0,8/0,2 *	60	30	10	**515-0019**
VacuCap® 90	0,1	90	60	10	**515-0012**
VacuCap® 90	0,2	90	60	10	**515-0013**
VacuCap® 90	0,45	90	60	10	**515-0014**
VacuCap® 90	0,2 **	90	60	10	**516-9812**
VacuCap® 90	0,45 **	90	60	10	**515-0155**
VacuCap® 90 PF	0,8/0,2 *	90	60	10	**515-0015**

Description	Pk	Cat. No.
Accessories		
Feedline accessory kit	1	**516-6919**

* with prefilter
** with individually attached tubing

PALL Life Sciences

Membrane filters, AcroPak™ 20

PP housing with PC filling bell, with upstream vent

Suitable for the sterile filtration of media and buffers up to 2 litres.

Inlet/outlet for tubing diameter 6,4 - 12,7 mm, outlet with filling bell

Max. pressure: 4,1 bar

Max. Temperature: 60 °C

Supor®

Hydrophilic polyethersulfone membrane with built-in prefilter

High flow rates, ideal for solutions where low protein binding is required. Not recommended for use with some ketones

Fluorodyne® II

Hydrophilic PVDF

Compatible with aqueous solutions and many organic solvents

Type	Pore size (µm)	Filtration area (cm^2)	Pk	Cat. No.
Supor®	0,8/0,2	20	3	**514-4096**
Supor®*	0,8/0,2	20	3	**514-4097**
Fluorodyne® II	0,1	20	3	**516-9041**
Fluorodyne® II*	0,1	20	3	**516-9042**
Fluorodyne® II	0,2	20	3	**514-4094**
Fluorodyne® II*	0,2	20	3	**514-4095**

* sterile

PALL Life Sciences

STERILE

Filtration capsules, AcroPak™ 200

PP housing with PC filling bell, with upstream vent, sterile

Suitable for the sterile filtration of media and buffers up to 20 litres.

Supor®

Hydrophilic polyethersulfone (PES) membrane with built-in prefilter.

High flow rates, ideal for solutions where low protein binding is required. Not recommended for use with some ketones

Fluorodyne® II

Hydrophilic PVDF membrane

Compatible with aqueous and many organic solvents

Inlet/outlet	6,4 - 12,7 mm Ø stepped hose barb with filling bell on outlet	6,4 - 12,7 mm Ø stepped hose barb with female luer slip interior and filling bell outlet
Max. temperature (°C)	60	
Max. pressure (bar)	4,1	

Type	Pore size (µm)	Filtration area (cm^2)	Pk	Cat. No.
Supor®, 6,4 - 12,7 mm Ø stepped hose barb with filling bell on outlet	0,8/0,2	200	3	**514-4098**
Fluorodyne® II	0,2	200	3	**514-4086**

PALL Life Sciences

STERILE

AcroPak™ capsules 500, 1000 and 1500, Supor®

Membrane: Supor® hydrophilic polyethersulfone (PES); housing: PP; filling bell: PC; sterile

For filtration of liquids requiring prefiltration such as serum-containing media. Ideal for solutions requiring low protein binding. Ensure sterile, mycoplasma-free cell culture media with the 0,1 µm pore size.

• 100% integrity tested to assure sterile filtrate

Type	Sample volume	Water flow rate	Inlet/outlet	Max. temperature (°C)	Max. pressure (bar)	Filtration area (cm²)
0,1/0,1 µm	50 l	0,2 l/min (0,1 bar)	6,4 - 12,7 mm hose barb with filling bell	60 (2,1 bar)	4,1	500
0,2/0,2 µm		0,6 l/min (0,1 bar)				
0,8/0,2 µm		1,1 l/min (0,1 bar)				
0,8/0,45 µm		1,13 l/min (0,1 bar)				
0,1/0,1 µm	100 l	0,4 l/min (0,1 bar)				1000
0,2/0,2 µm		1,1 l/min (0,1 bar)				
0,8/0,2 µm		1,6 l/min (0,1 bar)				
0,8/0,45 µm		2,5 l/min (0,1 bar)				
0,2/0,2 µm	150 l	1,6 l/min (0,1 bar)	12,7 mm straight hose barb			1500
0,8/0,2 µm		2,2 l/min (0,1 bar)				

Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
0,1/0,1	500	1	**516-7544**
0,2/0,2	500	1	**516-7542**
0,8/0,2	500	1	**515-0001**
0,8/0,45	500	1	**515-0003**
0,1/0,1	1000	1	**516-7545**
0,2/0,2	1000	1	**516-7543**
0,8/0,2	1000	1	**515-0002**
0,8/0,45	1000	1	**515-0004**
0,2/0,2	1500	1	**515-0127**
0,8/0,2	1500	1	**515-0126**

PALL Life Sciences

STERILE

Filtration capsules with HT Tuffryn® membrane

HT Tuffryn® polysulfone membrane, PC housing, sterile

Final filter for reliable bacterial retention.

- Uniform flow, maximum throughput
- Built-in air vent
- Integrity testable

Sterilised by gamma irradiation.

Water flow rate	1,2 l/min (0,7 bar)	2 l/min (0,7 bar)	5,2 l/min (0,7 bar)
Max. temperature (°C)	100		
Max. pressure (bar)	3,4		
Filtration area (cm²)	300	500	1290

Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
0,2/,0,2	300	1	**516-7527**
0,45/0,2	500	1	**516-7520**
0,2/0,2	1290	1	**516-7515**

PALL Life Sciences

Filter capsules with Versapor® membrane

Versapor® acrylic copolymer membrane, PC housing, sterile

For prefiltration of particulate liquids (such as serum) prior to final sterilisation filtration and for non critical final filtration.

Water flow rate	11,42 l/min (0,5 bar)		0,22 l/min (0,1 bar)
Max. temperature (°C)	88 (2,1 bar)		
Max. pressure (bar)	3,4		
Type	Mini-capsule	Versaflow™	Versacap

Type	Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
Mini-capsule	0,8/0,45	500	1	**516-7521**
Versaflow™	0,8/0,45	1390	1	**516-7523**
Serum capsule	GF/1,2	500	1	**514-4093**
Versacap	0,45/0,2	225	1	**516-7522**

Pressure filtration units, Sartolab® P20 and P20 Plus

Sartorius

Cellulose acetate membrane, P20 Plus with glass fibre prefilter; PC housing, sterile

Ready to use units which, attached to a membrane pump or tube pump, quickly and reliably sterilise 100 ml to 5 litres of media and aqueous solutions.

Air vent with PTFE membrane

Individually sterile bagged

Outlet: Hose nipple with filling bell

Water flow rate	250 ml/min (1 bar)
Max. pressure (bar)	3

Type	Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
P20, inlet hose nipple	0,2	20	10	**512-3352**
P20, inlet Luer lock	0,2	20	10	**512-3353**
P20 Plus, inlet hose nipple	0,2	20	10	**512-3356**
P20 Plus, inlet Luer lock	0,2	20	10	**512-3357**

Filtration capsules Sartobran® 150 and 300

Sartorius

Cellulose acetate membrane, PTFE vent filter, PP housing and PC filling bell, steam sterilised

Ready to use pressure filtration units for sterile filtration of 100 ml to 50 litres of buffers, infusion solutions, tissue culture solutions, serum and other solutions containing proteins. A hydrophobic PTFE membrane validated for sterile air filtration allows an effective air bubble collection at the highest point upstream.

• Cost saving scale up to larger volumes

Individually sterile packed

Type	OO	SO	SS	OO
Inlet/outlet	1/2" single stepped hose barb / 1/2" single stepped hose barb	1 1/2 sanitary Tri-Clamp®/ 1/2" single-stepped hose barb	1 1/2" sanitary Tri-Clamp®/ 1 1/2" sanitary Tri-Clamp®/	1/2" single stepped hose barb / 1/2" single stepped hose barb
Max. pressure (bar)	4 at +20 °C; 2 at +80 °C			

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Type	Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
OO	0,45/0,2	150	5	**611-0732**
SO	0,45/0,2	150	5	**512-3336**
SS	0,45/0,2	150	5	**611-0728**
OO	0,45/0,2	300	2	**512-3331**
OO	0,45/0,2	300	5	**611-0733**

Bottle top vacuum filtration systems, Standard Line

PS funnel and collection reservoir

Systems for vacuum filtration of aqueous solutions including cell culture media, buffers or other biological fluids. Once filtration is complete, solution can be stored in the collection reservoir until needed.

PES membrane: Low protein binding and low extractables. Ideal for tissue culture applications.

0,2 µm: Ideal for sterilisation applications and media preparation

0,45 µm: Ideal for buffer clarification

- Each individual unit is lot numbered for traceability
- Once filtration is complete, solution can be stored in the collection reservoir until needed

Non pyrogenic, non cytotoxic

ISO 10993-5, 1999

Packaging: Individually packaged in easy to peal bags, receiver bottle cap is individually wrapped.

Delivery information: Includes the filtration funnel with either 0,2 µm, or 0,45 µm PES membrane, vacuum port, lid, collection reservoir and cap for storage.

Description	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
Complete filtration units					
Complete filtration unit	150	0,20	50	12	**514-0328**
Complete filtration unit	150	0,45	50	12	**514-0329**
Complete filtration unit	250	0,20	50	12	**514-0330**
Complete filtration unit	250	0,45	50	12	**514-0331**
Complete filtration unit	500	0,20	75	12	**514-0332**
Complete filtration unit	500	0,45	75	12	**514-0333**
Complete filtration unit	1000	0,20	91	12	**514-0334**
Complete filtration unit	1000	0,45	91	12	**514-0335**
Filtration cups only					
Filtration cup	150	0,20	50	24	**514-0336**
Filtration cup	150	0,45	50	24	**514-0337**
Filtration cup	250	0,20	50	24	**514-0338**
Filtration cup	250	0,45	50	24	**514-0339**
Filtration cup	500	0,20	75	24	**514-0340**
Filtration cup	500	0,45	75	24	**514-0341**
Filtration cup	1000	0,20	91	24	**514-0342**
Filtration cup	1000	0,45	91	24	**514-0343**
PS reservoir bottles (caps included)					
Reservoir bottle with cap	150			24	**514-0344**
Reservoir bottle with cap	250			24	**514-0345**
Reservoir bottle with cap	500			24	**514-0346**
Reservoir bottle with cap	1000			24	**514-0347**

Bottle top vacuum filtration systems, High Performance

Designed for the preparation of buffers, tissue culture media, microbiological media and other biological fluids. These vacuum filtration systems feature large diameter Pall membranes for guaranteed performance and maximum throughput. The bottle top filtration system design includes a receiver bottle with an ergonomic shape, moulded finger grips and a patented bottle cap. The centrifuge tube and funnel system, allows the user to filter fluids directly into a 15 ml or 50 ml tube.

Each separate piece is compatible with the Quick-Connect™ pedestal base, which allows for a convenient one-time vacuum hose connection and one handed operation. A cradle ring is also available for use with existing laboratory stands. Systems are available with 0,1 µm (mycoplasma filtering grade), 0,2 µm (sterilising grade) or 0,45 µm (clarification grade) asymmetric PES membranes. All items are made from FDA-grade, Class VI materials and are gamma sterilised.

- Quick-Connect™ pedestal base or cradle ring allows for hands-free filtration. Weighted for extra stability
- Quick-Connect™ pedestal base ensures that the unit is always correctly placed
- Forward-facing, large, raised graduation marks allow for easy visualisation of volumes
- Vacuum on/off switch located at the front
- Vacuum hose adapter to use with conventional filtration set ups

Delivery information: Complete system includes filtration funnel (PS), media bottle (PS) or centrifuge tube (PP) and hose adapter.

Description	Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
Complete filtration units						
Centrifuge tube filtration unit	PES	15	0,1	40	24	**514-0367**
Centrifuge tube filtration unit	PES	15	0,2	40	24	**514-0317**
Centrifuge tube filtration unit	PES	15	0,45	40	24	**514-0318**
Centrifuge tube filtration unit	PES	50	0,1	40	24	**514-0366**
Centrifuge tube filtration unit	PES	50	0,2	40	24	**514-0308**
Centrifuge tube filtration unit	PES	50	0,45	40	24	**514-0309**
Media bottle filtration unit	PES	250	0,1	66	12	**514-0348**
Media bottle filtration unit	PES	250	0,2	66	12	**514-0296**
Media bottle filtration unit	PES	250	0,45	66	12	**514-0299**
Media bottle filtration unit	PES	500	0,1	90	12	**514-0349**
Media bottle filtration unit	PES	500	0,2	90	12	**514-0297**
Media bottle filtration unit	PES	500	0,45	90	12	**514-0300**
Media bottle filtration unit	PES	1000	0,1	90	12	**514-0350**
Media bottle filtration unit	PES	1000	0,2	90	12	**514-0298**
Media bottle filtration unit	PES	1000	0,45	90	12	**514-0301**
Filtration funnels only						
Filtration funnel for centrifuge tube	PES	15	0,1	40	30	**514-0363**
Filtration funnel for centrifuge tube	PES	15	0,2	40	30	**514-0364**
Filtration funnel for centrifuge tube	PES	15	0,45	40	30	**514-0365**
Filtration funnel for centrifuge tube	PES	50	0,1	40	30	**514-0359**
Filtration funnel for centrifuge tube	PES	50	0,2	40	30	**514-0360**
Filtration funnel for centrifuge tube	PES	50	0,45	40	30	**514-0362**
Filtration funnel for media bottle	PES	250	0,1	66	24	**514-0354**
Filtration funnel for media bottle	PES	250	0,2	66	24	**514-0302**
Filtration funnel for media bottle	PES	250	0,45	66	24	**514-0305**
Filtration funnel for media bottle	PES	500	0,1	90	24	**514-0355**
Filtration funnel for media bottle	PES	500	0,2	90	24	**514-0303**
Filtration funnel for media bottle	PES	500	0,45	90	24	**514-0306**
Filtration funnel for media bottle	PES	1000	0,1	90	24	**514-0358**
Filtration funnel for media bottle	PES	1000	0,2	90	24	**514-0304**
Filtration funnel for media bottle	PES	1000	0,45	90	24	**514-0307**

Description	Pk	Cat. No.
Accessories		
Quick-Connect™ pedestal base	1	**514-0319**
Cradle ring	1	**514-0324**

Bottle top vacuum filtration units, Sartolab
Sartorius

Polyethersulfone membrane, PS funnel and collection reservoir, sterile

For the sterile filtration of cell culture media and aqueous solutions.

- High flow rate
- Low protein binding

Delivery information: Supplied with tube adapter and closure lid.

Capacity (ml)	Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
Sartolab RF, complete with receiver flask				
150	0,2	18	12	**514-0174**
250	0,2	24	12	**514-0175**
500	0,2	63	12	**514-0176**
1000	0,2	79	12	**514-0177**
Sartolab BT, without flask, can be adapted for use on bottles with 45 mm neck				
150	0,2	18	48	**514-0178**
500	0,2	63	12	**514-0179**
1000	0,2	79	12	**514-0180**

Bottle top vacuum filtration systems
Corning®

Vacuum filter systems available in four sizes: 150 ml; 250 ml; 500 ml and 1 l.

Adapters are colour coded by membrane type for easy product identification: Polyethersulfone (PES) yellow; cellulose acetate (CA) orange; cellulose nitrate (CN) blue; nylon (NY) red.

- Angled hose connector simplifies vacuum line attachment
- Receiver bottles feature easy grip sides for improved handling
- Individually packaged, sterile, certified non pyrogenic
- Caps for receiver bottles are sterile and individually packaged
- Extra plastic storage bottles are available

Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
PS funnel/receiver bottle, 150 ml capacity, 50 mm diameter membrane					
PES	150	0,22	50	12	**513-3357**
CA	150	0,22	50	12	**513-3358**
CA	150	0,45	50	12	**513-3359**
PS funnel/receiver bottle, 250 ml capacity, 50 mm diameter membrane					
CN	250	0,22	50	12	**734-1860**
CA	250	0,22	50	12	**513-3346**
CA	250	0,45	50	12	**513-3347**
NY	250	0,2	50	12	**513-3350**
PES	250	0,22	50	12	**513-3354**
PS funnel/receiver bottle, 500 ml capacity, 70 mm diameter membrane					
CN	500	0,22	70	12	**734-1861**
CA	500	0,22	70	12	**513-3348**
CA	500	0,45	70	12	**513-3349**
NY	500	0,2	70	12	**513-3352**
PES	500	0,22	70	12	**513-3355**
PES	500	0,1	70	12	**514-0169**
PS funnel/receiver bottle, 1000 ml capacity, 90 mm diameter membrane					
CN	1000	0,22	90	12	**734-1821**
NY	1000	0,2	90	12	**734-1844**
CA	1000	0,45	90	12	**734-1845**
CA	1000	0,22	90	12	**734-1846**
PES	1000	0,22	90	12	**513-3356**

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Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
PS funnel/receiver bottle, 1000 ml capacity, 90 mm diameter membrane					
CA*	1000	0,22	90	12	**734-1900**
CA*	1000	0,45	90	12	**734-1901**
PES	1000	0,1	90	12	**514-0168**

* 500 ml funnel with 70 mm membrane

Bottle top vacuum filtration systems, Nalgene®
Thermo Scientific

Polysulfone, autoclavable, reusable

Suitable for analytical or sterile filtration, under vacuum or pressure.

- Graduated receiver
- Two side-arms for tubing 6 - 8 mm inner diameter
- With cover for convenient sterile storage of filtrate

Delivery information: Supplied with holder and receiver, analytical plate, sterilisation plate and cover.

Capacity (ml)	Filtration area (cm²)	Pk	Cat. No.
250/250	11,25/13,3	1	**513-3001**
500/500	11,25/13,3	1	**513-3002**
500/1000	11,25/13,3	1	**513-3003**

Bottle top vacuum filtration funnels, Nalgene®
Thermo Scientific

Polysulfone, autoclavable, reusable

Suitable for analytical or sterile filtration, with vacuum or pressure

With graduation and screw thread

Removable membrane support plate

PP tubing adapter

513-3203: For neck size 33 mm

516-0578: For neck size 45 mm

Capacity (ml)	Filtration area (cm²)	Pk	Cat. No.
500	13,3	1	**513-3203**
500	13,3	1	**516-0578**

Bottle top vacuum filtration systems, Nalgene®
Thermo Scientific

Nylon membrane, PS funnel and collection reservoir, sterile

For special applications. No wetting agents, the lowest in extractables, excellent alcohol resistance.

- Funnel and receiver flask graduated
- Quick disconnect tubing adapter
- With cover

Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
150	0,2	50	12	**734-5012**
150	0,45	50	12	**734-5013**
250	0,2	50	12	**734-5016**
250	0,45	50	12	**734-5017**
500 *	0,2	75	12	**734-5018**
500 *	0,45	75	12	**734-5019**
500	0,2	75	12	**734-5014**
500	0,45	75	12	**734-5015**
500	0,2	90	12	**513-1631**
1000	0,2	90	12	**513-1641**

* funnel: 500 ml, receiver: 1000 ml

Bottle top vacuum filtration systems, Nalgene®
Thermo Scientific

Triton X-free cellulose nitrate membrane, PS funnel and collection reservoir, sterile

Sterile disposable filters for cold sterilisation, clarification, prefiltration and ultrafiltration of buffers, culture media and aqueous solutions. Membrane with excellent wetting properties and fastest flow rates with aqueous solutions.

- Funnel and receiver flask graduated
- Quick disconnect tubing adapter
- With cover

Description	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
Standard					
No grid	115 ***	0,2	50	12	**734-5001**
Green grid	115 ***	0,45	50	12	**734-5002**
MF75™ series, with screw closure					
No grid	150	0,2	50	12	**734-5003**
Green grid	150	0,45	50	12	**734-5004**
Black grid	150	0,8	50	12	**734-5005**
No grid	250	0,2	50	12	**734-5006**
Green grid	250	0,45	50	12	**734-5007**
Black grid	250	0,8	50	12	**734-5008**
No grid	500 *	0,2	75	12	**734-5082**
Green grid	500 *	0,45	75	12	**734-5083**
Black grid	500 *	0,8	75	12	**734-5084**
No grid	500 * **	0,2	75	12	**734-5009**
Green grid	500 * **	0,45	75	12	**734-5010**
Black grid	500 * **	0,8	75	12	**734-5011**

* delivered with 12 glass fibre prefilters per case
** funnel: 500 ml, receiver: 1000 ml
*** low profile

Bottle top vacuum filtration funnels
Corning®

PS bottle top vacuum filters with adapters colour coded by membrane type: Polyethersulfone (PES) yellow; cellulose acetate (CA) orange; nylon (NY) red.

- Available in 33 mm and 45 mm neck sizes to fit most glass and plastic media storage bottles
- Individually packaged, sterile and certified non pyrogenic
- 45 mm neck sizes fit on Corning® plastic storage bottles

Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Neck	Pk	Cat. No.
150 ml capacity, 50 mm diameter membrane						
CA	150	0,22	50	33 mm	48	**513-3361**
CA	150	0,45	50	33 mm	48	**513-3344**
CA	150	0,22	50	45 mm	48	**513-3360**
CA	150	0,45	50	45 mm	48	**513-3345**
PES	150	0,22	50	33 mm	48	**734-1890**
PES	150	0,22	50	45 mm	48	**734-1891**
500 ml capacity, 70 mm diameter membrane						
NY	500	0,2	70	45 mm	12	**734-1811**
CA	500	0,45	70	33 mm	12	**734-1841**
CA	500	0,22	70	45 mm	12	**734-1842**
CA	500	0,45	70	45 mm	12	**734-1843**

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Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Neck	Pk	Cat. No.
500 ml capacity, 70 mm diameter membrane						
CA	500	0,22	70	33 mm	12	**734-1848**
PES	500	0,22	70	33 mm	12	**513-3362**
PES	500	0,22	70	45 mm	12	**525-3409**
1000 ml capacity, 90 mm diameter membrane						
CA	1000	0,22	90	45 mm	12	**734-1810**
PES	1000	0,22	90	45 mm	12	**734-1896**

Bottle top vacuum filtration systems, Nalgene®
Thermo Scientific

Surfactant-free cellulose acetate membrane (SFCA), PS funnel and collection reservoir, sterile

Ideal for cell culture, with low protein binding.

- Funnel and receiver flask graduated
- Quick disconnect tubing adapter
- With cover

Description	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
Complete unit	115	0,2	50	12	**513-1221**
Complete unit	115	0,45	50	12	**513-1222**
Complete unit	150	0,2	50	12	**513-1551**
Complete unit	150	0,45	50	12	**513-1552**
Complete unit	500	0,2	75	12	**513-1561**
Complete unit	500	0,45	75	12	**513-1562**
Complete unit	250	0,2	50	12	**513-1571**
Complete unit	250	0,45	50	12	**513-1572**
Complete unit	1000	0,2	75	12	**513-1581**
Complete unit	1000	0,45	75	12	**513-1582**
Complete unit	1000	0,2	90	12	**513-1611**
Complete unit	1000	0,45	90	12	**734-5029**
Complete unit	500	0,2	90	12	**513-1621**
Complete unit	500	0,45	90	12	**513-1622**
Top filter for 33 mm neck	150	0,2	50	12	**734-5061**
Top filter for 33 mm neck	150	0,45	50	12	**734-5062**
Top filter for 33 mm neck	500	0,2	75	12	**734-5065**
Top filter for 33 mm neck	500	0,45	75	12	**734-5066**
Top filter for 33 mm neck	1000	0,2	90	12	**734-5069**
Top filter for 45 mm neck	150	0,2	50	12	**734-5063**
Top filter for 45 mm neck	150	0,45	50	12	**734-5064**
Top filter for 45 mm neck	500	0,2	75	12	**734-5067**
Top filter for 45 mm neck	500	0,45	75	12	**734-5068**
Top filter for 45 mm neck	1000	0,2	90	12	**734-5070**

Bottle top vacuum filtration units, Nalgene®
Thermo Scientific

PES membrane, PS housing, sterile

Filters screw onto glass media bottles with 33 or 45 mm neck size.

- Allow direct filtration of liquid into sterile glass media bottles
- Graduated
- Side-arm with quick-disconnect tubing adapter

Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
For 33 mm neck diameter				
150	0,45	50	12	**734-5076**
500	0,45	75	12	**734-5072**

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Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
For 45 mm neck diameter				
150	0,45	50	12	**734-5078**
500	0,45	75	12	**734-5074**

Filter flasks for filtration systems, Nalgene®
Thermo Scientific

PS, PE-screw closure, sterile

Can be used to store sterilised filtrate.

- Gamma irradiated and ready to use
- 1½-turn threaded screw closure GL 45
- Leakproof seal eliminates pH shift in receivers

Graduated

Capacity (ml)	Pk	Cat. No.
150	24	**734-5085**
250	24	**734-5086**
500	12	**734-5087**
1000	12	**734-5088**

Bottle top vacuum filtration systems
Corning®

Cellulose acetate membrane, PS funnel and PP collection tube, sterile

- 50 mm diameter membrane
- Minimises unnecessary transfers by filtering directly into 50 ml centrifuge tube
- Includes two centrifuge tube stands with each case
- Each PP centrifuge tube is supplied with an individually wrapped cap for storage
- Individually packaged, sterile, certified non pyrogenic

Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
CA	150	0,22	50	12	**734-1831**
CA	150	0,45	50	12	**734-1830**

Bottle top vacuum filtration systems, Nalgene®
Thermo Scientific

Supor® machV PES membrane, PS funnel and PP collection tube, sterile

The optimal choice for small volume tissue culture work. Offers clean, fast filtration of 20 to 50 ml of media or buffers.

- Low protein binding
- Non cytotoxic and non pyrogenic

Delivery information: Comes assembled with 50 ml conical tube and a separate closure. Includes two reusable stands in each case.

Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
50	0,2	50	12	**514-0590**

PALL Life Sciences

Venting filters

Acro® 37 TF vent devices

Hydrophobic membrane PP reinforcened PTFE; PP housing, autoclavable

Multipurpose filter for small volume venting and gas filtration, ideal for small bioreactors and fermenters.

Bacterial air vents

Hydrophobic glass laminated (polyester/glass fibre/polyester) membrane: PP housing, autoclavable

Economical, disposable depth filter for venting applications or sterile gas delivery. Prevents the passage of aerosols, protecting equipment and staff.

Aerosol retention: 99,97% 0,3 µm (DOP) at 32 l/min/100 cm^2

Acro® 50 vent devices

Emflon® II (hydrophobic PVDF) membrane: PP housing, autoclavable

Ideal for venting of bioreactors, fermentation tanks and carboys or sterile gas purging of culture vessels. Ideal for attachment to disposable systems that need to undergo gamma irradiation.

514-4227: with vent, 514-4228 without vent, 100% integrity tested

Airflow rate (l/min)	3,58 (0,2 bar)	40 (0,4 bar)	27 (1 bar)
Inlet/outlet	stepped hose barbs 6,4 - 9,5 mm Ø	stepped hose barbs 6,4 - 12,7 mm Ø	
Max. temperature (°C)	100	121	60
Ø (mm)	37		50

Pore size (µm)	Filtration area (cm^2)	Ø (mm)	Pk	Cat. No.
Acro® 37 TF vent devices				
0,2	7,5	37	24	**514-4117**
0,2	7,5	37	200	**514-4118**
Bacterial air vents				
1 *	7,5	37	10	**514-4114**
1	7,5	37	24	**514-4107**
Acro® 50 vent devices				
0,2	20	50	3	**514-4227**
0,2	20	50	100	**514-4228**

* sterile

PALL Life Sciences

Venting filters, Vacushield™

Hydrophobic PTFE membrane, PP housing

Protects valves and pump components from damage due to liquids. Protects laboratory personnel from potential biohazards, airborne and aerosol contaminants.

Aerosol retention: 99,97% of 0,3 µm DOP particles at 32 l/min/100 cm^2

Airflow rate (l/min)	8 (0,2 bar)
Inlet/outlet	for tubing Ø 6,4 - 12,7
Max. pressure (bar)	1
Max. temperature (°C)	130
Ø (mm)	50

Pore size (µm)	Filtration area (cm^2)	Ø (mm)	Pk	Cat. No.
0,45	19,6	50	3	**514-4115**

PALL Life Sciences

Venting filters, AcroVent®

PTFE hydrophobic membrane, PP housing

Economical, disposable device decreasing contamination risks. Ideal for gas lines for CO_2 incubators.

Airflow rate (l/min)	8 (0,2 bar)
Inlet/outlet	for tubing Ø 6,4 - 12,7 mm
Max. pressure (bar)	4,1
Max. temperature (°C)	130

Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
0,2	19,6	10	**514-4108**

PALL Life Sciences

Venting filters, Acro® 50

Membrane: PTFE on a hydrophobic PP support; housing: PP, autoclavable

Reusable filters with superior performance for critical applications, ideal for use with bioreactors and fermenters and for filtration of aggressive solvents.

Airflow rate (l/min)	8 (0,2 bar)			12 (0,2 bar)	15 (0,2 bar)
Inlet/outlet	stepped hose barbs 6,4 - 12,7 mm Ø	1/8" MNPT	9,5 mm Ø straight	stepped hose barbs 6,4 - 12,7 mm Ø	1/8" MNPT
Max. pressure (bar)	4,1				
Max. temperature (°C)	130				
Pore size	0,2 µm			0,45 µm	1 µm
Ø (mm)	50				

Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
0,2	19,6	18	**514-4109**
0,2	19,6	72	**516-7600**
0,2 *	19,6	18	**516-7627**
0,2 **	19,6	18	**516-7628**
0,45	19,6	18	**514-4110**
1	19,6	18	**514-4111**
1 *	19,6	18	**515-0125**

* inlet/outlet: 1/8" MNPT
** inlet/outlet: 9,5 mm diameter straight

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Venting filters
Sartorius

Hydrophobic PP reinforcened PTFE membrane, PP housing, sterile

For the sterile venting of small fermenters and culture vessels.

Airflow rate (l/min)	5 (0,1 bar)	8,5 (0,1 bar)
Inlet/outlet	tubing nozzle 6 - 12 mm with Luer inner cone	
Max. temperature (°C)	134	
Pore size	0,2 µm	0,45 µm

Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
0,2	20	12	**512-3250**
0,2	20	25	**512-3251**
0,2 *	20	100	**611-0715**
0,2 **	5,3	50	**611-0696**
0,45	20	12	**611-0714**

* non sterile
** PE-strengthened PTFE in cryolite housing

PALL Life Sciences

Filtration capsules, AcroPak™ 300

PTFE hydrophobic membrane, PP housing

For high airflow rate venting applications. Also useful for aggressive solvent filtration.

- 100% integrity tested

Airflow rate (l/min)	32 (0,07 bar)
Inlet/outlet	for tubing Ø 6,4 - 12,7 mm
Max. pressure (bar)	4,1
Max. temperature (°C)	60
Water flow rate	0,8 l/min (0,1 bar)

Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
0,2	300	3	**515-0143**

PALL Life Sciences

HEPA capsules

Versapor® membrane, PP housing

Designed to provide bacteria-free air (HEPA: High Efficiency Particulate free Air) for sterile applications. Porous membrane delivering high airflow rates at low differential pressure and extends filter life.

Ensures particulate free air with 99,97% retention of 0,3 µm DOP aerosol (ASTM D 2986-71).

Can be used for non sterilising liquid prefiltration.

Inlet/outlet	3/8" FNPT; includes optional hose barb fittings to accept 12,7 mm ID tubing
Max. pressure (bar)	3,4
Max. temperature (°C)	88

Pore size (µm)	Filtration area (cm²)	Pk	Cat. No.
1,2	860	1	**514-4092**

PALL Life Sciences

Carbon filtration capsules

100 g actived carbon filter, PC housing

Removes odour, colloids and organics from liquids.

Inlet/outlet	3/8" FNPT; includes optional hose barb fittings to accept 12,7 mm ID tubing
Max. pressure (bar)	3,4
Max. temperature (°C)	80

Filtration area (cm^2)	Pk	Cat. No.
70000 m^2	1	**515-0000**

Venting filters, HEPA-VENT™ and HEPA-CAP™
Whatman (GE Healthcare)

Glass microfibre filter, PP housing, autoclavable

In line devices, particularly suitable for the sterile venting of fermentors, incubators or reaction vessels to prevent airborne particles from entering or exiting the vessel.

The glass microfibre filtration media is mildly hydrophobic for resistance to bacterial growth and has been laminated on both sides to prevent fibre release.

- Retains 99,97% of airborne particles >0,3 µm, ideal for clean air applications
- Allows bi-directional flow
- Depth filter design allows for high loading capacity

Airflow rate (l/min)	90 at 0,69 bar	225 at 0,35 bar	700 at 0,35 bar
Connections	for 6-10 mm Ø. int		for 9,5 - 12 mm Ø. int
Housing type	disc	capsule	

Type	Filtration area (cm^2)	Pk	Cat. No.
Hepa-Vent™ disc	16	10	**515-0113**
Hepa-Cap™ 36 capsule	625	1	**516-1104**
Hepa-Cap™ 75 capsule	1300	1	**516-1105**

Centrifugal filters

PP insert and receiver tube

MWCO filters are ideal to concentrate, purify and desalt peptides, proteins, oligonucleotides, DNA and RNA.

The 0,2 and 0,45 µm centrifugal filters are used for particulate removal, sample clarification or prefiltration clean up of large agarose or acrylamide gel debris prior to further purification with a MWCO device.

- Low binding, typical recovery greater than 90%
- Sealed membrane

Fits rotors that accept 1,5 ml tubes

Dead volume	Filtration area (cm^2)	Max. RCF (×g)	Sample volume (µl)	Temperature (°C)
PES (polyethersulfone) membrane				
<5 µl	0,28	14000	max. 500	0 - 40
Nylon membrane				
<5 µl	0,28	14000	max. 500	0 - 40

MWCO (kD)	Pore size (µm)	Colour code	Pk	Cat. No.
PES (polyethersulfone) membrane				
3		Grey	100	**516-0227**
3		Grey	500	**516-0228**
10		Blue	100	**516-0229**
10		Blue	500	**516-0230**
30		Red	100	**516-0231**
30		Red	500	**516-0232**
Nylon membrane				
	0,2	Aqua	100	**516-0233**
	0,2	Aqua	500	**516-0234**
	0,45	Lilac	100	**516-0235**
	0,45	Lilac	500	**516-0236**

Centrifugal concentrators

Pall Life Sciences centrifugal concentrators for ultrafiltration and microfiltration facilitate many common nucleic acid and protein processing procedures. The Nanosep®, Microsep™ Advance, Macrosep® Advance and Jumbosep™ units are available with various molecular separation thresholds and pore sizes that are easily identifiable by their colour coding. These centrifugal units ensure efficient concentration and desalination of samples between 50 µl and 60 ml within a few minutes. Ultrafiltration reduces the number of process steps. The concentrated samples can immediately be transferred to their subsequent applications.

Unique characteristics

- Fast processing 90% yields can be achieved within as little as five to ten minutes
- Wide MWCO range. Once the correct separation threshold or pore size has been determined, you can easily recognise these by the colour code
- Low protein binding. Most centrifugal concentrators are made of low binding polypropylene

Applications

- Protein concentration
- Buffer exchange
- Desalination
- DNA concentration
- Sample fractionation

Centrifugal concentrator	Sample volume
Nanosep®	<0,5 ml
Microsep™ Advance	0,5 – 5 ml
Macrosep® Advance	5 – 20 ml
Jumbosep™	20 – 60 ml

MWCO selection for nucleic acid applications

MWCO	Base Pairs (DS)	Bases (SS)
1 K	5-16 Bp	9-32 Bs
3 K	16-32 Bp	32-65 Bs
5 K	25-50 Bp	50-95 Bs
10 K	50-145 Bp	95-285 Bs
30 K	145-285 Bp	285-570 Bs
50 K	240-475 Bp	475-950 Bs
100 K	475-1450 Bp	950-2900 Bs

MWCO selection for protein applications

MWCO	Nominal pore size	Biomolecular size	Biomolecular weight
1 K	-	-	3-10 K
3 K	-	-	10-20 K
5 K	-	-	15-30 K
10 K	-	-	30-90 K
30 K	-	-	90-180 K
50 K	5 nm	15-30 nm	150-300 K
100 K	10 nm	30-90 nm	300-900 K
300 K	35 nm	90-200 nm	900-1800 K

PALL Life Sciences

Centrifugal devices, Nanosep®

Simple concentrating and desalting of 50 to 500 µl samples.

- Rapid processing of samples
- Typical recoveries are greater than 90%, available with low protein binding Omega™ membrane

Housing: Low binding PP.

Ultrasonically welded seals prevent bypass or seal failure.

Fits standard centrifuge rotors that accept 1,5 ml tubes.

MWCO (kD)	Colour code	Pk	Cat. No.
3	Grey	24	**516-8480**
3	Grey	100	**516-8481**
3	Grey	500	**516-0584**
10	Blue	24	**516-8490**
10	Blue	100	**516-8491**
10	Blue	500	**516-8492**
30	Red	24	**516-8501**
30	Red	100	**516-8502**
30	Red	500	**516-8503**
100	Clear	24	**516-8519**
100	Clear	100	**516-8520**
100	Clear	500	**516-8521**
300	Orange	24	**516-8530**
300	Orange	100	**516-8531**
300	Orange	500	**516-8532**

PALL Life Sciences

Centrifugal devices, Nanosep® MF

GH Polypro membrane (PP, hydrophilic) PP housing

Ideal for particulate removal, especially when sample recovery is a concern. Suitable for aqueous, organic and aggressive organic samples and for rapid processing of samples.

Filtration area (cm^2)	0,3
Max. RCF (×g)	14000
Sample volume (µl)	max. 500
Temperature (°C)	0 - 40

Pore size (µm)	Filtration area (cm^2)	Pk	Cat. No.
0,45	0,3	100	**514-4084**
0,45	0,3	500	**514-4085**

PALL Life Sciences

Centrifugal devices, Nanosep® MF

Membrane: Modified nylon

Ideal for sample preparation in analytical chemistry (HPLC, GC, IC and MS).

Filtration area (cm²)	10
Max. RCF (×g)	14000
Sample volume (µl)	max. 500
Temperature (°C)	0 - 40
Ø×H (mm)	29×109

Pore size (µm)	Membrane	Colour code	Pk	Cat. No.
0,2	Bio-Inert®	Aqua	24	**734-2700**
0,2	Bio-Inert®	Aqua	100	**516-8554**
0,2	Bio-Inert®	Aqua	500	**516-9487**
0,45	Bio-Inert®	Lilac	24	**734-2702**
0,45	Bio-Inert®	Lilac	100	**516-8561**
0,45	Bio-Inert®	Lilac	500	**516-9489**

PALL Life Sciences

Centrifugal devices, Microsep™ Advance and Macrosep® Advance

Microsep™ Advance centrifugal devices

Precise, quick recovery of microlitre volumes of concentrate.

- High recoveries, typically greater than 90%
- With deadstop to prevent samples from spinning to dryness
- Fits centrifuges that accept standard 17×100 mm tubes

Macrosep® Advance centrifugal devices

Quickly concentrates up to 20 ml of biological sample without valuable sample loss.

- High recoveries, typically greater than 90%
- With deadstop to prevent samples from spinning to dryness
- Low protein binding Omega™ membrane and polypropylene housing minimise losses due to non specific binding
- Fits centrifuges that accept standard 50 ml conical tubes

Dead volume	Filtration area (cm²)	Max. RCF (×g)	Sample volume (µl)	Temperature (°C)	Ø×H (mm)
Microsep™ Advance with Omega™ membrane					
>65 µl	3,3	14000	max. 5000	0 - 40	17×120
Microsep™ Advance with Supor® membrane					
>65 µl	3,3	14000	max. 5000	0 - 40	17×120
Macrosep® Advance with Omega™ membrane					
>450 µl	7,2	14000	max. 20000	0 - 40	50×120
Macrosep® Advance with Supor® membrane					
>450 µl	7,2	14000	max. 20000	0 - 40	50×120

MWCO (kD)	Pore size (µm)	Colour code	Pk	Cat. No.
Microsep™ Advance with Omega™ membrane				
3		Grey	24	**516-0370**
3		Grey	100	**516-0371**
10		Blue	24	**516-0372**
10		Blue	100	**516-0373**
30		Red	24	**516-0374**
30		Red	100	**516-0375**
100		Clear	24	**516-0376**
100		Clear	100	**516-0377**
Microsep™ Advance with Supor® membrane				
	0,2	Aqua	24	**516-0378**
	0,2	Aqua	100	**516-0381**
	0,45	Lilac	24	**516-0382**
	0,45	Lilac	100	**516-0383**
Macrosep® Advance with Omega™ membrane				
3		Grey	6	**516-0354**
3		Grey	24	**516-0355**
3		Grey	100	**516-0356**
10		Blue	6	**516-0357**
10		Blue	24	**516-0358**
10		Blue	100	**516-0359**
30		Red	6	**516-0360**
30		Red	24	**516-0361**
30		Red	100	**516-0362**

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MWCO (kD)	Pore size (µm)	Colour code	Pk	Cat. No.
Macrosep® Advance with Omega™ membrane				
100		Clear	6	**516-0363**
100		Clear	24	**516-0364**
100		Clear	100	**516-0365**
Macrosep® Advance with Supor® membrane				
	0,2	Aqua	24	**516-0366**
	0,2	Aqua	100	**516-0367**
	0,45	Lilac	24	**516-0368**
	0,45	Lilac	100	**516-0369**

Centrifugal concentrators, Vivacon® 500
Sartorius

For samples up to 500 µl; membrane: Regenerated cellulose Hydrosart®

Vivacon® 500 centrifugal concentrators have been designed for DNA and protein concentration and rebuffering. They feature a horizontal membrane design that is preferred by some users for reasons of consistency with previously used procedures and reproducibility.

- Optimal performance with very dilute samples, e.g. forensic specimens
- Low binding materials; high recoveries even from diluted samples
- Re-spin possibility; complete and highly reproducible sample recovery
- Volume graduation and the molecular weight cut-off printed on individual devices

Dead volume	5 µl
Filtration area (cm²)	0,32
Ø×H (mm)	12,4×45/47,5

MWCO (kD)	Pk	Cat. No.
2	25	**518-0008**
2	100	**518-0009**
10	25	**518-0000**
10	100	**518-0001**
30	25	**518-0002**
30	100	**518-0003**
50	25	**518-0004**
50	100	**518-0005**
100	25	**518-0006**
100	100	**518-0007**
2, 10, 30 *	12	**518-0011**
30, 50, 100 *	12	**518-0010**

* Starter pack

Centrifugal concentrators, Vivacon® 2
Sartorius

For samples up to 2 ml; membrane: Regenerated cellulose Hydrosart®

Vivacon® 2 centrifugal concentrators have been designed for DNA concentration, buffer exchange applications and primer removal. They feature a horizontal membrane design that is preferred by some users for reasons of consistency with previously used procedures and reproducibility.

- Optimal performance with very dilute samples, e.g. forensic specimens
- Low binding materials; high recoveries even from diluted samples
- Re-spin possibility; complete and highly reproducible sample recovery
- Volume graduation and the molecular weight cut-off printed on individual devices

Dead volume	10 µl
Filtration area (cm²)	0,95
Ø×H (mm)	16×115/125

MWCO (kD)	Pk	Cat. No.
2	25	**518-0020**
2	100	**518-0021**
10	25	**518-0012**
10	100	**518-0013**
30	25	**518-0014**
30	100	**518-0015**

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MWCO (kD)	Pk	Cat. No.
50	25	**518-0016**
50	100	**518-0017**
100	25	**518-0018**
100	100	**518-0019**

Centrifugal filtration units, Vivaspin® 500
Sartorius

For 100 to 600 µl, polyethersulfone (PES) membrane

The Vivaspin® 500 units can effectively be used in fixed angle rotors suitable for 2,2 ml centrifuge tubes.

The vertical membrane and the thin channel filtration chamber minimise membrane fouling and provide high speed concentrations, even with particle laden solutions.

- Protein removal from serum and cell/tissue lysates
- Exchange buffers for proteomic peptide samples
- Prepare samples for mass spectrometry

Dead volume	<5 µl
Filtration area (cm^2)	0,5
Max. RCF (×g)	15000
Ø×H (mm)	11×50

MWCO (kD)	Pk	Cat. No.
3	25	**512-2837**
3	100	**512-2838**
5	25	**512-3737**
5	100	**512-4001**
10	25	**512-3736**
10	100	**512-4002**
30	25	**512-3738**
30	100	**512-4003**
50	25	**512-3739**
50	100	**512-4004**
100	25	**512-3740**
100	100	**512-4005**
300	25	**512-4025**
300	100	**512-4026**
1000	25	**512-4027**
1000	100	**512-4028**
0,2 µm	25	**512-3743**
0,2 µm	100	**512-3744**
Starter kit (5x 5, 10, 30, 50, 100 kD)	25	**512-3745**

Centrifugal filtration units, Vivaspin® 2
Sartorius

For 0,4 to 2 ml

This device combines the speed of the classical Vivaspin® products with low internal surface and membrane area for superior recoveries from very dilute solutions.

Choice of directly pipetting the concentrate from the dead stop pocket built into the bottom of the concentrator, or alternatively reverse spinning into the concentrate recovery cap which can then be sealed for storage.

- Protein removal from serum and cell/tissue lysates
- Exchange buffers for proteomic peptide samples
- Prepare samples for mass spectrometry

Dead volume	Filtration area (cm^2)	Max. RCF (×g)	Ø×H (mm)
Polyethersulfone (PES) membrane			
<10 µl	1,2	8000	17×126
Cellulose triacetate membrane			
<10 µl	1,2	8000	17×126
Hydrosart® membrane			
<10 µl	1,2	8000	17×126

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MWCO (kD)	Pk	Cat. No.
Polyethersulfone (PES) membrane		
3	25	**512-2841**
3	100	**512-2842**
5	25	**512-3753**
5	100	**512-4006**
10	25	**512-3752**
10	100	**512-4007**
30	25	**512-3754**
30	100	**512-4008**
50	25	**512-3755**
50	100	**512-4009**
100	25	**512-3756**
100	100	**512-4010**
300	25	**512-2839**
300	100	**512-2840**
1000	25	**512-3757**
1000	100	**512-3758**
0,2 µm	25	**512-3759**
0,2 µm	100	**512-3760**
Starter kit (5x 5, 10, 30, 50, 100 kD)	25	**512-3767**
Cellulose triacetate membrane		
5	25	**512-3769**
5	100	**512-3770**
10	25	**512-3771**
10	100	**512-3772**
20	25	**512-3773**
20	100	**512-3774**
Hydrosart® membrane		
2	25	**512-2866**
2	100	**512-2867**
5	25	**512-2845**
5	100	**512-2846**
10	25	**512-2843**
10	100	**512-2844**
30	25	**512-2847**
30	100	**512-2848**

Centrifugal filtration units, Vivaspin® 4

Sartorius

For 1 to 4 ml, polyethersulfone (PES) membrane

This device combines a high speed concentration with high recovery.

Direct recovery by pipetting the concentrate from dead stop pocket built into the bottom of the concentrator.

- Protein removal from serum and cell/tissue lysates
- Exchange buffers for proteomic peptide samples
- Prepare samples for mass spectrometry

Dead volume	10 µl
Filtration area (cm^2)	2
Max. RCF (×g)	7500
Ø×H (mm)	17×122

MWCO (kD)	Pk	Cat. No.
0,2 µm	25	**512-2859**
0,2 µm	100	**512-2860**
5	25	**512-2851**
5	100	**512-2852**
10	25	**512-2849**
10	100	**512-2850**
30	25	**512-2853**
30	100	**512-2854**
50	25	**512-2855**
50	100	**512-2856**
100	25	**512-2857**
100	100	**512-2858**
Starter kit (5x 5, 10, 30, 50, 100 kD)	25	**512-2861**

Centrifugal filtration units, Vivaspin® 15R
Sartorius

For 2 to 15 ml, Hydrosart® (modified regenerated cellulose) membrane

This device is ideally where extremely high recovery with very low adsorption is needed, for example in applications such as desalting and concentration of Ig fractions. Extremely short concentration time.

- Protein removal from serum and cell/tissue lysates
- Exchange buffers for proteomic peptide samples
- Prepare samples for mass spectrometry

Dead volume	<20 µl
Filtration area (cm^2)	3,9
Max. RCF (×g)	6000
Ø×H (mm)	30×116

MWCO (kD)	Pk	Cat. No.
2	12	**512-4125**
2	48	**512-4126**
5	12	**512-4119**
5	48	**512-4120**
10	12	**512-4121**
10	48	**512-4122**
30	12	**512-4123**
30	48	**512-4124**

Centrifugal filtration units, Vivaspin® Turbo 15
Sartorius

For 0,5 to 15 ml, polyethersulfone (PES) membrane

For scientists and lab technicians who need to quickly and safely concentrate biological samples.

- Equipped with a unique patent pending modified dead stop pocket, that enables reproducible and total recoveries of even highly concentrated samples
- Allows easy and complete recovery of the concentrate, while also being the fastest in the market

Dead volume	<20 µl
Filtration area (cm^2)	4
Max. RCF (×g)	7500
Ø×H (mm)	25,5×76

MWCO (kD)	Pk	Cat. No.
3	12	**512-0567**
3	48	**512-0568**
5	12	**512-0559**
5	48	**512-0560**
10	12	**512-0557**
10	48	**512-0558**
30	12	**512-0561**
30	48	**512-0562**
50	12	**512-0563**
50	48	**512-0564**

Centrifugal filtration units, Vivaspin® 20

Sartorius

For 5 to 20 ml, polyethersulfone (PES) membrane

Offer increased volume flexibility and performance. Feature twin vertical membranes for unparalleled filtration speeds and 100x more concentration.

Direct recovery by pipetting the concentrate from dead stop pocket built into the bottom of the concentrator.

- Protein removal from serum and cell/tissue lysates
- Exchange buffers for proteomic peptide samples
- Prepare samples for mass spectrometry

Dead volume	<20 µl
Filtration area (cm^2)	6
Max. RCF (×g)	8000
Ø×H (mm)	30×116

MWCO (kD)	Pk	Cat. No.
3	12	**512-2864**
3	48	**512-2865**
5	12	**512-3784**
5	48	**512-4018**
10	12	**512-3783**
10	48	**512-4019**
30	12	**512-3785**
30	48	**512-4020**
50	12	**512-3786**
50	48	**512-4021**
100	12	**512-3787**
100	48	**512-4022**
300	12	**512-2862**
300	48	**512-2863**
1000	12	**512-3788**
1000	48	**512-4023**
0,2 µm	12	**512-3789**
0,2 µm	48	**512-4024**
Starter kit (5x 5k, 10k, 30k, 50k, 100k)	12	**512-3790**

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Tangential flow systems, Vivaflow® 50 and 200
Sartorius

Vivaflow® 50 and 200 devices are ready to use crossflow cassettes for filtration and concentration of samples from 100 ml to 3 l or 500 ml to 5 l. The membrane surface per device is 50 cm² or 200 cm² respectively. The devices come with all the necessary accessories for running with a laboratory pump and a size 16 pump head. For speeding up the concentration and increasing the volume throughput, up to six Vivaflow® 50 cassettes can be connected together or two Vivaflow® 200 can be connected together. Optimally suited for applications like cell culture supernatant concentration, virus concentration and water concentration this economical product offers a standard of ease of use, reliability and flexibility.

- Plug and play laboratory crossflow cassette
- Optimal for aqueous sample concentration e.g. proteins and nanoparticles
- Vivaflow® 50 are disposable. Vivaflow® 200 are reusable
- High flow rate and recovery

Membrane	MWCO (kD)	Pk	Cat. No.
Vivaflow® 50 modules			
Polyethersulfone (PES)	3	2	**515-0142**
Polyethersulfone (PES)	5	2	**511-0875**
Polyethersulfone (PES)	10	2	**511-0874**
Polyethersulfone (PES)	30	2	**512-4063**
Polyethersulfone (PES)	50	2	**512-4064**
Polyethersulfone (PES)	100	2	**512-4065**
Regenerated celluose	100	2	**512-3714**
Polyethersulfone (PES)	0,2 µm	2	**512-4067**
Vivaflow® 200 modules			
Hydrosart®	2	1	**518-0090**
Polyethersulfone (PES)	3	1	**518-0091**
Polyethersulfone (PES)	5	1	**511-0876**
Hydrosart®	5	1	**515-0140**
Polyethersulfone (PES)	10	1	**512-4069**
Hydrosart®	10	1	**515-0139**
Polyethersulfone (PES)	30	1	**512-4070**
Hydrosart®	30	1	**515-0141**
Polyethersulfone (PES)	50	1	**512-4071**
Polyethersulfone (PES)	100	1	**512-4072**
Polyethersulfone (PES)	0,2 µm	1	**512-4074**

Ultrafiltration Units, Vivacell 70
Sartorius

For 10 to 70 ml, polyethersulfone (PES) membrane

Vivacell 70 combines the ease of use of centrifugal devices with the flexibility and control provided by pressurised ultrafiltration cells.

For convenience, simply spin in a large capacity centrifuge (carriers accepting 250 ml bottles). For highest speeds particularly with difficult samples, pressurise the device with air or inert gas before centrifuging.

For more process control or for single samples, combine gas pressure with a gentle orbital shake, or you can even pressurise and then leave standing on a bench top or in a refrigerator for maximum simplicity with minimum equipment requirements.

Dead volume	150 µl
Filtration area (cm²)	20
Max. pressure (bar)	5
Max. RCF (×g)	1000
Ø×H (mm)	62×119 without pressure head; 62×125 with centrifugal pressure; 62×185 mm with pressure reservoir

MWCO (kD)	Type	Pk	Cat. No.
0,2 µm	With filtrate container	2	**512-4037**
0,2 µm	Without filtrate container	10	**512-4044**
5	With filtrate container	2	**512-4031**
5	Without filtrate container	10	**512-4038**
10	With filtrate container	2	**512-4032**
10	Without filtrate container	10	**512-4039**
30	With filtrate container	2	**512-4033**
30	Without filtrate container	10	**512-4040**
50	With filtrate container	2	**512-4034**
50	Without filtrate container	10	**512-4041**
100	With filtrate container	2	**512-4035**
100	Without filtrate container	10	**512-4042**

Ultrafiltration units, Vivacell 100
Sartorius

For 20 to 100 ml, polyethersulfone (PES) membrane

Vivacell 100 is a concentrator design for the highest performance and unmatched flexibility of use either as a centrifugal unit or as a pressurised cell. The Vivacell 100 is designed for concentration of samples up to 100 ml which makes it the largest centrifugal unit available. At the same time, the new construction design allows for maximum centrifugal force of 2000 ×g to be used for even faster concentration.

For single samples or for samples that have to be refrigerated, Vivacell 100 units can be pressurised and left on the bench, put on a laboratory shaker for faster concentration, or be transferred to a refrigerator. Handling is made fast and easy by the use of quick-connectors.

Dead volume	350 µl
Filtration area (cm²)	20
Max. pressure (bar)	5
Max. RCF (×g)	2000
Ø×H (mm)	62×123 without pressure head; 71×197 with pressure head

MWCO (kD)	Pk	Cat. No.
5	2	**516-0146**
5	10	**516-0145**
10	2	**516-0148**
10	10	**516-0147**
30	2	**516-0144**
30	10	**516-0143**
50	2	**516-0142**
50	10	**516-0141**
100	2	**516-0140**
100	10	**516-0139**
300	2	**516-0138**
300	10	**516-0137**
1000	2	**516-0136**
1000	10	**516-0135**
0,2 µm	2	**516-0134**
0,2 µm	10	**516-0133**

IVD

Absorption concentrator, Vivapore 10/20
Sartorius

For 10/20 ml sample

Ideal for general purpose laboratory concentration or purification prior to further analysis, Vivapore is particularly suited for labile solutions that can denature with alternative shear or pressure inducing methods or that require processing in a cold room environment.

With no need for additional equipment, pressure or vacuum, solvent absorption is the most economic and user friendly concentration technique available to the clinician and research scientist.

Just fill the unit with the solution to be concentrated, wait for the desired concentration level to be achieved and then pipette the concentrated sample from the bottom of the reservoir.

Membrane area: 28 cm²

Volume: 10 ml (to 20 ml with expansion reservoir in option)

W×H: 46×100 mm

Membrane	MWCO (kD)	Pk	Cat. No.
Vivapore 10/20			
PES	7,5	4	**512-4088**
PES	7,5	30	**512-4089**
PES	7,5	100	**512-4092**

PALL Life Sciences

Tangential flow filtration systems, Minimate™ TFF

Streamline laboratory scale concentration, desalting and buffer exchange processes up to 1 litre.

Applications

- Concentrate and desalt proteins, peptides or nucleic acids (DNA, RNA, oligonucleotides)
- Recover antibodies or recombinant proteins from clarified cell culture media
- Process metal sensitive enzymes and molecules
- Fractionate large from small biomolecules
- Concentrate viruses or gene therapy vectors
- Prepare samples prior to column chromatography
- Concentrate samples after gel filtration
- Depyrogenate water, buffers and media solutions

Description	Pk	Cat. No.
Minimate™ TFF system, complete with pump, UK-plug	1	**516-0205**

Description	Pk	Cat. No.
Accessories		
Reservoir assembly with stirrer, and gauge without pump, UK-plug	1	**516-0206**

PALL Life Sciences

Tangential flow filtration capsules, Minimate™

The disposable Minimate™ TFF capsules with Omega™ membrane can perform concentration processes desalting or buffer exchange on the same system with minimal user intervention and achieves high concentration factors in a single step due to the low hold-up volume of the devices. The capsules will process samples of up to 1 litre, or efficiently concentrate samples as little as 5 ml. All fittings and tubing are included to simplify installation into filtration setups and are compatible with a variety of positive pressure laboratory pumps. Scaleable

MWCO (kD)	Pk	Cat. No.
0,65	1	**515-0124**
1	1	**515-0116**
3	1	**515-0117**
5	1	**515-0118**
10	1	**516-6879**
30	1	**516-6880**
50	1	**515-0119**
70	1	**515-0120**
100	1	**516-6881**
300	1	**515-0121**
500	1	**515-0122**
1000	1	**515-0123**

Description	Pk	Cat. No.
Accessories		
Minimate™ fitting kit: male Luer to 3,2 mm hose barb, female Luer to 3,2 mm hose barb, 3,2 mm i.d. tubing, tubing screw clamp, tubing clamps, adhesive strips (loop and hook)	1	**518-0075**

PALL Life Sciences

T-series TFF cassettes with Omega™ membrane

T-series centramate cassettes with Omega™ membrane are ideal for development, pilot, and production scale TFF applications in diverse biological and biopharmaceutical processes.

Filtration area (cm^2)	MWCO (kD)	Pk	Cat. No.
200	1	1	518-0033
1000	1	1	518-0034
200	5	1	518-0035
1000	5	1	518-0036
200	10	1	518-0037
1000	10	1	518-0038
200	30	1	518-0039
1000	30	1	518-0040
200	50	1	518-0041
1000	50	1	518-0042
200	70	1	518-0043
1000	70	1	518-0044
200	100	1	518-0045
1000	100	1	518-0046
200	300	1	518-0047
1000	300	1	518-0048

Microcentrifuge, Micro Star 12

Safe and easy to use centrifuge delivering optimum performance in a compact unit. All operating parameters, including rpm, RCF and remaining time, are set and displayed digitally. It has an automatic lid release, pulse spin function for fast, convenient quick spins and an unique internal airflow design to reduce the heating up of samples.

- Compact design with small footprint
- Rapid acceleration and deceleration together with quiet operation characteristics
- Automatic detection for imbalance
- Alarms for over speed and over heat
- Autoclavable rotor for 12×1,5/2,0 ml tubes includes biosafety rotor lid

Ordering information: Supplied with fixed angle microtube rotor and adapters for 0,2 ml PCR tubes (pack of 12).

Model	Micro Star 12
Max. capacity	12×1,5/2,0 ml
Max. speed (min^{-1})	13500
Max. RCF (×g)	12300
Timer	1–30 min
Power supply	230 V / 50-60 Hz
W×D×H (mm)	208×245×145
Weight (kg)	4,4

Description	Pk	Cat. No.
Microcentrifuge Micro Star 12	1	**521-1651**

Description	Pk	Cat. No.
Accessories		
Rotor for 4×(8×0,2 ml) PCR strips	1	**521-1652**
Adapters for 0,2 ml PCR tubes (pack of 12)	12	**521-1653**
Adapters for 0,5 ml microtubes (pack of 12)	12	**521-1654**

Microcentrifuge, MiniStar silverline

This centrifuge was developed for applications that do not require high speed centrifugation, such as microfiltration and cell separation, and can also be used in a cold room. Metal base with ABS body and transparent safety cover. On closing the lid, the rotor quickly accelerates to maximum speed. Pressing the button on the front of the unit stops operation and opens the lid. Alternatively, the unit can be turned on and off with the switch at the back.

- Quiet and compact design
- Starts and stops in seconds
- Easy to operate, for eight microtubes or four strip tubes

Ordering information: MiniStar silverline supplied with 8×1,5/2,0 ml rotor, 4×(8×0,2 ml) strip tube rotor, eight adapters for 0,5 ml and eight adapters for 0,4 ml tubes.

Model	MiniStar silverline
Max. capacity	8×1,5/2,0 ml tubes or 4×(8×0,2 ml) tube strips
Max. speed (min^{-1})	6000
Max. RCF (×g)	2000
Noise level (dB(A))	57
W×D×H (mm)	132×155×110
Weight (kg)	0,75

Description	Pk	Cat. No.
MiniStar silverline with rotors and adapters, UK-plug	1	**521-2845**

Description	Pk	Cat. No.
Accessories		
Rotor for 8×1,5/2,0 ml tubes	1	**521-2847**
Rotor for 4 strips of 8×0,2 ml tubes	1	**521-2848**

Microcentrifuges, digital

Three models are available with maximum speed range from 7200 ×g (ideal for microfiltration and pelleting of small cell cultures) to 16 000 ×g suitable for working with proteins and DNA, and they can also be used in a cold room. In addition the models 1814 and 2416 feature brushless, maintenance-free motors for faster acceleration and quieter performance.

- Quiet and compact design
- Large digital displays and membrane keypads allow for precise setting of operating parameters and accurate representation
- Speed/RCF can be set and displayed in min^{-1} or ×g

Ordering information: Supplied with a fixed angle microtube rotor.

Model	Digital 1207	Digital 1814	Digital 2416
Max. capacity	12×1,5/2,0 ml	18×1,5/2,0 ml	24×1,5/2,0 ml
Max. speed (min^{-1})	10000	13000	13300
Max. RCF (×g)	7200	14000	16000
Timer	1 - 99 minutes		
Noise level (dB(A))	62	59	61
W×D×H (mm)	191×178×127	267×236×178	
Weight (kg)	1,5	5,5	5,9

Description	Pk	Cat. No.
1207 for 12×1,5/2,0 ml tubes, UK-plug	1	**521-2832**
1814 for 18×1,5/2,0 ml tubes, UK-plug	1	**521-2835**
2416 for 24×1,5/2,0 ml tubes, UK-plug	1	**521-2841**

Description	Pk	Cat. No.
Accessories		
Adapters for 0,5 ml tubes (set of 6)	6	**521-2817**
Adapters for 0,4 ml tubes (set of 6)	6	**521-2818**
Adapters for 0,2 ml tubes (set of 6)	6	**521-2819**

Microcentrifuges, MiniSpin® / MiniSpin® Plus
Eppendorf

MiniSpin

MiniSpin Plus

These microcentrifuges are easy to use, ideal for research, workstation and practical work, with clear digital display of time and speed, and timer from 15 sec to 30 min for MiniSpin® and from 15 sec to 99 min for MiniSpin® Plus.

- Extremely compact
- Stable and quiet
- Separate Short Spin button for fast, convenient quick spins
- Lid automatically opens at the end of the run to reduce handling time
- Power pack integrated in the frame

Delivery information: Supplied with a fixed angle microtube rotor.

Model	MiniSpin®	MiniSpin® Plus
Max. capacity	12×1,5/2,0 ml	
Max. speed (min^{-1})	13400	14500
Max. RCF (×g)	12100	14000

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Acceleration/braking time (s)	13/12
W×D×H (mm)	226×239×119
Weight (kg)	4,3

Description	Pk	Cat. No.
Microcentrifuge MiniSpin® with autoclavable standard rotor in anodised aluminium, 12×1,5/2,0 ml with stainless steel lid, UK plug	1	**521-0116**
Microcentrifuge MiniSpin® Plus with autoclavable "Black Line" rotor in refined black aluminium 12×1,5/2,0 ml with stainless steel lid, UK plug	1	**521-2005**

Description	Pk	Cat. No.
Accessories		
Rotor F-55-16-5 PCR, 2×8-tube PCR strips, with lid, 11520 ×g	1	**521-1585**

Microcentrifuges, ventilated/refrigerated, Micro Star 17 / 17R

The Micro Star 17 and 17R microcentrifuges combine power, versatility and convenience in a safe, compact, easy to use laboratory instrument. Both the ventilated Micro Star 17 and the refrigerated Micro Star 17R are designed to accelerate the routine sample preparation process. The special biocontainment rotor lid for one click rotor opening and closing shortens retrieval time compared to screw on lids.

- Quiet and powerful performance up to 17 000 ×g
- 'Click' biocontainment rotor lid keeps the user and the samples safe
- Easy operation; intuitive controls and bright, easy to read displays

Ordering information: Supplied with 24-place rotor for 1,5/2,0 ml tubes and aerosol-tight rotor lid.

Model	Micro Star 17	Micro Star 17R
Temperature (°C)	-	–9...+40
Max. speed (min^{-1})	13300	
Max. RCF (×g)	17000	
Timer	1–99 min (in increments of 1 min) + Hold mode	
Noise level (dB(A))	<56	<50
W×D×H (mm)	225×243×352	330×295×445

Description	Pk	Cat. No.
Microcentrifuge, ventilated, Micro Star 17	1	**521-1646**
Microcentrifuge, refrigerated, Micro Star 17R	1	**521-1647**

Microcentrifuges, high speed, ventilated/refrigerated, CT15E / CT15RE

High technology bench top centrifuges, ventilated or refrigerated, designed for standard applications, as well as biosafety or molecular biology applications.

- Exceptionally low noise
- Compact and safe - door interlock, dual overspeed detector, imbalance detector, abnormal motor temperature detector, automatic door closure system
- Easy to use front panel
- Autoclavable rotors (T15A62 and T15A63 rotors can also be used for biosafety applications)

Compliance with CE marking requirements for mechanical and electrical safety, and electromagnetic compatibility (61010-1, 61010-2-020, EN 61326)

Ordering information: Supplied with T15A61 fixed angle rotor, 24×2,0 ml, 21 500 ×g, and plastic lid. T15A62 and T15A63 rotors available separately.

Model	CT15E	CT15RE
Temperature (°C)	-	–20...+40
Max. capacity	24×2,0 ml and 24×0,5 ml (T15A62 fixed angle rotor)	
Max. speed (min^{-1})	15000	
Max. RCF (×g)	21500	
Drive motor	Brushless DC motor (inverter control)	
Programs	SPEED/RCF, TIME, TEMP (CT15RE only), ACCEL, DECEL and stop melody	
Memory	Up to 3 sets of operating parameters can be stored	

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Timer	1 - 99 minutes (in increments of 1 minute) with a HOLD function (continuous operation)	
Noise level (dB(A))	<50	
Power supply	AC 220/240 V, 50/60 Hz 10 A	AC 220/230 V, 50 Hz 10 A
Power consumption (W)	300	500
W×D×H (mm)	240×320×250	290×538×307
Weight (kg)	17	40
Acceleration/braking ramps	2 stage variable acceleration, 2 stage braked deceleration plus coasting deceleration	

Description	Pk	Cat. No.
CT15E Microcentrifuge, ventilated, with fixed angle rotor for 24×2,0 ml	1	**521-3600**
CT15RE Microcentrifuge, refrigerated, with fixed angle rotor for 24×2,0 ml	1	**521-3601**

Description	Pk	Cat. No.
Accessories		
T15A61 fixed angle rotor, autoclavable, with plastic lid, 24×2,0 ml, 21500 ×g (supplied with centrifuge)	1	**521-3602**
T15A62 fixed angle rotor, autoclavable, with lid for biosafety applications, 24×2,0 ml or 0,5 ml, 21500 ×g	1	**521-3603**
T15A63 fixed angle rotor, autoclavable, with lid for biosafety applications, 32×0,2 ml (4×8 strips), 21500 ×g	1	**521-3604**
Biosafety shield cover for T15A61	1	**521-3653**

IVD

Microcentrifuges, ventilated/refrigerated, 5418 / 5418 R
Eppendorf

Ideal for centrifuging a small number of samples to high standards.

- Extremely compact and quiet
- Practical system with two control knobs
- Standard, 18-position rotor, certified impermeable to aerosols
- SHORT spin button for rapid centrifuging
- Automatic lid release after run - prevents sample warming and allows rapid access to samples

Delivery information: Supplied with FA-45-18-11 rotor.

Model	5418	5418 R
Temperature (°C)	-	0...+40
Max. capacity	18×1,5/2,0 ml	
Max. speed (min^{-1})	14000	
Max. RCF (×g)	16873	
Noise level (dB(A))	<57	<55
Power supply	230 V / 50 - 60 Hz	
Power consumption (W)	170	320
W×D×H (mm)	210×300×210	300×460×250
Weight (kg)	7,7	22

Description	Pk	Cat. No.
Microcentrifuge, ventilated 5418, incl. rotor FA-45-18-11, UK-plug	1	**521-0726**
Microcentrifuge, refrigerated, 5418 R, incl. rotor FA-45-18-11, UK-plug	1	**521-1539**

IVD

Microcentrifuges, ventilated/refrigerated, 5424 / 5424 R
Eppendorf

5424

5424R

Microcentrifuges with 24 positions, extremely quiet running and perfectly designed for use in all biology and microbiology labs. Available in two versions; with control knobs or touch sensitive keypad.

- The microcentrifuge with control knobs enables faster parameter adjustment
- On the microcentrifuge with keypad (foil), the display screen can be cleared more easily

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- The lid opens automatically at the end of run
- The standard rotor for 24×1,5/2,0 ml tubes has an aerosol-tight lid
- Choice of four different rotors, available separately

Supplied with standard rotor FA-45-24-11 and fitted lid. Four different rotors are available separately: Standard rotor FA-45-24-11, standard rotor FA-45-24-11-Special with PTFE coating for improved resistance to chemicals, rotor F-45-18-11-Kit with 18 positions, and strip rotor F-45-32-5-PCR for 4×8 PCR tubes. Adapters are also available for 0,2, 0,4, 0,5 and 0,6 ml tubes - please enquire for details.

Model	5424	5424 R
Temperature (°C)	-	–10...+40
Max. capacity	24×1,5/2,0 ml	
Max. speed (min^{-1})	14680	15000
Max. RCF (×g)	20238	21130
Acceleration/braking time (s)	15/16	
Timer	30 s to 9 h 59 min; continuous	
Noise level (dB(A))	<51	<54
Power supply	230 V / 50 - 60 Hz	
Power consumption (W)	250	350
W×D×H (mm)	236×320×227	290×480×260
Weight (kg)	13,4	21

Description	Pk	Cat. No.
Microcentrifuge, ventilated 5424, knob version, incl. rotor FA-45-24-11 and lid, UK-plug	1	**521-0734**
Microcentrifuge, ventilated 5424, knob version, without rotor, UK-plug	1	**521-0736**
Microcentrifuge, ventilated 5424, foil version, incl. rotor FA-45-24-11 and lid, UK-plug	1	**521-0730**
Microcentrifuge, ventilated 5424, foil version, without rotor, UK-plug	1	**521-0732**
Microcentrifuge, refrigerated 5424 R, foil version, incl. rotor FA-45-24-11 and lid, UK-plug	1	**521-1540**
Microcentrifuge, refrigerated 5424 R, foil version, without rotor, UK-plug	1	**521-1541**
Microcentrifuge, refrigerated 5424 R, knob version, incl. rotor FA-45-24-11 and lid, UK-plug	1	**521-1542**
Microcentrifuge, refrigerated 5424 R, knob version, without rotor, UK-plug	1	**521-1543**

Description	Pk	Cat. No.
Accessories		
Fixed angle rotor FA-45-24-11-Special, 24×1,5/2 ml, PTFE coated, 20238 ×g, incl. lid	1	**521-0737**
Fixed angle rotor F-45-18-11-Kit with extended rim, 18×1,5/2 ml, 17347 ×g, incl. lid	1	**521-0742**
Fixed angle rotor F-45-32-5-PCR, 4×8 PCR tubes, 17829 ×g, incl. lid	1	**521-0741**

IVD

Microcentrifuge, refrigerated, 5427 R

Eppendorf

This fast running microcentrifuge is designed for maximum application flexibility and offers a versatile choice of rotors in order to serve different user demands. The available rotors include high capacity rotors with up to 48 places as well as high speed rotors for a quick sample throughput.

- Short-Spin function allows for quick short centrifugation with pre-selectable rotation speed
- Very quiet operation due to further improved sound insulation
- FastTemp for rapid pre-cooling of the centrifuge, e.g. from 23 °C to 4 °C in approx. 11 minutes
- Continuous cooling keeps the temperature after the run constant
- Alternatively to continuous cooling: ECO-shut off of the compressor (adjustable after 1, 2, 4 or 8 hours of non use) for a lower energy consumption

Can be supplied with or without rotor.

Model	5427 R
Temperature (°C)	–11...+40
Max. capacity	48×1,5/2,0 ml (with rotor FA-45-48-11)
Max. speed (min^{-1})	16220 (with rotor FA-45-24-11)
Max. RCF (×g)	25000 (with rotor FA-45-24-11)
Acceleration/braking time (s)	18/18 (with rotor FA-45-24-11)
Timer	10 s - 9:59 h
Noise level (dB(A))	<54
Power supply	230 V; 50 - 60 Hz
Power consumption (W)	550
W×D×H (mm)	319×540×254
Weight (kg)	30

Description	Pk	Cat. No.
Individual microcentrifuge 5427 R, without rotor, UK-plug	1	**521-1727**
Microcentrifuge 5427 R set, with rotor FA-45-48-11, UK-plug	1	**521-1729**
Microcentrifuge 5427 R set, with rotor FA-45-30-11, UK-plug	1	**521-1731**

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Description	Pk	Cat. No.
Rotors for microcentrifuge 5427 R		
Fixed angle rotor FA-45-24-11, incl. rotor lid, aerosol-tight, for 24×1,5/2,0 ml tubes (max. 25000 ×g; 16220 min^{-1})	1	**521-1732**
Fixed angle rotor FA-45-24-11 kit, incl. rotor lid, aerosol-tight, with raised edge for centrifugation of up to 24 spin columns (max. 19100 ×g; 13200 min^{-1})	1	**521-1733**
Fixed angle rotor FA-45-30-11, incl. rotor lid, aerosol-tight, for 30×1,5/2,0 ml tubes (max. 20800 ×g; 14000 min^{-1})	1	**521-1734**
Fixed angle rotor F-45-30-11, incl. rotor lid, for 30×1,5/2,0 ml tubes (max. 20800 ×g; 14000 min^{-1})	1	**521-1735**
Fixed angle rotor FA-45-48-11, incl. rotor lid, aerosol-tight, for 48×1,5/2,0 ml tubes (max. 18210 ×g; 12700 min^{-1})	1	**521-1736**
Fixed angle rotor F-45-48-11, incl. rotor lid, for 48×1,5/2,0 ml tubes (max. 18210 ×g; 12700 min^{-1})	1	**521-1737**
PCR strip rotor F-45-48-5-PCR, for up to 48×0,2 ml PCR tubes (max. 11710 ×g; 10500 min^{-1})	1	**521-1738**
Swing out rotor S-24-11-AT, incl. rotor lid, aerosol-tight, for 24×1,5/2,0 ml tubes (max. 16049 ×g; 12700 min^{-1})	1	**521-1739**

IVD

2 year warranty

Microcentrifuges, high speed, universal, 5430 / 5430 R

Eppendorf

These centrifuges feature an ergonomic design and high speed, as well as a large number of rotors for performing a wide range of tasks.

- Can be fitted with 12 different rotors for many applications (microtubes, PCR strips, cryotubes, conical tubes, PCR plates, deep-well plates, slides)
- Max. RCF: 30 130 ×g
- Capable of storing up to 50 programs (fast load buttons and parameter recording)
- Easy-to-use operator interface menu in four languages
- Backlit graphic LCD display

Rotors available as options:	
Fixed angle rotor F-45-30-11	PTFE coating, 30×2,0 ml microtubes (max. Ø 11 mm), 20817 ×g / 14000 min^{-1}
Aerosol-tight fixed angle rotor FA-45-30-11	PTFE coating, 30×2,0 ml microtubes (max. Ø 11 mm), 20817 ×g / 14000 min^{-1}
Aerosol-tight fixed angle rotor FA-45-24-11-Kit	64×0,2 ml PCR tubes (max. Ø 5 mm), 13543×g / 11800 min^{-1}
Fixed angle rotor F-45-64-5-PCR	64×0,2 ml PCR tubes (max. Ø 5 mm), 13543 ×g / 11800 min^{-1}
Fixed angle rotor F-45-18-17-Cryo	18 cryotubes (max. Ø 17 mm), 8324 ×g / 8900 min^{-1}
Fixed angle rotor F-35-6-30	6×15/50 ml conical tubes (max. Ø 30 mm) or 6 Centriplus centrifuge filtration units, 7197 ×g / 7830 min^{-1}
Swing out rotor A-2-MTP	2 buckets (microplates, PCR plates, deep-well plates, slides), 2204 ×g / 4680 min^{-1}

Model	5430	5430 R
Temperature (°C)	-	–11...+40
Max. capacity	30×1,5/2,0 ml microtubes or 6×50 ml Falcon tubes	
Max. speed (min^{-1})	17500	
Max. RCF (×g)	30130	
Acceleration/braking time (s)	<25 / <25	
Programs	Up to 50	
Noise level (dB(A))	<67	<63
Power supply	230 V, 50/60 Hz	
Power consumption (W)	475	1050
W×D×H (mm)	335×415×250	380×640×300
Weight (kg)	29 (without rotor)	56 (without rotor)

Description	Pk	Cat. No.
Microcentrifuge 5430, with keypad, without rotor, UK-plug	1	**521-2052**
Microcentrifuge 5430, with keypad, with FA-45-30-11 rotor and lid, UK-plug	1	**521-1280**
Microcentrifuge 5430 R, refrigerated, with keypad, FA-45-30-11 rotor and lid, UK-plug	1	**521-1281**
Microcentrifuge 5430 R, refrigerated, with keypad, without rotor, UK-plug	1	**521-1282**
Microcentrifuge 5430 R, refrigerated, with knobs and FA-45-30-11 rotor and lid, UK-plug	1	**521-1283**
Microcentrifuge 5430 R, refrigerated, with knobs, without rotor, UK-plug	1	**521-1284**

Description	Pk	Cat. No.
Rotors for 5430 / 5430R		
Aerosol-tight fixed angle rotor FA-45-24-11-HS, 24×1,5/2,0 ml, with aluminium lid and PTFE coating	1	**521-2039**
Aerosol-tight fixed angle rotor FA-45-24-11-Kit, 24×1,5/2,0 ml, with aluminium lid	1	**521-1740**
Aerosol-tight fixed angle rotor FA-45-30-11, 30×1,5/2,0 ml, with aluminium lid and PTFE coating	1	**521-1741**
Fixed angle rotor F-45-30-11, 30×1,5/2,0 ml, with PP lid	1	**521-2008**
Fixed angle rotor F-35-6-30, 6×15 ml/50 ml Falcon tubes, blood collection tubes, Oak Ridge tubes, with aluminium lid and adapter	1	**521-2017**
Fixed angle rotor F-45-18-17-Cryo, 18 cryotubes, with PP lid and adapters	1	**521-2013**
Fixed angle rotor F-45-64-5-PCR, 64×0,2 ml or strips, with aluminium lid and adapters	1	**521-2016**
Swing out rotor A-2-MTP with 2 buckets and aluminium lid	1	**521-2010**
Accessories for fixed angle rotor F-45-64-5-PCR		
Adapters for PCR strip	4	**521-2022**

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Description	Pk	Cat. No.
Accessories for fixed angle rotor F-35-6-30		
Adapters for 1 filter tube with flat bottom Ø 29,5 mm	6	**521-2024**
Adapters for 1×15 ml conical tube	2	**521-2026**
Adapters for 1×50 ml conical tube	2	**521-2027**
Adapter 1 round bottom tube Ø 13 mm for small bore, set of 2	2	**521-1288**
Adapter 1 round bottom tube Ø 16 mm for small bore, set of 2	2	**521-1289**
Adapter 1 round bottom tube Ø 13 mm for large bore, set of 2	2	**521-1290**
Adapter 1 round bottom tube Ø 16 mm for large bore, set of 2	2	**521-1291**
Adapter 1 round bottom tube Ø 16,8 mm for small bore, set of 2	2	**521-1292**
Adapter 1 round bottom tube Ø 26 mm for large bore, set of 2	2	**521-1293**
Adapter 1 round bottom tube Ø 29 mm for large bore, set of 2	2	**521-1294**
Adapter 1 tube Ø 16,8 mm for large bore, set of 2	2	**521-1295**

IVD

Microcentrifuges, Pico™ & Fresco™
Thermo Scientific

The Pico™ (ventilated) and Fresco™ (refrigerated) centrifuges are available in two speed options. Pico™ and Fresco™ 17 are perfect for routine laboratory work, while the Pico™ and Fresco™ 21 are ideal for high end research applications.

- The 24-place rotor can be used for all 1,5 to 2,0 ml tubes, including mini-preps and spin columns
- Composite Rotor technology, for greater chemical resistance and faster acceleration/deceleration compared to traditional aluminium
- Unique ClickSeal® biocontainment rotor lid 'clicks' in place, providing assurance that samples are securely contained, and with one click opening, shortens retrieval time compared to screw-on lids
- PPSU transparent lids have improved strength and chemical resistance compared with polycarbonate/metallic lids, and enables viewing of the samples for added safety and convenience
- Intuitive controls and easy to read display simplifies operation

Model	Pico™ & Fresco™ 17	Pico™ & Fresco™ 21
Temperature (°C)	–9...+40 (in increments of 1 °C) (Fresco™ only)	
Max. speed (min^{-1})	13300	14800
Max. RCF (×g)	17000	21100
Acceleration/braking time (s)	12/12	
Timer	1 - 99 min (in increments of 1 min) + Hold	
Noise level (dB(A))	56 (ventilated) / 50 (refrigerated)	
W×D×H (mm)	243×352×225 & 295×445×330	
Weight (kg)	11 & 28	

Description	Pk	Cat. No.
Microcentrifuge Pico™ 17, ventilated, incl. rotor, 24×1,5/2,0 ml, and ClickSeal™ biocontainment lid	1	**521-1095**
Microcentrifuge Pico™ 17, ventilated, incl. haematocrit rotor for 24 tubes	1	**521-1101**
Microcentrifuge Fresco™ 17, refrigerated, incl. rotor, 24×1,5/2,0 ml, and ClickSeal™ biocontainment lid	1	**521-1097**
Microcentrifuge Pico™ 21, ventilated, incl. rotor, 24×1,5/2,0 ml, and ClickSeal™ biocontainment lid	1	**521-1096**
Microcentrifuge Fresco™ 21, refrigerated, incl. rotor, 24×1,5/2,0 ml, and ClickSeal™ biocontainment lid	1	**521-1098**
Microcentrifuge Pico™ 21, ventilated, incl. rotor, 24×1,5/2,0 ml, ClickSeal™ biocontainment lid, and dual rotor with screw on lid	1	**521-1099**
Microcentrifuge Fresco™ 21, refrigerated, incl. rotor, 24×1,5/2,0 ml, ClickSeal™ biocontainment lid, and dual rotor with screw on lid	1	**521-1100**

Description	Pk	Cat. No.
Accessories		
Dual row fixed angle rotor for 18×1,5/2,0 ml and 18×0,5 ml tubes, incl. screw on lid	1	**521-1104**
Standard fixed angle rotor for 24×1,5/2,0 ml with ClickSeal™ biocontainment lid	1	**521-1105**
Rotor for 36×0,5 ml, incl. screw on lid	1	**521-1106**
PCR strip rotor for 4×8 sample 0,2 ml PCR strips, 16200 ×g, with ClickSeal™ biocontainment lid	1	**521-1107**
PCR rotor for 8×8 PCR tubes, incl. screw on lid	1	**521-1109**
Haematocrit rotor for 24 haematocrit capillaries	1	**521-1108**
Replacement screw on lid for rotors 521-1106, 521-1109 and 521-1104	1	**521-1102**
Replacement ClickSeal™ biocontainment lid, for rotors 521-1105 and 521-1107	1	**521-1103**

IVD

Microcentrifuge, MIKRO 185
Hettich

This versatile centrifuge can be used with four different rotors. All separation steps that are necessary for sample preparation for molecular biology applications, that do not require cooling can be performed rapidly and reliably. Ideal for research, clinical diagnostics and education purposes.

- Compact design saves space on the workbench
- Lid locking and holding; emergency lid lock release
- Pulse key for short centrifugation runs
- Backlit LCD display; setting of speed and timer via arrow keys

Ordering information: Rotors are available separately. Adapters for 0,2/0,5 ml tubes available on request.

Model	MIKRO 185
Max. capacity	24×1,5/2,0 ml (with rotor 1226)
Max. speed (min^{-1})	13300
Max. RCF (×g)	17008 (with rotor 1226)
Timer	1 - 99 min continuous run, short cycle mode (pulse key)
Power supply	208 - 240 V
W×D×H (mm)	262×352×228
Weight (kg)	10

Description	Pk	Cat. No.
Microcentrifuge MIKRO 185, without rotor	1	**521-1897**

Description	Pk	Cat. No.
Rotors		
Fixed angle rotor 1226, 24-place, 45°, 13300 min^{-1}, 17008 ×g, with biocontainment lid	1	**521-1899**
Fixed angle rotor 1252, 12-place, 45°, 13300 min^{-1}, 14041 ×g, with plastic lid	1	**521-1914**
Fixed angle rotor 1258, 18-place, 45°, 13300 min^{-1}, 15030 ×g, with plastic lid	1	**521-1915**
Fixed angle rotor 1213, for spin column kits, 18-place, 45°, 13300 min^{-1}, 15030 ×g, without lid	1	**521-1898**
Accessories		
Biocontainment lid for rotor 1213	1	**521-1900**

IVD

Microcentrifuges, ventilated/refrigerated, MIKRO 200 / 200 R
Hettich

The MIKRO 200 and 200 R rank among the fastest centrifuges in their class with a maximum speed of 15 000 min^{-1} and an RCF of 21 382 ×g.

- Smooth running, high performance motor featuring a maintenance-free frequency drive
- Powered lid locking, quick entry foil keypad with easy to read, digital display and twist knob to enter values
- Memory storage for four programs
- MIKRO 200 R: Infinitely variable setting from –10 °C to +40 °C, Fast Cool function, stand-by mode maintains the set temperature, automatic refrigeration switch-off when the lid is opened
- Safety features: Imbalance switch off, automatic rotor recognition, lid locking and holding during rotor run, lid dropping protection, motor overheat protection, chamber overheat protection for MIKRO 200 R

Ordering information: Rotors and accessories available separately.

Model	MIKRO 200	MIKRO 200 R
Temperature (°C)	-	–10...+40
Max. capacity - fixed angle rotor	30×0,2/2,0 ml	

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Max. speed - fixed angle rotor (min^{-1})	15000	
Max. RCF - fixed angle rotor (×g)	21382	
Acceleration/braking ramps	9/9	
Programs	4	
Timer	1 sec - 99 min 59 sec, continuous run, short cycle mode (pulse key)	
Power supply	200 - 240 V / 50 - 60 Hz	200 - 240 V / 50 Hz
W×D×H (mm)	275×344×260	281×547×260
Weight (kg)	11,5	28

Description	Pk	Cat. No.
Ventilated microcentrifuge MIKRO 200, without rotor	1	**521-0910**
Refrigerated microcentrifuge MIKRO 200 R, without rotor	1	**521-0911**

Description	Pk	Cat. No.
Rotors for MIKRO 200 centrifuge		
Fixed angle rotor 2424-B, 24×1,5/2 ml, 15000 min^{-1}, 21382 ×g	1	**521-1523**
Fixed angle rotor 2427-A, 30×0,2/2,0 ml, 15000 min^{-1}, 20627 ×g	1	**521-1717**
Fixed angle rotor 2426-B, for 20×1,8 ml cryo tubes, 15000 min^{-1}, 21130 ×g, with lid	1	**521-1818**
Fixed angle rotor 2430-B, 30×0,5 ml, 15000 min^{-1}, 20376 ×g	1	**521-1524**

Other rotors and accessories available on request.

IVD

Microcentrifuges, ventilated/refrigerated, MIKRO 220 / 220 R
Hettich

Powerful, compact bench top centrifuges with quiet and smooth running for processing microlitre tubes of 0,2 ml to 2,0 ml, used in clinical laboratories as well as in genetic research, virology and bacteriology. The refrigerated MIKRO 220 R also accommodates tubes up to 50 ml and is specifically designed to meet the demands of sample preparation for PCR applications.

- Quick entry foil keypad, twist knob, metal housing and lid, centrifuging chamber of stainless steel, viewing port in the lid
- Memory storage for 10 programs
- 9 pre-selectable acceleration/braking ramps, or unbraked run down
- MIKRO 220 R: Infinitely variable setting from –20 to +40 °C, Fast Cool function
- Safety features: Lid locking and holding during rotor run, emergency lid-lock release, motor overheat protection, chamber overheat protection for MIKRO 220 R, imbalance switch off, automatic rotor recognition, lid dropping protection

Ordering information: Rotors and accessories available separately.

Model	MIKRO 220	MIKRO 220 R
Temperature (°C)	-	–20...+40
Max. capacity - fixed angle rotor	48×1,5/2,0 ml	48×1,5/2,0 ml; 6×50 ml
Max. speed - fixed angle rotor (min^{-1})	18000	
Max. RCF - fixed angle rotor (×g)	31514	
Acceleration/braking ramps	9/9	
Programs	10	
Timer	1 sec - 99 min 59 sec, continuous run, short cycle mode (pulse key)	
Power supply	220 - 240 V / 50 - 60 Hz	
Power consumption (W)	700	900
W×D×H (mm)	330×420×313	330×650×313
Weight (kg)	21	42

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Description	Pk	Cat. No.
Ventilated microcentrifuge MIKRO 220, without rotor	1	**521-0908**
Refrigerated microcentrifuge MIKRO 220 R, without rotor	1	**521-0909**

Description	Pk	Cat. No.
Rotors		
Fixed angle rotor, 6×50 ml conical tubes, 6000 min^{-1}, 4025 ×g, for use with MIKRO 220 R	1	**521-1896**
Fixed angle rotor 1158-L, 48×1,5/2,0 ml (2 rows), 14000 min^{-1}, 21255 ×g, with biocontainment lid	1	**521-1186**
Fixed angle rotor 1160, 6-place, for PCR strips, 14000 min^{-1}, 18845 ×g	1	**521-1522**
Fixed angle rotor 1189-A, 30×1,5/2,0 ml, 14000 min^{-1}, 21255 ×g, with biocontainment lid	1	**521-1187**
Fixed angle rotor 1195-A, 24×1,5/2,0 ml, 18000 min^{-1}, 31514 ×g, with biocontainment lid	1	**521-1188**

Other rotors and accessories available on request.

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Centrifuge, CompactStar CS4

The CompactStar CS4 centrifuge is designed for the separation of various samples in the fields of chemistry, life science, clinical research and routine diagnostics. The combination of tube adapters are suitable for running 5 ml (12×75 mm) and 7 ml (13×100 mm) tubes, and also conical and standard 15 ml tubes.

- High speed: Up to 6500 min^{-1} / 4000 ×g
- Control panel featuring easy turn knobs and large digital displays for time and speed
- Timer can be set up to 30 minutes and to the 'On' position for a continuous run
- The compact footprint makes it ideal for almost any laboratory and it can easily be transported from lab to lab

Ordering information: Supplied with 6×15 ml angle rotor with adapter set as detailed below. All available adapters are already included at no extra cost.

Model	CompactStar CS4
Max. capacity	6×15 ml conical / 6×15 ml standard / 6×10 ml blood tube
Max. speed (min^{-1})	6500
Max. RCF (×g)	4000
Timer	30 s to 30 minutes, or continuous
W×D×H (mm)	210×240×180
Weight (kg)	4,75

Description	Pk	Cat. No.
CompactStar CS4 centrifuge, with angle rotor, UK plug	1	**521-2854**

Description	Pk	Cat. No.
Accessories		
Spare adapter set for 5 ml (12×75 mm) and 7 ml (13×100 mm) tube sizes (included in standard delivery)	6	**521-2856**

Microplate centrifuge, PCR Plate Spinner

The PCR Plate Spinner offers a personal sized centrifuge designed to spin down PCR plates. This unique centrifuge is equipped with a dual position vertical rotor that accepts a wide variety of PCR plates; 96-well, 384-well, skirted and non skirted plates are compatible with the Plate Spinner. The rotor features integral plate guides, ensuring that the plates stay vertical and do not tip inside the rotor.

- Space saving design; quiet, simple operation
- Easy plate loading system
- Quickly spins down droplets and condensation
- Use before and after thermal cycling to improve PCR yield
- Cold room compatible

Model	PCR Plate Spinner
Max. capacity	2 PCR plates
Max. speed (min^{-1})	2500
Max. RCF (×g)	500
Power supply	230 V / 50-60 Hz
W×D×H (mm)	191×208×183
Weight (kg)	3

Description	Pk	Cat. No.
PCR Plate Spinner, UK-plug	1	**521-1649**

Description	Pk	Cat. No.
Accessories		
Adapter for strips, tubes or half plates	2	**521-1650**

Centrifuge, clinical compact, Heraeus® Labofuge® 200
Thermo Scientific

Ideal for use in medical practices, small laboratories, and as a stand-by unit in large laboratories.

- Accommodates a wide range of the most popular medical tubes
- Microprocessor controlled
- Bright digital displays and touch pad keys for easy setting of speed and run-time
- Improved safety: Equipped with a lid lock, lid interlock, and steel armoured guard ring
- Maintenance-free, brushless motor

Ordering information: Supplied with 12×15 ml angle rotor. Other rotors and adapters are available separately on request.

Model	Labofuge® 200
Max. capacity	12×15 ml
Max. speed (min^{-1})	5300
Max. RCF (×g)	3030
Control	Microprocessor
Programs	Last values entered are stored
Timer	1 - 99 min and continuous operation
Power supply	230 V / 50 - 60 Hz
W×D×H (mm)	284×375×240
Weight (kg)	10,7

Description	Pk	Cat. No.
Compact clinical centrifuge Labofuge® 200	1	**521-1130**

Description	Pk	Cat. No.
Rotors for Labofuge® 200 centrifuge		
Replacement fixed angle rotor, 12×15 ml	1	**521-3274**
Accessories		
Adapter for 12×7 ml glass tubes (DIN), 12×3-5/7 ml Vacutainers / 6×9 ml Sarstedt (R) tubes	12	**521-1151**

VWR HITACHI

Centrifuges, universal, CT6E / CT6EL

CT6E

CT6EL

Universal bench top centrifuges with new design and selectable options (rotors and buckets) to suit a wide range of applications. Type CT6E with swing out rotor has a maximum capacity up to 1000 ml (4×250 ml) and CT6EL has a maximum capacity up to 2000 ml (4×500 ml) with swing out rotor.

- Easy to use front panel
- Compact for smooth and speedy loading/unloading of samples
- Environmentally friendly - more recyclable, energy saving and resource saving than conventional models
- Exceptionally low noise
- Two models are available with different rotors and adapters

Compliance with CE marking requirements for mechanical and electrical safety, also electromagnetic compatibility (61010-2-020, EN 61326).

Ordering information: Round and rectangular buckets as well as associated adapters for various centrifuge tubes and flasks and filter units are available on request.

Optional accessories:		
Model	CT6E	CT6EL
Angle rotors	T6AP (8×50 ml)	T6AP2 (8×50 ml)
Swing out rotors (buckets)	T4SS / T5SS (4×250 ml)	T3S6 (4×500 ml)
Swing out rotors (microplates)	T5SS3 (up to 75 mm high microplates)	T3S8 (up to 90 mm high microplates)

Model	CT6E	CT6EL
Max. capacity	1000 ml (4×250 ml) (T5SS swing out rotor)	2000 ml (4×500 ml) (T3S6 swing out rotor)
Max. speed (min^{-1})	6000 with fixed angle rotor T6AP	6000 with fixed angle rotor T6AP2
Max. RCF (×g)	4770	
Acceleration/braking time (s)	2-stage variable acceleration, 2-stage braked deceleration and coasting deceleration	
Motor	Brushless DC motor (inverter control)	

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Programs	5 programmed operations possible (speed, run time, acceleration/deceleration settings and rotor stop signal)	
Timer	1 - 99 min (in increments of 1 min) with a HOLD function (continuous operation)	
Rotor stop signal	Selectable from 5 melodies, a beep tone and mute setting	
Colour	Silver	Mint blue
Power supply	220/240 V 50/60 Hz 10 A	
Power consumption (W)	600	
W×D×H (mm)	440×595×330	540×720×330
Weight (kg)	45	55

Description	Pk	Cat. No.
CT6E centrifuge, without rotor	1	**521-3605**
CT6EL centrifuge, without rotor	1	**521-3610**

Description	Pk	Cat. No.
Rotors and accessories for CT6E centrifuge		
T4SS swing out rotor, rectangular buckets, 4×250 ml, 4170 ×g	1	**521-3608**
T5SS swing out rotor, round buckets, 4×250 ml, 4170 ×g	1	**521-3607**
T5SS3 rotor for 2 microplates, 3120 ×g	1	**521-3609**
T6AP angle rotor, 8×50 ml, 4770 ×g	1	**521-3606**
Aerosol-tight cap shields for round buckets	4	**521-3666**
Adapter for rectangular bucket, 8×15 ml tubes, Ø 16,5×100 mm	4	**521-3643**
Adapter for rectangular bucket, 10×10 ml tubes, Ø 15,4×100 mm	4	**521-0762**
Adapter for rectangular bucket, 8×7/10 ml tubes, Ø 13,2×100 mm	4	**521-3642**
Adapter for rectangular bucket, 6×15 ml conical tubes, Ø 17×120 mm	4	**521-3644**
Adapter for rectangular bucket, 2×50 ml conical tubes, Ø 30×115 mm	4	**521-3645**
Adapter for rectangular bucket, 8×4/5 ml blood tubes, Ø 13,2×78 mm	4	**521-3641**
Adapter for round bucket, 7×10/15 ml tubes, Ø 16/16,5×100/110 mm	4	**521-3657**
Adapter for round bucket, 4×160 ml tubes, Ø 52×120 mm	4	**521-3665**
Adapter for round bucket, 1×50 ml round bottom tubes, Ø 35×100 mm	4	**521-3659**
Adapter for round bucket, 1×50 ml conical tubes, Ø 30×115 mm	4	**521-3661**
Adapter for round bucket, 4×15 ml conical tubes, Ø 17×120 mm (can be used without sealing cap)	4	**521-3660**
Adapter for round bucket, 7×4/5 ml blood tubes, Ø 13,3×78 mm	4	**521-3668**
Adapter for round bucket, 28×7 ml blood tubes, Ø 12,4/12,7/13,2×100 mm	4	**521-3658**
Rotors and accessories for CT6EL centrifuge		
T3S6 swing out rotor, 4×500 ml, without bucket, 2000 ×g	1	**521-3612**
T3S8 swing out rotor for 4 microplates, 2150 ×g	1	**521-3613**
T6AP2 fixed angle rotor, 8×50 ml, 4770 ×g	1	**521-3611**
Rectangular buckets for T3S6 rotor	4	**521-3682**
Microplate bucket MP2, deepwell/microplates (2000 ×g)	4	**521-3630**
Adapter for rectangular bucket, 7×50 ml conical tubes, Ø 29×115 mm	4	**521-3631**
Microplate bucket M2, microplates (850 ×g)	4	**521-3617**
Adapter for rectangular bucket, 12×15 ml conical tubes, Ø 17×120 mm	4	**521-3632**
Adapter for rectangular bucket, 20×5/7 ml blood tubes, Ø 13,3×75/100 mm	4	**521-3623**
Tube, 500 ml, PA, for water analysis	4	**521-3626**
Adapter for rectangular bucket, 20×6/10 ml blood tubes, Ø 15,6×75/100 mm	4	**521-3624**
Adapter for square bucket, 64×4/5 ml blood tubes, Ø 13,2×100 mm	4	**521-3651**
Adapter for rectangular bucket, 30×5/7 ml tubes, Ø 13/14×120 mm	4	**521-3619**
Adapter for rectangular bucket, 20×15 ml tubes, Ø 16,5×120 mm	4	**521-3681**
Adapter for rectangular bucket, 4×50 ml round bottom tubes, Ø 36×120 mm	4	**521-3620**
Adapter for rectangular bucket, 144×10 ml round tubes, Ø 12×120 mm	4	**521-3618**

IVD

2 year warranty

Centrifuges, bench top, ventilated/refrigerated, 5702 / 5702 R / 5702 RH
Eppendorf

5702

5702 R

The 5702 range of centrifuges is ideal for medical routine, clinical and biotechnology research. There are different rotor options available to accommodate any type of tube. Rotors, buckets and lids are autoclavable. The centrifuges have induction motors and a timer which can be set for up to 90 minutes or for continuous operation.

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- User friendly control panel with a small number of clearly labelled function keys and easy to read LCD display; speed can be set from 100 min^{-1} to a maximum of 4400 min^{-1}
- Automatic, motorised lid locking
- Slow startup and braking through the SOFT function
- Stainless steel rotor chamber (rust-proof)
- Heated and refrigerated centrifuge 5702 RH allows centrifugation under biological conditions to improve cell viability for more accurate results in downstream applications (e.g. cell cultivation)

Model	5702	5702 R	5702 RH
Max. capacity	4×90 ml		
Max. speed (min^{-1})	4400		
Max. RCF (×g)	3000		
Temperature (°C)	-	–9...+40	–9...+42
Acceleration/braking time (s)	<25/25		
Noise level (dB(A))	<51	<45	
Power consumption (W)	200	380	
W×D×H (mm)	320×400×240	380×580×260	
Weight (kg)	20	36	

Description	Pk	Cat. No.
Centrifuge 5702, without rotor, UK-plug	1	**521-0125**
Centrifuge 5702 R, refrigerated, without rotor, UK-plug	1	**521-0134**
Centrifuge 5702 RH, refrigerated and heated, without rotor, UK-plug	1	**521-0594**

Description	Pk	Cat. No.
Swing-out rotors		
Swing out rotor A-8-17, 8×15 ml with 8 inserts, 2800 ×g	1	**521-0021**
Swing out rotor A-4-38 with 4×85 ml round buckets, 3000 ×g (adapters sold separately)	1	**521-0032**
Swing out rotor A-4-38 without round buckets, 3000 ×g	1	**521-0133**
Fixed-angle rotors		
Fixed angle rotor F-35-30-17, 30×15 ml, with 30 conical tube adapters and 30 rubber mats, 2750 ×g	1	**521-0024**
Fixed angle rotor F-35-30-17, 10×15 ml, with 10 conical tube adapters and 10 rubber mats, 2750 ×g	1	**521-0025**
Fixed angle rotor F-45-24-11, 24×1,5/2,0 ml, without lid, 1770 ×g	1	**521-0595**
Fixed angle rotor F-45-18-17-Cryo, 18×1,0/2,0 ml, without lid, 1840 ×g	1	**521-0597**
Adapter		
Rectangular buckets, 90 ml (adapters sold separately) for A-4-38 rotor	4	**522-1132**
Aerosol-tight lids for 85 ml round buckets	2	**521-0033**

IVD

Centrifuge, bench top, ROTOFIX 32 A

Hettich

A rugged, versatile and indispensable centrifuge for routine laboratory tasks in doctors' practices and small hospital laboratories, especially for tasks in clinical chemistry and cytology as well as for the preparation of samples in industrial and research laboratories.

- Metal housing and lid, stainless steel chamber, practical lid locking device, viewing port in the lid
- Easy to use foil keypad for fast, precise and easy entry of the parameters via selector keys
- Pulse key for short centrifuging, RCF key enabling indication of the RCF during centrifugation
- Safety features: Lid locking and holding, imbalance switch off, automatic rotor recognition, emergency lid lock release

Ordering information: Rotors and adapters available separately.

Model	ROTOFIX 32 A
Max. capacity - swing out rotor	4×100 ml / 32×15 ml
Max. speed - fixed angle rotor (min^{-1})	6000
Max. RCF - fixed angle rotor (×g)	4226
Timer	1 - 99 min, continuous run, short cycle mode (pulse key)
Power supply	208 - 240 V / 50 - 60 Hz
W×D×H (mm)	366×430×257
Weight (kg)	23

Description	Pk	Cat. No.
Bench top centrifuge ROTOFIX 32 A, without rotor	1	**521-0902**

Description	Pk	Cat. No.
Swing out rotors		
Swing out rotor 1324, 4×100 ml, 4500 min^{-1}, 3328 ×g, without buckets	1	**521-1303**
Swing out rotor 1624, 4×100 ml, 4000 min^{-1}, 2665 ×g, to be completed with buckets and adapters	1	**523-1011**

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Description	Pk	Cat. No.
Fixed angle rotors		
Fixed angle rotor 1418, 8×50 ml, 4500 min^{-1}, 3283 ×g	1	**521-1309**
Fixed angle rotor 1613, 12×15 ml, 6000 min^{-1}, 4146 ×g	1	**521-1310**
Accessories for swing-out rotors		
Round bucket, 1×50 ml tube	1	**521-1307**
Round bucket, max. 1×100 ml tube, for 1624 rotor, to be completed with adapters	1	**523-1120**
Round bucket, 100 ml, for 1324 rotor	1	**521-1306**
Biocontainment lid for round bucket 523-1120 / 521-1306	1	**523-1121**

IVD

Centrifuges, compact, EBA 200 / 200 S
Hettich

These compact centrifuges come with a fixed angle rotor and are ideal for low numbers of samples. EBA 200 is ideal for medical diagnostics in clinical environments. The high speed of the EBA 200 S enables shorter centrifugation time so that plasma with a low platelet count can be obtained for analysis in just a few minutes.

- Both models are equipped with 8-place angle rotor which holds tubes up to 15 ml
- Maintenance-free frequency drive
- Compact size saves space on the bench top

Ordering information: Both centrifuges are supplied with fixed-angle rotor for all common blood collection tubes. Special adapters for small tube sizes are available on request.

Model	EBA 200	EBA 200 S
Max. capacity	8×15 ml	
Max. speed (min^{-1})	6000	8000
Max. RCF (×g)	3461	6153
Timer	1 - 99 min continuous run, short cycle mode (pulse key)	
Power supply	208 - 240 V	
W×D×H (mm)	262×352×228	
Weight (kg)	8	10

Description	Pk	Cat. No.
Centrifuge, EBA 200, with rotor	1	**521-1928**
Centrifuge, EBA 200 S, with rotor	1	**521-1930**

IVD

Centrifuges, bench top, EBA 280 / 280 S
Hettich

The EBA 280 and the higher performance EBA 280 S are small centrifuges suitable for use in medical diagnostics, environmental analysis and research labs, for example for the sedimentation of cells and yeasts or for clarifying water and soil samples. Both centrifuges can be used with various swing out and fixed angle rotors.

- Rapid changeover system allows switching of rotors without tools and with just one hand; no need for screws or tightening
- Control system with program memory
- Lid locking and holding; emergency lid lock release
- Backlit LCD display, time and speed setting via arrow keys
- Decanting rotor enables washing of cells

Ordering information: Rotors and adapters need to be ordered separately.

Model	EBA 280	EBA 280 S
Max. capacity	6×50 ml	
Max. speed (min^{-1})	6000	
Max. RCF (×g)	4146	5071
Acceleration/braking ramps	1 - 9	
Programs	10	
Timer	1 s - 99 min 59 s; continuous run; short cycle mode (pulse key)	
Power supply	200 - 240 V	
W×D×H (mm)	326×389×242	
Weight (kg)	11	

Description	Pk	Cat. No.
Small bench top centrifuge, EBA 280	1	**521-1916**
Small bench top centrifuge, EBA 280 S	1	**521-1918**

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Description	Pk	Cat. No.
Swing out rotors		
Swing out rotor 1146, 6-place, 90°, 4700 min^{-1} / 3112 ×g (EBA 280), 6000 min^{-1} / 5071 ×g (EBA 280 S), without carriers	1	**521-1926**
Swing out rotor 1148, 8-place, 90°, 5000 min^{-1}, 2991 ×g, without carriers	1	**521-1927**
Swing out rotor 1142, 12-place, 60°, 5000 min^{-1}, 2963 ×g, without carriers	1	**521-1922**
Fixed angle rotors		
Fixed angle rotor 1137, 6-place, 35°, 6000 min^{-1}, 4025 ×g	1	**521-1920**
Fixed angle rotor 1139, 12-place, 35°, 6000 min^{-1}, 4146 ×g	1	**521-1921**
Fixed angle rotor 1133, for decanting, 12-place, 35°, 5000 min^{-1}, 2879 ×g	1	**521-1919**

Centrifuges, bench top, ventilated/refrigerated, UNIVERSAL 320 / 320 R

Hettich

Centrifuges with excellent performance and comprehensive range of accessories enabling them to carry out virtually any centrifuging task.

- User friendly centrifuge with powered lid locking, quick-entry foil keypad, 10 programmable memories, easily exchangeable rotors
- Metal housing and lid, stainless steel chamber, viewing port in the lid
- Safety features: Lid locking and holding during rotor run, emergency lid-lock release, lid dropping protection, motor overheat protection, chamber overheat protection (UNIVERSAL 320 R), imbalance switch off, automatic rotor recognition

Ordering information: Rotors and adapters available separately.

Model	UNIVERSAL 320	UNIVERSAL 320 R
Max. capacity - swing out rotor	4×100 ml	
Max. speed - fixed angle rotor (min^{-1})	15000	
Max. RCF - fixed angle rotor (×g)	21382	
Temperature (°C)	-	–20...+40
Timer	1 sec - 99 min 59 sec, continuous run, short cycle mode (pulse key)	
Power supply	200 - 240 V / 50 - 60 Hz	
W×D×H (mm)	395×520×346	401×695×346
Weight (kg)	29	52

Description	Pk	Cat. No.
Bench top centrifuge, ventilated, UNIVERSAL 320, without rotor	1	**521-0903**
Bench top centrifuge, refrigerated, UNIVERSAL 320 R, without rotor	1	**521-0904**

Description	Pk	Cat. No.
Swing out rotors		
Swing out rotor 1324, 4×100 ml, 4500 min^{-1}, 3328 ×g, without buckets	1	**521-1303**
Microplate rotor 1460, 2×microplate, 4000 min^{-1}, 2218 ×g	1	**521-1210**
Swing out rotor 1494, 4×100 ml, 5000 min^{-1}, 4193 ×g	1	**521-1214**
Swing out rotor 1617, 8×50 ml, 5000 min^{-1}, 3857 ×g (with carriers)	1	**523-1703**
Swing out rotor 1619, 6×50 ml, 4000 min^{-1}, 2701 ×g (with carriers)	1	**521-1215**
Fixed angle rotors		
Fixed angle rotor 1418, 8×50 ml, 4500 min^{-1}, 3283 ×g	1	**521-1309**
Fixed angle rotor 1613, 12×15 ml, 6000 min^{-1}, 4146 ×g	1	**521-1310**
Fixed angle rotor 1615, 12×15 ml, 12000 min^{-1}, 16582 ×g	1	**521-1311**
Fixed angle rotor 1620 A, 6×85 ml, 6000 min^{-1}, 4226 ×g	1	**521-1216**
Fixed angle rotor 1689-A, 30×1,5/2 ml, 14000 min^{-1}, 21255 ×g, with biocontainment lid	1	**521-1218**
Accessories for swing-out rotors		
Round bucket, 1×50 ml tube	1	**521-1307**
Round bucket, 100 ml, for 1324 rotor	1	**521-1306**
Biocontainment lid for round bucket 523-1120 / 521-1306	1	**523-1121**

Centrifuges, bench top, Heraeus® Labofuge® 400 / 400 R

Thermo Scientific

Labofuge® 400 bench top centrifuges are ideal for medical and biological applications that require medium sample processing capacity.

- Simple and sturdy design for ultimate reliability
- Wide range of rotors and adapters available
- Quick run function; soft acceleration and braking
- Induction motor, carbon-free, maintenance-free
- Labofuge® 400 R; Microprocessor-controlled protection system prevents sample freezing, even at standstill cooling

Ordering information: Rotors and adapters available separately.

Model	Labofuge® 400	Labofuge® 400 R
Max. capacity	4×180 ml	
Max. capacity - fixed angle rotor	18×15 ml	
Max. capacity - swing out rotor	4×100 ml DIN / 28×7/15 ml blood	
Max. speed (min^{-1})	300 - 11500 (in increments of 100)	300 - 13000 (in increments of 100)
Max. RCF (×g)	12568	16060
Temperature (°C)	-	0...+40
Control	EASYcontrol II microprocessor	
Timer	1 - 99 min, continuous operation	
Noise level (dB(A))	<58	
Power consumption (W)	250	500
W×D×H (mm)	436×568×310	625×600×340
Weight (kg)	40	74

Description	Pk	Cat. No.
Centrifuge Labofuge® 400, without accessories	1	**521-1011**
Centrifuge Labofuge® 400 set incl. swing out rotor, four round buckets and four aerosol-tight caps	1	**521-1010**
Centrifuge Labofuge® 400 set incl. rotor for microplates	1	**521-1022**
Centrifuge Labofuge® 400 R, without accessories	1	**521-1001**
Centrifuge Labofuge® 400 R set incl. swing out rotor, four round buckets and four aerosol-tight caps	1	**521-1000**

Description	Pk	Cat. No.
Accessories		
Microlitre rotor for 24×1,5/2 ml microtubes, 13000 min^{-1}, 16060 ×g	1	**521-2411**
Biosafe lid, aerosol-tight, for microlitre rotor 521-2411	1	**521-3160**
Swing out rotor for 2×2 microplates	1	**521-1060**
Swing out rotor for 4×180 ml tubes	1	**521-1030**
Round buckets, 180 ml for 521-1030	1	**521-1032**
Cap, aerosol-tight, for round bucket, 180 ml for 521-1032	1	**521-1033**
Fixed angle rotor for 18×15 ml tubes	1	**521-1020**
Adapter, B-type, 1×25 ml Universal (Ø 25,5 mm), for 521-1032	1	**521-1040**
Adapter, B-type, 2×25 ml tubes (Ø 25 mm), for 521-1032	1	**521-1047**
Adapter, B-type, 1×50 ml tube (Ø 35 mm), for 521-1032	1	**521-1048**
Adapter, B-type, 1×50 ml conical tube, for 521-1032	1	**521-1049**
Adapter, B-type, 4×15 ml Vacutainer (Ø 17 mm), for 521-1032	1	**521-1045**
Adapter, B-type, 3×15 ml conical tubes, for 521-1032	1	**521-1021**
Adapter, B-type, 7×15 ml tubes (Ø 17 mm), for 521-1032	1	**521-1044**
Adapter, B-type, 7×7 ml Vacutainer (Ø 13/14 mm), for 521-1032	1	**521-1043**
Adapter, B-type, 9×7 ml tubes (Ø 13 mm), for 521-1032	1	**521-1042**
Adapter, B-type, 1×100 ml tube (Ø 48 mm), for 521-1032	1	**521-1050**
Adapter, Centri-Lab, 12×1,5/2,0 ml microtubes, for 521-1032	1	**521-1041**

Centrifuges, bench top, ventilated/refrigerated, Mega Star 1.6 / 1.6R

1.6

1.6R

TX-400

These versatile centrifuges are ideal for a range of routine applications in pharmaceutical and biotechnology industries as well as for academic research. They offer good capacity and an ergonomic design which facilitates the work on the bench top. The Mega Star centrifuges are available as a ventilated or a refrigerated version. The refrigerated version, with pre-cooling function, is suitable for temperature-sensitive sample processing with control between –10 °C and +40 °C.

- Auto-Lock® III rotor system: Tool-free rotor exchange system enables quick rotor exchange; with just the push of a button users can quickly change rotors and easily access the rotor chamber for cleaning
- Aerosol-tight ClickSeal® bucket sealing system: Glove friendly one handed open/close capability, no need for screw caps and complicated clips
- SMARTSpin® technology optimising acceleration, braking and residual load imbalance for maximum safety, smooth runs and reproducible separations
- Time saving pulse function for short runs
- Intuitive controls and large, bright LED display facilitate operation and programming

TX-400 swing out rotor: This rotor is designed for a broad range of laboratory throughput needs. With a capacity of 4×400 ml, 76×5/7 ml blood tubes or up to 36×15 ml conical tubes in a single run, it provides a very high configuration flexibility.

Ordering information: Supplied as complete packages, incl. centrifuge, TX-400 rotor, set of four round buckets, four ClickSeal® lids and two power cords (EU and UK plug). Adapters need to be ordered separately.
Centrifuges can be used with all rotors suitable for Megafuge 16/16R centrifuges. Additional rotors are available on request.

Model	Mega Star 1.6	Mega Star 1.6R
Max. capacity - swing out rotor	4×400 ml	
Max. speed - swing out rotor (min^{-1})	4700	
Max. RCF - swing out rotor (×g)	4149	
Temperature (°C)	-	–10...+40
Acceleration/braking ramps	9/10	
Motor	Brushless induction motor	
Control	Microprocessor	
Functions	Auto-Lock® III rotor locking system, ClickSeal® sealing system	Auto-Lock® III rotor locking system, pre-cooling and CFC-free refrigeration, ClickSeal® sealing system
Programs	6 (direct access)	
Timer	9 h 99 min + continuous	
Anti-unbalance system	SMARTSpin®	
Display	Large, bright LED	
Languages	English, German, French, Spanish, Italian, Dutch and Russian	
Noise level (dB(A))	<61	<55
Power supply	230 V / 50 - 60 Hz	
Power consumption (W)	1010	1400
W×D×H (mm)	440×605×360	623×605×360
Weight (kg)	57,5 (centrifuge only)	91,5 (centrifuge only)

Description	Pk	Cat. No.
Ventilated bench top centrifuge, Mega Star 1.6, package incl. TX-400 rotor, buckets and lids	1	**521-1749**
Refrigerated bench top centrifuge, Mega Star 1.6R, package incl. TX-400 rotor, buckets and lids	1	**521-1750**

Centrifuges, bench top, ventilated/refrigerated, Mega Star 3.0 / 3.0R

3.0

3.0 R

TX-750

These versatile centrifuges are ideal for a range of routine applications in pharmaceutical and biotechnology industries as well as for academic research. They offer exceptional capacity and an ergonomic design which facilitates the work on the bench top. The Mega Star centrifuges are available as a ventilated or a refrigerated version. The refrigerated version, with pre-cooling function, is suitable for temperature-sensitive sample processing with control between –10 °C and +40 °C.

- Auto-Lock® III rotor system: Tool-free rotor exchange system enables quick rotor exchange; with just the push of a button users can quickly change rotors and easily access the rotor chamber for cleaning
- Aerosol-tight ClickSeal® bucket sealing system: Glove friendly one handed open/close capability, no need for screw caps and complicated clips
- SMARTSpin® technology optimising acceleration, braking and residual load imbalance for maximum safety, smooth runs and reproducible separations
- Time saving pulse function for short runs
- Intuitive controls and large, bright LED display facilitate operation and programming

TX-750 swing out rotor: This high capacity (4×750 ml) rotor accelerates productivity with up to 196×5/7 ml blood tubes or 28×50 ml conical tubes in a single run.

Ordering information: Supplied as complete packages, incl. centrifuge, TX-750 rotor, set of four round buckets, four ClickSeal® lids and two power cords (EU and UK plug). Adapters need to be ordered separately.
Centrifuges can be used with all rotors suitable for Megafuge 40/40 R centrifuges. Additional rotors are available on request.

Model	Mega Star 3.0	Mega Star 3.0R
Max. capacity - swing out rotor	4×750 ml	
Max. speed - swing out rotor (min^{-1})	4000	
Max. RCF - swing out rotor (×g)	3494	
Temperature (°C)	-	–10...+40
Acceleration/braking ramps	9/10	
Motor	Brushless induction motor	
Control	Microprocessor	
Functions	Auto-Lock® III rotor locking system, ClickSeal® sealing system	Auto-Lock® III rotor locking system, pre-cooling and CFC-free refrigeration, ClickSeal® sealing system
Programs	6 (direct access)	
Timer	9 h 99 min + continuous	
Anti-unbalance system	SMARTSpin®	
Display	Large, bright LED	
Languages	English, German, French, Spanish, Italian, Dutch and Russian	
Noise level (dB(A))	<61	<57
Power supply	230 V / 50 - 60 Hz	
Power consumption (W)	1700	1950
W×D×H (mm)	565×670×360	745×670×360
Weight (kg)	86 (centrifuge only)	116 (centrifuge only)

Description	Pk	Cat. No.
Ventilated bench top centrifuge, Mega Star 3.0, package incl. TX-750 rotor, buckets and lids	1	**521-1751**
Refrigerated bench top centrifuge, Mega Star 3.0R, package incl. TX-750 rotor, buckets and lids	1	**521-1752**

IVD

Centrifuges, bench top, ventilated/refrigerated, Heraeus® Megafuge® 8 / 8R

Thermo Scientific

These durable centrifuges are available as ventilated or refrigerated versions and provide exceptional capacity in a compact design with a smart, simple interface. The wide variety of the 11 (for Megafuge® 8) or even 13 (for Megafuge® 8R) available rotors provide the flexibility to support both clinical and research applications. These centrifuges conforms to latest clinical and safety standards (IVD).

- Quiet performance provides a safe, stress free environment
- One touch operation with pre-saved protocols and password protection
- Highly visible backlit display for easy reading of parameters
- Secure, push-button Auto-Lock™ function enables quick and easy rotor exchange and clear chamber access for cleaning convenience
- Biocontainment sealing options, including certified ClickSeal® lids for glove-friendly, one handed operation
- 8R model: Powerful refrigeration system with pre-cooling function

Ordering information: The units are supplied without rotor. Rotors, adapters and other accessories are available separately. Please contact your local VWR office for further information.

Model	Megafuge® 8	Megafuge® 8R
Max. capacity - fixed angle rotor	6×50 ml (with HIGHConic™ rotor)	
Max. capacity - swing out rotor	4×145 ml (with TX-150 rotor)	
Max. speed - fixed angle rotor (min^{-1})	16000 (with MicroClick 24 x 2 rotor)	17850 (with MicroClick 24 x 2 rotor)
Max. speed - swing out rotor (min^{-1})	4500 (with TX-150 rotor)	
Max. RCF - fixed angle rotor (×g)	24328 (with MicroClick 24 x 2 rotor)	30279 (with MicroClick 24 x 2 rotor)
Max. RCF - swing out rotor (×g)	3260 (with TX-150 rotor)	
Temperature (°C)	-	–10...+40 °C
Acceleration/braking ramps	2	
Control	Microprocessor	
Programs	4 protocols via direct access key	3 protocols via direct access key, plus 96 additional programs accessible via folder
Timer	99h 59 min + continuous	
Anti-unbalance system	SMARTSpin	
Languages	English, French, German, Spanish, Italian, Dutch and Russian	
Noise level (dB(A))	<58 (with TX-150 rotor); <61 (with MicroClick 24 x 2 rotor)	<56 (with all rotors); <52 (with MicroClick 24 x 2 rotor)
Power supply	230 V / 50 - 60 Hz	
Power consumption (W)	310	750
W×D×H (mm)	370×480×310 (lid closed)	460×670×320 (lid closed)
Weight (kg)	35	71

Description	Pk	Cat. No.
Bench top centrifuge Megafuge® 8, without accessories	1	**521-1765**
Bench top refrigerated centrifuge Megafuge® 8R, without accessories	1	**521-1857**

Description	Pk	Cat. No.
Swing out rotors		
Swing out rotor, TX-150, for 24 × 5/7 ml blood collection tubes or 8 × 50 ml conical tubes (4500 min^{-1} / 3260 ×g)	1	**521-1778**
Swing out rotor, MT-12, for 12 microtubes and filtration columns (13000 min^{-1} / 16438 ×g)	1	**521-1777**
Swing out rotor, M-10, for 4 microplates (4500 min^{-1} / 2576 ×g)	1	**521-1783**
Accessories for swing out rotors		
Round buckets for swing out rotor TX-150	4	**521-1779**
Replacement O-rings for swing out rotor TX-150	2	**521-1790**
Conical buckets, for swing out rotor TX-150	4	**521-1780**
ClickSeal® biocontainment lids for glove-friendly, one-handed operation, for swing out rotor TX-150	4	**521-1784**
Sealed buckets for swing out rotor M-10, R max 109 mm	2	**521-1852**
Unsealed buckets for swing out rotor M-10	2	**521-1789**
ClickSeal® biocontainment caps for microplate buckets, for swing out rotor M-10	2	**521-1853**
Adapters for swing out rotors		
Adapter for round buckets, 100 ml round bottom tube (Ø×L: 45×117 mm)	4	**521-1792**
Adapter for round buckets, 50 ml conical or skirted tube (Ø×L: 29,5×120 mm)	4	**521-1793**
Adapter for round buckets, 15 ml conical tube (Ø×L: 17×122 mm)	4	**521-1794**
Adapter for round buckets, 14 ml urine tube (Ø×L: 18×124 mm)	4	**521-1795**
Adapter for round buckets, 3/5 ml blood collection tube (Ø×L: 12×124 mm)	4	**521-1797**
Adapter for round buckets, 5/7 ml blood collection tube (Ø×L: 13×116 mm)	4	**521-1796**
Adapter for round buckets, 1,5/2 ml microtube (Ø×L: 11×65 mm)	4	**521-1798**
Adapter for round buckets, 25 ml universal flat/skirted tube (Ø×L: 25×199 mm)	4	**521-1799**
Adapter for 50 ml conical buckets, 15 ml conical tube (Ø×L: 17×123 mm)	2	**521-1817**
Clinical swing out rotors		
Swing out clinical rotor, TX-100, incl. unsealed carriers, for 16 × 5/7 ml blood collection tubes (4500 min^{-1} / 3260 ×g)	1	**521-1782**
Swing out clinical rotor, TX-100S, incl. sealed carriers, for 8 × 5/7 ml blood collection tubes (4500 min^{-1} / 3215 ×g)	1	**521-1781**
Swing out rotor packages		
Cell culture package, incl. swing out rotor TX-150, round buckets, adapters for 50 ml conical tubes	1	**521-1766**
High capacity cell culture package, incl. swing out rotor TX-150, conical buckets, adapters for 15 ml conical tubes	1	**521-1767**
Clinical rotor package, incl. swing out rotor TX-150, round buckets, ClickSeal® biocontainment lids, adapters for blood collection tubes (5/7 ml and 10 ml)	1	**521-1768**

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Description	Pk	Cat. No.
Fixed angle rotors		
Fixed angle rotor, MicroClick, incl. certified biocontainment lid, for 24 × 2 ml microtubes (16000 min^{-1} / 24372 ×g for Megafuge® 8; 17850 min^{-1} / 30279 ×g for Megafuge® 8R)	1	**521-1786**
Fixed angle rotor, MicroClick, incl. certified biocontainment lid, for 30 × 2 ml microtubes or filtration columns (14000 min^{-1} / 21693 ×g)	1	**521-1787**
Fixed angle rotor, MicroClick, incl. certified biocontainment lid, for 18 × 5 ml microtubes (14000 min^{-1}/ 22351 ×g), for use with Megafuge® 8R only	1	**521-1855**
Fixed angle rotor, HIGHConic™ III, with transparent biocontainment lid, for 6 × 50 ml conical tubes (8700 min^{-1} / 10155 ×g for Megafuge® 8; 9500 min^{-1} / 12108 ×g for Megafuge® 8R)	1	**521-1785**
Fixed angle rotor, individually sealed, 25°, R max 143 mm, 8×50 ml tubes (30×121 mm), 5600 min^{-1}, 5014 ×g, for use with Megafuge® 8R only	1	**521-1567**
CLINIConic™ fixed angle rotor, 37°, R max 140 mm, 30×15 ml tubes (5650 min^{-1}, 4997 ×g)	1	**521-1565**
Fixed angle rotor, PCR Strip, for 8 × 8 PCR strips (14800 min^{-1} / 16800 ×g)	1	**521-1788**
Haematocrit fixed angle rotor, for 24 blood capillaries (13300 min^{-1} / 17860 ×g)	1	**521-1791**
Adapters for fixed angle rotors		
Adapter for MicroClick rotors 30 × 2 and 24 × 2; 0,2 ml PCR tube (Ø×L: 6,5×20 mm)	30	**521-1800**
Adapter for MicroClick rotors 30 × 2 and 24 × 2; 0,25 ml microtube (Ø×L: 6×46 mm)	30	**521-1816**
Adapter for MicroClick rotors 30 × 2 and 24 × 2; 0,5 ml microtube (Ø×L: 8×44 mm)	30	**521-1815**
Adapter for Microclick 18×5 rotor, 1,5/2 ml micro tube (Ø×L: 11×45 mm)	2	**521-1854**
Adapter for HIGHConic™ III rotor, 5 ml conical micro tube (Ø×L: 17×100 mm)	2	**521-1856**

IVD

Centrifuges, bench top, ventilated/refrigerated, Heraeus® Megafuge® 16 / 40 series
Thermo Scientific

Megafuge® 16

Megafuge® 40

Heraeus® Megafuge® centrifuges offer exceptional capacity, ergonomics and value for routine sample processing on the bench top. The leading innovative designs enable safe, simple and comfortable everyday operation.

- Intuitive controls and large super bright LED display simplify operation and programming
- Auto-Lock® III rotor system - tool-free rotor exchange system facilitating 3 second rotor exchange with just the push of a button, for quickly changing rotors and easy access to rotor chamber for cleaning
- ClickSeal® biocontainment solution - glove friendly, one handed open and closing with a simple low pressure lever, eliminates screw caps and complicated clips
- SMARTSpin® technology optimising acceleration, braking and residual load imbalance for maximum safety, smooth runs and reproducible separations

The different rotors enable your lab to meet all processing needs (further details on rotors listed after Heraeus® Multifuge® X series)

- **TX-200 and TX-400 swing out rotors for Megafuge® 16**: With a capacity range of 4×180 ml or 4×400 ml (up to 76 blood tubes or 16 conical tubes in a single run), achieve high configuration flexibility
- **TX-750 swing out rotor for Megafuge® 40**: High capacity (4×750 ml), delivers maximum flexibility at 4700 min^{-1} and features a choice of round or rectangular buckets with multiple adapters as well as microplate carriers
- **TX-1000 swing out rotor for Megafuge® 40**: Enables processing 4×1000 ml, 40×50 ml conical tubes, 196 blood tubes or 24 microplates; with corrosion resistant coating
- **M-20 microplate rotor**: Specifically designed for spinning standard and deep well microplates and available with optional transportable vessels for certified biocontainment
- **BIOShield® rotors**: Run frequently used tubes at high speed with the confidence and simplicity of a single, certified biosafety lid
- **BIOLiner™ High capacity swingout rotor for Multifuge® 40**: 40×50 ml Falcon or 196× Vacutainer tubes
- **CLINIConic® rotor**: Spins 30×15 ml round or conical tubes and ensures acceleration and throughput for cell culture and blood separation applications
- **8×50 ml sealed, fixed angle rotor**: Ideal for TB sputum applications, can centrifuge eight conical tubes in individually sealed vessels with rapid acceleration and processing times
- **Fiberlite™** carbon fibre rotors that offer versatility, speed and robust, corrosion-free design. Accommodate 6×100 ml tubes at 15 000 min^{-1} (24 600 ×g) or 48 microtubes at 25 000 ×g

Ordering information: Supplied without rotors. Please contact your local VWR sales office for more information about available adapters and other accessories.

Model	16	16R	40	40R
Max. capacity - fixed angle rotor	6×100 ml (with F15-6×100 rotor)			
Max. capacity - swing out rotor	4×400 ml (with TX-400 rotor)		4×1000 ml (with TX-1000 rotor)	
Max. speed - fixed angle rotor (min^{-1})	15200 (with 30×2 ml rotor)		15200 (with 48×2 ml rotor)	
Max. speed - swing out rotor (min^{-1})	5500 (with TX-200 rotor)		5300 (with BIOShield 1000A rotor)	
Max. RCF - fixed angle rotor (×g)	25830 (with 30×2 ml rotor)		25314 (with 48×2 ml rotor)	
Max. RCF - swing out rotor (×g)	5580 (with TX-200 rotor)		5590 (with BIOShield 1000A rotor)	
Temperature (°C)	-	–10...+40	-	–10...+40
Acceleration/braking ramps	9/10			
Motor	Brushless induction motor			
Control	Microprocessor			
Functions	Auto-Lock® III rotor locking system	Auto-Lock® III rotor locking system, pre-cooling and CFC-free refrigeration	Auto-Lock® III rotor locking system	Auto-Lock® III rotor locking system, pre-cooling and CFC-free refrigeration

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Programs	6 (direct access)			
Timer	9 h 99 min + continuous			
Anti-unbalance system	SMARTSpin®			
Display	Large super bright LED			
Languages	English, German, French, Spanish, Italian, Dutch and Russian			
Noise level (dB(A))	<61 with TX-400 rotor	<55 with TX-400 rotor	<61 with TX-750 rotor	<57 with TX-750 rotor
Power supply	230 V / 50 - 60 Hz			
Power consumption (W)	1010	1400	1700	1950
W×D×H (mm)	440×605×360	623×605×360	565×670×360	745×670×360
Weight (kg)	57,5	91,5	86	116

Description	Pk	Cat. No.
Ventilated benchtop centrifuge, Heraeus® Megafuge® 16, without rotor	1	**521-1520**
Refrigerated benchtop centrifuge, Heraeus® Megafuge® 16R, without rotor	1	**521-1521**
Ventilated benchtop centrifuge, Heraeus® Megafuge® 40, without rotor	1	**521-1525**
Refrigerated benchtop centrifuge, Heraeus® Megafuge® 40R, without rotor	1	**521-1526**

IVD

Centrifuges, bench top/floor standing, ventilated/refrigerated, Heraeus® Multifuge® X1 / X3 series
Thermo Scientific

Multifuge X1

Multifuge X3

Heraeus® Multifuge® X1/X3 centrifuge series offers industry-leading throughput, the most versatile range of rotors and adapters, and energy efficient operation. For unparalleled processing performance, maximum versatility, and exceptional energy efficiency. A broad range of rotors and adapters, including lightweight Fiberlite™ carbon fibre rotors, handles diverse laboratory applications.

- Advanced, intuitive programmable controls, 7-language menu (actual and set parameters displayed), 99 programs incl. 5 with direct access
- Auto-Lock® III rotor system - tool-free rotor exchange system facilitating 3 second rotor exchange with just the push of a button, for quickly changing rotors and easy access to the chamber for cleaning
- Enhanced rotor library includes 5 Fiberlite™ carbon fibre rotors, enabling high speed, high capacity centrifugation of up to 6×250 ml
- ClickSeal® biocontainment solution - glove-friendly, one-handed open and closing with a simple low pressure lever, eliminates screw caps and complicated clips
- SMARTSpin® technology optimising acceleration, braking and residual load imbalance for maximum safety, smooth runs and reproducible separations

The different rotors enable your lab to meet all processing needs (further details on rotors listed after Heraeus® Multifuge® X series):

- **TX-200 and TX-400 swing out rotors for Multifuge® X1**: With a capacity of 4×180 ml, ideal for high speed, standard centrifugation, or 4×400 ml, accommodates up to 76 blood tubes and up to 16×50 ml conical tubes in a single run and in certified sealed conditions
- **TX-750 swing out rotor for Multifuge® X3**: High capacity (28×50 ml conical / 108×Vacutainer tubes) and high flexibility, 4700 min^{-1} (4816 ×g), with a choice of round or rectangular buckets and microplate adapters
- **TX-1000 swing out rotor for Multifuge® X3**: Enables processing 4×1000 ml tubes, 40×50 ml conical tubes, 196 blood tubes or 24 microplates; with corrosion resistant coating
- **BIOShield® rotors**: Include a biosafety lid, run frequently-used tubes at high speed
- **BIOLiner™ high capacity swing out rotor for Multifuge® X3**: 40×50 ml conical or 196×Vacutainer tubes
- **HIGHPlate™ swing out rotor for Multifuge® X3**: Capacity of 10 microplates at high speed, 6300 min^{-1} (6168 ×g)
- **Fiberlite™** carbon fixed angle rotors for conical tubes: 5 versatile, high-speed, rugged carbon fibre rotors maximising the centrifuge performances. Capacity of 8×50 ml achieving more than 24 000 ×g, or 14×50 ml at 12 000 ×g for pelleting bacteria or yeast cells and for purifying nucleic acids and cells

Ordering information: Supplied without rotors. Please contact VWR for more information about available adapters and other accessories.

Model	X1	X1R	X3	X3 F	X3R	X3 FR
Max. capacity - fixed angle rotor	6×100 ml (with F15-6×100 rotor)		6×250 ml (with F14-6×250LE rotor)			
Max. capacity - swing out rotor	4×400 ml (with TX-400 rotor)		4×1000 ml (with TX-1000 rotor)			
Max. speed - fixed angle rotor (min^{-1})	15200 (with microlitre rotors)					
Max. speed - swing out rotor (min^{-1})	6300 (with BIOShield® 720 rotor)		6000 (with BIOShield® 1000A rotor)			
Max. RCF - fixed angle rotor (×g)	25830 (with 30×2 ml rotor)		25314 (with 48×2 ml rotor)			
Max. RCF - swing out rotor (×g)	7188 (with BIOShield® 720 rotor)		7164 (with BIOShield® 1000A rotor)			
Temperature (°C)	-	–10...+40	-		–10...+40	
Acceleration/braking ramps	9/10					

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Motor	Brushless induction motor					
Control	Microprocessor					
Functions	Auto-Lock™ III rotor locking system	Auto-Lock™ III rotor locking system, pre-cooling and CFC-free refrigeration	Auto-Lock™ III rotor locking system		Auto-Lock™ III rotor locking system, pre-cooling and CFC-free refrigeration	
Programs	99 (5 with direct access)					
Timer	99 h 99 min + continuous					
Anti-unbalance system	SMARTSpin®					
Display	Backlit display: Actual and set parameters displayed					
Languages	English, German, French, Spanish, Italian, Dutch and Russian					
Noise level (dB(A))	<61 with TX-400 / <65 with F15-8×50 rotor	<55 with TX-400 / <65 with F15-8×50 rotor	<61 with TX-750 / <64 with F15-8×50 rotor	<64 with TX-750 / <55 with F15-8×50 rotor	<57 with TX-750 / <64 with F15-8×50 rotor	<58 with TX-750 / <57 with F15-8×50 rotor
Power supply	230 V / 50 - 60 Hz					
Power consumption (W)	1010	1400	1700		1950	
W×D×H (mm)	440×605×360	623×605×360	565×670×360	550×670×790	745×670×360	550×670×790
Weight (kg)	57,5	91,5	86	152,5	116	142,5

Description	Pk	Cat. No.
Ventilated bench top centrifuge, Heraeus® Multifuge® X1, without rotor	1	**521-1378**
Refrigerated bench top centrifuge, Heraeus® Multifuge® X1R, without rotor	1	**521-1379**
Ventilated bench top centrifuge, Heraeus® Multifuge® X3, without rotor	1	**521-1380**
Ventilated floor-standing centrifuge, Heraeus® Multifuge® X3 F, without rotor	1	**521-1382**
Refrigerated bench top centrifuge, Heraeus® Multifuge® X3R, without rotor	1	**521-1381**
Refrigerated floor-standing centrifuge, Heraeus® Multifuge® X3 FR, without rotor	1	**521-1383**

Rotors and accessories for Heraeus® Megafuge® and Multifuge® centrifuges

Thermo Scientific

M-20

TX-200

Fiberlite™ F15-6×100

Description	Pk	Cat. No.
Swing out rotors and accessories for Megafuge® 16/16R and Multifuge® X1/X1R		
TX-200 swing out rotor, 4×180 ml, 5500 min^{-1}, 5580 ×g, for Multifuge® X1/X1R / Megafuge® 16/16R	1	**521-1566**
Round buckets (set of 4), 180 ml, for TX-200 rotor	4	**521-1364**
TX-400 swing out rotor, 4×400 ml, 5000 min^{-1}, 4696 ×g, without buckets, for Multifuge® X1/X1R / Megafuge® 16/16R	1	**521-1775**
Round buckets (set of 4), 400 ml, for TX-400 rotor	4	**521-1361**
BIOShield® 720 swing out rotor, 4×180 ml, 6300 min^{-1}, 7188 ×g (with Multifuge® X1/X1R); 5300 min^{-1}, 5088 ×g (with Megafuge® 16/16R)	1	**521-1564**
M-20 microplate rotor, 2×3 standard or 2×1 deep well, 4000 min^{-1}, 2272 ×g, incl. two buckets and two adapters, for Multifuge® X1/X1R / Megafuge® 16/16R	1	**521-1400**
Sealed microplate carriers for M-20 rotor, including trays and lids (set of 2)	2	**521-1538**
ClickSeal™ biocontainment lids (set of 4) for 180 ml round buckets	4	**521-1365**
ClickSeal™ biocontainment lids (set of 4) for 400 ml round buckets	4	**521-1362**
Swing out rotors and accessories for Megafuge® 40/40R and Multifuge® X3/X3R		
TX-1000 Swing out rotor, 4×1000 ml or 24 microplates, with anti-friction coating, without buckets, 4200 min^{-1}, 4121 ×g (with refrigerated centrifuges); 3800 min^{-1}, 3374 ×g (with ventilated centrifuges), for Multifuge® X3/X3R / Megafuge® 40/40R	1	**521-2616**
Buckets (set of 4), 100 ml, for TX-1000 rotor	1	**521-2615**
ClickSeal™ biocontainment lids for TX-1000 buckets	4	**521-2618**
TX-750 swing out rotor, 4×750 ml, 4700 min^{-1}, 4816 ×g, with anti-friction coating, without buckets, for Multifuge® X3/X3R / Megafuge® 40/40R	1	**521-1352**
Round buckets (set of 4) 750 ml, for TX-750 rotor	4	**521-1353**
ClickSeal™ biocontainment lids (set of 4) for 750 ml round buckets	4	**521-1354**
Rectangular buckets (set of 4) 250 ml, for TX-750 rotor	4	**521-1355**
ClickSeal™ biocontainment lids (set of 4) for 250 ml rectangular buckets	4	**521-1356**
Microplates carriers for TX-750 rotor (set of 2), including plate trays and neoprene pad, 4×4 standard or 4×1 deep-well	2	**521-1406**
Microplates carriers for TX-750 rotor (set of 4), including plate trays and neoprene pad, 4×4 standard or 4×1 deep-well	4	**521-1357**
BIOShield® 1000A swing out rotor, 4×250 ml, 6000 min^{-1}, 7164 ×g (with Multifuge® X3/X3R); 5300 min^{-1}, 5590 ×g Megafuge® 40/40R	1	**521-1776**
BIOLiner™ high capacity swing out rotor, 4×750 ml, 3500 min^{-1}, 2739 ×g, for Multifuge® X3/X3R / Megafuge® 40/40R	1	**521-1371**
BIOLiner™ buckets (set of 4), 4×750 ml, for BIOLiner™ rotor	4	**521-1372**
ClickSeal™ biocontainment lids (set of 4) for BIOLiner™ buckets	4	**521-1373**
Microplate carriers for BIOLiner™ rotor (set of 4), 4×4 standard or 4×1 deep-well	4	**521-1374**
ClickSeal™ biocontainment lids (set of 4) for BIOLiner microplate carriers	4	**521-1375**

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Description	Pk	Cat. No.
Swing out rotors and accessories for Megafuge® 40/40R and Multifuge® X3/X3R		
Microplate carriers for BIOLiner™ rotor (set of 2), 4×4 standard or 4×1 deep-well	2	**521-1407**
HIGHPlate™ 6000 microplate rotor, 2×5 standard, 6300 min^{-1}, 6168 ×g, for Multifuge® X3/X3R	1	**521-1351**
Fiberlite™ H3-LV large volume swing out rotor, 28×standard or 8×deep-well plates, 3600 min^{-1}, 1840 ×g, for Multifuge™ X3/X3R	1	**521-1370**
Adapters		
Microlitre 30×2 sealed aluminium fixed angle rotor, 30×2 ml, 15200 min^{-1}, 25830 ×g, for Multifuge™ X1/X1R / Megafuge™ 16/16R	1	**521-1360**
Fixed angle rotors for Megafuge® and Multifuge®		
Microlitre 48×2 sealed aluminium fixed angle rotor, 48×2 ml, 15200 min^{-1}, 25314 ×g for Multifuge® X1/X1R/X3/X3R / Megafuge® 40/40R	1	**521-1349**
HIGHConic™ II aluminium fixed angle rotor, 6×94 ml, 10350 min^{-1}, 15090 ×g, for all Megafuge®/Multifuge® centrifuges	1	**521-1358**
Fiberlite™ F13-14×50c fixed angle rotor, 14×50 ml, 8500 min^{-1}, 12359 ×g (X1) / 10000 min^{-1}, 17105 ×g (X3)	1	**521-1366**
Fiberlite™ F14-6×250LE fixed angle rotor, 6×250 ml, 11000 min^{-1}, 18533 ×g, for Multifuge® X3/X3R	1	**521-1367**
Fiberlite™ F15-6×100 fixed angle rotor, 6×100 ml, 15000 min^{-1}, 24652 ×g, for all Megafuge®/Multifuge® centrifuges	1	**521-1377**
Fiberlite™ F15-8×50c fixed angle rotor, 8×50 ml, 14500 min^{-1}, 24446 ×g, for Multifuge® X1/X1R/X3/X3R	1	**521-1368**
Fiberlite™ F21-48×2 fixed angle rotor, 48×2 ml, 15200 min^{-1}, 25055 ×g for Multifuge® X1/X1R/X3/X3R / Megafuge® 40/40R	1	**521-1369**

Centrifuges, bench top, ventilated/refrigerated, 5804 / 5804 R / 5810 / 5810 R
Eppendorf

5804 + 5810R

Multipurpose centrifuges in ventilated and refrigerated versions which accept high capacity swing out rotors, accommodating virtually all commercially available tubes from 0,5 to 400 ml, and fixed angle rotors. Bucket adapters and adapter modules can be stacked until the required tube height is attained and then lowered onto the holders in the rectangular buckets. The stable plastic adapters are robustly constructed and can be easily cleaned, even autoclaved in their entirety in the event of contamination with biologically active sample material.

- Automatic rotor recognition senses rotor type and sets maximum allowable speed, ensuring safety
- Fast, simple programming of time, temperature (refrigerated models) speed/RCF and radius values
- Up to 35 user defined programs
- Motorised lid lock
- 5804 R and 5810 R have FastTemp function for rapid pre-cooling; standby refrigeration keeps rotor chamber at set temperature while lid is closed

Model	5804	5804 R	5810	5810 R
Max. capacity	4×100 ml		4×400 ml	
Max. speed (min^{-1})	14000			
Max. RCF (×g)	20800			
Temperature (°C)	-	–9...+40	-	–9...+40
Acceleration/braking ramps	10/10			
Noise level (dB(A))	<67	<58	<65	<59
Power consumption (W)	900	1650	900	1650
W×D×H (mm)	470×550×340	640×550×340	540×610×350	700×610×350
Weight (kg)	55	80	68	99

Description	Pk	Cat. No.
Centrifuge 5804, without rotor, UK plug	1	**521-0135**
Centrifuge 5804 R, refrigerated, without rotor, UK plug	1	**521-0142**
Centrifuge 5810, without rotor, UK plug	1	**521-0143**
Centrifuge 5810 R, refrigerated, without rotor, UK plug	1	**521-0148**

Description	Pk	Cat. No.
Rotors for 5804 / 5804 R / 5810 / 5810 R		
Fixed angle rotor F-34-6-38, 6×85 ml with lid, 15500 ×g	1	**521-0050**
Fixed angle rotor F-45-30-11, 30×1,5/2,0 ml with aluminium lid, 20800 ×g	1	**521-0046**
Fixed angle rotor F-45-48-PCR, 6×8-tube strips or 6×5-tube strips or 48×0,2 ml, 15350 ×g	1	**521-0054**
Fixed angle rotor FA-45-30-11, 30×1,5/2,0 ml with aluminium lid aerosol-tight, 20800 ×g	1	**521-0049**
Swing out rotor A-2-DWP, 4×deep-well plate with 2 buckets, 2250 ×g	1	**521-0055**
Swing out rotor A-4-44, with 4×100 ml rectangular bucket, 4500 ×g	1	**521-0044**
Swing out rotor A-4-44, with 4 Falcon buckets 50 ml, 4500 ×g	1	**522-2454**
Swing out rotor A-4-62, with 4 rectangular buckets 250 ml, 3200 ×g	1	**521-0078**

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Description	Pk	Cat. No.
Rotors for 5804 / 5804 R / 5810 / 5810 R		
Swing out rotor A-4-62MTP, including 4 buckets for 12 microplates or 8 culture plates or 4 deep-well plates, 2750 ×g	1	**522-2730**
Swing out rotor A-4-81-MTP/Flex, with 4 buckets for 16 microplates or 12 culture plates or 4 deep-well plates, 2900 ×g	1	**521-0145**
Swing out rotor A-4-81 with 4 rectangular buckets 400 ml, 3250 ×g	1	**521-0081**
Drum rotor T-60-11, 60×1,5/2,0 ml with lid, 16400 ×g	1	**521-0051**

* Buckets for MTP/Flex microplates to complete rotor A-4-81 are available under Cat. No. 521-0744. Other rotors and accessories available on request.

IVD

Haematocrit centrifuge, HAEMATOKRIT 200
Hettich

This compact centrifuge efficiently determines the erythrocyte volume fraction in blood. It can hold up to 24 capillaries. The maximum packing density of the cells is achieved within seven minutes, the cell-free plasma is then available for further tests. Suitable for use in neonatology, haematology and sports medicine.

- Metal lid and deep metal chamber which securely holds the rotor
- Lid locking and holding; emergency lid lock release
- Rotor lid also serves as an evaluation disc, enabling the haematocrit values to be read off directly after sedimentation
- Practical control panel allows time and speed to be set quickly and easily

Ordering information: Rotors are available separately. A lid is included with both rotors.

Model	HAEMATOKRIT 200
Max. capacity	24 capillaries (with 2076 rotor)
Max. speed (min^{-1})	13000
Max. RCF (×g)	16060
Timer	1 - 99 min continuous run, short cycle mode (pulse key)
Power supply	208 - 240 V
W×D×H (mm)	262×352×228
Weight (kg)	10

Description	Pk	Cat. No.
Benchtop centrifuge HAEMATOKRIT 200, without rotor	1	**521-1929**

Description	Pk	Cat. No.
Accessories		
Haematocrit rotor 2076, 24-place, for standard capillaries, with lid	1	**521-1319**
Haematocrit rotor 2056, 20-place, for capillaries for quantitative Buffy Coat Analysis, with lid (not suited for standard capillaries)	1	**521-1318**

IVD

Centrifuges, bench top, ventilated/refrigerated, ROTINA 380 / 380 R
Hettich

ROTINA 380

ROTINA 380 R

The high performance bench top centrifuges ROTINA 380 and ROTINA 380 R impress with state of the art technology, large capacity, extremely easy handling and exceptionally smooth and quiet running. They are designed for a wide range of applications and mainly employed in diagnostics, cell culture, genetics research and microbiology.

- Smooth and quiet running, brushless, maintenance-free induction drive
- Housing and lid made of metal for speed stability, centrifuging chamber and inner lid cover made of stainless steel
- Ergonomically arranged controls and displays, easy to operate
- Special lid locking device enables effortless closing and opening of the lid with one hand
- Safety features: Additionally steel-armoured centrifuging chamber, automatic rotor recognition, imbalance switch-off, lid locking and holding during rotor run,

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lid dropping protection, emergency lid lock release

Ordering information: Rotors and adapters available separately.

Model	ROTINA 380	ROTINA 380 R
Max. capacity - fixed angle rotor	4×290 ml	
Max. speed - fixed angle rotor (min^{-1})	15000	
Max. RCF - fixed angle rotor (×g)	24400	
Temperature (°C)	-	–20...+40
Acceleration/braking ramps	9/9	
Programs	98 program storage spaces	
Timer	1 sec - 99 hr 59 min 59 sec; continuous run, short cycle mode (pulse key)	
Power supply	200 - 240 V/50 - 60 Hz	
W×D×H (mm)	457×600×418	457×750×418
Weight (kg)	51	81

Description	Pk	Cat. No.
Bench top centrifuge, ventilated, ROTINA 380	1	**521-1153**
Bench top centrifuge, refrigerated, ROTINA 380 R	1	**521-1154**

Description	Pk	Cat. No.
Swing out rotors		
Swing out rotor 1717, 10×15/50 ml, 4000 min^{-1}, 2916 ×g	1	**521-1477**
Swing out rotor 1726, 6×50 ml, 4000 min^{-1}, 2808 ×g	1	**521-1162**
Swing out rotor 1754, for 4×290 ml, 5000 min^{-1}, 4863 ×g	1	**521-1221**
Swing out rotor 1798, 4×250 ml, 4000 min^{-1}, 3095 ×g	1	**521-1165**
Fixed angle rotors		
Fixed angle rotor 1720, 6×85 ml, 10000 min^{-1}, 13528 ×g	1	**521-1161**
Fixed angle rotor 1721, 8×50 ml, 4500 min^{-1}, 3283 ×g	1	**521-1478**
Fixed angle rotor 1789, 30×1,5/2 ml, 15000 min^{-1}, 24400 ×g	1	**521-1490**
Fixed angle rotor 1792, 6×50 ml, 11000 min^{-1}, 16504 ×g, with lid	1	**521-1317**
Other rotors		
Drum rotor 1711 for 6 racks, without rack, 15000 min^{-1}, 18866 ×g	1	**521-1476**
Microplate rotor 1760, 2 × microplate, 4000 min^{-1}, 2397 ×g, without buckets	1	**521-1163**
Accessories for swing-out rotors		
Biocontainment lid for round bucket 521-1219	1	**521-1276**
Round bucket, max. 1×290 ml tube, for rotor 521-1221	1	**521-1219**
Accessories for other rotors		
Microplate bucket for rotor 521-1163	1	**521-1686**

IVD

Centrifuges, bench top, ventilated/refrigerated, ROTINA 420 / 420 R

Hettich

ROTINA 420

ROTINA 420 R

High performance, compact centrifuges developed for high sample throughput as well as for high sample volumes. Ideal for applications in clinical chemistry, biotechnology and in life science research facilities.

- User friendly centrifuge with automatic lid locking, ergonomic and advanced control panel, 98 program storage spaces, easily exchangeable rotors
- Metal housing and lid, stainless steel centrifuging chamber, viewing port in the lid
- Safety features: Lid locking and holding during rotor run, emergency lid lock release, lid dropping protection, motor overheat protection, chamber overheat protection (ROTINA 420 R), imbalance switch off, automatic rotor recognition

Ordering information: Rotors and adapters available separately.

Model	ROTINA 420	ROTINA 420 R
Max. capacity - swing out rotor	4×600 ml	
Max. speed - fixed angle rotor (min^{-1})	15000	
Max. RCF - fixed angle rotor (×g)	24400	
Temperature (°C)	-	–20...+40
Acceleration/braking ramps	9/9	
Programs	98 program storage spaces	
Timer	1 sec - 99 hr 59 min 59 sec; continuous run, short cycle mode	

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Power supply	200 - 240 V / 50 - 60 Hz	200 - 240 V / 50 Hz
W×D×H (mm)	506×650×423	713×654×423
Weight (kg)	75	108

Description	Pk	Cat. No.
Bench top centrifuge, ventilated, ROTINA 420	1	**521-1155**
Bench top centrifuge, refrigerated, ROTINA 420 R	1	**521-1156**

Description	Pk	Cat. No.
Fixed angle rotors		
Fixed angle rotor 4760 for PCR strips, 6 strips, 8×0,2 ml, 14000 min-1, 18845 ×g	1	**521-1168**
Fixed angle rotor 4790-A, 30×1,5/2 ml, 15000 min^{-1}, 24400 ×g, with biocontainment lid	1	**521-1503**
Fixed angle rotor 4794, 6×50 ml, 11000 min^{-1}, 16504 ×g	1	**521-1323**
Fixed angle rotor 4795, 4×250 ml, 9500 min^{-1}, 12007 ×g	1	**521-1170**
Swing out rotors		
Swing out rotor 4784-A, 4×600 ml (90°), 4500 min^{-1}, 4166 ×g	1	**521-1835**
Accessories for swing-out rotors		
Holding device for 96-well PCR plates	1	**521-1390**
Lid for round bucket 4750/4781	1	**521-1239**
Round carrier 4781, max. 1×600 ml, for rotor 4784-A	1	**521-1820**

Centrifuges, bench top/floor standing, ventilated/refrigerated, ROTANTA 460 / 460 R / 460 RF
Hettich

460 RF

460 R

High quality centrifuge with excellent performance and an extensive range of accessories guaranteeing fast, trouble free operation in daily laboratory use. With a maximum capacity of 3 litres per run, it is proving itself in clinics and laboratory centres, as well as in life science R&D departments.

- Powered lid locking
- State of the art control panel allowing easy input, recording and use of complex centrifugation programs 98 programmable ranges can be defined
- The refrigerated, floor standing version ROTANTA 460 RF has a width of only 55,4 cm, giving a reduced footprint, which makes it ideal for the busy laboratory
- Temperature control in refrigerated models within a range of –20 to +40 °C
- Safety features: Imbalance switch off, automatic rotor recognition, lid locking and holding during rotor run, lid dropping protection, motor overheat protection, chamber overheat protection

Ordering information: Rotors and adapters available separately.

Model	ROTANTA 460	ROTANTA 460 R	ROTANTA 460 RF
Max. capacity	4×750 ml		
Max. speed (min^{-1})	15000		
Max. RCF (×g)	24400		
Temperature (°C)	-	–20...+40	
Timer	1 sec - 99 hr 59 min 59 sec; continuous run, short cycle mode, pulse key		
Power supply	220 - 240 V / 50 - 60 Hz	220 - 240 V / 50 Hz	
W×D×H (mm)	554×706×456	770×706×456	554×697×961
Weight (kg)	101	141	164

Description	Pk	Cat. No.
Bench top centrifuge, ventilated, ROTANTA 460	1	**521-1604**
Bench top centrifuge, refrigerated, ROTANTA 460 R	1	**521-1605**
Floor standing centrifuge, refrigerated, ROTANTA 460 RF	1	**521-1549**

Description	Pk	Cat. No.
Swing out rotors		
Swing out rotor 4620, 2-place, for max. 12 microplates, 6200 min^{-1}, 6446 ×g	1	**521-1235**
Swing out rotor 5694, 4-place, 4000 min^{-1}, 3095 ×g, without buckets	1	**521-1607**
Swing out rotor 5699, 4×750 ml, 4600 min^{-1}, 5063 ×g, without buckets	1	**521-1838**
Fixed angle rotors		
Fixed angle rotor 5615, 6×94 ml, 11500 min^{-1}, 18038 ×g, with bio-containment lid	1	**521-1327**
Accessories for swing-out rotors		
Round carrier, 750 ml, for rotor 5699	1	**521-1837**

Cytocentrifuges, Cellspin series

Cellspin I

Cellspin II

Versatile cytocentrifuges suitable for small and large sample volumes, designed for thin layer and monolayer cell preparations in medical applications such as cytology, urology, microbiology, haematology, immunocytochemistry, virology and oncology.

- Smooth running, high performance motor featuring a maintenance-free frequency drive
- Powered lid locking, quick entry foil keypad with easy to read, digital display and twist knob to enter values
- Cellspin II (refrigerated): Variable temperature setting from –20 °C to +40 °C, Fast Cool function
- Safety features: Imbalance switch off, automatic rotor recognition, lid locking and holding during rotor run, lid dropping protection, motor and chamber overheat protection (Cellspin II)

Ordering information: Supplied with a starter kit for 200 tests. Other rotors and accessories available on request.

Model	Cellspin I	Cellspin II	Cellspin II refrigerated
Rotor	Cellclip (standard or closed)		
Max. capacity - swing out rotor	6×50 ml conical tubes (with JC 381 rotor)		
Max. speed (min^{-1})	6000 (in 100 min^{-1} increments)	15000 (in 100 min^{-1} increments)	
Temperature (°C)	-		–20...+40
Acceleration/braking ramps	-	9/9	
Programs		10 program storage	
Timer	1 - 99 min; short cycle mode (pulse button)		
Power supply	208 - 240 V / 50 - 60 Hz	200 - 240 V / 50 - 60 Hz	
W×D×H (mm)	370×430×260	400×700×350	
Weight (kg)	25	29	54

Description	Pk	Cat. No.
Cellspin I		
Cellspin I-4 cytocentrifuge, with standard 4-position rotor (4 cellclips)	1	**720-1783**
Cellspin I-4 cytocentrifuge, with open removable rotor (JC 370/4)	1	**521-1848**
Cellspin I-4 cytocentrifuge, with open 4-position rotor (4 cellclips), Quickchange	1	**720-1785**
Cellspin I-4 cytocentrifuge, with closed 4-position rotor (4 cellclips), Quickchange	1	**720-1784**
Cellspin I-8 cytocentrifuge, with standard 8-position rotor (8 cellclips)	1	**720-1786**
Cellspin I-8 cytocentrifuge, with open 8-position rotor (8 cellclips), Quickchange	1	**720-1788**
Cellspin I-8 cytocentrifuge, with closed 8-position rotor (8 cellclips), Quickchange	1	**720-1787**
Cellspin I-12 cytocentrifuge, with standard 12-position rotor (12 cellclips)	1	**720-1780**
Cellspin I-12 cytocentrifuge, with open 12-position rotor (12 cellclips), Quickchange	1	**720-1782**
Cellspin I-12 cytocentrifuge, with open, removable 12-position EASY rotor JC 375	1	**521-1839**
Cellspin I-12 cytocentrifuge, with closed 12-position rotor (12 cellclips), Quickchange	1	**720-1781**
Cellspin I-12 cytocentrifuge, with closed, removable 12-position EASY rotor JC 105	1	**521-1840**
Cellspin II		
Cellspin II-12 cytocentrifuge, with standard 12-position rotor (12 cellclips)	1	**720-1801**
Cellspin II-12 cytocentrifuge, with closed 12-position rotor (12 cellclips)	1	**720-1797**
Cellspin II-12 cytocentrifuge, with open, removable 12-position EASY rotor JC 375	1	**521-1849**
Cellspin II-12 cytocentrifuge, with closed, removable 12-position EASY rotor JC 105	1	**521-1850**
Cellspin II-12 refrigerated cytocentrifuge, with standard 12-position rotor (12 cellclips)	1	**720-1799**
Cellspin II-12 refrigerated cytocentrifuge, with closed 12-position rotor (12 cellclips)	1	**720-1798**

Description	Pk	Cat. No.
Accessories		
Closed rotor JC101/12 with Quickchange 12-position, autoclavable	1	**521-1572**
Closed rotor JC101/8 with Quickchange 8-position, autoclavable	1	**521-1574**
Removable rotor JC370/12 with Quickchange 12-position, autoclavable	1	**521-1580**
Removable rotor JC370/8 with Quickchange 8-position, autoclavable	1	**521-1582**
Swing out rotor JC380 with Quickchange 8-place, for 15 ml test tubes, autoclavable	1	**720-1826**
Swing out rotor JC381 with Quickchange 6-place, for 50 ml Falcon test tubes, autoclavable	1	**720-1827**
Adapter for 15 ml tubes (for rotor JC381)	6	**521-1583**
Cellclip for Cellspin	1	**720-1802**
Seal for closed rotor JC101	1	**521-1575**
Cellspin fluid collector (25×10 ml)	25	**521-1576**
Cellspin fluid collector (2×500 ml)	2	**521-1577**
Cellspin fluid collector (2×5000 ml)	2	**521-1578**

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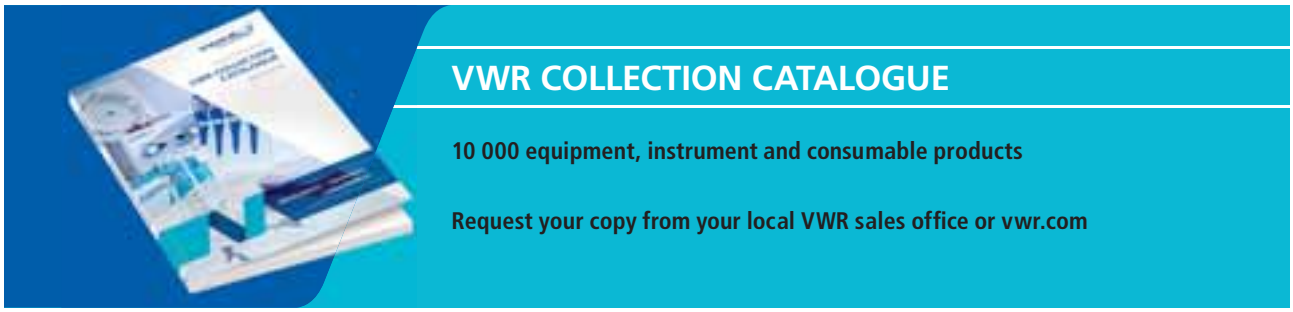
Description	Pk	Cat. No.
Accessories		
Cellspin fluid collector (1×10000 ml)	1	**521-1579**
Single Cellfunnel®, reusable, for samples up to 0,5 ml	12	**720-1803**
Filter cards only for reusable Single Cellfunnel®	200	**720-1804**
Single Cellfunnel®, disposable, for samples up to 0,5 ml	100	**720-1816**
Single Cellfunnel®, disposable, for samples up to 0,5 ml	500	**720-1817**
Single Cellfunnel®, disposable, for samples up to 0,5 ml, single packed	500	**720-1818**
Single Cellfunnel®, disposable, with brown filter card, for 0,4 ml samples or less	50	**720-1830**
Single Cellfunnel®, disposable, with brown filter card, for 0,4 ml samples or less	100	**720-1829**
Cytoslides with 1 circle, uncoated	100	**720-1808**
Cytoslides with 1 circle, coated	100	**720-1809**
Double Cellfunnel®, reusable, for two samples up to 0,5 ml	12	**720-1805**
Filter cards only for reusable Double Cellfunnel®	500	**720-1806**
Double Cellfunnel®, disposable, with 2 offset holes	100	**720-1821**
Double Cellfunnel®, disposable, with 2 offset holes	500	**720-1822**
Cytoslides with 2 offset circles, coated	100	**720-1810**
Cytoslides with 2 offset circles, coated	100	**720-1814**
Cytoslides with 2 offset circles, uncoated	100	**720-1807**
Cytoslides with 2 offset circles, uncoated	100	**720-1815**
Filter cards, thin, brown, for 0,4 ml samples or less	200	**720-1823**
ECOfunnel®, disposable, with ECOseal, for samples up to 6 ml	100	**720-1819**
ECOfunnel®, disposable, with ECOseal, for samples up to 6 ml	500	**720-1820**
ECOfunnel®, reusable, for samples up to 6 ml	12	**720-1811**
ECOseal for ECOfunnel®	100	**720-1813**
ECOslides, coated	100	**720-1812**
Filter cards for ECOfunnel®	100	**720-1825**



Microcentrifuge tubes, 1,5 ml, SuperSpin™

Ultra-clear PP, graduated, autoclavable and freezable with flat caps, easy to open

- Can withstand ultra-high centrifugation to RCF 40 000×g
- Fits all standard and high capacity rotors
- Flat cap can be easily labelled and pierced, includes a special 90° hinge, making it easier to close while pipetting one handed
- Good for phenol/chloroform vortexing
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: Microtubes packed in resealable bags. Assorted colours pack includes red, blue, green, yellow, orange tubes in separate 100 tube bags.

Capacity (ml)	Colour	Pk	Cat. No.
1,5	Transparent	500	**211-0015**
1,5	Amber	500	**211-0016**
1,5	Yellow	500	**211-0017**
1,5	Orange	500	**211-0018**
1,5	Red	500	**211-0019**
1,5	Violet	500	**211-0020**
1,5	Blue	500	**211-0021**
1,5	Green	500	**211-0022**
1,5	Assorted	500	**211-0023**

Microcentrifuge tubes, 0,65 ml, SuperClear™ boil-proof

Ultra-clear PP, graduated, autoclavable and freezable with flat cap

- Can withstand centrifugation to 30 000×g
- Fits all standard and high capacity rotors
- Flat cap can be easily labelled and pierced, includes a special 90° hinge, making it easier to close while pipetting one handed
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: Microtubes packed in resealable bags. Assorted colours pack includes red, blue, green, yellow, orange tubes in separate 200 tube bags.

Capacity (ml)	Colour	Pk	Cat. No.
0,65	Transparent	1.000	**211-0024**
0,65	Yellow	1.000	**211-0025**
0,65	Orange	1.000	**211-0026**
0,65	Red	1.000	**211-0027**
0,65	Violet	1.000	**211-0028**
0,65	Blue	1.000	**211-0029**
0,65	Green	1.000	**211-0030**
0,65	Assorted	1.000	**211-0031**

Microcentrifuge tubes, 1,7 ml, SuperClear™

Ultra-clear PP, graduated, autoclavable and freezable, with flat cap

- Can withstand centrifugation to 14 000×g
- Fit all standard and high capacity rotors
- Flat cap can be easily labelled and pierced, including a special 90° hinge, making it easier to close while pipetting one handed
- Every lot is tested and guaranteed DNase- and RNase-free

Capacity (ml)	Colour	Pk	Cat. No.
1,7	Transparent	500	**211-0319**

Microcentrifuge tubes, 1,7 ml, SuperClear™ boil-proof

Ultra-clear PP, graduated, autoclavable and freezable with or without flat cap

- Can withstand centrifugation to 20 000×g
- Fits all standard and high capacity rotors
- Flat cap can be easily labelled and pierced, includes a special 90° hinge, making it easier to close while pipetting one handed
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: Microtubes packed in resealable bags. Assorted colours pack includes red, blue, green, yellow, orange tubes in separate 100 tube bags.

Capacity (ml)	Colour	Pk	Cat. No.
With cap			
1,7	Transparent	500	**211-0007**
1,7	Yellow	500	**211-0008**
1,7	Orange	500	**211-0009**
1,7	Red	500	**211-0010**
1,7	Violet	500	**211-0011**
1,7	Blue	500	**211-0012**
1,7	Green	500	**211-0013**
1,7	Assorted	500	**211-0014**
Without cap			
1,7	Transparent	500	**211-0032**

Microcentrifuge tubes, 1,7 ml, SuperClear™

Ultra-clear PP, sterile, graduated, autoclavable and freezable with flat cap

- Can withstand centrifugation to 14 000×g
- Fits all standard and high capacity rotors
- Flat cap can be easily labelled and pierced, including a special 90° hinge, making it easier to close while pipetting one handed
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: 50 microtubes/sterile bag.

Capacity (ml)	Colour	Packed	Pk	Cat. No.
1,7	Transparent	50/bag, 10 bags/pack	500	**211-0033**

Microcentrifuge tubes, 2,0 ml, SuperClear™

Ultra-clear PP, graduated, autoclavable and freezable with flat cap

- Can withstand centrifugation to 14 000×g
- Fits all standard and high capacity rotors
- Tubes have frosted side labelling surface and flat cap can be easily labelled and pierced
- Every lot is tested and guaranteed DNase- and RNase-free

Packaging: In resealable bag. Assorted colours pack includes red, blue, green, yellow, orange tubes in separate 100 tube bags.

Capacity (ml)	Colour	Pk	Cat. No.
2,0	Transparent	500	**211-0034**
2,0	Amber	500	**211-0035**
2,0	Blue	500	**211-0036**
2,0	Green	500	**211-0037**
2,0	Assorted	500	**211-0038**
2,0	Yellow	500	**211-0116**
2,0	Orange	500	**211-0117**
2,0	Red	500	**211-0118**
2,0	Violet	500	**211-0119**

Microcentrifuge tubes, 1,5 ml, 3810X
Eppendorf

PP, graduated, autoclavable when open with attached cap

- Can withstand centrifugation up to 25 000×g in fixed angle rotor (up to 70 000×g possible in swing bucket rotor)
- Flat, frosted cap and writing surface on body of the tube
- Easy to open and close thanks to improved cap geometry

Capacity (ml)	Colour	Pk	Cat. No.
3810X			
1,5	Transparent	1.000	**700-5239**
1,5	Blue	1.000	**211-2114**
1,5	Green	1.000	**211-2116**
1,5	Red	1.000	**211-2117**
1,5	Yellow	1.000	**211-2118**
3810X PCR clean (free of human DNA, DNase, RNase and PCR inhibitor)			
1,5	Transparent	1.000	**211-2166**

Microcentrifuge tubes, Safe-Lock
Eppendorf

0,5 ml / 1,5 ml / 2,0 ml

Microcentrifuge tubes

PP, graduated, with attached cap, autoclavable when open

- Can withstand centrifugation up to 30 000×g for 0,5 and 1,5 ml and up to 25 000×g for 2,0 ml
- Frosted writing surface, easily opened using one hand
- The hook on the patented hinged lid clips around the rim of the test tube, preventing the tube from opening accidentally

Micropestle for microcentrifuge tubes

White plastic. For resuspension of pellets in 1,5 and 2,0 ml microtubes.

- Simple and easy handling
- Good chemical resistance
- High thermal resistance, autoclavable

Capacity (ml)	Colour	Pk	Cat. No.
Microcentrifuge tubes			
0,5	Transparent	500	**211-2140**
0,5	Yellow	500	**211-2141**
0,5	Red	500	**211-2142**
0,5	Green	500	**211-2144**
0,5	Amber	500	**211-2145**
0,5	Assorted	500	**211-2149**
1,5	Assorted	1.000	**211-2139**
1,5	Transparent	1.000	**211-2130**
1,5	Yellow	1.000	**211-2131**
1,5	Blue	1.000	**211-2133**
2,0	Transparent	1.000	**211-2120**
1,5	Green	1.000	**211-2134**
1,5	Amber	1.000	**211-2135**
2,0	Yellow	1.000	**211-2121**
2,0	Red	1.000	**211-2122**
2,0	Blue	1.000	**211-2123**
2,0	Green	1.000	**211-2124**
2,0	Amber	1.000	**211-2125**
2,0	Assorted	1.000	**211-2129**

Description	Pk	Cat. No.
Micropestle for microcentrifuge tubes		
Micropestles for resuspending pellets from microcentrifuge tubes Safe-Lock (1,5-2,0 ml)	10	**211-2100**

Microcentrifuge tubes, Safe-Lock PCR clean
Eppendorf

PP, graduated, with attached cap, autoclavable when open

- Can withstand centrifugation up to 30 000×g for 0,5 and 1,5 ml and up to 25 000×g for 2,0 ml
- The hook on the patented hinged lid clips around the rim of the test tube, preventing the tube from opening accidentally
- Free of human DNA, DNase, RNase and PCR inhibitors (PCR clean)

Capacity (ml)	Pk	Cat. No.
0,5	500	**211-2163**
1,5	1.000	**211-2164**
2,0	1.000	**211-2165**

Microcentrifuge tubes, Biopur® Safe-Lock
Eppendorf

PP, graduated, sterile, with attached cap, autoclavable when open

- Can withstand centrifugation up to 30 000×g for 0,5 and 1,5 ml and up to 25 000×g for 2,0 ml
- The hook on the patented hinged lid clips around the rim of the test tube, preventing the tube from opening accidentally
- For RNase-, DNA-, ATP- and pyrogen-free work

Packaging: Individually sealed.

Capacity (ml)	Pk	Cat. No.
0,5	50	**211-2162**
1,5	100	**211-2161**
2,0	100	**211-2160**

Microcentrifuge tubes, protein LoBind / DNA LoBind
Eppendorf

Special PP, with attached cap

- Can withstand centrifugation up to 18 000×g (Protein LoBind) / 25 000×g (DNA LoBind)
- Protein LoBind: Minimum protein loss (less than 3%, BSA 1 µg/ml)
- DNA LoBind: Less than 1% loss of DNA/RNA at low concentrations and critical conditions
- Free of DNA, DNase, RNase and PCR inhibitors (PCR clean); free of surface coating, e.g. silicone

Capacity (ml)	Pk	Cat. No.
DNA LoBind		
0,5	250	**525-0129**
1,5	250	**525-0130**
2,0	250	**525-0131**
Protein LoBind		
0,5	100	**525-0132**
1,5	100	**525-0133**
2,0	100	**525-0134**

Eppendorf Tubes® 5,0 ml
Eppendorf

High quality polypropylene, transparent

Eppendorf tubes are the benchmark for simple and safe sample preparation from 0,5 to 2,0 ml. For larger volumes, 15 ml and 50 ml conical tubes are available. With medium sample volumes you may face an issue; they need to be processed with large conical screw cap tubes - impractical, inconvenient and often prone to contamination. Eppendorf now offers the missing links; the Eppendorf Tubes® 5,0 ml. This product fills the gap between existing tube versions and enables the simple and safe processing of sample volumes up to 5,0 ml. Simple, practical and ergonomic single-hand operation. Large labelling area. Hinged lid for minimised sample evaporation during storage and incubation in a wide range of temperatures from –86 to +80 °C. Material is free from plasticisers, biocides or mould release agents, for reliable test results.

- Easier processing of samples up to 5,0 ml
- Higher yields in DNA isolation, especially with samples with limited quantity of source material
- Convenient and safe cell culture applications
- Easier sample access lowers the risk of contamination
- Preparation of mastermixes and buffers
- Less storage space needed
- Safe cell and tissue lysis

Delivery information: Starter packs include 400 tubes (2 packages with 2 bags of 100 each), 2 racks (with 16 locations each) white, 8 universal adapters for rotors with bore holes for 15 ml conical tubes, PCR clean

Capacity (ml)	Packed	Pk	Cat. No.
Eppendorf Tubes® 5,0 ml, Eppendorf Quality			
5,0	2 bags of 100 ea.	200	**525-0713**
Eppendorf Tubes® 5,0 ml, PCR clean			
5,0	2 bags of 100 ea.	200	**525-0714**
Eppendorf Tubes® 5,0 ml, Sterile			
5,0	10 bags of 20 ea.	200	**525-0716**

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Capacity (ml)	Packed	Pk	Cat. No.
Eppendorf Tubes® 5,0 ml, Biopur®			
5,0	individually wrapped	50	**525-0715**
Eppendorf Protein LoBind Tubes 5,0 ml, PCR clean			
5,0	2 bags of 50 ea.	100	**525-0710**
Eppendorf DNA LoBind Tubes 5,0 ml, PCR clean			
5,0	4 bags of 50 ea.	200	**525-0711**
Starter Pack Eppendorf Tubes® 5,0 ml, PCR clean			
5,0	1 Starter Pack	400	**525-0712**
Tube Clips for Eppendorf Tubes® 5,0 ml			
-	Pack of 10 pcs.	10	**525-0718**
Racks for Eppendorf Tubes® 5,0 ml (16 places)			
-	Pack of 2 pcs.	2	**525-0717**

Microcentrifuge tubes, 0,5 ml
Brand

PP, autoclavable with attached cap

- Can withstand centrifugation up to 10 000×g
- Flat cap can be easily labelled and pierced
- Tight fitting attached cap provides leak free seal, yet re-opens easily

Capacity (ml)	Colour	Pk	Cat. No.
0,5	Transparent	1.000	**211-2612**

IVD

Microcentrifuge tubes, 1,5 ml
Brand

PP, graduated (except 211-2611), autoclavable with attached cap (except 211-2611)

- Can withstand centrifugation up to 20 000×g (except 211-2611: Up to 6000×g)
- Flat cap can be easily labelled and pierced
- Frosted marking area (except 211-2611)
- Amber-coloured microcentrifuge tubes are particularly suitable for light-sensitive reagents

CE-marked (except 211-2611) according to IVD-Directive 98/79 EC

Capacity (ml)	Colour	Pk	Cat. No.
With cap			
1,5	Transparent	500	**211-2610**
1,5	Transparent	3.000	**212-0198**
1,5	Yellow	500	**211-2601**
1,5	Blue	500	**211-2602**
1,5	Green	500	**211-2603**
1,5	Orange	500	**211-2604**
1,5	Amber	500	**211-2605**
Without cap			
1,5	Transparent	2.000	**211-2611**

Microcentrifuge tubes, 1,5 ml, BIO-CERT®
Brand

PP, graduated, autoclavable, sterile with attached cap

- Can withstand centrifugation up to 20 000×g
- Flat cap can be easily labelled and pierced, frosted marking area
- ATP-, DNA-, endotoxin- and RNase-free

CE-marked according to IVD-Directive 98/79 EC

Capacity (ml)	Colour	Pk	Cat. No.
1,5	Transparent	450	**211-3251**

Microcentrifuge tubes, 2,0 ml
Brand

PP, graduated, autoclavable with attached cap

- Can withstand centrifugation up to 20 000×g
- Flat cap can be easily labelled and pierced
- Frosted marking area

Capacity (ml)	Colour	Pk	Cat. No.
2,0	Transparent	500	**211-2606**

Microcentrifuge tubes, 1,5 ml, Secure-Lock™

PP, graduated at 0,5, 1,0 and at 1,5 ml, autoclavable with flat cap Secure-Lock™

- Can withstand centrifugation to 20000×g
- Flat cap can be easily labelled and pierced
- With special locking clasp, Secure-Lock™ prevents tubes from opening during centrifugation, boiling, storing, freezing and shipping

Capacity (ml)	Colour	Pk	Cat. No.
Secure-Lock™ cap with pick-up tab			
1,5	Blue	500	**720-1013**
Secure-Lock™ cap			
1,5	Green	500	**212-9612**
Secure-Lock™ locking cap			
1,5	Natural	5.000	**525-1745**
Secure-Lock™ cap			
1,5	Yellow	500	**212-9614**
Secure-Lock™ cap with pick-up tab			
1,5	Yellow	500	**720-1016**
Secure-Lock™ cap			
1,5	Transparent	500	**212-9613**
Secure-Lock™ cap with pick-up tab			
1,5	Transparent	500	**720-1015**

Microcentrifuge tubes, Snaplock, Axygen®
Corning®

High quality PP, graduated, autoclavable

Microtubes made from PP homopolymer for excellent sample visibility. Available in an ultra-transparent (MaxyClear) version or in assorted colours, with frosted writing area.

- Flat snaplock cap makes labelling easier, an area of 0,28 mm diameter can be perforated to minimise the risk of opening at high temperatures
- Maxymum Recovery® microtubes with ultra-smooth surfaces prevent adhesion of proteins and nucleic acids after long periods of storage
- Certified DNase-, RNase- and endotoxin-free

Packaging: Supplied in bulk, in resealable plastic bags.

Capacity (ml)	Type	Colour	RCF max. (×g)	Sterile	Pk	Cat. No.
0,6	MaxyClear™ Snaplock	Clear	20000	-	1.000	**525-0225**
0,6	Maxymum Recovery® Snaplock	Clear	20000	-	500	**525-0229**
1,5	MaxyClear™ Snaplock	Clear	20000	-	500	**525-0226**
1,5	Maxymum Recovery® Snaplock	Clear	20000	-	250	**525-0230**
1,7	MaxyClear™ Snaplock	Clear	14000	-	500	**525-0227**
1,7	Maxymum Recovery® Snaplock	Clear	14000	-	250	**525-0231**
2,0	MaxyClear™ Snaplock	Clear	20000	-	500	**525-0228**
2,0	Maxymum Recovery® Snaplock	Clear	20000	-	250	**525-0232**

Microcentrifuge tubes
Biotix

PP, graduated, autoclavable and freezable with attached flat caps

Medical grade superior clarity for visualisation of samples and isolated pellets. Graduated frosted side panel and flat snap cap provide surface for labelling.

- DNase-, RNase and endotoxin-free
- Can withstand centrifugation to RCF 20 000×g
- Tubes with X-Resin™ provides ultra-low binding characteristics

Assorted colours pack includes red, blue, green, yellow, orange tubes

Capacity (ml)	Type	Colour	Version	Packed	Pk	Cat. No.
0,65	-	Clear	non sterile	1000 tubes/bag	1.000	**525-0576**
0,65	-	Clear	Certified pre-sterile	500 tubes/bag	500	**525-0577**
0,65	X-Resin™	Clear	non sterile	1000 tubes/bag	1.000	**525-0578**
1,5	-	Clear	non sterile	500 tubes/bag	500	**525-0580**
1,5	-	Clear	Certified pre-sterile	250 tubes/bag	250	**525-0581**
1,5	X-Resin™	Clear	non sterile	500 tubes/bag	500	**525-0582**
2,0	-	Clear	non sterile	500 tubes/bag	500	**525-0584**
2,0	-	Clear	Certified pre-sterile	250 tubes/bag	250	**525-0585**
2,0	X-Resin™	Clear	non sterile	500 tubes/bag	500	**525-0586**

Microcentrifuge tubes and screw caps

Ultra-clear PP resin microtubes, graduated, autoclavable and freezable with screw caps

- Can withstand centrifugation to 20 000×g
- With universal screw threads that will work with all major brands of caps
- Caps include an ethylene propylene O-ring seal for secure storage
- Caps have smooth surface for applying labels
- Sterile tubes are sterilised by radiation

Packaging: Non sterile microtubes and caps are packed in resealable bags. Sterile microtubes with attached caps are in sterile bags of 50 tubes, 10 bags/pack.

Capacity (ml)	Type	Colour	Pk	Cat. No.
Microcentrifuge tubes with natural colour caps in separate resealable bags				
0,5	without skirt		500	**211-0121**
0,5	skirted		500	**211-0096**
1,5	without skirt		500	**211-0090**
1,5	skirted		500	**211-0098**
2,0	without skirt		500	**211-0100**
2,0	skirted		500	**211-0093**
Sterile microcentrifuge tubes with natural colour screw caps				
0,5	without skirt		500	**211-0122**
0,5	skirted		500	**211-0097**
1,5	without skirt		500	**211-0091**
1,5	skirted		500	**211-0099**
2,0	without skirt		500	**211-0101**
2,0	skirted		500	**211-0094**
Microcentrifuge tubes only				
0,5	without skirt		500	**211-0123**
0,5	skirted		500	**211-0095**
1,5	without skirt		500	**211-0124**
1,5	skirted		500	**211-0125**
2,0	without skirt		500	**211-0126**
2,0	skirted		500	**211-0092**
Screw caps for microcentrifuge tubes				
-	-	Transparent	500	**211-0086**
-	-	Orange	500	**211-0087**
-	-	Red	500	**211-0088**
-	-	Assorted	500	**211-0089**
-	-	Yellow	500	**211-0127**
-	-	Green	500	**211-0128**
-	-	Blue	500	**211-0129**
-	-	Violet	500	**211-0130**
-	-	White	500	**211-0131**

Microcentrifuge tubes with attached screw caps
Brand

PP non graduated, PE screw cap with sealing cone

- Can withstand centrifugation to 17 000×g
- Ideal for storage of serum and blood samples, also for boiling and centrifugation
- Positive sealing screw cap with sealing cone
- Fast opening and closing with 1¼ turn of cap
- Operating range: –90 to +100 °C

Ordering information: Coloured cap inserts for identification are available separately.

Capacity (ml)	Type	Pk	Cat. No.
0,5	self-standing	1.000	**211-3201**
1,5	self-standing	1.000	**211-3202**
1,5	round-bottom	1.000	**211-3203**
2,0	self-standing	1.000	**211-3204**
2,0	round-bottom	1.000	**211-3205**

Colour	Pk	Cat. No.
Coloured Cap Inserts		
White	100	**211-3221**
Red	500	**525-0688**
Green	100	**211-3224**
Yellow	500	**525-0501**

Microcentrifuge tubes with attached screw caps
Brand

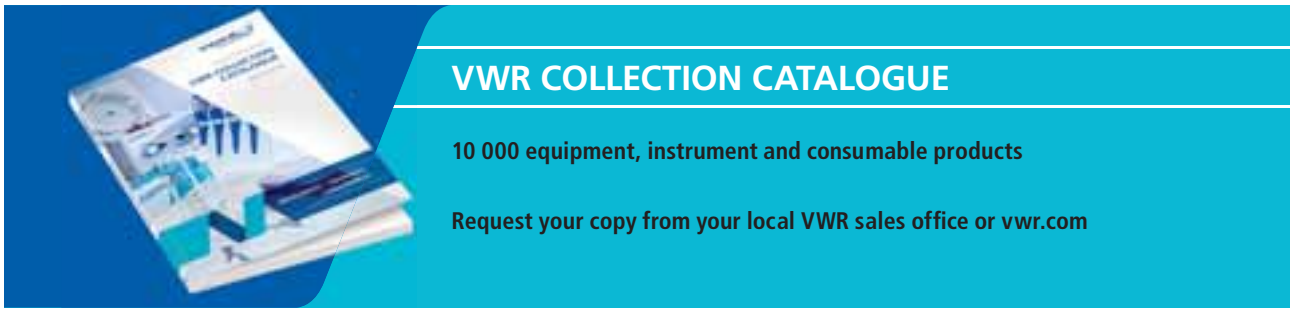
PP, graduated, autoclavable, PP screw cap with silicone seal

- Can withstand centrifugation to 17 000×g
- Ideal for storage of serum and blood samples as well as for boiling and centrifugation
- Positive sealing screw cap with silicone seal
- Fast opening and closing with 1¼ turn of cap
- Operating range: –196 to +121 °C, suitable for freezing samples in the gas phase of liquid nitrogen at –196 °C

Ordering information: Coloured cap inserts for identification are available separately.

Capacity (ml)	Type	Pk	Cat. No.
0,5	self-standing	1.000	**211-3211**
1,5	self-standing	1.000	**211-3212**
1,5	round-bottom	1.000	**211-3213**
2,0	self-standing	1.000	**211-3214**
2,0	round-bottom	1.000	**211-3215**

Colour	Pk	Cat. No.
Coloured Cap Inserts		
White	100	**211-3221**
Red	500	**525-0688**
Green	100	**211-3224**
Yellow	500	**525-0501**



Microcentrifuge tubes
Brand

PP, graduated, sterile with PP screw cap or non sterile without PP screw cap, autoclavable

- Can withstand centrifugation to 17 000×g
- Cap with silicone seal
- With frosted marking area

Temperature range: –196 to +121°C

Capacity (ml)	Type	Colour	Pk	Cat. No.
Microcentrifuge tubes, non sterile, without cap				
0,5	self-standing	Natural	1.000	**211-3231**
1,5	self-standing	Natural	1.000	**211-3232**
1,5	round-bottom	Natural	1.000	**211-3233**
2,0	self-standing	Natural	1.000	**211-3234**
2,0	round-bottom	Natural	1.000	**211-3235**
Microcentrifuge tubes, sterile, with cap				
0,5	self-standing	Natural	500	**211-3236**
1,5	self-standing	Natural	500	**211-3237**
1,5	round-bottom	Natural	500	**211-3238**
2,0	self-standing	Natural	500	**211-3239**
2,0	round-bottom	Natural	500	**211-3240**
Caps, non sterile				
-	-	White	1.000	**211-3241**
-	-	Blue	1.000	**211-3242**
-	-	Red	1.000	**211-3243**
-	-	Green	1.000	**211-3244**
-	-	Yellow	1.000	**211-3245**

Microcentrifuge tubes, Micrewtube®

PP, with O-ring seal screw cap and attachment loop, autoclavable

Ideal for cryogenic work as well as freezer storage, boiling applications, centrifugation etc. and will fit most standard microcentrifuge rotors. The cap's high profile facilitates manipulation especially in aseptic procedures and can remain attached to the tube in order to prevent potential mix-up and contamination.

- The O-ring secured in the top of the cap ensures a positive leakproof seal, time after time, keeping the integrity of small samples under even the most adverse conditions
- Sterile tubes are gamma irradiated and available either plain or with printed graduations and white marking area for sample identification
- Can be autoclaved to +121 °C in upright position with caps loosened
- Certified RNase-, DNase-, pyrogen- and DNA-free

Max. RCF: Non skirted tubes can be centrifuged up to 20 000×g

Temperature range: –196 to +121 °C

Packaging: Sterile tubes are packaged in tamper-proof resealable bags.

Capacity (ml)	Type	Packed	Pk	Cat. No.
Non sterile, non graduated, with pre-attached caps unassembled				
0,5	skirted	bulk	1.000	**720-0508**
1,5	skirted	bulk	1.000	**212-9570**
1,5	conical bottom	bulk	1.000	**212-9573**
1,8	skirted	bulk	1.000	**720-0510**
1,8	conical bottom	bulk	1.000	**212-9576**
Sterile, non graduated, with pre-attached caps assembled				
0,5	skirted	50/package, 500/case	500	**212-9568**
1,5	skirted	50/package, 500/case	500	**212-9571**
1,5	conical bottom	50/package, 500/case	500	**720-0509**
1,8	skirted	50/package, 500/case	500	**212-9575**
1,8	conical bottom	50/package, 500/case	500	**720-0512**
Sterile, graduated, with pre-attached caps assembled				
0,5	skirted	50/package, 500/case	500	**212-9569**
1,5	skirted	50/package, 500/case	500	**212-9572**
1,5	conical bottom	50/package, 500/case	500	**212-9574**
1,8	skirted	50/package, 500/case	500	**720-0511**
1,8	conical bottom	50/package, 500/case	500	**720-0513**

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Colour	Pk	Cat. No.
Coloured cap inserts, Capinsert™		
Assorted	500	**612-4086**
Blue	500	**612-4087**
Green	500	**612-4088**
Grey	500	**612-4089**
Lilac	500	**612-4090**
Orange	500	**612-4091**
Pink	500	**612-4092**
Red	500	**612-4093**
Violet	500	**612-4094**
White	500	**612-4095**
Yellow	500	**612-4096**
Spare caps, with lip seal, without loop		
Blue	1.000	**612-3989**
Green	1.000	**612-3996**
Lilac	1.000	**612-4019**
Natural	1.000	**612-4037**
Red	1.000	**612-4045**
White	1.000	**612-4055**
Yellow	1.000	**612-4082**
Spare caps, with lip seal and loop		
Blue	1.000	**612-3990**
Green	1.000	**612-3997**
Lilac	1.000	**612-4032**
Natural	1.000	**612-4038**
Red	1.000	**612-4046**
White	1.000	**612-4056**
Yellow	1.000	**612-6652**
Spare caps, with O-ring seal, without loop		
Blue	1.000	**612-3991**
Brown	1.000	**612-3994**
Green	1.000	**612-3998**
Lilac	1.000	**612-4034**
Red	1.000	**612-4047**
White	1.000	**612-4057**
Yellow	1.000	**612-4083**
Spare caps with O-ring seal and loop		
Blue	1.000	**612-3993**
Green	1.000	**612-4009**
Lilac	1.000	**612-4036**
Natural	1.000	**612-4043**
Red	1.000	**612-4049**
White	1.000	**612-4059**
Yellow	1.000	**612-4085**
Spare caps, flat top, with lip seal, without loop		
Blue	1.000	**612-6662**
Green	1.000	**612-6663**
Lilac	1.000	**612-4031**
Natural	1.000	**612-6661**
Red	1.000	**612-6664**
White	1.000	**612-6666**
Yellow	1.000	**612-6665**
Spare caps, flat top, with O-ring seal, without loop		
Blue	1.000	**612-3992**
Brown	1.000	**612-3995**
Green	1.000	**612-3999**
Lilac	1.000	**612-4035**
Natural	1.000	**612-4039**
Orange	1.000	**612-4044**
Red	1.000	**612-4048**
White	1.000	**612-4058**
Yellow	1.000	**612-4084**

Microcentrifuge tubes, Micrewtube®

PP, with O-ring seal screw cap (without attachment loop), autoclavable

Ideal for cryogenic work as well as freezer storage, boiling applications, centrifugation etc. and will fit most standard microcentrifuge rotors. The cap's high profile facilitates manipulation especially in aseptic procedures. The cap does not have attachment loops for users who prefer to remove the caps completely from the tubes when filling or sampling.

- The O-ring secured in the top of the cap ensures a positive leakproof seal, time after time, keeping the integrity of small samples under even the most adverse conditions
- Sterile tubes are gamma irradiated and available either plain or with printed graduations and white marking area for sample identification
- Can be autoclaved to +121 °C in upright position with caps loosened
- Certified RNase-, DNase-, pyrogen- and DNA-free

Max. RCF: Non skirted tubes can be centrifuged up to 20 000×g

Temperature range: –196 to +121 °C

Packaging: Sterile tubes are packaged in tamper-proof resealable bags.

Capacity (ml)	Type	Packed	Pk	Cat. No.
Non sterile, non graduated, with caps unassembled				
0,5	skirted	Bulk	1.000	**720-0514**
1,5	skirted	Bulk	1.000	**212-9578**
1,5	conical bottom	Bulk	1.000	**212-9580**
1,8	skirted	Bulk	1.000	**720-0517**
1,8	conical bottom	Bulk	1.000	**720-0520**
Sterile, non graduated, with caps assembled				
0,5	skirted	50/package, 500/case	500	**720-0515**
1,5	skirted	50/package, 500/case	500	**720-0516**
1,5	conical bottom	50/package, 500/case	500	**212-9581**
1,8	skirted	50/package, 500/case	500	**720-0518**
1,8	conical bottom	50/package, 500/case	500	**212-9583**
Sterile, graduated, with caps assembled				
0,5	skirted	50/package, 500/case	500	**212-9577**
1,5	skirted	50/package, 500/case	500	**212-9579**
1,5	conical bottom	50/package, 500/case	500	**212-9582**
1,8	skirted	50/package, 500/case	500	**720-0519**
1,8	conical bottom	50/package, 500/case	500	**720-0521**

Microcentrifuge tubes, Micrewtube®

PP, with lip seal screw cap and attachment loop

Ideal for freezer storage, boiling application, centrifugation etc. and will fit most standard microcentrifuge rotors. Caps are supplied with attachment loops in order to prevent contamination and mix-up.

- Flexible sealing lip inside the cap ensures a positive leakproof seal under even the most adverse conditions
- Sterile tubes are gamma irradiated and available either plain or with printed graduations and white marking area for sample identification
- Certified RNase-, DNase-, pyrogen- and DNA-free

Max. RCF: Non skirted tubes can be centrifuged up to 20 000×g

Temperature range: –90 to +100 °C

Packaging: Sterile tubes are packaged in tamper-proof resealable bags.

Capacity (ml)	Type	Packed	Pk	Cat. No.
Non sterile, non graduated, with pre-attached caps not screwed on				
0,5	skirted	Bulk	1.000	**720-0522**
1,5	skirted	Bulk	1.000	**720-0525**
1,5	round bottom	Bulk	1.000	**720-0528**
1,8	skirted	Bulk	1.000	**720-0531**
1,8	round bottom	Bulk	1.000	**212-9585**
Sterile, non graduated, with pre-attached caps screwed on				
0,5	skirted	50/package, 500/case	500	**720-0523**
1,5	skirted	50/package, 500/case	500	**720-0526**
1,5	round bottom	50/package, 500/case	500	**720-0529**
1,8	skirted	50/package, 500/case	500	**720-0532**
1,8	round bottom	50/package, 500/case	500	**212-9586**

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Capacity (ml)	Type	Packed	Pk	Cat. No.
Sterile, graduated, with pre-attached caps screwed on				
0,5	skirted	50/package, 500/case	500	**720-0524**
1,5	skirted	50/package, 500/case	500	**720-0527**
1,5	round bottom	50/package, 500/case	500	**720-0530**
1,8	skirted	50/package, 500/case	500	**212-9584**
1,8	round bottom	50/package, 500/case	500	**525-0386**

Colour	Pk	Cat. No.
Coloured cap inserts, Capinsert™		
Assorted	500	**612-4086**
Blue	500	**612-4087**
Green	500	**612-4088**
Grey	500	**612-4089**
Lilac	500	**612-4090**
Orange	500	**612-4091**
Pink	500	**612-4092**
Red	500	**612-4093**
Violet	500	**612-4094**
White	500	**612-4095**
Yellow	500	**612-4096**
Spare caps, with lip seal, without loop		
Blue	1.000	**612-3989**
Green	1.000	**612-3996**
Lilac	1.000	**612-4019**
Natural	1.000	**612-4037**
Red	1.000	**612-4045**
White	1.000	**612-4055**
Yellow	1.000	**612-4082**
Spare caps, with lip seal and loop		
Blue	1.000	**612-3990**
Green	1.000	**612-3997**
Lilac	1.000	**612-4032**
Natural	1.000	**612-4038**
Red	1.000	**612-4046**
White	1.000	**612-4056**
Yellow	1.000	**612-6652**
Spare caps, with O-ring seal, without loop		
Blue	1.000	**612-3991**
Brown	1.000	**612-3994**
Green	1.000	**612-3998**
Lilac	1.000	**612-4034**
Natural	1.000	**525-0215**
Red	1.000	**612-4047**
White	1.000	**612-4057**
Yellow	1.000	**612-4083**
Spare caps with O-ring seal and loop		
Blue	1.000	**612-3993**
Green	1.000	**612-4009**
Lilac	1.000	**612-4036**
Natural	1.000	**612-4043**
Red	1.000	**612-4049**
White	1.000	**612-4059**
Yellow	1.000	**612-4085**
Spare caps, flat top, with lip seal, without loop		
Blue	1.000	**612-6662**
Green	1.000	**612-6663**
Lilac	1.000	**612-4031**
Natural	1.000	**612-6661**
Red	1.000	**612-6664**
White	1.000	**612-6666**
Yellow	1.000	**612-6665**
Spare caps, flat top, with O-ring seal, without loop		
Blue	1.000	**612-3992**
Brown	1.000	**612-3995**
Green	1.000	**612-3999**
Lilac	1.000	**612-4035**
Natural	1.000	**612-4039**
Orange	1.000	**612-4044**
Red	1.000	**612-4048**
White	1.000	**612-4058**
Yellow	1.000	**612-4084**

Microcentrifuge tubes, Micrewtube®

PP tubes with HDPE lip seal screw caps

These versatile tubes can be used for freezer storage, boiling applications, centrifugation and other laboratory applications. The deep flexible sealing lip inside the cap ensures a positive leakproof seal and prevents the contents of the tube from coming into contact with the threads, thereby reducing the chances of sample contamination. Screw caps are completely removable from the tubes. Tubes are available with skirts, which means that they are free standing. In addition tubes without skirts are available sterile and with white marking fields and graduations.

- Positive leakproof seal
- Temperature range –196 to +110 °C, non skirted tubes can be centrifuged up to 20 000×g
- Sterile tubes are gamma irradiated and packaged in tamper-proof resealable bags
- Cannot be autoclaved as the closure is made of HDPE
- Certified RNase-, DNase-, pyrogen- and DNA-free

Capacity (ml)	Type	Packed	Pk	Cat. No.
Non sterile, non graduated, caps unassembled				
0,5	skirted	bulk	1.000	**212-9587**
1,5	skirted	bulk	1.000	**720-0534**
1,5	conical bottom	bulk	1.000	**212-9589**
1,8	skirted	bulk	1.000	**212-9591**
1,8	conical bottom	bulk	1.000	**720-0539**
Sterile, non graduated with caps assembled				
0,5	skirted	50/package, 500/case	500	**720-0533**
1,5	skirted	50/package, 500/case	500	**720-0535**
1,5	conical bottom	50/package, 500/case	500	**212-9590**
1,8	skirted	50/package, 500/case	500	**212-9592**
1,8	conical bottom	50/package, 500/case	500	**720-0540**
Sterile, graduated, with caps assembled				
0,5	skirted	50/package, 500/case	500	**212-9588**
1,5	skirted	50/package, 500/case	500	**720-0536**
1,5	conical bottom	50/package, 500/case	500	**720-0537**
1,8	skirted	50/package, 500/case	500	**720-0538**
1,8	conical bottom	50/package, 500/case	500	**720-0541**

Microcentrifuge tubes with screw caps, Axygen®
Corning®

PP, sterile or non sterile, conical base with or without skirt

Designed for many laboratory applications such as the collection, treatment, centrifugation, long-term storage and transport of inhibitor enzymes or other reagents.

- Easily perforated screw cap with extra long rim and O-ring to ensure effective, uniform closure for centrifugation
- The rims of the tubes and caps are ribbed for easier opening and closing with one hand
- Certified DNase-, RNase- and endotoxin-free

Volume: 0,5, 1,5 and 2,0 ml

Max. RCF: 20 000×g

Packaging: Transparent microcentrifuge tubes supplied in boxes of 500; assorted microcentrifuge tubes supplied in boxes of 10 bags, 50 tubes.

Delivery information: Non sterile microcentrifuge tubes are supplied with non looped, screw caps unattached and include O-rings; sterile microcentrifuge tubes are supplied with non looped screw caps attached and include O-rings. Bags of 500 tubes with individual colour caps are available on request.

Capacity (ml)	Type	Colour	Pk	Cat. No.
Microcentrifuge tubes, non sterile, clear				
0,5	conical		500	**525-0313**
0,5	skirted		500	**525-0315**
1,5	conical		500	**525-0317**
1,5	skirted		500	**525-0319**
2,0	conical		500	**525-0321**
2,0	skirted		500	**525-0323**
Microcentrifuge tubes, non sterile, assorted				
0,5	conical		500	**525-0314**
0,5	skirted		500	**525-0316**
1,5	conical		500	**525-0318**
1,5	skirted		500	**525-0320**
2,0	conical		500	**525-0322**
2,0	skirted		500	**525-0324**
Microcentrifuge tubes, sterile, clear				
0,5	conical		500	**525-0325**
0,5	skirted		500	**525-0337**
1,5	conical		500	**525-0327**
1,5	skirted		500	**525-0338**
2,0	conical		500	**525-0343**
2,0	skirted		500	**525-0339**

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Capacity (ml)	Type	Colour	Pk	Cat. No.
Microcentrifuge tubes, sterile, assorted				
0,5	conical		500	**525-0326**
0,5	skirted		500	**525-0340**
1,5	conical		500	**525-0328**
1,5	skirted		500	**525-0487**
2,0	conical		500	**525-0342**
2,0	skirted		500	**525-0298**
Replacement caps without O-ring				
		Assorted	500	**525-0330**
		Clear	500	**525-0329**
Replacement caps with O-ring				
		Assorted	500	**525-0334**
		Clear	500	**525-0333**
		Assorted	500	**525-0332**
		Clear	500	**525-0331**
Replacement looped caps with O-ring				
		Assorted	500	**525-0336**
		Clear	500	**525-0335**

Micro packaging vials with thread, Nalgene®
Thermo Scientific

PPCO, translucent with low metal content

Disposable bottles, excellent as packaging for shipment by airfreight. Also ideal for storing and transporting PCR reagents, diagnostic and pharmaceutical items as well as many other applications. Manufacturing tolerances also permit use with automatic filling lines. Non cytotoxic and non pyrogenic.

- Can be centrifuged up to 13 000×g at room temperature, autoclavable
- A wide range of different screw caps (e.g. 215-1630) are optionally available
- Available non sterile or sterile, clear or amber

Comply with the requirements of the USP Class VI and FDA CFR 21.177.1520. Amber bottles comply with the requirements of the USP XXIV for the transmission of light.

Type	Capacity (ml)	Cap size (mm)	Colour	Sterile	Pk	Cat. No.
Skirted with conical interior	0,5	11	Translucent	+	1.000	**215-1183**
Conical design*	1,5	11	Translucent	+	1.000	**215-1524**
Skirted with conical interior	2,0	11	Translucent	+	1.000	**215-1184**
Skirted with conical interior	4,5	13	Translucent	+	1.000	**215-1525**
Skirted with conical interior	0,5	11	Amber	+	1.000	**215-1186**
Skirted with conical interior	2,0	11	Amber	+	1.000	**215-1187**
Skirted with conical interior	0,5	11	Translucent	-	1.000	**215-1259**
Skirted with conical interior	2,0	11	Translucent	-	1.000	**215-1261**
Skirted with conical interior	4,5	13	Translucent	-	1.000	**215-1628**
Skirted with conical interior	0,5	11	Amber	-	1.000	**215-1262**
Skirted with conical interior	2,0	11	Amber	-	1.000	**215-1629**

Colour code	Cap size (mm)	Sterile	Pk	Cat. No.
Closures, PPCO, natural, with colour coder, 11 mm				
No colour code	11	+	1.000	**215-1526**
White	11	+	1.000	**215-1527**
Yellow	11	+	1.000	**215-1188**
Orange	11	+	1.000	**215-1528**
Green	11	+	1.000	**215-1189**
Red	11	+	1.000	**215-1529**
Blue	11	+	1.000	**215-1190**
Gold	11	+	1.000	**215-1530**
Purple	11	+	1.000	**215-1531**
Natural	11	+	1.000	**215-1191**
Teal	11	+	1.000	**215-1544**
No colour code	11	-	1.000	**215-1630**
White	11	-	1.000	**215-1631**
Yellow	11	-	1.000	**215-1632**
Orange	11	-	1.000	**215-1633**
Green	11	-	1.000	**215-1263**
Red	11	-	1.000	**215-1638**
Blue	11	-	1.000	**215-1639**
Gold	11	-	1.000	**215-1640**

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Colour code	Cap size (mm)	Sterile	Pk	Cat. No.
Closures, PPCO, natural, with colour coder, 11 mm				
Purple	11	-	1.000	**215-1648**
Natural	11	-	1.000	**215-1649**
Teal	11	-	1.000	**215-1650**
Closures, PPCO, 13 mm				
Natural	13	+	1.000	**215-1584**
White	13	+	1.000	**215-1585**
Green	13	+	1.000	**215-1586**
White	13	-	1.000	**215-1704**
Closures, PPCO, low profile, 11 mm				
Natural	11	+	1.000	**215-1192**
White	11	+	1.000	**215-1193**
Yellow	11	+	1.000	**215-1210**
Green	11	+	1.000	**215-1211**
Red	11	+	1.000	**215-1212**
Blue	11	+	1.000	**215-1213**
Purple	11	+	1.000	**215-1215**
Amber	11	+	1.000	**215-1216**
Natural	11	-	1.000	**215-1651**
White	11	-	1.000	**215-1264**
Yellow	11	-	1.000	**215-1265**
Green	11	-	1.000	**215-1266**
Red	11	-	1.000	**215-1652**
Blue	11	-	1.000	**215-1653**
Purple	11	-	1.000	**215-1654**
Amber	11	-	1.000	**215-1267**
Closures, PPCO, amber, with colour coder, 11 mm				
No colour code	11	+	1.000	**215-1552**
White	11	+	1.000	**215-1553**
Yellow	11	+	1.000	**215-1560**
Orange	11	+	1.000	**215-1561**
Green	11	+	1.000	**215-1563**
Red	11	+	1.000	**215-1564**
Blue	11	+	1.000	**215-1567**
Gold	11	+	1.000	**215-1568**
Lilac	11	+	1.000	**215-1569**
Natural	11	+	1.000	**215-1570**
Teal	11	+	1.000	**215-1571**
Amber	11	+	1.000	**215-1583**
White	11	-	1.000	**215-1668**
Yellow	11	-	1.000	**215-1268**
Orange	11	-	1.000	**215-1669**
Green	11	-	1.000	**215-1670**
Red	11	-	1.000	**215-1671**
Blue	11	-	1.000	**215-1672**
Gold	11	-	1.000	**215-1679**
Lilac	11	-	1.000	**215-1694**
Natural	11	-	1.000	**215-1700**
Teal	11	-	1.000	**215-1701**
Amber	11	-	1.000	**215-1702**

* fits most biotechnology and diagnostic equipment

VWR COLLECTION CATALOGUE

10 000 equipment, instrument and consumable products

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Centrifuge tubes, SuperClear™

SuperClear™ PP or PS, conical, printed graduation, with purple HDPE flat screw or plug seal caps

- Extra thick walls to allow centrifugation up to 20 000×g
- With extra large, solvent resistant, white labelling area and black graduations
- Flat PE caps can be closed with a quick ¾ turn, allowing one handed opening and closing; leakproof plug seal caps (50 ml tubes only) are perfect for use with horizontal shakers or for extended storage
- Patented Earth Friendly® racks can be labelled with lab markers
- Sterile tubes are radiation sterilised to ensure non cytotoxicity
- Certified non cytotoxic, nuclease-free and pyrogen-free
- Patented ViewPoint™ labelling areas that help reduce smearing of lab markers and also helps protect sample labelling from damage during procedures

Capacity (ml)	Ø×L (mm)	Packed	Type	Pk	Cat. No.
Centrifuge tubes, 15 ml, PS, conical bottom, 3000xg, with moulded graduations and flat caps					
15	17x118	Bulk	Non sterile	1.000	**525-0147**
15	17x118	50/bag, 10 bags/case	Sterile	500	**525-0148**
15	17x118	25/rack, 2 racks/pack, 10 packs/case	Sterile	500	**525-0151**
Centrifuge tubes, 15 ml, PP, conical bottom, 17 000×g, with printed graduations and flat caps					
15	17×118	50/bag, 10 bags/case	Non sterile	500	**525-0149**
15	17×118	50/bag, 10 bags/case	Sterile	500	**525-0150**
15	17×118	25/rack, 2 racks/pack, 10 packs/case	Non sterile	500	**525-0152**
15	17×118	25/rack, 2 racks/pack, 10 packs/case	Sterile	500	**525-0153**
15	17×118	bulk (tubes & caps in separate bags)	Non sterile	500	**525-0154**
Centrifuge tubes, 15 ml, PP, conical bottom, 17 000×g, with printed graduations and plug caps					
15	17×118	50/bag, 10 bags/case	Non sterile	500	**525-0308**
15	17×118	50/bag, 10 bags/case	Sterile	500	**525-0309**
15	17×118	25/rack, 2 racks/pack, 10 packs/case	Non sterile	500	**525-0310**
15	17×118	25/rack, 2 racks/pack, 10 packs/case	Sterile	500	**525-0311**
15	17×118	bulk (tubes & caps in separate bags)	Non sterile	500	**525-0312**
Centrifuge tubes, 15 ml or 50 ml, conical bottom, PP, 20 000×g, Viewpoint™ writing spot and flat caps					
15	17×118	50/bag, 10 bags/case	Sterile	500	**525-0498**
15	17×118	25/rack, 2 racks/pack, 10 packs/case	Sterile	500	**525-0499**
50	29×115	50/bag, 10 bags/case	Sterile	500	**525-0496**
50	29×115	25/rack, 20 racks/case	Sterile	500	**525-0497**
Centrifuge tubes, 50 ml, PP, 9400×g, free-standing, with printed graduations and flat caps					
50	29×115	50/bag, 10 bags/case	Sterile	500	**525-0224**
50	29×115	bulk (tubes & caps in separate bags)	Non sterile	500	**525-0160**
Centrifuge tubes, 50 ml, PP, conical bottom, 20 000×g, with printed graduations and flat caps					
50	29×115	50/bag, 10 bags/case	Non sterile	500	**525-0155**
50	29×115	50/bag, 10 bags/case	Sterile	500	**525-0156**
50	29×115	25/rack, 20 racks/case	Non sterile	500	**525-0157**
50	29×115	25/rack, 20 racks/case	Sterile	500	**525-0158**
50	29×115	bulk (tubes & caps in separate bags)	Non sterile	500	**525-0159**
Centrifuge tubes, 50 ml, PP, conical bottom, 20000×g, with printed graduations and plug seal caps					
50	29×115	50/bag, 10 bags/case	Non sterile	500	**525-0303**
50	29×115	50/bag, 10 bags/case	Sterile	500	**525-0304**
50	29×115	25/rack, 20 racks/case	Non sterile	500	**525-0305**
50	29×115	25/rack, 20 racks/case	Sterile	500	**525-0306**
50	29×115	bulk (tube & caps in separate bags)	Non sterile	500	**525-0307**

Centrifuge tubes, high performance

PP, conical, with purple HDPE flat screw or plug seal caps

These disposable conical bottom and free-standing tubes are extremely versatile, and can be used for routine tasks as well as high speed centrifuging. Rack-packed tubes are packaged in freezable, recyclable, autoclavable racks. Tubes are sterilised by gamma irradiation (except free-standing tubes in bags or bulk). Tubes and caps are autoclavable and freezable.

- Certified non cytotoxic, nuclease-free and pyrogen-free
- Caps available in two styles: Flat screw caps with a smooth surface for additional labelling options, or plug seal caps for a secure seal when using shakers and horizontal incubators
- Easy to read black graduations and white writing area on the side for permanent coding
- Can be used for storing and freezing samples at temperatures down to –80 °C
- Can be centrifuged up to 12 500×g

Packaging: In bulk, in bags, or on plastic, autoclavable racks.

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Capacity (ml)	Packed	Version	Type	Pk	Cat. No.
Conical bottom					
15	50/bag, 10 bags/case	Flat screw cap	Sterile	500	**525-0400**
15	25 tubes per rack, 2 racks/pack, 10 packs/case	Flat screw cap	Sterile	500	**525-0401**
15	50/bag, 10 bags/case	Plug seal cap	Sterile	500	**525-0449**
15	25 tubes per rack, 2 rack/pack, 10 packs/case	Plug seal cap	Sterile	500	**525-0450**
50	50/bag, 10 bags/case	Flat screw cap	Sterile	500	**525-0402**
50	25 tubes per rack, 1 rack/pack, 20 packs/case	Flat screw cap	Sterile	500	**525-0403**
50	50/bag, 10 bags/case	Plug seal cap	Sterile	500	**525-0447**
50	25 tubes per rack, 1 rack/pack, 20 packs/case	Plug seal cap	Sterile	500	**525-0448**
Free-standing					
50	50/bag, 10 bags/case	Plug seal cap	Non sterile	500	**525-0417**
50	bulk (tubes & caps in separate bags)	Plug seal cap	Non sterile	500	**525-0416**
50	50/bag, 10 bags/case	Plug seal cap	Sterile	500	**525-0418**

Centrifuge tubes, ultra-high performance, light-sensitive

PP, conical, amber, with purple HDPE plug seal caps

Designed to provide protection for light-sensitive samples.

- Printed labelling area for quick and convenient sample identification
- HDPE caps are included
- Available in 15 or 50 ml sizes and offered in a variety of packaging formats
- Certified non cytotoxic, nuclease-free and pyrogen-free

Capacity (ml)	Packed	Sterile	Pk	Cat. No.
15	Bulk (tubes & caps in separate bags)	-	500	**525-0440**
15	50/bag, 10 bags/case	+	500	**525-0441**
15	25/rack, 2 racks/pack, 10 packs/case	+	500	**525-0442**
50	Bulk (tubes & caps in separate bags)	-	500	**525-0437**
50	50/bag, 10 bags/case	+	500	**525-0438**
50	25/rack, 20 racks/case	+	500	**525-0439**

Centrifuge tubes, metal-free

PP, conical, with natural HDPE flat screw caps

Ideal for environmental uses such as water analysis and other applications where tubes have the potential to contaminate samples. Tubes are certified free of major critical trace metals to less than 1 ppb.

- Available in two sizes with natural flat caps for easy labelling
- Tubes and caps are made of ultra-high purity CFR 21 compliant resins
- Printed graduation marks and large white writing area

Packaging: Tubes packaged in bulk bags are supplied 50 tubes per bag, 10 bags per case. SBS recyclable rack packaged tubes are supplied 25 per rack, 2 racks per pack, 10 packs per case.

Capacity (ml)	Packed	Pk	Cat. No.
15	Bulk bag	500	**525-0460**
15	SBS recyclable rack	500	**525-0461**
50	Bulk bag	500	**525-0462**
50	SBS recyclable rack	500	**525-0463**

Centrifuge tubes, large volume

PP, conical with purple HDPE flat screw caps

Perfect for clarifying large volume solutions or concentrating live cells in tissue culture. Resins are pre-tested, and are free of oleamide and pthalates. These tubes come in a unique balanced package of 2 tubes. The tubes include attached screw caps with integral elastomeric sealing ring that eliminates leaking.

- For standard centrifuge rotors
- Non pyrogenic, RNase/DNase-free
- Sterile and non sterile available
- Tubes fit standard storage racks
- For cushions type 734-0988

Capacity (ml)	Ø×L (mm)	Type	Pk	Cat. No.
175	62×118	Non sterile	48	**525-0503**
175	62×118	Sterile	48	**525-0504**
225	62×137	Non sterile	48	**525-0505**
225	62×137	Sterile	48	**525-0506**

Centrifuge tubes
Corning®

PP or PET, conical with HDPE CentriStar™ or plug seal caps or without cap, sterile

The clear centrifuge tubes have traditional plug seal caps or advanced CentriStar™ caps, or no cap. The CentriStar™ cap with leakproof design has a easy-on/easy-off flat top and offers advanced ergonomics with its wider knurls and roll-over edge design for easier gripping.

- Black printed graduations and a large white marking spot
- Certified non pyrogenic and DNase/RNase-free

Packaging: Bulk or in racks.

Ordering information: Foam racks and CentriStar™ caps available separately.

Capacity (ml)	Packed	RCF max. (×g)	Description	Type	Pk	Cat. No.
With plug seal cap						
15	25/bag	12000	-	Conical	500	**734-1862**
15	50/rack	12000	-	Conical	500	**734-1812**
15	25/bag	3600	-	Conical	500	**734-1813**
15	50/rack	3600	-	Conical	500	**734-1814**
50	25/rack	15500	-	Conical	500	**734-1827**
50	25/bag	15500	-	Conical	500	**734-1828**
50	25/rack	3600	-	Conical	500	**734-1829**
50	25/bag	3000	-	Skirted	500	**734-1872**
With CentriStar™ cap						
15	25/bag	12000	-	Conical	500	**734-1867**
15	50/rack	12000	-	Conical	500	**734-1866**
50	25/bag	15500	-	Conical	500	**734-1869**
50	25/rack	15500	-	Conical	300	**525-3414**
50	25/rack	15500	-	Conical	500	**734-1868**
50	25/bag	3000	-	Skirted	500	**734-1876**
Without cap						
15	25/bag	12000	-	Conical	500	**525-0477**
50	25/bag	12000	-	Conical	500	**525-0479**
CentriStar™ caps						
-	-	-	CentriStar™ cap for 15 ml tube, HDPE, orange, sterile	-	500	**525-0478**
-	-	-	CentriStar™ cap for 50 ml tube, HDPE, orange, sterile	-	500	**525-0480**

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Description	Pk	Cat. No.
Racks		
Standard rack for 15 ml centrifuge tubes	20	**734-4193**
Standard rack for 50 ml centrifuge tubes	20	**525-3412**
Universal rack for 15 and 50 ml centrifuge tubes	20	**525-3413**

Centrifuge bottles and cushions
Corning®

PP, with HDPE plug seal cap, sterile. Polyetherimide cushions

Ideal for applications requiring large volume centrifugation.

- Moulded graduations, conical bottom
- Tubes are sterile and certified non pyrogenic
- Max. RCF: 6000×g
- Support cushions must be used unless the rotor has appropriately shaped V-bottom holders

Packaging: Bulk, 6/bag.

Ordering information: Each case of 250 ml or 500 ml tubes contains a rack to facilitate handling

Capacity (ml)	Pk	Cat. No.
Centrifuge bottles		
250	102	**734-1863**
500	36	**734-1880**

For	Pk	Cat. No.
Support cushions for centrifuge bottles		
250 ml centrifuge tubes	6	**734-1823**
500 ml centrifuge tubes	6	**734-1881**

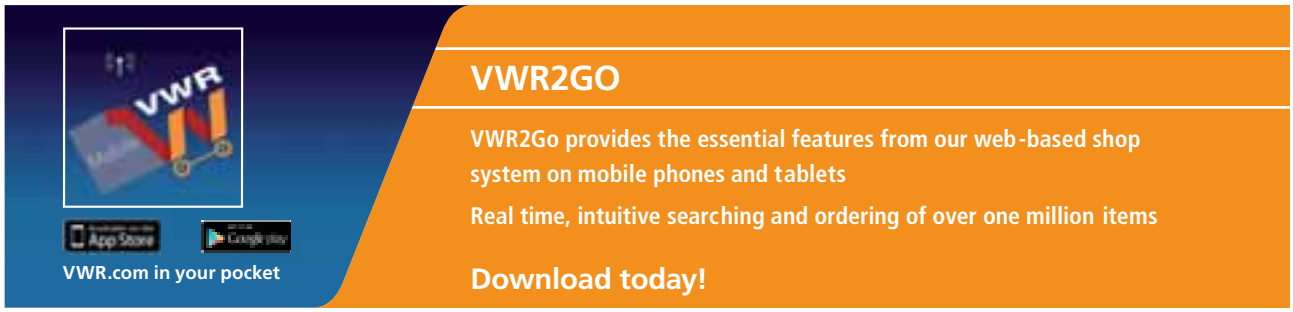
Centrifuge tubes with plug seal cap and dip tube
Corning®

PP sterile closed system centrifuge tubes arrive individually double bagged and pre-assembled. The caps have two ports: One port ends in a 0,2 µm filter, and the other port is chemically resistant, heat sealable flexible tubing, ending in a male Luer. Dip tubes, where available, reach all the way to the bottom of the flask for easy aseptic transfer during your liquid handling process.

These centrifuge tubes are ideal for applications requiring large volume centrifugation.

Each case of tubes contains a recyclable foam rack to facilitate handling. Support cushions (Cat. No. 734-1881 for 500) must be used with this product unless the centrifuge rotor has appropriate V-bottom cushions. HDPE plug seal caps. Maximum RCF of 6000×g. Tubes are sterile and certified non pyrogenic. Extra cap is included for centrifugation. Conical bottom style with graduations and dip tube. Plug seal cap style.

Capacity (ml)	Pk	Cat. No.
500	2	**525-1749**



Centrifuge tubes, Falcon®
Corning®

PP or PS, conical, printed graduation, with flat screw caps, sterile

- Meets bioanalytical grade requirements
- Pyrogen-free, non cytotoxic

PP: Withstands forces up to 12 000×g for 15 ml, 16 000×g for 50 ml and 7500×g for 175 ml and 225 ml.
PS: Withstands forces up to 1800×g for 15 ml.

Capacity (ml)	Ø×L (mm)	Packed	Pk	Cat. No.
PP				
15	17×120	125 per bag	500	**734-0451**
15	17×120	50 per rack	500	**734-0452**
50	30×115	25 per bag	500	**734-0448**
50	30×115	25 per rack	500	**734-0453**
175	61×118	8 per bag	48	**734-0987**
225	61×137	8 per bag	48	**734-0449**
PS				
15	17×120	125 per bag	500	**734-0450**
15	17×120	50 per rack	500	**734-0454**

Description	Pk	Cat. No.
Accessories		
Cushions for 175 and 225 ml conical centrifuge tubes, non sterile	8	**734-0988**

Centrifuge tubes, EZ Flip™, Nunc™
Thermo Scientific

PP, conical, printed graduations with hinged cap

- Printed graduations, white writing area and flat caps for sample identification
- Hinged-cap system with ergonomic design for one handed opening and closing
- Integrated leakproof cap prevents cross-contamination and lost closures
- Withstands forces up to 8500×g for 15 ml and 9500×g for 50 ml

Capacity (ml)	Packed	Description	Pk	Cat. No.
15	Loose	Centrifuge tubes, conical bottom, with hinged cap	500	**734-0995**
15	Racked	Centrifuge tubes, conical bottom, with hinged cap	500	**734-0996**
50	Loose	Centrifuge tubes, conical bottom, with hinged cap	500	**734-0997**
50	Racked	Centrifuge tubes, conical bottom, with hinged cap	500	**734-0998**

Centrifuge tubes, Nunc™
Thermo Scientific

PP, conical bottom, graduated, sterile, autoclavable without cap

- Withstands forces up to 7000×g with adapter for 200 ml
- Moulded graduations

Capacity (ml)	Ø×L (mm)	Packed	Pk	Cat. No.
200	60×130	4 per bag	48	**734-2186**

Description	Pk	Cat. No.
Accessories		
Adapter, cushion, nylon for 200 ml tubes	2	**391-8308**

Centrifuge tubes
Brand

PP, conical, printed graduation, with HDPE flat screw caps

- Withstand RCF up to 3000×g
- Screw cap with PE sealing cone
- Non sterile or gamma irradiated sterile
- CE-marked according to IVD-Directive 98/79 EC

Capacity (ml)	Ø×L (mm)	Version	Type	Pk	Cat. No.
15	17×120	non sterile	without skirt	750	**525-3201**
15	17×120	sterile	without skirt	750	**525-0240**
50	30×114	non sterile	without skirt	300	**525-0241**
50	30×114	sterile	without skirt	300	**525-0242**
50	30×116	non sterile	skirted	250	**525-0243**
50	30×116	sterile	skirted	250	**734-1329**

Centrifuge tubes, Axygen®
Corning®

PP, conical, printed graduation, with HDPE flat screw caps

- Max. RCF: 12 000×g
- Easy one hand operation
- Large writing area for sample identification

Capacity (ml)	Packed	Type	Pk	Cat. No.
15	500 tubes and 500 unassembled caps per case	non sterile	500	**525-0518**
15	25 tubes and assembled caps per rack	sterile	500	**525-1746**
50	500 tubes and 500 unassembled caps per case	non sterile	500	**525-0519**
50	25 tubes and assembled caps per rack, 20 racks per case	sterile	500	**525-1747**
50	25 tubes per bag	sterile	25	**525-1748**

Centrifuge tubes, 13,5 ml, Sterilin®
Thermo Scientific

PS, graduated, round or conical bottom, non skirted, sterile or non sterile, with or without PE screw cap

- Moulded graduation marks at 5 ml and 10 ml
- Wadded or non wadded screw cap
- Recommended RCF 3200×g in suitably balanced rotors

Capacity (ml)	Ø×L (mm)	Packed	Description	Pk	Cat. No.
Round bottom					
13,5	16×100	1 case	Sterilin® centrifuge tubes, sterile, with wadded cap	450	**525-0135**
13,5	16×100	1 case	Sterilin® centrifuge tubes, sterile, with non wadded cap	450	**212-7400**
13,5	16x100	1 case	Sterilin® centrifuge tubes, sterile, with non wadded cap	450	**212-7401**
Conical bottom					
13,5	16×100	1 case	Sterilin® centrifuge tubes, non sterile, without cap	1.200	**525-0137**
13,5	16×100	1 case	Sterilin® centrifuge tubes, sterile, with wadded cap	450	**525-0139**

Centrifuge tubes for urine samples

PS, conical, with graduations

- Disposable
- Fits standard centrifuge heads
- Caps are made from LDPE

Capacity (ml)	Ø×L (mm)	Packed	Pk	Cat. No.
Centrifuge tubes				
15	17×120	100/box, 10 boxes/case	1.000	**525-0146**
Caps for centrifuge tubes				
-	-	500/bag, 2 bags/case	1.000	**525-0145**

Centrifuge tubes

Round/conical bottom

Conical bottom, without cap

PTFE, smooth surface, with or without screw cap

- Inert
- Withstand forces up to 12 500×g
- Very good chemical resistance
- Suitable for use at high and low temperatures (–200 to +280 °C)

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
Round bottom			
8	12×100	1	**525-0183**
17	18×100	1	**525-0184**
50	25×140	1	**525-0185**
Conical bottom			
13	16×110	1	**525-0189**
18	18×120	1	**525-0190**
45	25×150	1	**525-0191**
Conical bottom, without cap			
13	16×110	1	**525-0186**
18	18×120	1	**525-0187**
45	25×150	1	**525-0188**

Centrifuge tubes, Nalgene®
Thermo Scientific

PPCO, round bottom and rimless, autoclavable

- Translucent, excellent chemical resistance
- Withstand forces up to 50 000×g
- More suitable for low temperatures than PP

Ordering information: 525-2859 and 525-2860 are lipped.

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
12	15,8×102,1	10	**525-2853**
15	15,8×112,8	10	**525-2854**
16	17,8×98,6	10	**525-2855**
38	25,2×88,1	10	**525-2857**
50	28,4×102	10	**525-2859**
50	28,5×102,4	10	**525-2858**
100	31,5×163,1	10	**525-2860**

Centrifuge tubes, Nalgene®
Thermo Scientific

PC, round bottom and rimless, autoclavable

- Transparent
- Withstands forces up to 50 000×g
- Suitable for use in refrigerated or non refrigerated centrifuges

Ordering information: 525-2889 and 525-2890 are lipped.

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
12	15,9×103,1	10	**525-2883**
15	16×114	10	**525-2884**
16	17,9×99,8	10	**525-2885**
38	25,3×88,6	10	**525-2887**
50	28,5×102	10	**525-2889**
50	28,8×103,1	10	**525-2888**
100	31,5×164,3	10	**525-2890**

Centrifuge tubes
Brand

PC, round bottom and rimless, graduated

- Slight yellow tint
- Withstand forces up to 20 000×g
- Embossed graduations

Subdivision: 1 ml for 50 ml tubes; 2 ml for 100 ml tubes

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
50	35×99	1	**525-3202**
100	41×115	1	**525-3204**
100	45×98	1	**525-3206**

Centrifuge tubes
Kartell

525-0475

212-0209

PP, conical bottom, autoclavable

- Translucent, very good chemical resistance
- Can withstand temperatures up to +120 °C

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
Without graduation			
13	16×108	500	**525-0475**
16	18×120	500	**525-0476**
With graduation			
10	16×112	100	**212-0209**

IVD

Centrifuge tubes
Kartell

PP, round bottom

- Translucent, rimmed, very good chemical resistance
- Can withstand temperatures up to +120 °C

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
7	12×100	100	**525-0469**
16	17×101	500	**525-0470**
31	24×93	50	**525-0471**
48	30×104	25	**525-0472**
70	35×99,5	20	**525-0473**
110	40×119	25	**525-0474**

Centrifuge tubes

PP or PS, conical bottom, graduated, disposable

- Suitable for general centrifugation, urinalysis procedures and serum separation
- Chemically clean and metal free, ready to use and uniform in size and shape
- Graduated

Max. RCF: 3000×g for PP tubes, 1200×g for PS tubes

Capacity (ml)	Ø×L (mm)	Packed	Pk	Cat. No.
PP				
15	17×120	Bulk	1.000	**212-9608**
PS				
15	17×120	Bulk	1.000	**212-9607**
15	17×120	100/pack	100	**525-0387**

Centrifuge tubes, Oak Ridge, Nalgene®
Thermo Scientific

Round bottom and rimless, autoclavable

- Withstands forces up to 50 000×g
- Suitable for use in refrigerated or non refrigerated centrifuges
- At speeds greater than 10 000×g, sealing cap assemblies are recommended

FEP

Translucent. Resists any acid, alkali or solvent. Excellent for chloroform and phenol extractions.

PSF

Transparent. Acid and alkali resistant.

PC

Transparent.

PPCO

Translucent. Greater chemical resistance than PC.

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
Centrifuge tubes, FEP with ETFE screw closure without gasket			
10	16×79	2	**525-2211**
30	25,7×93	2	**525-2212**
50	28,8×106,7	2	**525-2213**
Centrifuge tubes, PSF with PP screw closure without gasket			
30	25,8×94	10	**525-2223**
50	29,0×107,2	10	**525-2224**
Centrifuge tubes, PC with PP screw closure without gasket			
10	16,1×80,5	10	**525-2231**
28	25,8×94	10	**525-0037**
30	25,8×94	10	**525-2233**
50	28,8×106,4	10	**525-2234**
85	38,2×105,2	10	**525-2235**
Centrifuge tubes, PPCO with PP screw closure without gasket			
10	16,1×80,5	10	**525-2241**
28	25,8×94	10	**525-0038**
30	25,8×94	10	**525-2243**
50	28,8×105,9	10	**525-2244**
Centrifuge tubes, PSF with PP screw closure with silicone gasket			
50	28,8×114,8	10	**525-0040**
Centrifuge tubes, PC with PP screw closure with silicone gasket			
10	16,1×83,8	10	**525-0041**
16	18,1×107,2	10	**525-0042**
30	25,8×102,6	10	**525-0043**
50	28,8×114,8	10	**525-2236**
Centrifuge tubes, PPCO with PP screw closure with silicone gasket			
10	16,1×82,8	10	**525-0044**
16	18,1×106,4	10	**525-0244**
30	25,8×102,1	10	**525-0045**
50	28,8×113,5	10	**525-0046**

Centrifuge bottles, Nalgene®
Thermo Scientific

525-2431

525-2441

Conical bottom and rimless, graduated

- Withstands forces up to 27 500×g and 5800×g for 525-2451
- Suitable for use in refrigerated or non refrigerated centrifuges
- Must be used with adapter for conical-bottom centrifuge bottles 525-2400

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
Centrifuge bottles, PPCO with PP screw closure with silicone gasket			
175	61,5×144,3	4	**525-2431**
Centrifuge bottles, PC with PP screw closure with silicone gasket			
175	61,8×144,3	4	**525-2441**
Centrifuge bottles, PS with HDPE screw closure			
175	61,5×135,6	12	**525-2451**

Centrifuge bottles, Nalgene®
Thermo Scientific

With screw closure

When using the 250 ml bottles in the Sorvall GSA rotor, use adapter Cat. No. 525-2300.
At maximum rated speeds, sealing cap assemblies are required, please see Cat. Nos. 525-2913, 525-2914 or 525-2915.

PPCO

Translucent, autoclavable. Excellent chemical resistance.

- Withstands forces up to 13 200×g for 250 ml, 4800×g for 500 ml and 7100×g for 1000 ml

HDPE

Translucent.

- Withstands temperatures down to –100 °C and forces up to 8000×g

PC

Transparent, autoclavable.

- Withstands forces up to 27 500×g for 250 ml, 13 700×g for 500 ml and 7100×g for 1000 ml

FEP

Translucent, autoclavable. Resistant to acids, bases or solvents. Excellent for chloroform and phenol extractions.

- Withstands temperatures from –100 to +150 °C and forces up to 4000×g

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
Centrifuge bottles, PPCO with PP screw closure			
250	61,8×127,7	4	**525-2311**
500	69,5×170,2	4	**525-2313**
500	73,8×169,8	4	**525-2314**
1000	97,7×179	4	**525-2315**
1000	97,5×184,5	4	**525-2316**
Centrifuge bottles, HDPE with PP screw closure			
250	61,2×131,9	6	**525-2361**
Centrifuge bottles, PC with PP screw closure			
250	61,8×127,6	4	**525-2331**
500	69,5×169,6	4	**525-2333**
1000	97,6×188,4	4	**525-2335**
1000	98,1×180,2	4	**525-2336**
Centrifuge bottles, FEP with ETFE screw closure			
250	60×128,8	1	**525-2341**

Centrifuge bottles, Nalgene®
Thermo Scientific

PC or PPCO, wide-mouth, with PP screw closure with silicone gasket, autoclavable

- Excellent chemical resistance
- Withstands forces up to 27 500 × g for 250 ml and 13 700 × g for 500 ml
- When using the 250 ml bottle in Sorvall GSA rotor, use adapter 525-2300

Capacity (ml)	Ø×L (mm)	Material	Pk	Cat. No.
250	61,5×135,1	PC	4	**525-2472**
250	60,7×133,4	PPCO	4	**525-2371**
500	69,5×160	PC	4	**525-0047**
500	69,5×160	PPCO	4	**525-2373**

Centrifuge bottle, Bio Bottle, Nalgene®
Thermo Scientific

PPCO with white PP screw cap and silicone gasket

Designed to process a 12 litre harvest in a single run when used in a Thermo Scientific Sorvall® RC12BP Centrifuge and H-12000 Swing Bucket Rotor. Replaces Sorvall Bio Bottle (Cat. No. 77061). These bottles are ideal for bacterial, yeast and tissue isolations. Large volume gross separations up to 12 litres can be centrifuged up to 7333×g. Graduated, wide-mouth bottle simplifies decanting, re-suspensions and pellet removal.

- Ergonomic design facilitates loading, recovery and storage of samples. Smooth inner walls are less likely to shear delicate cells
- PPCO offers excellent chemical resistance
- For this non sterile bottle maximum service life is 50 cycles
- Recommended operating temperature range is from +4 to +22 °C; storage to 0 °C
- Meets USP VI, is non cytotoxic and non haemolytic

Capacity (ml)	Pk	Cat. No.
2000	6	**525-2317**

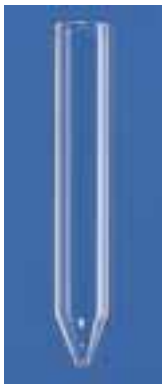
VWR COLLECTION CATALOGUE

10 000 equipment, instrument and consumable products

Request your copy from your local VWR sales office or vwr.com

Centrifuge tubes
Brand

525-1242


525-0500

525-1252

Conical bottom, beaded rim except 525-0500 cone-pointed bottom, rimless

- Withstands forces up to 3500×g

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
AR-Glas®, soda-lime glass, ungraduated			
15	17×113	100	**525-1242**
15	16,5×98	100	**525-0500**
AR-Glas®, soda-lime glass, graduated in white enamel (subdivision 0.1)			
15	17×113	1	**525-1252**

Centrifuge tubes, ASTM, BLAUBRAND®
Brand

Borosilicate glass 3.3, graduated

- Withstands forces up to 700×g
- Design, accuracy, etc. to meet ASTM specifications

Capacity (ml)	Length (mm)	Description	Pk	Cat. No.
100	203	Cylindrical, conical bottom, ASTM D 91	1	**525-1272**
100	160	Pear-shaped, cylindrical bottom, former standard ASTM D 96	1	**525-1273**
100	167	Cylindrical, conical bottom, former standard ASTM D 96	1	**525-1271**

Centrifuge tubes
DURAN Group

525-1104

525-1122

525-1142

DURAN®, borosilicate glass

Robust universal centrifuge tubes for many uses.

- Very good chemical and thermal resistance
- Max. RCF: 4000×g

DIN 58970 (part 2)*

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Capacity (ml)	Ø×L (mm)	Description	Pk	Cat. No.
6	12×100	Centrifuge tubes, round bottom	1	**525-1102**
12	16×100	Centrifuge tubes, round bottom	1	**525-1104**
25	24×100	Centrifuge tubes, round bottom	1	**525-1106**
50	34×100	Centrifuge tubes, round bottom	1	**525-1108**
80	40×115	Centrifuge tubes, round bottom	1	**525-1110**
80	44×100	Centrifuge tubes, round bottom	1	**525-1112**
250	56×147	Centrifuge tubes, round bottom	1	**525-1114**
25	24×100	Centrifuge tubes with conical bottom, angle 60°	1	**525-1132**
50	34×100	Centrifuge tubes with conical bottom, angle 60°	1	**525-1142**
12	16×100	Centrifuge tubes with conical bottom, angle 30°	1	**525-1122**

* 525-1110, 525-1112 and 525-1114 not according to DIN

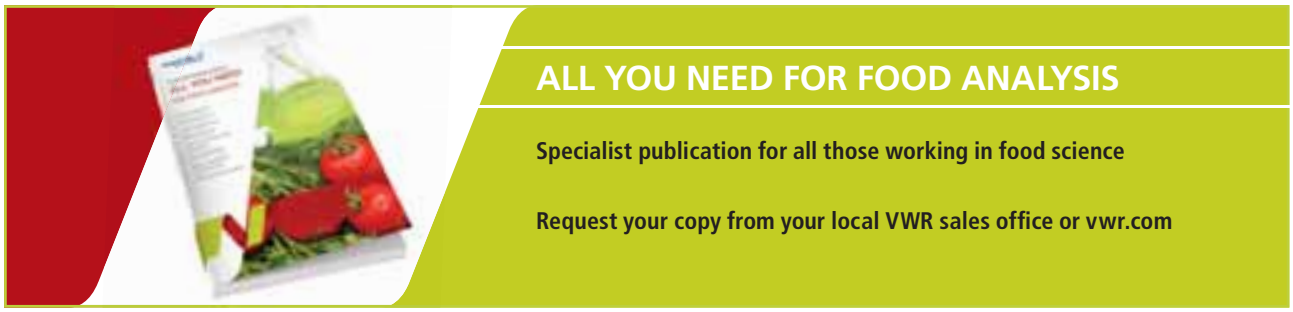
Centrifuge tubes, Quickfit®

PYREX®, borosilicate glass, cylindrical shape, without stopper

- Precision ground Quickfit® socket to accept tapered stopper
- Each tube is marked with its weight to the nearest 0,1 g to enable tubes of similar weight to be selected from any batch
- Can be centrifuged at RCF values up to 3000×g

Joint size: 24/20

Capacity (ml)	Ø×L (mm)	Pk	Cat. No.
30	28,5×115	10	**201-8268**



Racks, centrifuge tube

Steel with an epoxy coating, autoclavable

For 50 ml centrifuge tubes. Can also be used for all other types of tubes.

- Accepts tubes up to 30 mm diameter
- Ribbed base for better stability of the tubes
- Very good chemical resistance

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
50	8	77×88×140	Blue	1	**211-0197**

Rack for centrifuge bottles
Heathrow Scientific

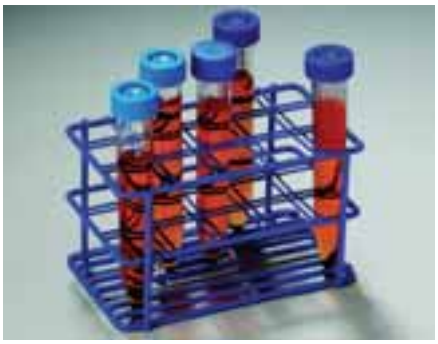
Steel with an epoxy coating, autoclavable

- Supports conical bottom centrifuge bottles
- The bottom rails hold the tip of the conical bottle

Hole diameter: 60 mm

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
250	6	205×135×104	Blue	1	**525-0142**

Racks for centrifuge tubes, Poxygrid®
Bel-Art Products



Epoxy coated steel wire, autoclavable

- Ideal for supporting conical bottom centrifuge tubes
- The bottom rails hold the tip of the conical tube

Hole diameter: 30 mm, for 525-9100: 18 mm

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
15	15 (3×5)	127×83×76	Blue	1	**525-9100**
50	8 (2×4)	149×81×92	Blue	1	**525-9101**
50	16 (4×4)	158×150×92	Blue	1	**525-9102**
50	36 (6×6)	229×229×89	Blue	1	**525-9134**

Centrifuge tube racks, Pop-Up™

PP

Close flat for storage and 'pop up' for quick use.

- Simple easy action to open and close
- Designed to help organise storage of 15 and 50 ml tubes
- Stackable in open or closed position
- Imprinted grid aids quick identification and retrieval
- Collapse flat (height 21 mm) for compact storage

Note: Robust PP construction but not recommended for cleaning in an autoclave

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
15	45	255×137×72	Purple	2	**525-0510**
50	18	255×137×72	Green	2	**525-0511**
15/50	33 (21+12)	255×137×72	Blue	2	**211-0367**
15/50	33 (21+12)	255×137×72	Pink	2	**211-0368**

Racks, centrifuge tube

PP, coloured

Suitable for VWR centrifuge tubes with conical bottom. The interlocking design of each rack makes them ideal for creating a user friendly workstation.

- Available for 15 or 50 ml tubes
- Freezable, recyclable, autoclavable
- Stackable to minimise storage space

Ordering information: Assorted colour rack cases include one blue, green, orange, red, and yellow rack per case.

For tubes (ml)	No. of holes	Colour	Pk	Cat. No.
15	25	Blue	5	**525-0434**
15	25	Green	5	**525-0435**
15	25	Natural	5	**525-0428**
15	25	Orange	5	**525-0431**
15	25	Purple	5	**525-0433**
15	25	Red	5	**525-0432**
15	25	White	5	**525-0429**
15	25	Yellow	5	**525-0430**
15	25	Assorted	5	**525-0436**
50	25	Blue	5	**525-0425**
50	25	Green	5	**525-0426**
50	25	Natural	5	**525-0419**
50	25	Orange	5	**525-0422**
50	25	Purple	5	**525-0424**
50	25	Red	5	**525-0423**
50	25	White	5	**525-0420**
50	25	Yellow	5	**525-0421**
50	25	Assorted	5	**525-0427**

Racks, centrifuge and test tube, puzzle rack

Two-sided puzzle-shaped pieces hold an assortment of 1,5, 2,0, 15 and 50 ml tubes. Pieces can be used separately for small sample applications or connected in a square or row configuration. Set of four pieces.

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
1,5/2,0 ; 15 ; 50	17/8	151×135×66	Assorted colours	1 SET	**211-0377**

Boxes for 15 or 50 ml tubes, Transformer™ Cube

PP, with clear lid

Robust, rugged construction for repeated storage. Snap-in one of the two included grids, either 15 ml tube grid or the 50 ml tube grid.

- Deep grid wells securely hold tubes upright
- Locate tubes easily with keyed lid, imprinted grid and first tube orientation
- View tube storage through clear lid and transparent sides

Colour	W×D×H (mm)	Pk	Cat. No.
Lilac	132×132×129	5	**211-0370**

Rack for centrifuge tubes
Heathrow Scientific

ABS

- Designed for stable use in water baths
- Supports conical bottom centrifuge tubes
- Alphanumeric grid reference aids tube identification
- Sterilisation with 70% alcohol spray

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
15/50	30/20	207×171×61	Orange	1	**525-0141**

Racks, microcentrifuge tube

PP, colour coded

Space for up to 80×1,5 or 2,0 ml microcentrifuge tubes. 5×16 array with conical shaped holes to hold microtubes securely.

- Perfect for freezer use
- Side handles for secure handling
- Numbered for easy sample identification

Ordering information: The assorted colour set includes one rack each in blue, green, pink, yellow and orange.

No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
80 (5×16)	225×67×29	Natural	5	**211-0204**
80 (5×16)	225×67×29	Orange	5	**211-0205**
80 (5×16)	225×67×29	Yellow	5	**211-0206**
80 (5×16)	225×67×29	Blue	5	**211-0207**
80 (5×16)	225×67×29	Green	5	**211-0208**
80 (5×16)	225×67×29	Pink	5	**211-0209**
80 (5×16)	225×67×29	Assorted	5	**211-0210**

Organisers for microcentrifuge tube racks

Clear acrylic

Organiser for up to eight racks, designed to hold VWR microcentrifuge tube racks Cat. Nos. 211-0204 to 211-0210. These racks help you keep large numbers of microtubes organised on your benchtop. Holds up to eight 80-well microtube racks filled with either 1,5 or 2,0 ml microtubes.

- Stable and sturdy construction, space saving, stackable
- Safe storage, quick and easy access to reaction vessel racks
- Easy to clean

Form	W×D×H (mm)	Colour	Pk	Cat. No.
Horizontal	310×236×122	Transparent	1	**211-0211**
Vertical	157×236×234	Transparent	1	**211-0212**

Racks, microcentrifuge tube

PP, coloured

For 96 (8×12) microtubes with 0,5 ml capacity or 96 microtubes with 1,5/2 ml capacity. Conical tapered openings to hold tubes securely. Complete with snap-on lid, which can also be used as a protective base.

- Perfect for freezer use
- Side handles for secure handling
- Numbered for easy sample identification

Ordering information: The assorted colour set includes one rack each in blue, green, pink, yellow and orange.

No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
96 (8×12)	246×121×51	Natural	5	**211-0213**
96 (8×12)	246×121×51	Yellow	5	**211-0214**
96 (8×12)	246×121×51	Blue	5	**211-0215**
96 (8×12)	246×121×51	Green	5	**211-0216**
96 (8×12)	246×121×51	Pink	5	**211-0217**
96 (8×12)	246×121×51	Assorted	5	**211-0218**

Microtube racks, Mega

PP

- For tubes of diameter 10 - 13 mm
- Storage of high quantity of samples eliminates the need for multiple racks
- Alphanumeric grid for quick location and retrieval of tubes
- Sturdy, lightweight material for easy transport

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
0,2/0,5/1,5/2,0	216	337×267×91	White	1	**211-0364**
0,2/0,5/1,5/2,0	216	337×267×91	Blue	1	**211-0363**

Rack, microcentrifuge tube, Rota-Rack® Duo

Work with PCR tubes right next to centrifuge tubes, dilute or take off concentrate using one rack.

- Rotate half the rack to suit particular requirements
- Purple module: 48 places for microtubes 0,5 ml or 48 places for microtubes 1,5 ml
- Blue module: 96 places for PCR tubes or 48 places for microtubes 1,5 ml
- Plate format and therefore compatible with 8-channel multipipettes
- Tapered wells with alphanumeric grid to help identification

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
0,2 / 0,5 / 1,5	96 / 48 / 48	296×118×34	Purple and Blue	1	**211-0369**

Boxes for microcentrifuge tubes
Heathrow Scientific

PP, with lid

- Racks feature durable 3 point hinges and a clasp that locks for secure lid closure
- For 1,5 or 2,0 ml microtubes and cryovials
- Feature moulded grid lines on the lid, imprinted coordinates on the base, and imprinted and raised coordinates on the box

Ordering information: Assorted pack includes one each of blue, green, pink, yellow and orange.

For (ml)	No. of holes	Colour	W×D×H (mm)	Pk	Cat. No.
1,5/2,0	50	Assorted	141×92×56	5	**211-9004**

Racks, microcentrifuge tube
Brand

PP, autoclavable

- For 20 microcentrifuge tubes
- Numbered positions for easy sample identification

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
1,5	20	210×70×37	Grey	1	**211-2629**

Racks, microcentrifuge tube
Eppendorf

Plastic, transparent

For 24 microtubes. The ideal solution when processing samples and for short to medium term storage. The microtubes can also be easily opened in the rack as the large distance between the holes prevents contamination from adjacent lids. UV resistant. Non-slip. Racks can also be stacked when filled.

- Numbered holes, labelling possible at holes and sides
- High temperature resistance, freezable to -80 °C, autoclavable
- Robust coupling mechanism

For tubes (ml)	No. of holes	Pk	Cat. No.
0,5	24	1	**211-2151**
1,5/2,0	24	1	**211-2102**

Racks, microcentrifuge tube, Nalgene®
Thermo Scientific

ResMer™, autoclavable

- Good chemical resistance
- Stackable when empty or full
- Alphanumeric grid reference for easy sample identification

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
1,5	24	143×90×52	White	1	**211-7121**

Racks, microcentrifuge tube
Kartell

732-2003

PP, autoclavable

Can accommodate 100×1,5 ml microtubes with closed caps or without caps, or 50×1,5 ml microtubes with caps open.

- Versatile racks, can be used dry, in water baths or in freezers
- Stackable when empty or full
- Alphanumeric grid reference for easy sample identification

For tubes (ml)	No. of holes	W×D×H (mm)	Colour	Pk	Cat. No.
1,5	100	263×109,5×45	White	1	**732-2000**
1,5	100	263×109,5×45	Blue	1	**732-2001**
1,5	100	263×109,5×45	Yellow	1	**732-2002**
1,5	100	263×109,5×45	Red	1	**732-2003**

Rotary evaporators, RV 10 basic
VWR by IKA

All models have motorised lift with safety stop function

Ergonomic, compact rotary evaporators with integrated heating bath and adjustable safety circuit. With digital speed display. Safe and simple operation through ergonomically shaped operator unit in the front area. Motorised lift (stroke 140 mm) with "safety stop" function, if the power cuts out the evaporator piston is automatically lifted out of the heating bath.

- Adjustable end position recognition to protect the glass from breaking
- Moves right and left in interval operation for the drying process
- Timer function for time lapse controls
- Water/oil heating bath with integrated carry handles and glassware
- Heats up quickly because of optimised bath volumes
- Push-off mechanism to loosen tightly fitting pistons

Ordering information: The RV 10 basic is available with coated or uncoated glassware. Supplied with water/oil bath, 1 l evaporation flask (NS 29/32), 1 l receiving flask (KS35/20) and condensing glassware set.
Please note: A vacuum source, vacuum check valve and cooling system are required but not supplied. Please contact your local VWR sales office for advice and details.

Model	RV 10 Basic
Temperature range (°C)	Ambient...+180
Rotation speed (min^{-1})	20 - 280
Rotation speed setting	Digital
Heating capacity (W)	1300
Cooling surface (cm^2)	1200
Bath capacity (l)	3
W×D×H (mm)	500×410×430 (without glassware)
Weight (kg)	20
Protection class DIN EN 60529	IP 20

Type	Version	Glassware	Pk	Cat. No.
RV 10 basic V, UK-plug	Vertical condenser	standard	1	**531-0916**
RV 10 basic V-C, UK-plug	Vertical condenser	coated*	1	**531-0918**

* With transparent plastic coating

Rotary evaporators, RV 10 digital
VWR by IKA

All models have motorised lift with safety stop function

Rotary evaporators with integrated heating bath, safe and simple operation via ergonomic controls in the front. A motorised lift with 140 mm stroke with "safety stop" function - if the power cuts out the evaporator flask is automatically lifted out of the heating bath. Units can be programmed to reverse the direction of rotation of the evaporation flask at intervals to assist the drying process. Temperature control of the heating bath is via a microprocessor controller.

- Digital speed display and digital bath temperature display
- Infrared interface transfers data from heating bath to the drive unit
- Digital heating bath with microprocessor controller can be used with oil or water, features integrated carrying handles for increased safety
- RS232 interface for remote PC operation using labworldsoft® software (optional), to allow for operation in automatic mode

Delivery information: Supplied with water/oil bath, 1 l evaporation flask (NS 29/32), 1 l receiving flask (KS35/20) and condensing glassware set (except Flex Package which is supplied without glassware).
Please note: A vacuum source, vacuum check valve and cooling system are required but not supplied. Please contact your local VWR sales office for advice and details.

Model	RV 10 digital
Temperature range (°C)	Ambient to 180
Rotation speed (min^{-1})	20 - 280
Rotation speed setting	Digital
Heating capacity (W)	1300
Cooling surface (cm^2)	1500
Bath capacity (l)	3
W×D×H (mm)	530×410×430 (without glassware)
Weight (kg)	20
Protection class DIN EN 60529	IP 20

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Type	Version	Glassware	Pk	Cat. No.
RV 10 digital, UK-plug	Vertical condenser	standard	1	**531-0908**
RV 10 digital, UK-plug	Vertical condenser	coated*	1	**531-0911**
RV 10 digital, UK-plug	Flex Package	without**	1	**531-0914**

* With transparent plastic coating
** Delivered only with bath, vapour tube, clamps for glassware and Woulf bottle. This package enables the customer to select the glassware set up for their specific application.
See "Glassware and accessories for rotary evaporators RV 10 / RV 8" for details of glassware available for the Flex Package.

Rotary evaporators, RV 10 control
VWR by IKA

All models have motorised lift with safety stop function

Rotary evaporators with integrated heating bath and vacuum controller; units feature USB interface, central display for automatic distillation and ramp programming. A motorised lift with 140 mm stroke with "safety stop" function - if the power cuts out the evaporator flask is automatically lifted out of the heating bath. Units can be programmed to reverse the direction of rotation of the evaporation flask at intervals to assist the drying process. Volume controlled distillation processes can be programmed.

- Built-in solvent library, can be added to by the user
- Specific distillation parameters can be stored for standard distillation; measurements and distillation type can be automatically transferred by the press of a key
- Automatic boiling point recognition
- Operated via colour graphic display which shows distillation curves and has a choice of multiple languages
- Environmentally efficient; cooling water and heating bath are automatically switched off at the end of the cycle; units have integrated monitoring of cooling water and automatic heating bath monitoring which stops the distillation in the event of temperature errors

Delivery information: Supplied with water/oil bath, magnetic valve laboratory vacuum (531-3485), 1 l evaporation flask (NS 29/32), 1 l receiving flask (KS 35/20) and condensing glassware set.
Please note: A vacuum source, vacuum check valve and cooling system are required but not supplied. Please contact your local VWR sales office for advice and details.

Model	RV 10 control
Temperature range (°C)	Ambient to 180
Rotation speed (min^{-1})	20 - 280
Rotation speed setting	Digital
Heating capacity (W)	1300
Cooling surface (cm^2)	1500
Bath capacity (l)	3
W×D×H (mm)	530×410×430 (without glassware)
Weight (kg)	21,5
Protection class DIN EN 60529	IP 21

Type	Version	Glassware	Pk	Cat. No.
RV 10 control, UK-plug	Vertical condenser	standard	1	**531-0878**
RV 10 control, UK-plug	Vertical condenser	coated*	1	**531-0881**
RV 10 control, UK-plug	Flex Package	without**	1	**531-0906**

* With transparent plastic coating
** Delivered only with bath, vapour tube, clamps for glassware and Woulf bottle. This package enables the customer to select the glassware set up for their specific application.

Rotary evaporators, RV 8
VWR by IKA

All models have motorised lift with safety stop function

These entry-level evaporators are ideal for all standard evaporation applications in universities and research laboratories. The functions of the familiar RV10 control have been extended and improved to enable fully automatic distillation, with automatic boiling point determination, an integrated solvent library and the option to connect a speed-controlled vacuum pump.

- Digital TFT display showing the rotation speed and heating bath temperature and allows optimal control of the entire distillation process
- Single-hand lift system with pressure sensors can be operated easily with the right or left hand
- Water/oil heating bath with integrated carrying handles
- USB connection enables online update of the firmware

Delivery information: Units are supplied with heating bath HB 10, either with or without glassware. RV 8 models are compatible with the full RV10 glassware range.
Please note: A vacuum source, vacuum check valve and cooling system are required but not supplied. Please contact your local VWR sales office for advice and details.

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Model	RV 8 V	RV 8 V-C	RV 8 Flex
Temperature range (°C)	Ambient...+180		
Rotation speed (min^{-1})	5 - 300		
Rotation speed setting	Digital		
Heating capacity (W)	1300		
Cooling surface (cm^2)	1500		
Bath capacity (l)	3		
W×D×H (mm)	495×390×615	510×345×490	
Weight (kg)	12,5	17,2	15,5
Protection class DIN EN 60529	IP 20		

Type	Version	Glassware	Pk	Cat. No.
RV 8 V, UK-plug	Vertical condenser	standard	1	**531-0894**
RV 8 V-C, UK-plug	Vertical condenser	coated*	1	**531-0897**
RV 8 Flex, UK-plug	Without condenser	without**	1	**531-0900**

* With transparent plastic coating
** Delivered only with bath, vapour tube, clamps for glassware and Woulf bottle. This package enables the customer to select the glassware set up for their specific application.

Glassware and accessories for rotary evaporators, RV 10 / RV 8
VWR by IKA

531-3476

531-0460

531-3026

Glassware sets include 1000 ml evaporation and receiving flasks. The solvent being distilled can be continuously fed in through the PTFE inlet tube. Plastic coated versions are available and offer additional user protection.

Other options include a heating bath shield for optimal protection against splashes of hot liquid. A protective cover which is essential when it is not possible to work in an extractor hood (protects the user against splashes of hot liquid and in the event of the evaporator flask breaking - coated glassware should also be used).

Description	Pk	Cat. No.
Glassware sets, protection cover and shield		
Set of glassware, vertical, standard	1	**531-3476**
Set of glassware, vertical, coated*	1	**531-3478**
Set of glassware, diagonal, standard	1	**531-3477**
Set of glassware, diagonal, coated*	1	**531-3479**
Shield for heating bath	1	**531-0299**
Protective cover for heating bath	1	**531-0298**
Condensers		
Vertical intensive condenser with double jacket and manifold, standard	1	**531-0460**
Vertical intensive condenser with double jacket and manifold, coated*	1	**531-0461**
Dry ice condenser, standard	1	**531-0462**
Dry ice condenser, coated*	1	**531-0463**
Vertical condenser with manifold and cut-off valve for reflux distillation, standard	1	**531-0464**
Vertical condenser with manifold and cut-off valve for reflux distillation, coated*	1	**531-0465**
Vertical intensive condenser with manifold and cut-off valve for reflux distillation, standard	1	**531-0466**
Vertical intensive condenser with manifold and cut-off valve for reflux distillation, coated*	1	**531-0467**
Vapour tubes, evaporation flasks and additional accessories		
Vapour tube NS 29/32	1	**531-0468**
Evaporation flask NS 29/32, 50 ml, borosilicate glass	1	**531-3004**
Evaporation flask NS 29/32, 100 ml, borosilicate glass	1	**531-3005**
Evaporation flask NS 29/32, 250 ml, borosilicate glass	1	**531-3006**
Evaporation flask NS 29/32, 500 ml, borosilicate glass	1	**531-3007**
Evaporation flask NS 29/32, 1000 ml, borosilicate glass	1	**531-3008**
Evaporation flask NS 29/32, 2000 ml, borosilicate glass	1	**531-3009**
Evaporation flask NS 29/32, 3000 ml, borosilicate glass	1	**531-3010**
Powder flask NS 29/32, 500 ml, borosilicate glass	1	**531-3025**
Powder flask NS 29/32, 1000 ml, borosilicate glass	1	**531-3026**

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Description	Pk	Cat. No.
Vapour tubes, evaporation flasks and additional accessories		
Powder flask NS 29/32, 2000 ml, borosilicate glass	1	**531-3027**
Evaporation cylinder NS 29/32 500 ml, borosilicate glass	1	**531-3028**
Evaporation cylinder NS 29/32 1500 ml, borosilicate glass	1	**531-3029**
Receiving flasks and additional accessories		
Foam brake NS 29/32	1	**531-3000**
Distilling spider with 6 distilling sleeves 20 ml	1	**531-3001**
Distilling spider with 12 distilling sleeves 20 ml	1	**531-3002**
Distilling spider with 20 distilling sleeves 20 ml	1	**531-3003**
Distilling sleeve 20 ml	1	**531-0676**
Distilling spider with 5 flasks NS 29/32 of 50 ml	1	**531-3011**
Distilling spider with 5 flasks NS 29/32 of 100 ml	1	**531-3012**
Evaporation flask 50 ml	1	**531-0674**
Evaporation flask 100 ml	1	**531-0675**
Receiving flask KS 35/20, 100 ml, borosilicate glass, standard	1	**531-3013**
Receiving flask KS 35/20, 250 ml, borosilicate glass, standard	1	**531-3014**
Receiving flask KS 35/20, 500 ml, borosilicate glass, standard	1	**531-3015**
Receiving flask KS 35/20, 1000 ml, borosilicate glass, standard	1	**531-3016**
Receiving flask KS 35/20, 2000 ml, borosilicate glass, standard	1	**531-3017**
Receiving flask KS 35/20, 3000 ml, borosilicate glass, standard	1	**531-3018**
Receiving flask KS 35/20, 100 ml, borosilicate glass, coated*	1	**531-3019**
Receiving flask KS 35/20, 250 ml, borosilicate glass, coated*	1	**531-3020**
Receiving flask KS 35/20, 500 ml, borosilicate glass, coated*	1	**531-3021**
Receiving flask KS 35/20, 1000 ml, borosilicate glass, coated*	1	**531-3022**
Receiving flask KS 35/20, 2000 ml, borosilicate glass, coated*	1	**531-3023**
Receiving flask KS 35/20, 3000 ml, borosilicate glass, coated*	1	**531-3024**
Miscelleous accessories		
Extension plate (required when using foam brake and 3 l evaporating flask)	1	**531-0672**
Seal	1	**531-0842**
Magnetic valves		
Magnetic valve, in-house vacuum, for RV10 control	1	**531-3487**
Magnetic valve, laboratory vacuum, for RV10 control	1	**531-3485**
Pump control including magnetic valve, for RV10 control	1	**531-3486**
Choke water valve to regulate the water flow, for RV10 control	1	**531-3488**
Filter to prevent contamination of the water pipes, for RV10 control	1	**531-3489**
Pressure regulating valve for adjusting the cooling water pressure, for RV10 control	1	**531-0673**

* With transparent plastic coating

Rotary evaporators, Hei-VAP Value, analogue
Heidolph

With hand lift

For all standard applications.

- Easy to use with two large dial controls for adjustment of rotation speed and heating bath temperature (no digital display)
- For limited budgets, the optional manual vacuum controller is available
- For precise vacuum control and reproducible results, the optional digital vacuum controller is recommended

Reduce process times by up to 30%, depending on the selected model and peripheral devices. The chemically resistant vacuum seal reduces the spare parts budget up to 75% with prolonged operational lifespan.

As standard, models are supplied with a detachable control panel with a 1,3 m cable. Therefore parameters can be changed outside of a closed fume hood, providing greater operator safety and ultimate process control. An optional remote control operating panel allows the user to step away from the evaporator and still monitor all process data increasing flexibility at work.

- Vapour tube is easy to remove from the drive; a flask ejector feature allows the user to easily remove sticking evaporating flasks
- Two independent safety circuits prevent overheating of the heating bath
- In case of a power cut, all motor lift models will remove the flask from the heating bath preventing potential thermal damage to the evaporated solution or safety hazards
- To protect the user from splashes and scalding, hot water and oil can be removed from the bath through a drain port
- All heating baths feature non slip handles with safety grip for safe and simple bath installation and removal

Delivery information: Supplied with water/oil bath, 1 l evaporation flask (29/32), 1 l receiving flask (35/20) and condenser glassware set.
Please note: A vacuum source, vacuum check valve and cooling system are required but not supplied. Please contact your local VWR sales office for advice and details.

Model	Hei-VAP Value
Temperature range (°C)	20...210
Rotation speed (min^{-1})	20 - 280

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Heating capacity (W)	1300
Bath capacity (l)	4.5
W×D×H (mm)	490×395×430
Protection class DIN EN 60529	IP 20

Type	Version	Glassware	Pk	Cat. No.
Hei-VAP Value, G1, UK-plug	Diagonal condenser	standard	1	**531-0695**
Hei-VAP Value, G1, UK-plug	Diagonal condenser	coated*	1	**531-0696**
Hei-VAP Value, G3, UK-plug	Vertical condenser	standard	1	**531-0697**
Hei-VAP Value, G3, UK-plug	Vertical condenser	coated*	1	**531-0698**
Hei-VAP Value, G5, UK-plug	Condensate trap	standard	1	**531-0699**
Hei-VAP Value, G5, UK-plug	Condensate trap	coated*	1	**531-0700**
Hei-VAP Value, G6, UK-plug	Vertical condenser for reflux	standard	1	**531-0701**
Hei-VAP Value, G6, UK-plug	Vertical condenser for reflux	coated*	1	**531-0702**

Description	Pk	Cat. No.
Accessories		
Condenser G6	1	**531-0871**

* With transparent plastic coating

Rotary evaporators, Hei-VAP Advantage, digital
Heidolph

HL models with hand lift, ML models with motor lift

For routine distillation applications and reproducible results.

- Large digital 3,5" LCD display indicates rotation speed, heating bath temperature and vapour temperature
- For limited budgets, the optional manual vacuum controller is available
- For precise vacuum control and reproducible results, the optional digital vacuum controller is recommended
- Automatic process timer turns off the evaporator at a pre-programmed time and removes evaporating flask from bath on motor lift model

Reduce process times by up to 30%, depending on the selected model and peripheral devices. The chemically resistant vacuum seal reduces the spare parts budget up to 75% with prolonged operational lifespan.

As standard, models are supplied with a detachable control panel with a 1.3 m cable. Therefore parameters can be changed outside of a closed fume hood, providing greater operator safety and ultimate process control. An optional remote control operating panel allows the user to step away from the evaporator and still monitor all process data increasing flexibility at work.

- The vapour tube is easy to remove from the drive; a flask ejector feature allows the user to easily remove sticking evaporating flasks
- Two independent safety circuits prevent overheating of the heating bath
- In case of a power cut, all motor lift models will remove the flask from the heating bath preventing potential thermal damage to the evaporated solution or safety hazards
- To protect the user from splashes and scalding, hot water and oil can be removed from the bath through a drain port
- All heating baths feature non slip handles with safety grip for safe and simple bath installation and removal

Delivery information: Supplied with water/oil bath, 1 l evaporation flask (29/32), 1 l receiving flask (35/20) and condenser glassware set.
Please note: A vacuum source, vacuum check valve and cooling system are required but not supplied. Please contact your local VWR sales office for advice and details.

Model	Hei-VAP Advantage
Temperature range (°C)	20...210
Rotation speed (min^{-1})	20 - 280
Heating capacity (W)	1300
Bath capacity (l)	4.5
W×D×H (mm)	490×395×430

Type	Version	Glassware	Pk	Cat. No.
Hei-VAP Advantage HL, G1, UK-plug	Diagonal condenser	standard	1	**531-0703**
Hei-VAP Advantage HL, G1, UK-plug	Diagonal condenser	coated*	1	**531-0704**
Hei-VAP Advantage HL, G3, UK-plug	Vertical condenser	standard	1	**531-0705**
Hei-VAP Advantage HL, G3, UK-plug	Vertical condenser	coated*	1	**531-0706**
Hei-VAP Advantage HL, G5, UK-plug	Condensate trap	standard	1	**531-0707**
Hei-VAP Advantage HL, G5, UK-plug	Condensate trap	coated*	1	**531-0708**
Hei-VAP Advantage HL, G6, UK-plug	Vertical condenser for reflux	standard	1	**531-0709**
Hei-VAP Advantage HL, G6, UK-plug	Vertical condenser for reflux	coated*	1	**531-0710**
Hei-VAP Advantage ML, G1, UK-plug	Diagonal condenser	standard	1	**531-0711**
Hei-VAP Advantage ML, G1, UK-plug	Diagonal condenser	coated*	1	**531-0712**
Hei-VAP Advantage ML, G3, UK-plug	Vertical condenser	standard	1	**531-0713**
Hei-VAP Advantage ML, G3, UK-plug	Vertical condenser	coated*	1	**531-0714**
Hei-VAP Advantage ML, G5, UK-plug	Condensate trap	standard	1	**531-0715**

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Type	Version	Glassware	Pk	Cat. No.
Hei-VAP Advantage ML, G5, UK-plug	Condensate trap	coated*	1	**531-0716**
Hei-VAP Advantage ML, G6, UK-plug	Vertical condenser for reflux	standard	1	**531-0717**
Hei-VAP Advantage ML, G6, UK-plug	Vertical condenser for reflux	coated*	1	**531-0718**

Description	Pk	Cat. No.
Accessories		
Condenser G6	1	**531-0871**
Vacuumbox	1	**531-0735**
Upgrade kit - upgrade from Advantage model to Precision model (hand lift)	1	**531-0736**
Upgrade kit - upgrade from Advantage model to Precision model (motor lift)	1	**531-0737**

* With transparent plastic coating

Rotary evaporators, Hei-VAP Precision, digital
Heidolph

HL models with hand lift, ML models with motor lift

Suitable for the most demanding applications, with excellent integrated vacuum control capabilities.

Reduce process times by up to 30%, depending on the selected model and peripheral devices. The chemically resistant vacuum seal reduces the spare parts budget by up to 75% with prolonged operational lifespan.

As standard, models are supplied with a detachable control panel with a 1,3 m cable. Therefore parameters can be changed outside of a closed fume hood, providing greater operator safety and ultimate process control. An optional remote control operating panel allows the user to step away from the evaporator and still monitor all process data increasing flexibility at work.

- The vapour tube is easy to remove from the drive; a flask ejector feature allows the user to easily remove sticking evaporating flasks
- Two independent safety circuits prevent overheating of the bath
- In case of a power cut, all motor lift models will remove the flask from the heating bath preventing potential thermal damage to the evaporated solution or safety hazards
- To protect the user from splashes and scalding, hot water and oil can be removed from the bath through a drain port
- All heating baths feature non slip handles with safety grip for safe and simple bath installation and removal

Save time during configuration – all connected components and peripheral devices are recognised by the evaporator which eliminates the need to configure the unit manually.

Even for the most demanding applications; easily eliminate foaming, excessive bubbling, or bumping of solutions. For the most commonly used applications, save the parameter settings into the ramp memory and apply an individual name for those ramps to avoid errors.

Reduce process times significantly by using these three programs for automated distillation:

SETpressure: Program for solvent separations. This program holds a set vacuum constant. During the evacuation the user has the full flexibility to choose any other level of vacuum at the press of a button.

AUTOeasy: Supports the automatic pressure control for solvent separations. The necessary pressure for the first boiling point is found automatically. This program can be used with all Heidolph glassware assemblies and does not require any accessories.

AUTOaccurate: Supports very precise automatic pressure control for solvent separations. This program works similarly to AUTOeasy, but in addition, is able to identify multiple boiling points automatically by reducing the vacuum accordingly. Also, the AUTOaccurate program delivers the finest and most precise vacuum control. To take advantage of this program the optional AUTOaccurate sensor (531-0844 see accessories) is required. This program cannot be used with Heidolph G1 and G5 assemblies.

- Large digital 4.3" graphic display features all parameters, integrated vacuum controller, and includes programs for automated distillations
- The integrated software guides the user through the capabilities of the evaporator
- Automatic process timer turns off the evaporator at a pre-programmed time and raises flask (on motor lift model)
- Control the process individually by pre-programming vacuum gradients
- Features a built-in vacuum controller as a standard

Delivery information: Supplied with water/oil bath, 1 l evaporation flask (29/32), 1 l receiving flask (35/20) and condenser glassware set.
Please note: A vacuum source, vacuum check valve and cooling system are required but not supplied. Please contact your local VWR sales office for advice and details.

Model	Hei-VAP Precision
Temperature range (°C)	20...210
Rotation speed (min^{-1})	20 - 280
Heating capacity (W)	1300
Bath capacity (l)	4.5
W×D×H (mm)	490×395×430

Type	Version	Glassware	Pk	Cat. No.
Hei-VAP Precision HL, G1, UK-plug	Diagonal condenser	standard	1	**531-0719**
Hei-VAP Precision HL, G1, UK-plug	Diagonal condenser	coated*	1	**531-0720**
Hei-VAP Precision HL, G3, UK-plug	Vertical condenser	standard	1	**531-0721**
Hei-VAP Precision HL, G3, UK-plug	Vertical condenser	coated*	1	**531-0722**
Hei-VAP Precision HL, G5, UK-plug	Condensate trap	standard	1	**531-0723**
Hei-VAP Precision HL, G5, UK-plug	Condensate trap	coated*	1	**531-0724**
Hei-VAP Precision HL, G6, UK-plug	Vertical condenser for reflux	standard	1	**531-0725**
Hei-VAP Precision HL, G6, UK-plug	Vertical condenser for reflux	coated*	1	**531-0726**

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Type	Version	Glassware	Pk	Cat. No.
Hei-VAP Precision ML, G1, UK-plug	Diagonal condenser	standard	1	531-0727
Hei-VAP Precision ML, G1, UK-plug	Diagonal condenser	coated*	1	531-0728
Hei-VAP Precision ML, G3, UK-plug	Vertical condenser	standard	1	531-0729
Hei-VAP Precision ML, G3, UK-plug	Vertical condenser	coated*	1	531-0730
Hei-VAP Precision ML, G5, UK-plug	Condensate trap	standard	1	531-0731
Hei-VAP Precision ML, G5, UK-plug	Condensate trap	coated*	1	531-0732
Hei-VAP Precision ML, G6, UK-plug	Vertical condenser for reflux	standard	1	531-0733
Hei-VAP Precision ML, G6, UK-plug	Vertical condenser for reflux	coated*	1	531-0734

Description	Pk	Cat. No.
Accessories		
Condenser G6	1	531-0871

* With transparent plastic coating

Vacuum pumps, Rotavac Valve Control and Rotavac Vario Control
Heidolph

Rotavac Valve Control

Two stage diaphragm pump made from chemically resistant materials. Suction capacity for use with up to three rotary evaporators at the same time.

- High suction capacity of 1,7 m^3/h, for fastest evacuation
- Ultimate vacuum of 9 mbar

Can be combined with a condensate cooler.

Designed for all Hei-VAP rotary evaporators.

Rotavac Vario Control

Three stage diaphragm pump made from chemically resistant materials. Adjustable speed of the pump produces the most precise vacuum control.

- High suction capacity of 1,5 m^3/h, for fastest evacuation
- Ultimate vacuum of 2 mbar
- Speed signal comes from the Hei-VAP rotary evaporator
- Highest distillation rates possible while reducing process time by 30%
- Improved solvent recovery up to 100%, stable distillation conditions

Significant noise and vibration reduction.

Minimal bench space requirements.

Includes power supply, vacuum sensor and valves.

Can be combined with a condensate cooler.

Designed for all Hei-VAP Precision rotary evaporators.

Description	Pk	Cat. No.
Rotavac Valve Control, UK-plug	1	531-0376
Rotavac Vario Control, UK-plug	1	531-0377

Other vacuum pump options are available, please contact VWR for details.

Rotary evaporators, Laborota 20 control
Heidolph

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Large scale evaporators up to 20 l

- Separate, bright digital displays for all distillation parameters
- Individually programmable ramps
- Patented evaporator flask support system allows for one person operation

Features:
Built in vacuum and temperature controller
Included self filling water bath system takes the worry out of running dry
Patented receiver cassettes guard against glassware breakage while providing a self-standing flask support
Receiving flasks feature reinforced bottom drain valves as standard
RS232 interface to program or monitor your distillation process

Choice of different glassware assemblies:

R: includes one ascending condenser, one 20 l evaporating flask, one 10 l receiving flask, and is recommended for all standard distillations.
R Shorty: identical to glassware R, but features a condenser that is 320 mm shorter. Distillation capacity remains the same. This is ideal in laboratories for hood applications or where height is restricted.
RC: includes one ascending condenser, one 20 l evaporating flask, two 10 l receiving flasks, and is recommended for all standard distillations.
RC Shorty: identical to glassware RC, but features a condenser that is 320 mm shorter. Distillation capacity remains the same. This is ideal in laboratories for hood applications or where height is restricted.
A: includes one descending condenser, one expansion vessel, one 20 l evaporating flask, one 10 l receiving flask, and is recommended for all solvents that tend to splash or foam.
AC: includes one descending condenser, one expansion vessel, one 20 l evaporating flask, two 10 l receiving flasks, and is recommended for all solvents that tend to splash or foam.
A2: includes one ascending and one descending condenser, one expansion vessel, one 20 l evaporating flask, one 10 l receiving flask, for low-boiling solvents and highest recovery rates.
A2C: includes one ascending and one descending condenser, one expansion vessel, one 20 l evaporating flask, two 10 l receiving flasks, for low-boiling solvents and highest recovery rates.

Laborota 20 control compact: Standard version.

Laborota 20 control safety: Version with implosion/explosion protection.

- Evaporation flask in safety coated glass
- Guard hood with transparent plastic covering the entire glassware assembly

Laborota 20 control automatic: Large scale evaporator designed for unattended use. The required product (solvate) is automatically re-filled and the condensate drained off. Self-filling water bath and electronic system allows for use over an unlimited time.

- For unattended overnight and weekend applications
- Affordable alternative to 50 and 100 l evaporators

Both models have identical specifications but only the Laborota 20 safety comes with these safety features:

- Metal frame and safety glass guard hood covering the bath
- High-impact PMMA door covering the glassware assembly
- High-impact PMMA latching doors which cover the receiving flask cassettes

Model	Temperature range (°C)	Rotation speed (min^{-1})	Evaporating rate (ml)	Heating capacity (W)	Bath capacity (l)	W×D×H (mm)	Protection class DIN EN 60529
Laborota 20 control compact							
Laborota 20 control compact / safety / automatic	20...180 ±1	6 - 160	3400 water/h	4000	24	1000×700×1580	IP 20
Laborota 20 control safety							
Laborota 20 control compact / safety / automatic	20...180 ±1	6 - 160	3400 water/h	4000	24	1000×700×1580	IP 20
Laborota 20 control automatic							
Laborota 20 control compact / safety / automatic	20...180 ±1	6 - 160	3400 water/h	4000	24	1000×700×1580	IP 20

Type	Pk	Cat. No.
Laborota 20 control compact		
Laborota 20 control compact R	1	**531-3431**
Laborota 20 control compact RC	1	**531-3432**
Laborota 20 control compact A	1	**531-3433**
Laborota 20 control compact A2	1	**531-3434**
Laborota 20 control compact AC	1	**531-3435**
Laborota 20 control compact A2C	1	**531-3436**
Laborota 20 control compact R Shorty	1	**531-3106**
Laborota 20 control compact RC Shorty	1	**531-3107**
Laborota 20 control safety		
Laborota 20 control safety RC	1	**531-3412**
Laborota 20 control safety A	1	**531-3413**
Laborota 20 control safety A2	1	**531-3414**
Laborota 20 control safety AC	1	**531-3415**
Laborota 20 control safety A2C	1	**531-3416**
Laborota 20 control safety R Shorty	1	**531-3108**
Laborota 20 control safety RC Shorty	1	**531-3109**

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Type	Pk	Cat. No.
Laborota 20 control automatic		
Laborota 20 A safety	1	**531-3110**
Laborota 20 A economy	1	**531-3111**

Description	Capacity (ml)	Pk	Cat. No.
Flasks for Laborota 20 control			
Evaporating flask	6000	1	**531-3101**
Evaporating flask	10000	1	**531-3462**
Evaporating flask	20000	1	**531-3461**
Powder evaporating flask	10000	1	**531-3464**
Powder evaporating flask	20000	1	**531-3463**
Accessories			
Vacuum valve	-	1	**531-3482**
Vacuum sensor	-	1	**531-3481**
Vacuum pump, for Laborota 20 control	-	1	**531-1019**
Flask clamp for glass-set R, S40/41	-	1	**531-1001**
Coupling, large for Laborota 20	-	1	**531-1002**
Coupling, large for Laborota 20 control	-	1	**531-1006**
Temperature sensor for boiling point	-	1	**531-3484**
Condenser, T auto, for glass-set R	-	1	**531-1008**
Elbow, glass-set-A control	-	1	**531-1009**
Distributor, to expansion vessel	-	1	**531-1010**
Distributor with valve	-	1	**531-1017**
Inlet tube with valve for glass-set (LR 20)	-	1	**531-1018**
Tubing set for Laborota 20, 5 m vacuum tubing, 9 m water tubing and connectors	-	1	**531-3467**
Base for Laborota 20	-	1	**531-3491**
Base for Laborota 20 Economy	-	1	**531-1020**
Software, LR 20, for saving all process data in a digital file	-	1	**531-1021**

Rotary evaporator, Rotavapor® R-210

Büchi

Rotavapor® R-210 rotary evaporator for rapid and complex distillation of all types of solvents. Works with evaporator flasks of 50 to 4000 ml. The R-210 is equipped with a new watertight system, an electric lifting and lowering device and automatic lifting of the evaporator flask in the event of a power failure.

- Electronically adjustable speed
- Heating bath designed to heat water or oil within a temperature range of +20 to +180 °C
- Heating bath comes with a digital temperature display fitted as standard

Rotavapor® R-210 Advanced

The R-210 Advanced comes with a V-850 vacuum controller that is used to control a V700 or V710 pump and which has a timer function and program memory. Rotating and lifting can be controlled by the controller. The integrated library containing 43 solvents, which can be updated via USB, facilitates fast and efficient evaporation.

Rotavapor® R-210 Professional*

The R-210 Professional includes the V-855 vacuum controller. You can choose different settings, such as continuous vacuum, pressure gradients, timer functions or complete automatic distillation. Integrated EasyVac and LabVac functions. Rotating and lifting can be controlled. The integrated library containing 43 solvents, which can be updated via USB, facilitates fast and efficient evaporation. Please contact your local VWR sales office for details.

*The valve unit (181-0140) or the Woulff bottle (181-0141) (to be used with a V-700 or V-710 vacuum pump) are available as optional extras.

Glassware

Glassware A, diagonal condenser: For standard distillations, can be used in a confined space, evaporator flask feed

Glassware V, vertical condenser: For standard distillations, evaporator flask feed, connection for vapour temperature sensor, automatic distillation possible with the V-855 vacuum controller

Glassware C, dry ice condenser: For distilling solvents with low boiling points, evaporator flask feed, no cooling liquid necessary

Glassware S, vertical condenser with shut-off valve: For standard distillations, evaporator flask feed, connection for vapour temperature sensor, automatic distillation possible with V-855 vacuum controller

Glassware E, descending condenser with expansion vessel: Ideal for distilling substances that have a tendency to foam and that take a long time to reach boiling point, evaporator flask feed, connection for vapour temperature sensor

Glassware BY, intensive condenser: Vertical condenser with double mantle, additional joint on the top of the condenser to allow expansion, evaporator flask feed, connection for vapour temperature sensor

Ordering information: Supplied complete and ready to use with 1000 ml receiving flask, 1000 ml evaporating flask and heating bath.
Please note: A vacuum source, vacuum check valve and cooling system are required but not supplied. Please contact your local VWR sales office for advice and details.

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Model	Rotation speed (min^{-1})	Heating capacity (W)	W×D×H (mm)
Glassware V, vertical condenser			
R-210	20 - 280	1300	550×415×575
Glassware A, diagonal condenser			
R-210	20 - 280	1300	550×415×575
Glassware C, dry ice condenser			
R-210	20 - 280	1300	550×415×575

Type	Glassware	Pk	Cat. No.
Glassware V, vertical condenser			
R-210 Basic	standard	1	**531-0100**
R-210 Advanced	standard	1	**531-0248**
R-210 Advanced, with Woulff bottle for vacuum controller	standard	1	**531-0101**
R-210 Professional	standard	1	**531-0269**
R-210 Basic	coated*	1	**531-0103**
R-210 Advanced	coated*	1	**531-0253**
R-210 Advanced Pack with V-850 vacuum controller, V-700 pump, heating bath, Woulff bottle, tubing and cables	coated*	1 KIT	**531-0850**
R-210 Advanced, with valve unit for vacuum controller	coated*	1	**531-0924**
R-210 Professional	coated*	1	**531-0273**
R-210 Professional, with Woulff bottle for vacuum controller	coated*	1	**531-0105**
Glassware A, diagonal condenser			
R-210 Basic	standard	1	**531-0089**
R-210 Advanced	standard	1	**531-0247**
R-210 Professional	standard	1	**531-0268**
R-210 Basic	coated*	1	**531-0129**
R-210 Advanced	coated*	1	**531-0252**
R-210 Professional	coated*	1	**531-0272**
Glassware C, dry ice condenser			
R-210 Basic	standard	1	**531-0092**
R-210 Advanced	standard	1	**531-0249**
R-210 Professional	standard	1	**531-0270**
R-210 Basic	coated*	1	**531-0093**
R-210 Advanced	coated*	1	**531-0254**
R-210 Professional	coated*	1	**531-0274**

Description	Pk	Cat. No.
Accessories		
Evaporating flasks, pear-shaped, NS 29/32, 1000 ml	1	**531-1815**
Clip for receiving flask S35	1	**531-0920**
Two-way valve 24 VDC for R-114	1	**531-1326**
Reitmeyer adapter, NS 29/32	1	**531-0921**
Condenser V, for evaporation systems	1	**531-0922**
Vacuum gasket WD26	1	**531-0238**
Vapour duct short complete NS 29/32	1	**531-0183**

* With transparent plastic coating

Rotary evaporators, Rotavapor® R-100 Essential

Büchi

The R-100 Essential is available as a stand-alone unit or as a complete ready to use kit. The Essential Solution kits provide an economical and complete high-end evaporation solution. The kits include a Rotavapor® R-100 evaporator, a regulated vacuum pump (V-100), an interface (I-100) and an optional chiller (F-100) to cover all the main evaporation applications efficiently.

- Combi-clip prevents the loosening of the flask during rotation
- Vapour duct is easily removed from the drive to allow easy cleaning of the sealing system with no risk of the glass breaking
- Small footprint saves valuable lab space and resources thanks to the centrally integrated system
- Reproducible yields are achievable thanks to the stability of the integrated heating bath, vacuum pump and chiller
- Powerful heating bath accepts flasks up to 4 l in size and has a digital readout of the current temperature
- Plastic coated glass (P+G) for added safety (V glassware only); all glassware with standard SJ 29/32 joint

The **V-100 vacuum pump** is an economical solution, designed to meet essential needs. Its compact and lightweight design is matched by its reliability.

The **F-100 recirculating chiller** eliminates the need for water cooling and therefore conserves energy usage.

The **I-100 interface** connects all of the components of the system to ensure a smooth and safe operation.

Glassware C: Dry ice condenser for distilling solvents with low boiling points, P+G coated glassware.

Glassware V: Vertical condenser for standard distillations, uncoated glassware.

Delivery information: R-100 is available as a stand-alone unit including glassware only or as a Essential Solution kit including glassware, vacuum pump, interface and optional chiller.

Model	R-100
Temperature range (°C)	20...95
Rotation speed (min^{-1})	20 - 280
Heating capacity (W)	1300
Vacuum	< 10 mbar (with V-100 pump)
Bath capacity (l)	4
W×D×H (mm)	617×898×502

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Type	Glassware	Pk	Cat. No.
R-100 stand-alone unit, glassware C	coated*	1	**531-0933**
R-100 stand-alone unit, glassware V	standard	1	**531-0935**
R-100 Essential Solution kit, glassware C	coated*	1	**531-0932**
R-100 Essential Solution kit, glassware V	standard	1	**531-0934**
R-100 Essential Solution kit incl. chiller, glassware V	standard	1	**531-0936**

* With transparent plastic coating

Recirculating chillers, RC-10 range

RC-10 Basic

RC-10 Digital

RC-10 Duo

VWR recirculating chillers are ideal for use with rotary evaporators, as they ensure constant, reproducible cooling conditions and avoid wasting tap water thereby increasing cost savings. Designed to be user friendly, the units have an easily accessible filling port on top of the unit and a drain tap at the back. The chillers have a stainless steel reservoir, operate using R134 refrigerant and can be used in the permitted ambient temperature range of 15 to 32 °C.

- Temperature set point can be adjusted by using the keys on the command panel (except the Basic model which has a fixed set point at 7 °C)
- The Duo chiller can cool two cooling cycles directly connected on the double outlets and inlets
- Regulate the temperature of the cooling cycle between –10 °C and +40 °C (use water and glycol mixture (70:30 mixture) for temperatures below +5 °C)
- Indicator on front panel for perfect visualisation of liquid level

Max. flow rate (with no counter pressure)/max. pressure (at zero flow)
RC-10 Basic 14 l/min, 0,4 bar
RC-10 Digital 8 l/min, 0,6 bar
RC-10 Duo 11 l/min, 1,0 bar

Delivery information: Basic and Digital units supplied with 2× 8 Ø mm hose connections, 2× screw nuts M 16 × 1, 2× PVC hose (1500 mm) and 2× hose clamps, Duo models have four of each of these. Include EU, UK and CH power cables.

Type	Temp. range (°C)	Temp. stability	Cooling capacity (kW)	Capacity (l)	W×D×H (mm)	Pk	Cat. No.
RC-10 Basic	7*	±2 K	0,5	3,5	280×360×520	1	**462-0137**
RC-10 Digital	–10...+40	±0,5 K	0,5	3,5	280×370×490	1	**462-0138**
RC-10 Duo	–10...+40	±0,5 K	0,95	3,5	350×420×600	1	**462-0139**

* Fixed
Note: Cooling capacity at +15 °C

Circulating chiller, Rotacool
Heidolph

Unique chiller designed specifically for rotary evaporators.

- Requires minimal bench space due to 'L' shape design
- Small quantity of circulating coolant required due to innovative technology

Small footprint of only 470×580 mm

Cooling capacity up to 400 W

Operating temperature range from –10 to +40 °C, ±0,5 °C

CFC-free

Description	Pk	Cat. No.
Rotacool, UK-plug	1	**531-0378**

Recirculating chillers, F-100 / F-108 / F-114 / F-125

Büchi

F-100

F-114

F-125

The F-series chillers provide the final step to a fully integrated evaporation or distillation process, leading to several key benefits:

- Up to 75% less energy consumption
- Reduced heat emission
- Easy handling and mobility
- Optimised distillation capacity
- Increased process safety due to communication of all connected instruments

F-100: Cost effective, small recirculating chiller that fulfils the basic cooling requirements. The perfect replacement of tap water chilling with small distillation instruments. It cools to a fixed temperature of 10 °C and is ideal for use with one rotary evaporator.

F-108: Powerful alternative to the F-100. The chiller is capable of cooling to -10 °C. At 15 °C the F-108 provides 800 W cooling capacity. If connected to one rotary evaporator it is possible to keep the temperature at 0 °C when performing a normal distillation.

F-114: Ideal when very low temperatures are required for single or multiple units. At 15 °C the F-114 provides a powerful 1400 W cooling capacity and ultimately cools to a final temperature of -10 °C.

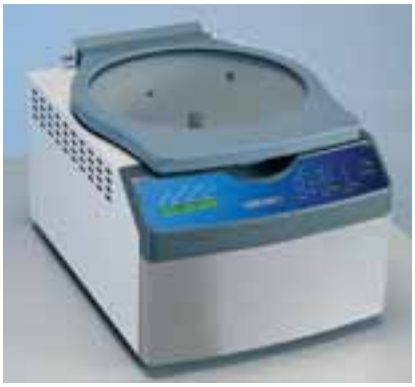
F-125: A powerful industrial chiller with a cooling capacity of 2500 W at 15 °C and an integrated trolley for use with the Rotavapor® R-220 SE industrial rotary evaporator.

Model	F-100	F-108	F-114	F-125
Cooling power (W)	500	800	1400	2500
Temperature range (°C)	10 (fixed)	–10...+25	–10...+25	
Weight (kg)	29	40	42	100
W×D×H (mm)	280×400×500	400×500×580	400×500×660	540×650×990

Description	Pk	Cat. No.
Recirculating chiller F-100, 230 V	1	**531-0858**
Recirculating chiller F-108, 230 V	1	**531-0923**
Recirculating chiller F-114, 230 V	1	**531-0859**
Recirculating chiller F-125, 230 V	1	**531-0860**

Centrifugal concentrators, bench top, CentriVap®

Labconco



CentriVap® vacuum concentrators are available in a range of configurations. The CentriVap® DNA model is supplied with a built-in 34 litres/min diaphragm pump, two 177 ml glass traps and a DNA rotor (60× 1,5/2,0 ml and 72× 0,5 ml). Model with glass lid is recommended for evaporation of solvents that are not compatible with acrylic (acetone, acetonitrile, ethanol, DMSO, etc.). The acid resistant model is recommended for corrosive solvents (TFA, acetic acid, etc.).

- Powder-coated aluminium chamber; PTFE-coated aluminium chamber with Hastelloy shaft for acid resistant model
- Centrifugation, controlled by microprocessor, up to 1725 min^{-1} and heating, controlled by microprocessor, up to +100 °C
- Control panel with on/off button, pre-heating button, optional Heat Boost button, parameter setting, three Quick-Start™ buttons and Quick-Stop™ system
- Automatic vacuum release valve
- Wide LCD screen displaying the program number, current and recommended temperature, heating time, cycle time and optional Heat Boost activation

Ordering information: Vacuum pump, rotor and cold trap are required but not included (except for the CentriVap® DNA). Please contact your local VWR sales office to discuss your application and receive advice on the best pump, rotor and trap options. Other concentrator models are available, please enquire for details.

Model	CentriVap®, standard	CentriVap®, acid resistant	CentriVap® DNA
Max. speed (min^{-1})	1725		
Max. power absorbed (W)	300		
Max. vacuum (mbar)	Depending on selected pump		7
Alarm	Audible alarm indicates end of cycle		
Memory	1 - 9 programs		

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Cycle time (min)	1 - 999		
Heating	From Off to HI (+100 °C) in increments of 1 °C		
Heating time (min)	1 - 999		
Weight (kg)	19	20	36
W×D×H (mm)	373×490×296 mm	373×490×297 mm	383×724×284 mm

Description	Pk	Cat. No.
CentriVap® bench top centrifugal concentrator, with acrylic lid, UK-plug	1	**531-0964**
CentriVap® bench top centrifugal concentrator, with acrylic lid and Heat Boost, UK-plug	1	**531-0965**
CentriVap® bench top centrifugal concentrator, with glass lid, UK-plug	1	**531-0966**
CentriVap® bench top centrifugal concentrator, acid-resistant, UK-plug	1	**531-0967**
CentriVap® bench top centrifugal concentrator, DNA, UK-plug	1	**531-0968**

Rotors and accessories for CentriVap® concentrators
Labconco

Hexagonal rotor

Rotor 12-17 mm

Description	Pk	Cat. No.
Hexagonal rotor, anodised aluminium, 132 holes for 1,5/2,0 ml microcentrifuge tubes	1	**531-0158**
12 - 17 mm rotor, 52 holes for 13×51 mm tubes and 24 holes for 16×100 mm tubes	1	**531-0159**
12 - 13 mm rotor, 40 holes for 1,5 ml microcentrifuge tubes, 16 holes for 12×55 mm tubes, and 92 holes for 12×75 mm tubes	1	**531-0160**
28 mm rotor, 32 holes for 1,5 ml microcentrifuge tubes and 12 holes for 28×140 mm tubes	1	**531-0161**
DNA rotor, 60 holes for 1,5 ml and 72 holes for 0,5 ml microcentrifuge tubes	1	**531-0163**
CentriZap® strobe light, incl. mounting holster and hardware for attachment to the right side of the CentriVap®	1	**531-0164**

Vacuum evaporation systems, RapidVap®
Labconco

Ideal for preparation of samples in a variety of applications including drug discovery, agrichemistry, mycology testing and environmental analysis. The systems use vacuum along with heat and vortex motion to help speed evaporation and provide an alternative to traditional centrifugal evaporation methods. These systems may be used with a broad range of aggressive chemicals. Heat is supplied by a dry block heating system that, unlike water baths, adds no potential source of contamination and requires no maintenance.

The RapidVap® can accommodate seven different, interchangeable accessory sample blocks holding sample volumes from just a few millilitres to as large as 450 millilitres. As many as 110 each of 12 or 13 mm tubes may be loaded at once. Additional blocks accommodate various tube types including conical centrifuge tubes and scintillation vials.

- Fast evaporation rates; water evaporates at a rate up to 0,75 ml/minute/tube
- Microprocessor controlled 1000 W dry block heating system up to +100 °C
- Microprocessor controlled vacuum level speeds evaporation
- Maintenance-free, microprocessor controlled motor provides smooth variable power, to drive the vortex motion up to 1000 min^{-1}

PTFE-coated aluminium chamber

Glass lid with Lexan® shield

Up to nine different user-set programs, each with different parameter set points, may be stored in memory

Parameters of time, heat, vortex speed and vacuum may be set

Easy to read LCD display

Delivery information: Requires vacuum pump, block and glassware. Please contact your local VWR sales office for details of suitable vacuum pumps.

Description	Pk	Cat. No.
RapidVap®, standard	1	**531-0171**
RapidVap®, with lid heater	1	**531-0172**
RapidVap®, standard with RS232	1	**531-0219**
RapidVap®, with lid heater and RS232	1	**531-0220**

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Description	Pk	Cat. No.
Accessories		
Glass lid with heater	1	**531-0205**
Stainless steel rack for 8 tubes of 170 ml	1	**531-0203**
Stainless steel rack for 8 tubes of 600 ml	1	**531-0206**
PTFE-coated aluminium block for 110 tubes Ø 13 mm, max. height 150 mm	1	**531-0202**
PTFE-coated aluminium block for 8 tubes of 170 ml	1	**531-0204**
PTFE-coated aluminium block for 110 tubes Ø 12 mm, max. height 150 mm	1	**531-0207**
PTFE-coated aluminium block for 110 tubes Ø 16 mm, max. height 150 mm	1	**531-0208**
PTFE-coated aluminium block for 8 tubes of 600 ml	1	**531-0209**
PTFE-coated aluminium block for 69 conical tubes of 15 ml	1	**531-0210**
PTFE-coated aluminium block for 26 scintillation tubes Ø 278 mm, max. height 150 mm	1	**531-0211**
Flat bottom tube borosilicate glass 600 ml	8	**531-0221**
Flat bottom tube borosilicate glass 170 ml	8	**531-0222**
Dry ice vacuum trap Ø×H: 200×248 mm	1	**531-0212**
Chemical trap canister, PP with stand	1	**531-0227**

Evaporation system, RapidVap® N_2
Labconco

An efficient, automatic evaporator system which can be used with a broad range of aggressive chemicals. In RapidVap N_2 systems, a stream of nitrogen or dry gas is directed downward onto the surface of the sample. Nitrogen blow-down reduces the partial pressure directly over the liquid to speed evaporation and help remove the solvent as it evaporates. Nitrogen may be programmed for 2, 4, 6 or all 8 tube locations. Vortex motion and dry heat may also be applied to further accelerate processing.

The block holds eight large samples, up to 450 ml each, making it efficient for environmental and residue testing. An accessory block that holds eight 170 ml tubes suitable for solid phase extraction is also available. In many of these applications, the samples should not go to dryness. The unique Cool-Zone™ block and tube design significantly reduces the evaporation rate after end point is achieved. The Cool-Zone™ insulates the samples and allows the researcher adequate time before the samples reach dryness to remove them or to perform solvent exchange procedures.

- Fast evaporation rates; water evaporates at a rate up to 1,1 ml/minute/tube
- Microprocessor controlled nitrogen blow down manifold introduces nitrogen to 2, 4, 6 or 8 individual sample tubes
- Microprocessor controlled 1000 W dry block heating system up to +100 °C
- Microprocessor controlled vacuum level speeds evaporation
- Maintenance-free, microprocessor controlled motor provides smooth variable power to drive the vortex motion up to 500 min^{-1}

PTFE-coated aluminium chamber and sample block for 8 tubes of 600 ml (with 450 ml sample size)

Glass lid

Up to nine different user-set programs, each with different parameter set points, may be stored in memory

Parameters of time, heat, vortex speed, vacuum may be set and number of active nitrogen positions may also be set

Easy-to-read LCD display

Ordering information: Requires nitrogen (with a maximum flow rate of 0,6 CFM), gas pressure regulator and glassware.

Description	Pk	Cat. No.
RapidVap® N_2 evaporation system	1	**531-0173**

The RapidVap® N_2 evaporation system is also available with RS232 interface connection. Please contact your local VWR sales office for details and also for details of the range of accessory blocks.

Vacuum concentrator kits, Savant™ SpeedVac® SPD131
Thermo Scientific

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The **SPD131DDA P1** concentrator kit is recommended for solid phase extractions, drying lipid extractions, flash chromatography fractions and for solid phase synthesis cleavage solutions such as protein hydrolyzates and evaporating synthesis solids.

The **SPD131DDA P2** concentrator kit is recommended for compound management and for evaporating dissolution solvents.

- Deep aluminum standard PTFE-coated chamber, safety cover lock, radiant lamps within the chambers
- Two valve manifold with built-in automatic bleeder valve
- Time/temperature display incorporating membrane switch
- Variable drying times from 35 to 80 °C in five degree increments
- Manual/auto timed run
- Built-in vacuum gauge and vacuum display
- Radiant glass safety cover improves drying time for applying radiant IR heat to samples
- Endpoint mode terminates run when pre-set vacuum level is reached
- Wider vapour port and tubing for enhanced vapour throughput: Reduces drying times
- Adjustable vacuum level for preventing bumping of difficult solvent mixtures and optimising drying times

Model	SPD131DDA P1	SPD131DDA P2
Solvents and solvent combinations	Acetic acid Ammonium hydroxide Formic acid Hydrochloric acid TFA Methylene chloride and TFA Acetone and HCL Methylene chloride and MEOH DMSO and methanol	DMSO DMF Toluene
Kit contents	SpeedVac® concentrator, acid-resistant Ultra-low temperature refrigerated trap (–104 °C) OFP400 oil-free ETFE/PFA 4-headed pump Rotor for glass tubes (40×12×75 mm) Glass condensation flask Tubing and fitting kit CryoCool heat transfer fluid (1 l)	SpeedVac® concentrator, acid-resistant Refrigerated trap (–5 °C) Vacuum pump Chemical trap Tubing kit Disposable cartridge Glass condensation flask Vacuum pump lubricating oil CryoCool heat transfer fluid (1 l)

Model	SPD131DDA P1	SPD131DDA P2
Temperature (°C)	–104	–5
Max. capacity	40 × glass tubes (12×75 mm)	24 × 1 Dram vials (15×45 mm)
Max. vacuum (mbar)	0,1 - 26,6	
Timer	Manual/Auto	
Heat range	35 - 80 °C	
Weight (kg)	159	
W×D×H (mm)	2083×813×864	

Description	Pk	Cat. No.
Vacuum concentrator kit SPD131DDA P1, 230 V	1	**531-0930**
Vacuum concentrator kit SPD131DDA P2, 230 V	1	**531-0937**

Vacuum concentrator kits, Savant™ SpeedVac® SPD1010/SPD2010 and SC210

Thermo Scientific

These concentrators contain all required components for HPLC fractions with water/0,1% trifluoroacetic acid and reversed-phase SPE eluants applications. Model SPD1010 is suitable for capacities up to 100 ml and model SPD2010 for capacities up to 500 ml.

SPD1010/SPD2010

- Standard PTFE-coated chamber, standard glass safety lid
- Radiant cover for chemical resistance and added heat source (enhanced drying times)
- Digital display for viewing and setting parameters (time, temperature vacuum)
- Vacuum control for vacuum ramping and ultimate level setting to optimise drying times and eliminate bumping of different solvent mixtures
- Dual timers for independent control of heater and run time
- Oil-free vacuum source, eliminating the need to add/change oil

SC210

- PTFE-coated chamber provides long lasting durability against harsh solvents
- Three selectable heating levels to optimise evaporation
- Automatic bleeder valve automatically provides vacuum at the beginning of a run and bleeds chamber to atmospheric pressure at the end of a run

Model	SPD1010	SPD2010	SC210
Solvent and solvent combinations	Acetonitrile Ethanol Methanol Methylene chloride Water Acetonitrile and water Methanol and water	Acetonitrile Ethanol Methanol Water Acetonitrile and water Ethanol and water Methanol and water	Acetonitrile Methanol Ethanol Water

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Kit content	Integrated SpeedVac® system with concentrator Oil-free vacuum pump and cold trap (–50 °C) 40×1,5 ml rotor Vacuum gauge CryoCool heat transfer fluid (1 l)	Integrated SpeedVac® system with concentrator Oil-free vacuum pump and cold trap (–50 °C) 200×1,5 ml rotor Vacuum gauge CryoCool heat transfer fluid (1 l)	High-capacity SpeedVac® 210A concentrator Oil-free vacuum pump and cold trap (–104 °C) 200×1,5 ml rotor Vacuum gauge Universal tubing package Chemical trap Disposable cartridge, glass condensation flask CryoCool heat transfer fluid (1 l)

Model	SPD1010 P1	SPD2010 P1	SC210 P1
Temperature (°C)	–50		–104
Max. capacity	40 × 1,5 ml	200 × 1,5 ml	
Timer	Dual (heater/run time)		-
Weight (kg)	86		46
W×D×H (mm)	889×813×1016		2083×813×864

Description	Pk	Cat. No.
Vacuum concentrator kit SPD1010 P1	1	**531-0928**
Vacuum concentrator kit SPD2010 P1	1	**531-0931**
Vacuum concentrator kit SC210	1	**531-0927**

Vacuum concentrators, Savant™ DNA SpeedVac® DNA120 and ISS110

Thermo Scientific

These concentrators are designed specifically for DNA and RNA applications. The compact, fully-integrated systems support the rapid and efficient concentration and drying of DNA/RNA samples (in water/ethanol or isopropanol), nucleic acids, PCR preps and synthetic oligos. The ISS110 concentrator is ideal for higher-volume applications, offering an integrated cold trap for rapid evaporation. The DNA120 is a very small unit – saving precious bench space.

- Three drying rates: ambient, 43 °C, 65 °C
- Oil-free diaphragm pump provides gentle transition from atmosphere to ultimate vacuum setting with no bumping
- PTFE-coated chamber resists chemicals and is easy to clean
- Acrylic lid, incl. safety interlock
- Model DNA120: Real-time LED display of time and dual digital timers for independent control of heat/run times

DNA120 includes:
DNA concentrator with integrated pump
RD36 rotor for 36×1,5 ml microtubes

ISS110 includes:
Basic integrated concentrator with built-in 4 l cold trap (–50 °C)
64×1,5 ml rotor
CryoCool heat transfer fluid (1 l)

Model	DNA120	ISS110
Solvents and solvent Combinations:	PCR buffers (aqueous) Water Ethanol and water	PCR buffers (aqueous) Ethanol and water Isopropanol

Model	DNA120	ISS110
Temperature (°C)	-	–50
Max. capacity	36 × 1,5 ml	64 × 1,5 ml
Max. power absorbed (W)	1150	
Timer	1 min - 10 h	-
Heat range	Ambient, 43 °C, 65 °C	
Sound level dB(A)	<65	
Weight (kg)	39	69
W×D×H (mm)	290×630×290	620×660×380

Description	Pk	Cat. No.
Vacuum concentrator DNA120, with rotor	1	**531-0925**
Vacuum concentrator ISS110, with rotor	1	**531-0926**

Rotary evaporating flasks
Lenz

DURAN®, borosilicate glass, clear or plastic-coated

NS 29/32 standard ground joint socket, pear-shaped, centre neck, thick-walled. Suitable for all standard rotary evaporators; with white labelling area.

- Very good chemical resistance
- High temperature resistance
- Minimal thermal expansion, giving relatively high resistance to temperature changes

Capacity (ml)	Pk	Cat. No.
Uncoated		
50	1	**201-0323**
100	1	**201-0324**
250	1	**201-0325**
500	1	**201-0326**
1000	1	**201-0327**
2000	1	**201-0328**
3000	1	**531-9127**
Coated		
50	1	**531-0831**
100	1	**531-0832**
250	1	**531-0833**
500	1	**531-0834**
1000	1	**531-0828**
2000	1	**531-0829**
3000	1	**531-0830**

Rotary evaporator receiving flasks
Lenz

531-0827

531-9145

DURAN®, borosilicate glass, clear or plastic-coated

Spherical joint KS 35/20, centred, suitable for all rotary evaporators.

- Very good chemical resistance
- High temperature resistance
- Minimal thermal expansion, giving relatively high resistance to temperature changes

Capacity (ml)	Pk	Cat. No.
Uncoated		
100	1	**531-9142**
250	1	**531-9143**
500	1	**531-9144**
1000	1	**531-9145**
2000	1	**531-9146**
Coated		
100	1	**531-0825**
250	1	**531-0826**
500	1	**531-0827**
1000	1	**531-0821**
2000	1	**531-0822**
3000	1	**531-0823**
4000	1	**531-0824**

Rotary evaporating flasks
Büchi

For Rotavapor® R-210/215 rotary evaporators. Pear-shaped with NS 29.2/32 ground joint socket.

Capacity (ml)	Pk	Cat. No.
50	1	**531-1811**
100	1	**531-1812**
250	1	**531-1813**
500	1	**531-1814**
1000	1	**531-1815**
2000	1	**531-1816**
3000	1	**531-1817**

Rotary evaporating flasks
SciLabware

PYREX®, borosilicate glass

Ideal for use with rotary evaporators. Large surface area for rapid evaporation. Robust heavy wall construction for added strength. Florentine shape allows easy removal of solid residues.

- Very good chemical resistance
- High temperature resistance
- Minimal thermal expansion giving relatively high resistance to temperature changes

Capacity (ml)	Socket size (NS)	Total height (mm)	Pk	Cat. No.
50	29/32	94	1	**201-8404**
100	29/32	107	1	**201-2374**
100	24/29	108	1	**531-0741**
250	24/29	148	1	**531-0742**
250	29/32	151	1	**201-8403**
500	29/32	160	1	**201-8406**
500	24/29	165	1	**531-0743**
1000	29/32	198	1	**201-8401**
1000	24/29	204	1	**201-8400**
2000	29/32	245	1	**201-8009**

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Cylindrical separating funnels
Lenz

DURAN®, borosilicate glass, with NS-PE stopper

With socket and plain stem. Available with interchangeable solid glass key or alternatively PTFE key for grease-free performance. With graduation.

Capacity (ml)	Socket size (NS)	Division (ml)	Pk	Cat. No.
With solid glass key				
50	29/32	1	1	**527-1121**
100	29/32	2	1	**527-1122**
250	29/32	5	1	**527-1123**
500	29/32	10	1	**527-1124**
1000	29/32	20	1	**527-1125**
With PTFE key				
50	29/32	1	1	**527-1101**
100	29/32	2	1	**527-1102**
250	29/32	5	1	**527-1103**
500	29/32	10	1	**527-1104**
1000	29/32	20	1	**527-1105**

Cylindrical separating funnels

PYREX®, borosilicate glass, with NS-PE stopper

With socket and plain stem. Available with interchangeable PTFE key for grease-free performance. With graduation.

- Double graduated scale showing approx. volume contained/volume dispensed
- Graduations in white enamel
- Complies to DIN ISO 4800

Capacity (ml)	Socket size (NS)	Division (ml)	Pk	Cat. No.
50	19/26	1	1	**532-0068**
100	19/26	2	1	**532-0069**
250	19/26	5	1	**532-0070**
500	24/29	10	1	**532-0071**

Conical separating funnels
Lenz

DURAN®, borosilicate glass, with NS-PE stopper

With socket and plain stem. Available with interchangeable solid glass key or alternatively PTFE key for grease-free performance. Both with or without graduations.

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Capacity (ml)	Socket size (NS)	Division	Pk	Cat. No.
Without graduation, with solid glass key				
50	19/26	-	1	**527-1131**
100	19/26	-	1	**527-1132**
250	29/32	-	1	**527-1133**
500	29/32	-	1	**527-1224**
1000	29/32	-	1	**527-1134**
2000	29/32	-	1	**527-1135**
Without graduation, with PTFE key				
50	19/26	-	1	**527-1136**
100	19/26	-	1	**527-1137**
250	29/32	-	1	**527-1138**
500	29/32	-	1	**527-1139**
1000	29/32	-	1	**527-1140**
2000	29/32	-	1	**527-1141**
With graduation and solid glass key				
50	19/26	2	1	**527-1221**
100	19/26	5	1	**527-1222**
250	29/32	10	1	**527-1223**
500	29/32	10	1	**527-1214**
1000	29/32	20	1	**527-1225**
2000	29/32	50	1	**527-1226**
With graduation and PTFE key				
50	19/26	2	1	**527-1201**
100	19/26	5	1	**527-1202**
250	29/32	10	1	**527-1203**
500	29/32	10	1	**527-1204**
1000	29/32	20	1	**527-1205**
2000	29/32	50	1	**527-1206**

Conical separating funnels

PYREX®, borosilicate glass, with NS-PP stopper

With socket, PP stopper, plain stem and interchangeable PTFE key for grease-free performance. Without graduation

Capacity (ml)	Socket size (NS)	Pk	Cat. No.
50	19/26	1	**201-2366**
100	19/26	1	**201-2365**
250	19/26	1	**201-2364**
500	24/29	1	**201-2363**
1000	24/29	1	**201-2362**
2000	34/35	1	**201-2361**

Conical separating funnels

PYREX®, borosilicate glass, with glass stopper

With ground glass stopper and interchangeable solid glass key. Without graduation.

Capacity (ml)	Socket size (NS)	Pk	Cat. No.
100	19/26	1	**511-0760**
250	24/29	1	**511-0761**
500	24/29	1	**511-0762**
1000	29/32	1	**511-0763**
2000	29/32	1	**511-0764**

Separating funnels, Gilson
Lenz

DURAN®, borosilicate glass, with NS-PE stopper

With socket and plain stem. Available with interchangeable solid glass key or alternatively PTFE key for grease-free performance. Without graduation.

Capacity (ml)	Socket size (NS)	Pk	Cat. No.
With solid glass key			
50	19/26	1	**527-1501**
100	19/26	1	**527-1502**
250	29/32	1	**527-1503**
500	29/32	1	**527-1504**
1000	29/32	1	**527-1505**
2000	29/32	1	**527-0024**
With PTFE key			
50	19/26	1	**527-1506**
100	19/26	1	**527-1507**
250	29/32	1	**527-1508**
500	29/32	1	**527-1509**
1000	29/32	1	**527-1510**
2000	29/32	1	**527-0025**

Separating funnels, pear shaped

PYREX®, borosilicate glass

Available with ground glass stopper and interchangeable solid glass key. Without graduation.

Capacity (ml)	Socket size (NS)	Pk	Cat. No.
50	19/26	1	**511-0037**
100	19/26	1	**511-0754**
250	24/29	1	**511-0755**
500	24/29	1	**511-0756**
1000	29/32	1	**511-0757**
2000	34/35	1	**511-0758**
5000	34/35	1	**511-0759**

Separating funnels, pear shaped

PYREX®, borosilicate glass

With socket, PE stopper and plain stem. Available with interchangeable PTFE key for grease-free performance. Without graduation.

Complies to DIN ISO 4800

Capacity (ml)	Socket size (NS)	Pk	Cat. No.
50	19/26	1	**532-0000**
100	19/26	1	**532-0001**
250	24/29	1	**532-0002**
500	24/29	1	**532-0003**
1000	29/32	1	**532-0004**
2000	29/32	1	**532-0005**

Separating funnels, Squibb
Lenz

DURAN®, borosilicate glass, with NS-PE stopper

With socket and plain stem. Available with interchangeable solid glass key or alternatively PTFE key for grease-free performance. With or without graduations.

Capacity (ml)	Socket size (NS)	Division	Pk	Cat. No.
Without graduation, with solid glass key				
50	19/26	-	1	**527-1331**
100	19/26	-	1	**527-1312**
250	29/32	-	1	**527-1333**
500	29/32	-	1	**527-1334**
1000	29/32	-	1	**527-1335**
2000	29/32	-	1	**527-1336**
Without graduation, with PTFE key				
50	19/26	-	1	**527-1321**
100	19/26	-	1	**527-1322**
250	29/32	-	1	**527-1323**
500	29/32	-	1	**527-1324**
1000	29/32	-	1	**527-1325**
2000	29/32	-	1	**527-1326**
With graduation and solid glass key				
50	19/26	2	1	**527-1990**
100	19/26	5	1	**527-1991**
250	29/32	5	1	**527-1992**
500	29/32	10	1	**527-1993**
1000	29/32	20	1	**527-1994**
2000	29/32	50	1	**527-1995**
With graduation and PTFE key				
50	19/26	2	1	**527-1301**
100	19/26	5	1	**527-1302**
250	29/32	5	1	**527-1303**
500	29/32	10	1	**527-1304**
1000	29/32	20	1	**527-1305**
2000	29/32	50	1	**527-1306**

Separating funnels, Squibb, Nalgene®
Thermo Scientific

PPCO translucent, TFE stopcock, PP screw closure

- Leakproof closure and stopcock
- Very good chemical resistance
- Autoclavable except for stopcock assembly
- TFE stopcock requires no lubrication

Capacity (ml)	Ø Cap (mm)	Pk	Cat. No.
125	28	1	**527-0005**
250	33	1	**527-0006**
500	43	1	**527-0007**
1000	53	1	**527-0008**

Separating funnels, Squibb, Nalgene®
Thermo Scientific

FEP translucent, TFE stopcock, ETFE screw closure

Robust, transparent, non stick for easy cleaning, non wetting for complete draining and impervious to any chemical used in a separating funnel.

- Leakproof closure and stopcock
- Autoclavable except for stopcock assembly
- TFE stopcock requires no lubrication

Capacity (ml)	Ø Cap (mm)	Pk	Cat. No.
125	28	1	**527-2101**
250	33	1	**527-2102**
500	43	1	**527-2103**
1000	53	1	**527-2104**
2000	53	1	**527-2105**

Sedimentation cones, Imhoff
Brand

Borosilicate glass 3.3

DIN 12672

Graduation and inscriptions in highly contrasting white enamel.

Type	Pk	Cat. No.
Graduated up to 100 ml, ring mark at 1000 ml		
Without stopcock	1	**528-1101**
With stopcock	1	**528-1102**
Graduated up to 1000 ml		
Without stopcock	1	**528-1111**

Sedimentation cone, Imhoff
VITLAB®

Styrene-acrylonitrile (SAN), PP screw plug

- As transparent as glass
- Easy draining via screw plug

Graduation: 0 - 2 ml:0,1/ 2 - 10 ml:0,5/ 10 - 40 ml:1/ 40 - 100 ml:2/ 100 - 1000 ml:10

Description	Pk	Cat. No.
Imhoff cone, 1000 ml	1	**532-0099**

Description	Pk	Cat. No.
Support for Imhoff cones		
Holder for 2 cones, W×D×H: 300×150×294 mm	1	**528-1199**

Boiling stones
BOLA

PTFE

Prevent chemical splashes and production of big bubbles when boiling the medium. Grain size: 4 mm. Packed in resealable bag. FDA conformity.

- Temperature resistance: From –200 to +250 °C
- Durable
- Excellent chemical resistance

Pk	Cat. No.
500 g	**459-9125**

Ballotini solid soda glass balls, SiLibeads®

Ballotini solid glass balls are produced from high quality and pure soda-lime glass. The unique washing and polishing process does not involve the addition of hydrofluoric acid and thus gives the balls a pure shiny surface without contamination.

Main applications include:

- Chemical plants (where large inert areas are required) and filters, e.g. fractionating columns
- Resin filler
- Shot blasting
- Burnishing (metal finishing)
- Gas chromatography

Ø (mm)	Pk	Cat. No.
0,0-0,050	1 kg	**201-0480**
0,040-0,070	25 kg	**201-0754**
0,070-0,110	25 kg	**201-0755**
0,090-0,15	1 kg	**201-0484**
0,090-0,15	1 kg	**201-0485**
0,10-0,20	1 kg	**201-0486**
0,15-0,25	1 kg	**201-0487**
0,20-0,30	1 kg	**201-0488**
0,30-0,40	1 kg	**201-0489**
0,40-0,60	1 kg	**201-0465**
0,40-0,60	20 kg	**201-0466**
0,50-0,75	1 kg	**201-0467**
0,50-0,75	20 kg	**201-0468**
0,80-1,00	5 kg	**201-0490**
1,00-1,25	1 kg	**201-0469**
1,00-1,25	20 kg	**201-0470**
1,0-1,2	1 kg	**201-0491**
1,25-1,55	1 kg	**201-0471**
1,55-1,85	1 kg	**201-0472**
1,70-2,00	1 kg	**459-9131**
1,70-2,00	20 kg	**201-0473**
1,80-2,20	20 kg	**201-0475**
2,70-3,30	1 kg	**459-9132**
2,70-3,30	20 kg	**201-0476**
2,85-3,30	20 kg	**201-0474**
3,70-4,30	1 kg	**459-9133**
4,70-5,30	1 kg	**459-9134**
5,70-6,30	1 kg	**459-9135**
6,70-7,30	1 kg	**201-0477**
7,60-8,40	1 kg	**459-9136**
8,60-9,40	1 kg	**201-0478**
9,50-10,50	1 kg	**459-9137**
10,50-11,50	1 kg	**201-0479**
11,50-12,50	1 kg	**459-9138**

Freeze drying systems, FreeZone®

Labconco

Benchtop model 4,5 l

Console model 4,5 l

Designed to handle the lyophilisation needs of research laboratories. Collectors that reach –50 °C are available with capacities from 1 to 18 litres. Cascade systems in 2,5, 4,5, 6 and 12 litre collector capacities that reach –84 °C are ideal for freeze drying samples with low eutectic temperatures. The FreeZone® –105 °C bench top freeze dryer systems are suitable for samples with very low eutectic points including ones containing small amounts of methanol or ethanol.

- Automatic start-up; pressing one button initiates collector refrigeration and vacuum
- LCD screen for easy to read digital readouts of vacuum, temperature and service information
- RS232 port (on all models except FreeZone® 1 litre systems) simplifies connection to a personal computer

Lighted graphs (on all models except FreeZone® 1 litre systems) display amber then green, to indicate when temperature and vacuum levels are right for adding samples.

The 2,5, 4,5 and 6 litre freeze dry systems feature an automated valve for pressure regulation to help accelerate sublimation.

The audible/visual alarm alerts the user to abnormal system events. Alarm messages are displayed on the LCD.

The upright collector chamber makes defrosting easy. All models may be manually defrosted by pouring water into the upright chamber to melt the collected ice. A collector drain hose allows convenient emptying of the melted ice. Larger systems feature hot gas defrost.

Moisture sensor (on all models except FreeZone® 1 litre systems) protects the vacuum pump by preventing refrigeration or vacuum start-up when moisture is detected in the collector chamber.

Vacuum break valve (on all models except the FreeZone® 1 litre systems) protects the system from oil backstreaming during power outages.

Ordering information: Other models, including versions with PTFE coated collectors, and a broad range of accessories including shelves and heated shelves are available, please contact VWR for more information.

Delivery information: Supplied with 3/4" ID vacuum hose and two clamps but without pump and accessories.

Delivery information: The FreeZone® –105 °C bench top freeze dry systems have ice holding capacity of 4,5 litres and have 2× 1/3 hp refrigeration systems. They are supplied with a 12-port stainless steel drying chamber.

Type	Ice capacity (l)	Drying capacity max. (litres/24 hr)	W×D×H (mm)	Pk	Cat. No.
FreeZone® freeze dry systems, –50 °C					
FreeZone® 1 bench top, without chamber, UK-plug	1	1	305×454×423	1	**535-0101**
FreeZone® 2,5 bench top, without chamber, UK-plug	2,5	2	305×454×423	1	**535-0093**
FreeZone® 4,5 bench top, with permanently installed 10-port stainless steel drying chamber and stainless steel collector chamber and coil, UK-plug	4,5	>2	457×470×572	1	**535-0102**
FreeZone® 4,5 console, with permanently installed 10-port stainless steel drying chamber and stainless steel collector chamber and coil, UK-plug	4,5	>2	457×610×1222	1	**535-0103**
FreeZone® 6 bench top, without chamber, UK-plug	6	4	808×714×371	1	**535-0104**
FreeZone® 12 console, including stoppering tray dryer with microprocessor controlled temperature programming unit from –40 to +40 °C and three processing shelves, UK-plug	12	8	808×711×921	1	**535-0106**
FreeZone® 18 console, without chamber, UK-plug	18	10	808×711×921	1	**535-0105**
FreeZone® Plus cascade freeze dry systems, –84 °C					
FreeZone® Plus 2,5 bench top without chamber, UK-plug	2,5	1,8	368×590×424	1	**535-0100**
FreeZone® Plus 2,5 console, without chamber, UK-plug	2,5	1,8	457×590×926	1	**535-0099**
FreeZone® Plus 4,5 bench top, with 12-port drying chamber, UK-plug	4,5	4	572×615×381	1	**535-0097**
FreeZone® Plus 4,5 console, with 10-port drying chamber, UK-plug	4,5	4	572×615×927	1	**535-0098**
FreeZone® freeze dry systems, –105 °C					
FreeZone® 4,5 bench top, stainless steel collector coil and 12-port drying chamber, UK-plug	4,5	2,5	587×653×671	1	**535-0095**
FreeZone® 4,5 bench top, PTFE-coated stainless steel collector coil and 12-port drying chamber, UK-plug	4,5	2,5	587×653×671	1	**535-0096**

Description	Pk	Cat. No.
Accessories		
Acrylic chamber for bulk drying 235×244 mm (requires shelves to operate), for Freezone® 1, 2,5 and 6	1	**535-0027**
Acrylic chamber with 8 valves 1/2" 235×244 mm	1	**535-0028**
Clear chamber with 8 valves 3/4" 305×380 mm, for Freezone® 6, 12 and 18	1	**535-0029**
12-port drying chamber, stainless steel 248×203 mm, for Freezone® 2,5, 6, 12 and 18	1	**535-0030**
16-port drying chamber, stainless steel 330×330 mm, for Freezone® 6, 12 and 18	1	**535-0031**
Fast-Freeze® flasks (complete set), and components		
Fast Freeze® complete flask (incl. flask top, bottom and filter paper), 40 ml	1	**535-0042**
Fast Freeze® complete flask (incl. flask top, bottom and filter paper), 80 ml	1	**531-0176**
Fast Freeze® complete flask (incl. flask top, bottom and filter paper), 150 ml	1	**535-0043**
Fast Freeze® complete flask (incl. flask top, bottom and filter paper), 300 ml	1	**535-0044**

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Description	Pk	Cat. No.
Fast-Freeze® flasks (complete set), and components		
Fast Freeze® complete flask (incl. flask top, bottom and filter paper), 600 ml	1	**535-0045**
Adapters, borosilicate glass, 45° bend, for connecting the 6,35 mm Fast-Freeze® flask top to 6,35 mm valve ports	1	**531-0177**
Adapters, borosilicate glass, 45° bend, for connecting the 19,05 mm Fast-Freeze® flask top to 19,05 mm valve ports	1	**535-0047**
Adapters, stainless steel, 45° bend, for connecting the 6,35 mm Fast-Freeze® flask top to 6,35 mm valve ports	1	**535-0048**
Other accessories		
4-Port manifold, 304 stainless steel with four neoprene valves, accommodates both 1/2" and 3/4" adapters for connection to flasks	1	**535-0041**

Freeze drying system, FreeZone® Triad™

Labconco

The FreeZone® Triad™ freeze drying system is an all inclusive bench top lyophiliser for 4 samples on the left side and stoppering tray dryer processing shelf. The processing shelf holds up to 441 three millilitre serum bottles and the four valves hold samples in flasks, serum bottles or ampoules. Samples for both types of freeze drying can be run at once. The chamber pre-freezes samples to save money and time, eliminating the need for a separate freezer and product transfer.

The Triad™ includes a pneumatic stoppering mechanism that inflates the diaphragm and lowers the stoppering tray above the shelf. No compressed gas is required.

- Microprocessor controlled temperature programming from –55 °C to +50 °C during ramping and holding and –75 °C during pre-freezing
- Alarm indicator for temperature and vacuum
- 1/3 hp refrigeration systems cool to –85 °C for processing samples with low eutectic points
- A hot gas defrost is also included with switch and automatic shut off when refrigerant reaches +65 °C or after three hours
- Stainless steel condensate pan with drain hose

Ordering information: Model requires (not included): Vacuum pump with a displacement of at least 144 litres per minute, 0,002 mBar ultimate pressure, reverse IEC plug, and fitting suitable for 3/4" ID vacuum hose and freeze dry glassware, if not bulk freeze drying. Please contact VWR for further details.

Type	Ice capacity (l)	Drying capacity max. (litres/24 hr)	W×D×H (mm)	Pk	Cat. No.
FreeZone® Triad™ freeze drying system	2,5	1,84	720×742×709	1	**535-0052**

Soxhlet extractors
Lenz

With Dimroth condenser

With Allihn condenser

Extractor

DURAN®, borosilicate glass

For extraction from solids with solvents. The solvent is recirculated continuously and distilled from the extracted sample before contacting the solid again. The extract is concentrated in the distillation flask. The method allows an effective separation with relatively small amounts of extracting solvents.

Delivery information: The complete apparatus consists of a round bottom flask with NS 29/32 socket, an extractor with NS 29/32 cone and a condenser with GL 14 tubing connectors. All parts are available separately.

Type	Extraction cap. (ml)	Flask capacity (ml)	Socket size (NS)	Pk	Cat. No.
With Dimroth condenser					
Complete	30	100	29/32	1	**533-2131**
Complete	70	100	34/35	1	**533-2132**
Complete	100	250	45/40	1	**533-2133**
Complete	150	250	45/40	1	**533-2134**
Complete	200	250	45/40	1	**533-2135**
Complete	250	500	45/40	1	**533-2136**
Complete	300	500	60/46	1	**533-2137**
Complete	500	1000	60/46	1	**533-2138**
Complete	1000	2000	71/51	1	**533-2139**
With Allihn condenser					
Complete	30	100	29/32	1	**533-0039**
Complete	70	100	34/35	1	**533-0040**
Complete	100	250	45/40	1	**533-0041**
Complete	150	250	45/40	1	**533-0042**
Complete	200	250	45/40	1	**537-0030**
Complete	250	500	45/40	1	**533-0043**
Extractors only					
Extractor	30		29/32	1	**533-2141**
Extractor	70		34/35	1	**533-2142**
Extractor	100		45/40	1	**533-2143**
Extractor	150		45/40	1	**533-2144**
Extractor	200		45/40	1	**533-2145**
Extractor	250		45/40	1	**533-2146**
Extractor	300		60/46	1	**533-2147**
Extractor	500		60/46	1	**533-2148**
Extractor	1000		71/51	1	**537-1000**

Soxhlet extractors, Quickfit®

PYREX®, borosilicate glass

For extracting soluble components or impurities from solids via repeated soaking/siphoning with solvent.

Conforms to BS 2071

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Description	Extraction cap. (ml)	Pk	Cat. No.
Socket 24/29, cone 19/26, thimble size: 18×55 mm	20	1	201-8373
Socket 29/32, cone 24/29, thimble size: 22×80 mm	40	1	201-8374
Socket 34/35, cone 24/29, thimble size: 28×80 mm	60	1	201-8375
Socket 34/35, cone 34/35, thimble size: 28×120 mm	100	1	201-8377
Socket 34/35, cone 34/35, thimble size: 28×80 mm	60	1	201-8376
Socket 40/38, cone 24/29, thimble size: 33×100 mm	100	1	201-8378
Socket 50/42, cone 24/29, thimble size: 41×123 mm	200	1	201-8380

Extraction thimbles, Grade 501

Pure cellulose cotton

Suitable for all types of extractors (Soxhlet, Büchi, Gerhardt, and more).

- Determination of free lipids content in foods and fat content in milk powder
- Determination of oil content in oleaginous products
- Extraction and quantification of various components

I-Ø×H (mm)	Pk	Cat. No.
19×90	25	516-0000
22×80	25	516-0252
25×80	25	516-0253
25×100	25	516-0254
28×80	25	516-0255
30×80	25	516-0256
30×100	25	516-0257
33×60	25	516-0258
33×80	25	516-0259
33×100	25	516-0260
33×118	25	516-0261
41×123	25	516-0262

Extraction thimbles
Whatman (GE Healthcare)

Type 603, cellulose

The high purity of the materials ensures reliable and reproducible analytical results.

I-Ø×H (mm)	Thickness (mm)	Pk	Cat. No.
22×80	1,5	25	533-0000
25×60	1,5	25	515-0080
25×80	1,5	25	533-0001
25×100	1,5	25	533-0002
26×60	1,5	25	533-0003
27×80	1,5	25	533-0004
28×60	1,5	25	533-0005
28×80	1,5	25	515-0131
28×100	1,5	25	515-8918
30×80	1,5	25	515-8923
30×100	1,5	25	533-0006
33×60	1,5	25	515-8927
33×80	1,5	25	533-0007
33×90	1,5	25	515-8929
33×94	1,5	25	533-0008
33×100	1,5	25	533-0009
33×118	1,5	25	533-0010
33×130	1,5	25	515-8932
33×205	1,5	25	515-8813
34×130	1,5	25	515-8934
35×150	1,5	25	533-0011
40×85	2,0	25	515-8940
41×123	2,0	25	515-0081
48×145	2,0	25	515-8948
48×200	2,0	25	515-8949
44×230	2,0	25	515-8814
75×250	2,5	25	515-8958

Extraction thimbles
Whatman (GE Healthcare)

High quality cellulose

Made from high quality alpha cellulose with high mechanical resistance and high retention capability.

I-Ø×H (mm)	Thickness (mm)	Pk	Cat. No.
Single thickness extraction thimbles			
10×50	1	25	**734-2500**
18×55	1	25	**734-2501**
19×90	1	25	**734-2502**
22×65	1	25	**734-2578**
22×80	1	25	**734-2503**
25×80	1	25	**734-2505**
25×90	1	25	**734-2579**
25×100	1	25	**734-2504**
26×60	1	25	**734-2506**
28×80	1	25	**734-2509**
28×100	1	25	**734-2507**
30×80	1	25	**734-2511**
30×100	1	25	**734-2510**
33×80	1	25	**734-2514**
33×94	1	25	**734-2515**
33×118	1	25	**734-2513**
37×130	1	25	**734-2516**
41×123	1	25	**734-2517**
43×123	1	25	**734-2518**
60×180	1	25	**734-2519**

Extraction thimbles
Whatman (GE Healthcare)

Type 603 g, borosilicate glass microfibre

Manufactured from 100% pure borosilicate glass with inorganic binder.

- For temperatures up to +500 °C

I-Ø×H (mm)	Thickness (mm)	Pk	Cat. No.
10×38	1,5	25	**537-0027**
16×50	1	25	**515-9005**
19×90	1	25	**515-9007**
22×80	1,5	25	**533-0012**
23,8×68	1,5	25	**515-9013**
25×100	1,5	25	**515-9011**
28×60	1,5	25	**515-9016**
33×94	1,5	25	**515-9017**
30×100	1,5	25	**515-9025**
33×100	1,5	25	**515-9030**
33×118	1,5	25	**515-9031**
35×150	1,5	25	**515-9036**

Chromatography

For many years VWR has been supplying the scientific community with chromatography instruments, consumables, software and services. We strive to bring you the best chromatography solutions for your individual needs.

We provide you with a total chromatography portfolio of leading manufacturers plus the VWR Collection brand. You get a choice of quality and price as well as advice from chromatography specialists, application laboratories and chromatography service technicians.

Please visit www.vwr.com or contact your local VWR sales office.

Chromatography vials

Crimp neck vial

Snap cap vial

Screw neck vial

A wide variety of glass and plastic vials are used in chromatographic analyses. To ensure trouble-free autosampler operation it is important to select vials with the correct dimensions. The term "ND" in the following entries, followed by a number (i.e. ND8), refers to the neck diameter of the vial in mm.

Crimp neck vials, ND8

Vials, closures, septa and tools

Flat, round bottom and conical micro-vials available with volumes of 0,3 to 1,2 ml in clear or amber glass.

Broad selection of crimp closures with different types of septa.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Crimp neck vials, ND8				
Amber glass, conical	0,4	7×30	1.000	**548-0831**
Amber glass, conical	0,6	7×40	1.000	**548-0339**
Amber glass, flat bottom	0,7	7×40	1.000	**548-0037**
Amber glass, flat bottom	1,2	8,2×40	1.000	**548-0783**
Clear glass, conical	0,2	5,5×31,5	1.000	**548-0078**
Clear glass, conical	0,6	7×40	1.000	**548-0340**
Clear glass, flat bottom	0,7	7×40	1.000	**548-0036**
Clear glass, flat bottom	0,8	8,2×30	1.000	**548-0035**
Clear glass, flat bottom	1,2	8,2×40	1.000	**548-0341**
Clear glass, round bottom	0,3	5,5×31,5	1.000	**548-0080**

Type	Description	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Crimpers and decappers						
	Crimper for 8 mm aluminium caps				1	**548-0069**
	Decapper for 8 mm aluminium caps				1	**548-0070**

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Type	Description	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Aluminium crimp caps, ND8 with central hole, 4 mm and septum						
Clear lacquered aluminium		60° shore A	Natural rubber red-orange/ TEF transparent	1,0	1.000	**548-0041**
Clear lacquered aluminium		60° shore A	Natural rubber red-orange/ TFE transparent	1,0	1.000	**548-3290**
Clear lacquered aluminium		45° shore A	PTFE red/silicone white/ PTFE red	1,0	1.000	**548-0038**
Clear lacquered aluminium		45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3291**
Clear lacquered aluminium		55° shore A	Silicone beige/PTFE red	1,5	1.000	**548-0324**
Clear lacquered aluminium		45° shore A	Silicone blue transparent/ PTFE white	1,3	1.000	**548-0326**
Clear lacquered aluminium		45° shore A	Silicone dark blue/ PTFE white	1,3	1.000	**548-0328**
Clear lacquered aluminium		45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0040**
Clear lacquered aluminium		45° shore A	Silicone white/PTFE red, with slit	1,3	1.000	**548-0813**
Clear lacquered aluminium		53° shore D	Virgin PTFE	0,25	1.000	**548-0325**
Clear lacquered aluminium		70° shore A	Viton black	1,0	1.000	**548-0829**
Clear lacquered aluminium		70° shore A	Viton black	1,5	1.000	**548-0323**
Other caps and seals for crimp neck vials, ND8						
PE caps with central hole 4 mm		60° shore A	Natural rubber red-orange/ TFE transparent	1,0	1.000	**548-0374**
PE caps with central hole 4 mm		45° shore A	Silicone white /PTFE red	1,3	1.000	**548-0375**
PE Push-On caps with penetration point		-	-	-	1.000	**548-0810**

VWR COLLECTION

SELECTED FOR YOU

Screw neck vials, ND8

Standard vials with a small opening for GC and HPLC, micro-inserts, closures, kits and tools.

- Broad range of small opening micro-inserts available
- Kits with vials (10×100) and closures available for convenience
- Especially suitable for VWR-Hitachi equipment

Delivery information: Kits include: 1,5 ml glass screw cap vial (11,6×32 mm), screw cap PP black with 5,5 mm central hole and septum.

Type	Capacity (ml)	Ø×H (mm)	Septum	Pk	Cat. No.
Screw neck vials, ND8					
Clear glass	1,5	11,6×32		1.000	**548-0018**
Clear glass with label and filling lines	1,5	11,6×32		1.000	**548-0420**
Clear glass, conical	1,1	11,6×32		1.000	**548-0419**
Clear glass, silanised	1,5	11,6×32		100	**548-1366**
Amber glass	1,5	11,6×32		1.000	**548-0448**
Amber glass with label and filling lines	1,5	11,6×32		1.000	**548-0019**
Kits					
Clear glass with label and filling lines, septum: Silicone white/PTFE red, 45° shore A, 1,3 mm	1,5	11,6×32		100	**548-3283**
Clear glass, septum: Natural rubber red-orange/TEF transparent, 60° shore A, 1,3 mm	1,5	11,6×32		1.000	**548-0915**
Clear glass, septum: PTFE red/silicone white/PTFE red, 45° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0176**
Clear glass, septum: Silicone white/PTFE blue, 55° shore A, 0,9 mm, slitted	1,5	11,6×32		1.000	**548-0095**
Clear glass, septum: Silicone white/PTFE red, 45° shore A, 1,3 mm	1,5	11,6×32		1.000	**548-0175**
Clear glass, septum: Virgin PTFE, 53° shore D, 0,25 mm	1,5	11,6×32		1.000	**548-0913**
Amber glass with label and filling lines, septum: Silicone white/PTFE red, 45° shore A, 1,3 mm	1,5	11,6×32		100	**548-0852**
Amber glass, septum: Silicone white/PTFE blue, 55° shore A, 0,9 mm, slitted	1,5	11,6×32		100	**548-0853**
Amber glass, septum: Silicone white/PTFE red, 45° shore A, 1,3 mm	1,5	11,6×32		1.000	**548-0914**
Screw neck vials, ND8 with pre-assembled seals					
Clear glass, pre-assembled with black cap	1,5	11,6×32	Silicone white/PTFE blue, 55° shore A, 0,9 mm, slitted	1.000	**548-0819**
Clear glass, pre-assembled with black cap	1,5	11,6×32	Silicone white/PTFE red, 45° shore A, 1,3 mm, slitted	1.000	**548-0850**

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Type	Capacity (ml)	Ø×H (mm)	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Micro-inserts, ND8 for small opening							
Clear glass, conical, with separate metal spring	0,1	4×27,5				1.000	**548-0021**
Clear glass, conical, top 15 mm	0,1	5×31				1.000	**548-0020**
Clear glass, conical, with assembled plastic spring	0,1	5×29				1.000	**548-0083**
Clear glass, conical, top 9 mm	0,1	5×31				1.000	**548-0308**
Clear glass, flat bottom	0,2	5×31				1.000	**548-0780**
Screw caps, ND8 PP with septa							
Black, closed top			55° shore A	Butyl red/PTFE grey	1,3	1.000	**548-0836**
Black, closed top			60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0355**
Black, closed top			55° shore A	Silicone beige/PTFE red	1,5	1.000	**548-3176**
Black, closed top			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0360**
Black, with central hole 5,5 mm			55° shore A	Butyl red/PTFE grey	1,3	1.000	**548-0106**
Black, with central hole 5,5 mm			60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0023**
Black, with central hole 5,5 mm			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0022**
Black, with central hole 5,5 mm			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3322**
Black, with central hole 5,5 mm			55° shore A	Silicone beige/PTFE red	1,5	1.000	**548-0354**
Black, with central hole 5,5 mm			45° shore A	Silicone blue transparent/PTFE white	1,3	1.000	**548-0357**
Black, with central hole 5,5 mm			45° shore A	Silicone dark blue/PTFE white	1,3	1.000	**548-0359**
Black, with central hole 5,5 mm			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0024**
Black, with central hole 5,5 mm			45° shore A	Silicone white/PTFE red, slitted	1,3	1.000	**548-0834**
Pink, with central hole 5,5 mm			55° shore A	Butyl red/PTFE grey	1,3	1.000	**548-1492**
Pink, with central hole 5,5 mm			60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-1490**
Pink, with central hole 5,5 mm			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-1496**
Pink, with central hole 5,5 mm			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-1491**
Pink, with central hole 5,5 mm			55° shore A	Silicone beige/PTFE red	1,5	1.000	**548-1494**
Pink, with central hole 5,5 mm			45° shore A	Silicone dark blue/PTFE white	1,3	1.000	**548-1495**
Pink, with central hole 5,5 mm			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-1493**
Pink, with central hole 5,5 mm			45° shore A	Silicone white/PTFE red, slitted	1,3	1.000	**548-1497**
White, with central hole 5,5 mm			60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0358**
Septa, ND8							
Virgin PTFE			53° shore D		0,25	1.000	**548-0027**
Silicone white/PTFE blue, slitted			55° shore A		0,9	1.000	**548-0026**
Natural rubber red-orange/TEF transparent			60° shore A		1,0	1.000	**548-0316**
PTFE red/silicone white/PTFE red			45° shore A		1,0	1.000	**548-0312**
Viton black			70° shore A		1,0	1.000	**548-0828**
Butyl red/PTFE grey			55° shore A		1,3	1.000	**548-0115**
Natural rubber red-orange/TEF transparent			60° shore A		1,3	1.000	**548-0318**
PTFE grey/Butyl red/PTFE grey			55° shore A		1,3	1.000	**548-0782**
Silicone blue transparent/PTFE white			45° shore A		1,3	1.000	**548-0320**
Silicone dark blue/PTFE white			45° shore A		1,3	1.000	**548-0322**
Silicone white/PTFE red			45° shore A		1,3	1.000	**548-0314**
Silicone beige/PTFE red			55° shore A		1,5	1.000	**548-0313**
Viton black			70° shore A		1,5	1.000	**548-0315**
Screw caps PP, ND8 without septum							
Black, central hole 5,5 mm						1.000	**548-0025**
Black, closed						1.000	**548-0335**
White, closed						1.000	**548-0336**
White, with central hole 5,5 mm						1.000	**548-0337**

Short thread vials, ND9

Standard glass or plastic vials for GC and HPLC, micro-inserts, closures and kits. Can be used universally on almost all autosamplers, preferred type of vial for Waters and Agilent.

- Wide opening enables easy filling
- Closures with different types of septa can be supplied in differently coloured caps; blue cap also available with closed top
- Pre-cut closures for HPLC needles are available, where only the silicone is slitted, but the PTFE remains intact (no concentration changes; no contamination due to impurities extracted from the silicone)
- Synthetic material often used in Agilent red rubber/PTFE septa has been added to the product line (this is a softer material with less fragmentation than natural rubber/TEF)

Kits include: 1,5 ml short thread vial (11,6×32 mm), short thread cap PP blue, red or transparent with 6 mm central hole and septum.

Special short thread cap for LC/MS and GC/MS applications

- One component closure
- No bleeding, absolutely inert
- Tight, pierceable and chemical resistant like PTFE

HPLC and GC certified vial kits

The use of HPLC and GC certified vial kits are an important way of reducing sources of error and ensuring that processes are reproducible.

- Each batch of HPLC and GC certified kits is tested on 15 critical parameters. In a realistic method, an HPLC/UV and GC/FID test of vials/closure combination of blanks and contaminations will be carried out
- The batch specific test certificate with the HPLC and GC-chromatograms can be handed out upon request
- The HPLC and GC certified kits are supplied completely shrink-wrapped for reasons of originality, purity and transport safety

Type	Capacity (ml)	Ø×H (mm)	Septum	Pk	Cat. No.
Short thread vials, ND9					
Clear glass with label and filling lines, integrated 0,2 ml micro-insert	0,2	11,6×32		1.000	**548-0425**
Clear Topsert TPX with integrated glass micro-insert 0,2 ml	0,2	11,6×32		1.000	**548-0428**
Clear TopSert TPX with integrated glass micro-insert 0,2 ml, silanised	0,2	11,6×32		1.000	**548-0430**
Clear glass with integrated micro-insert, "base bonded"	0,3	11,6×32		1.000	**548-1442**
Clear glass, inner cone in the solid glass bottom	1,1	11,6×32		1.000	**548-0081**
Clear glass	1,5	11,6×32		1.000	**548-0028**
Clear glass with label and filling lines	1,5	11,6×32		1.000	**548-0029**
Clear glass, silanised	1,5	11,6×32		1.000	**548-0426**
Amber Topsert TPX with integrated glass micro-insert	0,2	11,6×32		1.000	**548-0791**
Amber TopSert, TPX with integrated 0,2 ml glass micro-insert, silanised	0,2	11,6×32		1.000	**548-0849**
Amber glass with label and filling lines, integrated 0,2 ml micro-insert	0,2	11,6×32		1.000	**548-3308**
Amber glass with label and filling lines	1,5	11,6×32		1.000	**548-0030**
Amber glass with label and filling lines, silanised	1,5	11,6×32		1.000	**548-0427**
Short thread vials in plastic, ND9					
PP transparent, conical insert	0,3	11,6×32		1.000	**548-0440**
TPX cystal clear, conical insert	0,3	11,6×32		1.000	**548-0450**
PP amber, conical insert	0,3	11,6×32		1.000	**548-0453**
PP transparent, cylindrical insert	0,7	11,6×32		1.000	**548-0894**
PP transparent with filling lines	1,5	11,6×32		1.000	**548-0452**
PP amber with filling lines	1,5	11,6×32		1.000	**548-0455**
Kits					
Clear glass, 1,1 ml, cone in the solid glass bottom, blue cap, septum silicone beige/PTFE white, 45° shore A, 1,3 mm, slitted	1,1	11,6×32		1.000	**548-1083**
Clear glass, 1,1 ml, cone in the solid glass bottom, blue cap, septum silicone white/PTFE blue, 55° shore A, 1,0 mm, with slit	1,1	11,6×32		100	**548-0463**
Clear glass, 1,5 ml, blue cap, septum natural rubber red-orange/TEF transparent, 60° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0907**
Clear glass, 1,5 ml, blue cap, septum PTFE red/silicone white/PTFE red, 45° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0909**
Clear glass, 1,5 ml, blue cap, septum silicone white/PTFE blue, 55° shore A, 1,0 mm, slitted	1,5	11,6×32		1.000	**548-0908**
Clear glass, 1,5 ml, blue cap, septum silicone white/PTFE red, 55° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0177**
Clear glass, 1,5 ml, blue cap, septum virgin PTFE, 53° shore D, 0,2 mm	1,5	11,6×32		1.000	**548-1396**
Clear glass, 1,5 ml, blue cap UltraBond™, septum silicone beige/PTFE white, 45° shore A, 1,3 mm, slitted	1,5	11,6×32		100	**548-3214**

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Type	Capacity (ml)	Ø×H (mm)	Septum	Pk	Cat. No.
Kits					
Clear glass, 1,5 ml, red cap, septum silicone white/PTFE red, 55° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-3255**
Clear glass, 1,5 ml, silanised, blue cap, septum silicone beige/PTFE white, 45° shore A, 1,3 mm, slitted	1,5	11,6×32		1.000	**548-1363**
Clear glass, 1,5 ml, transparent cap, septum natural rubber red-orange/TEF transparent, 60° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0854**
Clear glass, 1,5 ml, transparent cap, septum silicone white/PTFE red, 55° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0911**
Clear glass, 1,5 ml, with label and filling lines, blue cap, septum PTFE red/silicone white/PTFE red, 45° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-3275**
Clear glass, 1,5 ml, with label and filling lines, blue cap, septum silicone beige/PTFE white, 45° shore A, 1,3 mm	1,5	11,6×32		1.000	**548-1092**
Clear glass, 1,5 ml, with label and filling lines, blue cap, septum silicone white/PTFE blue, 55° shore A, 1,0 mm, slitted	1,5	11,6×32		1.000	**548-0910**
Clear glass, 1,5 ml, with label and filling lines, blue cap, septum silicone white/PTFE red, 55° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-3343**
Clear glass, 1,5 ml, with label and filling lines, blue cap UltraBond™, septum silicone beige/PTFE white, 45° shore A, 1,3 mm, slitted	1,5	11,6×32		1.000	**548-3276**
Clear glass, 1,5 ml, with label and filling lines, transparent cap, septum silicone white/PTFE red, 55° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-3213**
Amber glass, 1,5 ml, with label and filling lines, blue cap, septum silicone white/PTFE blue, 55° shore A, 1,0 mm, slitted	1,5	11,6×32		1.000	**548-3259**
Amber glass, 1,5 ml, with label and filling lines, blue cap, septum silicone white/PTFE red, 55° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-3253**
Amber glass, 1,5 ml, with label and filling lines, blue cap UltraBond™, septum silicone beige/PTFE white, 45° shore A, 1,3 mm, slitted	1,5	11,6×32		1.000	**548-3047**
Amber glass, 1,5 ml, with label and filling lines, transparent cap, septum silicone white/PTFE red, 55° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0912**
Amber glass, 1,5 ml, with label and filling lines, transparent cap, virgin PTFE, 53° shore D, 0,2 mm	1,5	11,6×32		1.000	**548-3342**
PP transparent, 0,3 ml, blue cap, septum PTFE red/silicone white/PTFE red, 60° shore A, 1,0 mm	0,3	11,6×32		100	**548-0189**
PP transparent 0,3 ml, blue cap, septum silicone white/PTFE blue slitted, 60° shore A, 1,0 mm	0,3	11,6×32		100	**548-0464**
PP transparent 0,7 ml, blue cap UltraBond™, septum silicone beige/PTFE white, 45° shore A, 1,3 mm, slitted	0,7	11,6×32		1.000	**548-1398**
PP transparent 1,5 ml, blue cap, septum silicone white/PTFE blue, 55° shore A, 1,0 mm, slitted	1,5	11,6×32		1.000	**548-0855**
Short thread vials, ND9 with pre-assembled seals					
Clear glass, pre-assembled with blue cap	1,5	11,6×32	Red rubber/PTFE beige, (Agilent quality), 45° shore A, 1,0 mm	1.000	**548-1056**
Clear glass, pre-assembled with blue cap	1,5	11,6×32	Silicone white/PTFE blue, 55° shore A, 1,0 mm, slitted	1.000	**548-3309**
Clear glass, pre-assembled with green cap	1,5	11,6×32	Natural rubber red-orange/TEF transparent, 60° shore A, 1,0 mm	1.000	**548-0706**
Amber glass, pre-assembled with blue cap	1,5	11,6×32	Silicone white/PTFE blue, 55° shore A, 1,0 mm, slitted	1.000	**548-1055**
Amber glass, pre-assembled with Ultrabond™ blue cap	1,5	11,6×32	Silicone beige/PTFE white, 45 ° shore A, 1,3 mm, slitted	1.000	**548-3201**
HPLC and GC certified vial kits					
HPLC/GC certified vial kit, clear glass, 1,5 ml, with label and filling lines, UltraClean seal: 9mm PP short thread cap, blue, centre hole, septum silicone white/PTFE red, 55 ° shore A, 1,0 mm	1,5			1.000	**548-1488**
HPLC/GC certified vial kit, amber glass, 1,5 ml, with label and filling lines, UltraClean seal: 9mm PP short thread cap, blue, centre hole, septum silicone white/PTFE red, 55 ° shore A, 1,0 mm	1,5			1.000	**548-1489**

Type	Capacity (ml)	Ø×H (mm)	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Micro-inserts for wide opening							
Clear, 10 mm top, with filling lines	0,1	6×29				1.000	**548-1380**
Clear, 10 mm top, with filling lines and attached plastic spring	0,1	6×29				1.000	**548-1381**
Clear, flat bottom	0,2	6×31				1.000	**548-1382**
Micro-insert, clear glass, with assembled plastic spring	0,1	5,7×29				1.000	**548-0002**

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Type	Capacity (ml)	Ø×H (mm)	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Micro-inserts for wide opening							
Micro-insert, clear glass, with assembled plastic spring, silanised	0,1	6×29				1.000	**548-0812**
Micro-insert, clear glass, 15 mm top	0,1	6×31				1.000	**548-0006**
Micro-insert, clear glass, 12 mm top	0,1	6×31				1.000	**548-0310**
Micro-insert, clear glass, 15 mm top, silanised	0,1	6×31				1.000	**548-0311**
Micro-insert, clear glass, flat bottom	0,2	6×31				1.000	**548-0001**
Short screw caps with central hole, 6 mm and septa, ND9							
Magnetic, for CTC GC PAL and Thermo Scientific TriPlus™			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-3294**
PP black			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0784**
PP black			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0785**
PP black			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3298**
PP black			55° shore A	Silicone white/PTFE blue, slitted	1,0	1.000	**548-0788**
PP black			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-0786**
PP black			53° shore D	Virgin PTFE	0,2	1.000	**548-0787**
PP blue			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0086**
PP blue			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0087**
PP blue			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-0896**
PP blue			55° shore A	Silicone white/PTFE blue, slitted	1,0	1.000	**548-0088**
PP blue			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-0085**
PP blue			55° shore A	Silicone white/PTFE red, pre-cut (Y)	1,0	1.000	**548-3300**
PP blue			53° shore D	Virgin PTFE	0,2	1.000	**548-0089**
PP blue, closed top			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-3185**
PP blue, closed top			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-0898**
PP blue, closed top			53° shore D	Virgin PTFE	0,2	1.000	**548-3184**
PP green			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0383**
PP green			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0840**
PP green			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3295**
PP green			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-3179**
PP green			55° shore A	Silicone white/PTFE red, slitted	1,0	1.000	**548-3183**
PP green			53° shore D	Virgin PTFE	1,0	1.000	**548-0163**
PP pink			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-1500**
PP pink			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-1503**
PP pink			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-1501**
PP pink			55° shore A	Silicone white/PTFE blue, slitted	1,0	1.000	**548-1504**
PP pink			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-1502**
PP pink			53° shore D	Virgin PTFE	0,2	1.000	**548-1499**
PP red			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0379**
PP red			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0380**
PP red			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3297**
PP red			55° shore A	Silicone white/PTFE blue, slitted	1,0	1.000	**548-0382**
PP red			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-0381**
PP red			53° shore D	Virgin PTFE	0,2	1.000	**548-0839**
PP transparent			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0032**
PP transparent			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0033**
PP transparent			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3296**
PP transparent			55° shore A	Silicone white/PTFE blue, slitted	1,0	1.000	**548-0084**
PP transparent			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-0034**
PP transparent			55° shore A	Silicone white/PTFE red, pre-cut (Y)	1,0	1.000	**548-3301**
PP transparent			53° shore D	Virgin PTFE	0,2	1.000	**548-0377**
PP transparent			70° shore A	Viton black	1,0	1.000	**548-0378**

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Type	Capacity (ml)	Ø×H (mm)	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Short screw caps with central hole, 6 mm and septa, ND9							
PP yellow			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0164**
PP yellow			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0841**
PP yellow			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3299**
PP yellow			55° shore A	Silicone white/PTFE blue, slitted	1,0	1.000	**548-3182**
PP yellow			55° shore A	Silicone white/PTFE red	1,0	1.000	**548-0162**
UltraBond™ short thread seals, ND9 with central hole							
PP black			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0371**
PP blue (compatible with Waters)			45° shore A	Silicone beige/PTFE white	1,3	1.000	**548-0372**
PP blue (compatible with Waters)			45° shore A	Silicone beige/PTFE white, slitted	1,3	1.000	**548-0373**
Special short thread cap for LC/MS and GC/MS applications							
MS short thread cap, transparent, with thinned penetration area and diaphragm						1.000	**548-0902**
Septa 9 mm for short thread caps							
Virgin PTFE			53° shore D		0,2	1.000	**548-3323**
Natural rubber red-orange/TEF transparent			60° shore A		1,0	1.000	**548-3324**
PTFE red/silicone white/PTFE red			45° shore A		1,0	1.000	**548-3326**
Red rubber/PTFE beige			45° shore A		1,0	1.000	**548-3293**
Silicone white/PTFE red			55° shore A		1,0	1.000	**548-3325**

Total microlitre vials

Total microlitre vials provide a precise tapered internal design for a maximum recovery without the need for a separate micro-insert. They ensure maximum recovery for GC and HPLC/UHPLC with a residual volume <1 µl.

- Usable as a concentration vial because the solid glass bottom offers excellent heat transfer and stability
- Autosampler compatibility because of the flat glass bottom and "standard" vial design
- Flexible volume from 1,4 ml (max. possible volume) down to 25 µl (min. recommended working volume)
- First hydrolytic class

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Short thread vials ND9, clear glass	0,9	11,6×32	100	**548-1386**
Snap ring/crimp vials ND9, clear glass	0,9	11,6×32	100	**548-1387**

Screw neck vials, ND10

Vials, micro-inserts, closures and septa. Used on Perkin Elmer, Shimadzu, Varian, Waters, Jasco.

- Wide opening enables easy filling
- Vials are packed in a cleanroom class 10 000

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Screw neck vials, ND10				
Clear glass	1,5	11,6×32	1.000	**548-0385**
Clear glass with label and filling lines	1,5	11,6×32	1.000	**548-0386**
Amber glass with label and filling lines	1,5	11,6×32	1.000	**548-0387**

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Type	Capacity (ml)	Ø×H (mm)	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Micro-inserts for wide opening							
Micro-insert, clear glass, with assembled plastic spring	0,1	5,7×29				1.000	**548-0002**
Micro-insert, clear glass, with assembled plastic spring, silanised	0,1	6×29				1.000	**548-0812**
Micro-insert, clear glass, 15 mm top	0,1	6×31				1.000	**548-0006**
Micro-insert, clear glass, 12 mm top	0,1	6×31				1.000	**548-0310**
Micro-insert, clear glass, 15 mm top, silanised	0,1	6×31				1.000	**548-0311**
Micro-insert, clear glass, flat bottom	0,2	6×31				1.000	**548-0001**
PP screw caps, ND10 with septum							
PP black, central hole 7 mm			60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0389**
PP black, central hole 7 mm			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0391**
PP black, central hole 7 mm			45° shore A	Silicone white/PTFE beige	1,5	1.000	**548-0388**
PP black, central hole 7 mm			55° shore A	Silicone white/PTFE blue, slitted	1,5	1.000	**548-0392**
PP black, central hole 7 mm			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0390**
PP black, closed top			60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-3256**
PP screw caps, ND10 without septum							
PP black, central hole 7 mm						1.000	**548-0384**
PP black, closed top						1.000	**548-3257**
Septa 9,5 mm							
Virgin PTFE			53° shore D		0,25	1.000	**548-3186**
PTFE red/silicone white/PTFE red			45° shore A		1,0	1.000	**548-3328**
Natural rubber red-orange/TFE transparent			60° shore A		1,3	1.000	**548-3327**
Silicone white/PTFE red			45° shore A		1,3	1.000	**548-3292**
Silicone white/PTFE beige			45° shore A		1,5	1.000	**548-3258**
Silicone white/PTFE blue, slitted			55° shore A		1,5	1.000	**548-3329**

VWR COLLECTION

SELECTED FOR YOU

Crimp neck vials, ND11

Standard vials for GC and HPLC with wide opening, micro-inserts, closures, kits and tools.

- Magnetic crimp caps for CTC PAL and Thermo Scientific TriPlus™ autosamplers
- Wide opening enables easy filling
- Broad range of micro-inserts and microvials available

Packed in a cleanroom class 10 000.

Delivery information: Kits include: 1,5 ml glass crimp neck vial (11,6×32 mm), aluminium crimp cap, clear lacquered with 5,5 mm central hole and septum.

Type	Capacity (ml)	Ø×H (mm)	Septum	Pk	Cat. No.
Crimp neck vials, ND11					
Clear glass, conical	0,9	10×32		1.000	**548-0421**
Clear glass, conical	1,1	11,6×32		1.000	**548-0418**
Clear glass, inner cone in solid glass bottom	1,1	11,6×32		1.000	**548-0092**
Clear glass, small opening	1,5	11,6×32		1.000	**548-0447**
Clear glass, wide opening	1,5	11,6×32		1.000	**548-0003**
Clear glass, wide opening	2,5	11,6×41		1.000	**548-0423**
Clear glass, wide opening, silanised	1,5	11,6×32		100	**548-1368**
Clear glass with label and filling lines, wide opening	1,5	11,6×32		1.000	**548-0004**
Clear glass with label and filling lines and integrated 0,2 ml micro-insert	0,2	11,6×32		1.000	**548-0424**
Clear TopSert, TPX snap ring vial with integrated 0,2 ml glass micro-insert	0,2	11,6×32		1.000	**548-0429**
Clear TopSert, TPX snap ring vial with integrated 0,2 ml glass micro-insert, silanised	0,2	11,6×32		1.000	**548-0431**
Amber glass with label and filling lines, wide opening	1,5	11,6×32		1.000	**548-0005**

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Type	Capacity (ml)	Ø×H (mm)	Septum	Pk	Cat. No.
Crimp neck vials, ND11					
Amber glass with label and filling lines and integrated 0,2 ml micro-insert	0,2	11,6×32		1.000	**548-3307**
Amber TopSert, TPX snap ring vial with integrated 0,2 ml glass micro-insert	0,2	11,6×32		1.000	**548-0792**
Amber TopSert, TPX snap ring vial with integrated 0,2 ml glass micro-insert, silanised	0,2	11,6×32		1.000	**548-3198**
Kits					
Clear glass with label and filling lines, natural rubber red-orange/butyl red/TEF transparent, 45° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-1361**
Clear glass, silicone white/PTFE red, 45° shore A, 1,3 mm	1,5	11,6×32		1.000	**548-0173**
Clear glass, silicone beige/PTFE red, 55° shore A, 1,5 mm	1,5	11,6×32		1.000	**548-0467**
Clear glass, PTFE red/silicone white/PTFE red, 45° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0174**
Clear glass, natural rubber red-orange/TEF transparent, 60° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0171**
Clear glass, natural rubber/butyl red/TEF, 45° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0172**
Clear glass, magnetic crimp cap, PTFE red/silicone white/PTFE red, 45° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0906**
Amber glass with label and filling lines, natural rubber red-orange/butyl red/TEF transparent, 45° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-1362**
Amber glass with label, natural rubber red-orange/TEF transparent, 60° shore A, 1,0 mm	1,5	11,6×32		1.000	**548-0905**
Crimp neck vials, ND11, wide opening, with pre-crimped aluminium cap and septum					
Clear glass, clear lacquered aluminium with 5,5 mm central hole	1,5	11,6×32	Natural rubber red-orange/TEF transp, 60° shore A, 1,0 mm	1.000	**548-0474**
Clear glass, clear lacquered aluminium with 5,5 mm central hole	1,5	11,6×32	Natural rubber red-orange/butyl red/TEF transp, 45° shore A, 1,0 mm	1.000	**548-0856**
Clear glass, clear lacquered aluminium with 5,5 mm central hole	1,5	11,6×32	Natural rubber red-orange/butyl red/TEF transp, 60° shore A, 1,3 mm	1.000	**548-3311**
Clear glass, blue lacquered aluminium with 5,5 mm central hole	1,5	11,6×32	Natural rubber red-orange/butyl red/TEF transp, 45° shore A, 1,0 mm	1.000	**548-0705**
Amber glass, clear lacquered aluminium with 5,5 mm central hole	1,5	11,6×32	Natural rubber red-orange/TEF transp, 60° shore A, 1,0 mm	1.000	**548-3310**

Type	Capacity (ml)	Ø×H (mm)	Description	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Crimpers and decappers								
			Crimper for 11 mm aluminium caps				1	**548-0071**
			Decapper for 11 mm aluminium caps				1	**548-0072**
Other caps								
PE Push-On caps with penetration point, blue				-	-	-	1.000	**548-0187**
PE caps with central hole 4,5 mm				60° shore A	Natural rubber red-orange/TFE transparent	1,0	1.000	**548-0513**
PE caps with central hole 4,5 mm				55° shore A	Silicone white / PTFE red	1,0	1.000	**548-0517**
Micro-inserts for wide opening								
Micro-insert, clear glass, with assembled plastic spring	0,1	5,7×29					1.000	**548-0002**
Micro-insert, clear glass, with assembled plastic spring, silanised	0,1	6×29					1.000	**548-0812**
Micro-insert, clear glass, 15 mm top	0,1	6×31					1.000	**548-0006**
Micro-insert, clear glass, 12 mm top	0,1	6×31					1.000	**548-0310**
Micro-insert, clear glass, 15 mm top, silanised	0,1	6×31					1.000	**548-0311**
Micro-insert, clear glass, flat bottom	0,2	6×31					1.000	**548-0001**
Aluminium crimp caps, ND11 with central hole, 5,5 mm and septum								
Blue lacquered aluminium				45° shore A	Natural rubber red-orange/butyl red/TEF transparent	1,0	1.000	**548-0405**
Blue lacquered aluminium				45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3305**
Blue lacquered aluminium				45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0845**
Clear lacquered aluminium				55° shore A	Butyl red/PTFE grey	1,3	1.000	**548-0790**

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Type	Capacity (ml)	Ø×H (mm)	Description	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Aluminium crimp caps, ND11 with central hole, 5,5 mm and septum								
Clear lacquered aluminium				45° shore A	Natural rubber red-orange/butyl red/TEF	1,0	1.000	**548-0010**
Clear lacquered aluminium				60° shore A	Natural rubber red-orange/butyl red/ TEF transparent	1,3	1.000	**548-3261**
Clear lacquered aluminium				60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0008**
Clear lacquered aluminium				55° shore A	PTFE grey/butyl red/PTFE grey	1,3	1.000	**548-0804**
Clear lacquered aluminium				45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0007**
Clear lacquered aluminium				45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3272**
Clear lacquered aluminium				55° shore A	Silicone beige/ PTFE red	1,5	1.000	**548-0409**
Clear lacquered aluminium				45° shore A	Silicone blue transparent/PTFE white	1,3	1.000	**548-0412**
Clear lacquered aluminium				45° shore A	Silicone dark blue/ PTFE white	1,3	1.000	**548-0444**
Clear lacquered aluminium				55° shore A	Silicone white/PTFE blue, cross-slitted	1,5	1.000	**548-0411**
Clear lacquered aluminium				45° shore A	Silicone white/ PTFE red	1,3	1.000	**548-0009**
Clear lacquered aluminium				53° shore D	Virgin PTFE	0,25	1.000	**548-0408**
Clear lacquered aluminium				53° shore D	Virgin PTFE (sealed by o-ring)	0,25	1.000	**548-1506**
Clear lacquered aluminium				70° shore A	Viton black	1,5	1.000	**548-0410**
Clear lacquered aluminium				70° shore A	Viton black	1,0	1.000	**548-0846**
Clear lacquered aluminium, central hole, with roll grove				-	Aluminium liner, sealed by o-ring	0,06	1.000	**548-1505**
Gold lacquered aluminium				45° shore A	Natural rubber red-orange/butyl red/ TEF transparent	1,0	1.000	**548-0406**
Gold lacquered aluminium				45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3306**
Gold lacquered aluminium				45° shore A	Silicone white/ PTFE red	1,3	1.000	**548-0847**
Green lacquered aluminium				45° shore A	Natural rubber red-orange/butyl red/ TEF transparent	1,0	1.000	**548-0403**
Green lacquered aluminium				45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3303**
Green lacquered aluminium				45° shore A	Silicone white/ PTFE red	1,3	1.000	**548-0848**
Red lacquered aluminium				45° shore A	Natural rubber red-orange/butyl red/ TEF transparent	1,0	1.000	**548-0404**
Red lacquered aluminium				45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3304**
Red lacquered aluminium				55° shore A	Silicone cream/ PTFE red	1,5	1.000	**548-0443**
Red lacquered aluminium				45° shore A	Silicone white/ PTFE red	1,3	1.000	**548-0844**
Magnetic crimp caps, ND11 with central hole, 5 mm and septum for CTC PAL and Thermo Scientific TriPlus autosamplers								
Gold lacquered				45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0082**
Gold lacquered				45° shore A	Silicone white/ PTFE red	1,3	1.000	**548-0407**
Septa 11 mm								
Virgin PTFE				53° shore D		0,25	1.000	**548-0396**
Natural rubber red-orange/TEF transparent				60° shore A		1,0	1.000	**548-0400**
PTFE red/silicone white/PTFE red				45° shore A		1,0	1.000	**548-0394**
Red rubber/PTFE beige				45° shore A		1,0	1.000	**548-3302**
Butyl red/PTFE grey				55° shore A		1,3	1.000	**548-0789**
Red rubber/butyl red/PTFE grey				55° shore A		1,3	1.000	**548-0843**
Silicone blue transparent/PTFE white				45° shore A		1,3	1.000	**548-0401**
Silicone white/PTFE red				45° shore A		1,3	1.000	**548-0393**
Silicone beige/PTFE red				55° shore A		1,5	1.000	**548-0395**
Silicone white/PTFE blue, cross-slitted				55° shore A		1,5	1.000	**548-0398**
Viton black				70° shore A		1,5	1.000	**548-0397**

VWR COLLECTION

SELECTED FOR YOU

Snap ring vials, ND11

Vials, micro-inserts, closures and kits.

- Recommended for HPLC only
- Wide opening enables easy filling
- Vials can alternatively be crimped with 11 mm aluminium crimp caps

Transparent and blue caps also available in a soft PE version.

Kits with 100 vials and closures are available.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Snap ring vials, ND11				
Clear glass with integrated micro-insert, "base bonded"	0,25	11,6×32	1.000	**548-1441**
Clear glass	1,5	11,6×32	1.000	**548-0011**
Clear glass with label and filling lines	1,5	11,6×32	1.000	**548-0422**
Amber glass with label and filling lines	1,5	11,6×32	1.000	**548-0012**
Plastic snap ring vials, ND11				
PP transparent, conical insert	0,3	11,6×32	1.000	**548-0120**
TPX transparent, conical insert	0,3	11,6×32	1.000	**548-0451**
PP transparent, cylindrical insert	0,7	11,6×32	1.000	**548-0895**
PP amber, conical insert	0,3	11,6×32	1.000	**548-0454**
Kits				
Clear glass, septum natural rubber red-orange/TEF transparent, 60° shore A, 1,0 mm	1,5	11,6×32	100	**548-0470**
Clear glass, septum silicone white/PTFE red, 45° shore A, 1,3 mm	1,5	11,6×32	100	**548-0471**
Clear glass, septum silicone white/PTFE blue, cross-slitted 55° shore A, 1,0 mm	1,5	11,6×32	100	**548-0472**
Clear glass, septum PTFE red/silicone white/PTFE red, 45° shore A, 1,0 mm	1,5	11,6×32	100	**548-0473**

Type	Capacity (ml)	Ø×H (mm)	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Other caps							
PE Push-On caps with penetration point, blue			-	-	-	1.000	**548-0187**
Micro-inserts for wide opening							
Micro-insert, clear glass, with assembled plastic spring	0,1	5,7×29				1.000	**548-0002**
Micro-insert, clear glass, with assembled plastic spring, silanised	0,1	6×29				1.000	**548-0812**
Micro-insert, clear glass, 15 mm top	0,1	6×31				1.000	**548-0006**
Micro-insert, clear glass, 12 mm top	0,1	6×31				1.000	**548-0310**
Micro-insert, clear glass, 15 mm top, silanised	0,1	6×31				1.000	**548-0311**
Micro-insert, clear glass, flat bottom	0,2	6×31				1.000	**548-0001**
Snap ring caps, ND11 PE with central hole, 6 mm and septa							
PE blue, hard version			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0433**
PE blue, hard version			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0434**
PE blue, hard version			55° shore A	Silicone white/PTFE blue, cross-slitted	1,0	1.000	**548-0435**
PE blue, hard version			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0432**
PE blue, hard version			45° shore A	Silicone white/PTFE red, pre-cut (Y)	1,3	1.000	**548-3332**
PE blue, soft version			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-3207**
PE blue, soft version			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-3209**
PE blue, soft version			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-0897**
PE blue, soft version			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3360**
PE blue, soft version			55° shore A	Silicone white/PTFE blue, cross-slitted	1,0	1.000	**548-3210**
PE blue, soft version			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-3208**
PE blue, soft version			45° shore A	Silicone white/PTFE red, pre-cut (Y)	1,3	1.000	**548-3334**
PE green, hard version			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0165**
PE green, hard version			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-3346**
PE green, hard version			55° shore A	Silicone white/PTFE blue, cross-slitted	1,0	1.000	**548-0893**
PE pink, hard version			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-1507**
PE pink, hard version			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-1509**
PE pink, hard version			55° shore A	Silicone white/PTFE blue, cross-slitted	1,0	1.000	**548-1510**
PE pink, hard version			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-1508**

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Type	Capacity (ml)	Ø×H (mm)	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Snap ring caps, ND11 PE with central hole, 6 mm and septa							
PE red, hard version			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0436**
PE red, hard version			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0437**
PE red, hard version			55° shore A	Silicone white/PTFE blue, cross-slitted	1,0	1.000	**548-0439**
PE red, hard version			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0438**
PE transparent, hard version			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0014**
PE transparent, hard version			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0015**
PE transparent, hard version			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3358**
PE transparent, hard version			55° shore A	Silicone white/PTFE blue, cross-slitted	1,0	1.000	**548-0017**
PE transparent, hard version			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0016**
PE transparent, hard version			45° shore A	Silicone white/PTFE red, pre-cut (Y)	1,3	1.000	**548-3331**
PE transparent, soft version			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-3203**
PE transparent, soft version			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-3204**
PE transparent, soft version			45° shore A	Red rubber/PTFE beige	1,0	1.000	**548-3330**
PE transparent, soft version			55° shore A	Silicone white/PTFE blue, cross-slitted	1,0	1.000	**548-3206**
PE transparent, soft version			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-3205**
PE transparent, soft version			45° shore A	Silicone white/PTFE red, pre-cut (Y)	1,3	1.000	**548-3333**
PE yellow, hard version			60° shore A	Natural rubber red-orange/TEF transparent	1,0	1.000	**548-0166**
PE yellow, hard version			45° shore A	PTFE red/silicone white/PTFE red	1,0	1.000	**548-0851**
PE yellow, hard version			55° shore A	Silicone white/PTFE blue, cross-slitted	1,0	1.000	**548-0892**
PE yellow, hard version			45° shore A	Silicone white/PTFE red	1,3	1.000	**548-3211**

VWR COLLECTION

SELECTED FOR YOU

Screw neck vials, ND13

Vials, micro-inserts and closures.

- If used for sample storage purposes, closures with closed top caps are available
- Product line includes vials with label and filling lines
- Primarily for HPLC with 48 carousel positions, Shimadzu and Waters

Delivery information: Kits include: 4 ml glass screw cap vial (14,7×45 mm), PP black screw cap with 8,5 mm central hole or closed top and septum.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Screw neck vials, ND13				
Clear glass	4	14,7×45	1.000	**548-0051**
Clear glass with label and filling lines	4	14,7×45	1.000	**548-0509**
Amber glass	4	14,7×45	1.000	**548-0052**
Amber glass with label and filling lines	4	14,7×45	1.000	**548-0510**
Kits				
Clear glass, screw cap PP black, central hole 8,5 mm with septum natural rubber red-orange/TEF transparent, 60° shore A, 1,3 mm	4	14,7×45	100	**548-0519**
Clear glass, screw cap PP black, central hole 8,5 mm with septum natural rubber red-orange/TEF transparent, 60° shore A, 1,3 mm	4	14,7×45	924	**548-3314**
Clear glass, screw cap PP black, central hole 8,5 mm with septum PTFE red/silicone white/PTFE red, 45° shore A, 1,0 mm	4	14,7×45	100	**548-0522**
Clear glass, screw cap PP black, central hole 8,5 mm with septum silicone beige/PTFE red, 55° shore A, 1,5 mm	4	14,7×45	100	**548-0521**
Clear glass, screw cap PP black, central hole 8,5 mm with septum virgin PTFE, 53° shore D, 0,25 mm	4	14,7×45	100	**548-0523**
Clear glass, screw cap PP black, central hole 8,5 mm with septum virgin PTFE, 53° shore D, 0,25 mm	4	14,7×45	840	**548-1395**
Clear glass, screw cap PP black, closed top with septum virgin PTFE, 53° shore D, 0,25 mm	4	14,7×45	100	**548-0529**
Amber glass, screw cap PP black, central hole 8,5 mm with septum natural rubber red-orange/TEF transparent, 60° shore A, 1,3 mm	4	14,7×45	100	**548-0524**
Amber glass, screw cap PP black, central hole 8,5 mm with septum PTFE red/silicone white/PTFE red, 45° shore A, 1,0 mm	4	14,7×45	100	**548-0527**
Amber glass, screw cap PP black, central hole 8,5 mm with septum silicone beige/PTFE red, 55° shore A, 1,5 mm	4	14,7×45	100	**548-0526**
Amber glass, screw cap PP black, central hole 8,5 mm with septum virgin PTFE, 53° shore D, 0,25 mm	4	14,7×45	100	**548-0528**

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Type	Capacity (ml)	Ø×H (mm)	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Micro-insert for 4 ml screw neck vials							
Clear glass, 15 mm top (needs 548-0094)	0,3	6×40				1.000	**548-0093**
Metallic spring for 548-0093		7,5×50				1.000	**548-0094**
Screw cap PP with central hole, 8,5 mm and septa, ND13							
PP black			55° shore A	Butyl red/PTFE grey	1,3	1.000	**548-0794**
PP black			60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0053**
PP black			45° shore A	PTFE red/ silicone white/PTFE red	1,0	1.000	**548-0511**
PP black			55° shore A	Silicone beige/PTFE red	1,5	1.000	**548-0054**
PP black			45° shore A	Silicone dark blue/PTFE white	1,3	1.000	**548-0516**
PP black			55° shore A	Silicone white/PTFE blue, slitted	1,5	1.000	**548-0191**
PP black, closed top			55° shore A	Butyl red/PTFE grey	1,3	1.000	**548-0805**
PP black, closed top			60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0512**
PP black, closed top			55° shore A	Silicone cream/PTFE red	1,5	1.000	**548-0514**
Septa 12 mm							
Virgin PTFE			53° shore D		0,25	1.000	**548-0111**
PTFE red/silicone white/PTFE red			45° shore A		1,0	1.000	**548-0479**
Butyl red/PTFE grey			55° shore A		1,3	1.000	**548-0108**
Natural rubber red-orange/TEF transparent			60° shore A		1,3	1.000	**548-0476**
Silicone blue transparent/PTFE white			45° shore A		1,3	1.000	**548-0112**
Silicone beige/PTFE red			55° shore A		1,5	1.000	**548-0475**
Silicone white/PTFE blue, cross-slitted			55° shore A		1,5	1.000	**548-0477**
Screw cap PP, ND13 without septum							
Black, central hole 8,5 mm						1.000	**548-0096**
Black, closed						1.000	**548-0097**
White, closed						1.000	**548-0506**

VWR COLLECTION

SELECTED FOR YOU

Aluminium crimp caps ND13

Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Clear lacquered, central hole	50° shore A	Pharma-Fix (butyl/PTFE)	2,0	1.000	**548-0488**
Clear lacquered, centre tear-off	50° shore A	Pharma-Fix (butyl/PTFE)	2,0	1.000	**548-0489**
Clear lacquered, complete tear-off	50° shore A	Pharma-Fix (butyl/PTFE)	2,0	1.000	**548-0490**
Clear lacquered, central hole	55° shore A	Butyl red/PTFE grey	2,0	1.000	**548-0496**
Clear lacquered, complete tear-off	55° shore A	Butyl red/PTFE grey	2,0	1.000	**548-0497**
Clear lacquered, centre tear-off	55° shore A	Butyl red/PTFE grey	2,0	1.000	**548-0498**

Headspace screw neck vials with precision thread, ND18

Vials, closures, septa and kits.

- No risk of incorrectly sealed vials as is the case with crimping
- More convenient to close and open, especially as magnetic crimp caps are very hard to crimp
- Lower coring and protection for the needle due to thinner septa
- Universal use for Headspace and SPME due to thinner septa
- Special pre-cut septa (silicone layer is slitted but PTFE remains intact) for safe penetration of the sensitive SPME phase with hardly any coring

Tested and approved by CTC for their Combi PAL (Gerstel, Atas, Agilent), also recommended by Agilent for their G1888A samplers, by Shimadzu for AOC5000 and for Perkin Elmer TurboMatrix autosamplers (models after 1/9/2006).

Delivery information: Kits include 20 ml clear glass precision screw neck headspace vial (22,5×75,5 mm), magnetic screw cap silver with 8 mm central hole and septum.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Headspace screw neck vials with precision thread, ND18 (only suitable for magnetic caps)				
Clear glass (CTC PAL: Varian, Gerstel, Atas, Shimadzu, Agilent)	10	22,5×46	100	**548-0247**
Amber glass (CTC PAL: Varian, Gerstel, Atas, Shimadzu)	10	22,5×46	100	**548-0552**
Clear glass (CTC PAL: Varian, Gerstel, Atas, Shimadzu, Agilent)	20	22,5×75,5	100	**548-0248**
Amber glass (CTC PAL: Varian, Gerstel, Atas, Shimadzu, Agilent)	20	22,5×75,5	100	**548-0553**
Headspace screw caps vial, ND18 (only suitable for PP caps)				
Clear glass	20	23×75,5	100	**548-0549**
Kits				
Clear glass, magnetic cap silver, central hole 8 mm with septum butyl red/PTFE grey, 55° shore A, 1,6 mm	20	22,5×75,5	100	**548-0563**
Clear glass, magnetic cap silver, central hole 8 mm with septum silicone blue transparent/PTFE white, 45° shore A, 1,3 mm	20	22,5×75,5	100	**548-0564**
Clear glass, magnetic cap silver, central hole 8 mm with septum silicone white/PTFE blue, 60° shore A, 1,5 mm	20	22,5×75,5	100	**548-0562**

Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Magnetic screw caps, ND18 and septum, ND18					
Silver, central hole 8 mm	55° shore A	Butyl red/PTFE grey	1,6	1.000	**548-0246**
Silver, central hole 8 mm	45° shore A	Silicone blue transparent/PTFE white	1,3	1.000	**548-0543**
Silver, central hole 8 mm	50° shore A	Silicone white/aluminium foil silver	1,3	1.000	**548-3316**
Silver, central hole 8 mm	55° shore A	Silicone white/PTFE blue	1,5	1.000	**548-0245**
Silver, central hole 8 mm	45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0193**
Silver, central hole 8 mm	55° shore A	Silicone white/PTFE red, precut for SPME	1,5	1.000	**548-3339**
Silver, closed top	55° shore A	Butyl red/PTFE grey	1,6	1.000	**548-0811**
Silver, closed top	45° shore A	Silicone white/PTFE red	1,3	1.000	**548-0822**
Septa 17,5 mm					
Silicone blue transparent/PTFE white	45° shore A		1,3	1.000	**548-0867**
Silicone white/aluminium foil silver	50° shore A		1,3	1.000	**548-3315**
Silicone white/PTFE red	45° shore A		1,3	1.000	**548-3223**
Silicone white/PTFE blue	55° shore A		1,5	1.000	**548-3221**
Butyl red/PTFE grey	55° shore A		1,6	1.000	**548-0866**
PP screw caps, ND18 with septum for 548-0549					
PP black, central hole 12 mm	55° shore A	Butyl red/PTFE grey	1,6	1.000	**548-0559**
PP black, central hole 12 mm	55° shore A	Butyl red/PTFE grey	2,0	1.000	**548-0561**
Closed top PP screw caps for storage vials					
PP black, closed, for 548-3027, 548-0549	55° shore A	Silicone white/PTFE red	1,5	1.000	**548-3363**
PP screw caps, ND18 with septum for 548-0549					
PP black, central hole 12 mm	45° shore A	Silicone blue transparent/PTFE white	1,7	1.000	**548-0557**
PP black, central hole 12 mm	55° shore A	Silicone white/PTFE red	1,5	1.000	**548-1062**
PP black, central hole 12 mm, without septum	-	-	-	1.000	**548-0547**
PP black, closed	55° shore A	Butyl red/PTFE grey	1,6	1.000	**548-0560**
PP black, closed	55° shore A	Butyl red/PTFE grey	2,0	1.000	**548-1061**
PP black, closed	45° shore A	Silicone blue transparent/PTFE white	1,7	1.000	**548-0558**
PP black, closed, without septum	-	-	-	1.000	**548-0548**
Septa 16 mm					
Butyl red/PTFE grey	55° shore A		1,3	1.000	**548-0795**
Butyl red/PTFE grey	55° shore A		1,6	1.000	**548-0539**
Butyl red/PTFE grey	55° shore A		2,0	1.000	**548-0540**
Natural rubber red-orange/TEF transparent	60° shore A		1,3	1.000	**548-0533**
PTFE red/silicone white/PTFE red	45° shore A		1,0	1.000	**548-0537**

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Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Septa 16 mm					
Silicone blue transparent/PTFE white	45° shore A		1,7	1.000	**548-0538**
Silicone white/PTFE red	45° shore A		1,3	1.000	**548-0534**
Silicone white/PTFE red	55° shore A		1,5	1.000	**548-1063**

VWR COLLECTION

SELECTED FOR YOU

Headspace crimp vials, ND20

Clear and amber glass vials with a rounded or flat bottom and volumes from 5 to 20 ml, closures and tools. A rounded bottom vial is more sturdy and resistant to high pressure during the heating process. Flat bottom vials are more appropriate for certain instruments.

- Pressure release safety caps with a broad range of different septa available
- Magnetic and magnetic bimetal caps for CTC Combi PAL and Shimadzu AOC5000 autosamplers
- Caps with Pharma-Fix septa (Butyl/PTFE) achieve the best sealing properties
- Vials can withstand high internal pressure due to their wall thickness of 1,2 mm

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Headspace crimp vials, ND20				
Clear glass, bevel type, rounded bottom (Perkin Elmer)	5	22×38,2	1.000	**548-0057**
Clear glass, flat bottom (Varian)	5	20×38	1.000	**548-0611**
Clear glass, flat bottom	10	20×54	1.000	**548-0612**
Clear glass, flat bottom, long neck (Carlo Erba, Dani, Fisons, Agilent)	10	22,5×46	1.000	**548-0090**
Clear glass, rounded bottom (Carlo Erba, Fisons, CTC, Varian (CP))	10	22,5×46	1.000	**548-0133**
Clear glass, bevel type, rounded bottom, with label and filling lines (Perkin Elmer, Tekmar)	20	23×75,5	100	**548-0610**
Clear glass, bevel type, rounded bottom (Perkin Elmer, Tekmar)	20	23×75,5	1.000	**548-0055**
Clear glass, flat bottom, long neck (Carlo Erba, Dani, Fisons, Agilent)	20	22,5×75,5	1.000	**548-0091**
Clear glass, rounded bottom (CTC PAL Varian, Gerstel, Atas, Shimadzu)	20	22,5×75,5	1.000	**548-0151**
Amber glass, rounded bottom (Carlo Erba, Fisons, CTC, Varian (CP))	10	22,5×46	1.000	**548-0799**
Amber glass, bevel type, rounded bottom (Perkin Elmer, Tekmar)	20	23×75,5	100	**548-0614**
Amber glass, rounded bottom (CTC PAL Varian, Gerstel, Atas, Shimadzu)	20	22,5×75,5	1.000	**548-0798**
Other crimp neck vials, ND20				
Clear glass, flat neck, flat bottom	50	31×101	100	**548-0608**
Clear glass, flat neck, flat bottom	100	51,6×94,5	88	**548-0609**

Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Aluminium crimp cap, ND20 with central hole, 10 mm and septa					
Aluminium, central hole 10 mm	50° shore A	Butyl/PTFE, grey	3,0	1.000	**548-0060**
Aluminium, central hole 10 mm	50° shore A	Butyl dark grey	3,0	1.000	**548-0580**
Aluminium, central hole 10 mm	-	Butyl stopper, grey (unassembled)	-	1.000	**548-0058**
Aluminium, central hole 10 mm	50° shore A	Pharma-Fix butyl/PTFE	3,0	1.000	**548-0059**
Aluminium, central hole 10 mm	50° shore A	Silicone aluminium foil silver	3,0	1.000	**548-0587**
Aluminium, central hole 10 mm	45° shore A	Silicone blue transparent/PTFE white	3,0	1.000	**548-0061**
Aluminium, central hole 10 mm	45° shore A	Silicone white/PTFE beige	3,2	1.000	**548-0593**
Aluminium gold, central hole 10 mm	50° shore A	Pharma-Fix butyl/PTFE	3,0	1.000	**548-0578**
Aluminium headspace caps, ND20 with septa					
Clear lacquered aluminium	50° shore A	Butyl/PTFE, grey	3,0	1.000	**548-0062**
Clear lacquered aluminium	55° shore A	Butyl dark grey	3,0	1.000	**548-0579**
Clear lacquered aluminium	50° shore A	Pharma-Fix butyl/PTFE	3,0	1.000	**548-0064**
Clear lacquered aluminium	45° shore A	Silicone blue transparent/PTFE white	3,0	1.000	**548-0063**
Clear lacquered aluminium	50° shore A	Silicone white/aluminium foil silver	3,0	1.000	**548-0065**
Clear lacquered aluminium	45° shore A	Silicone white/PTFE beige	3,2	1.000	**548-0592**
Magnetic crimp caps, ND20 with central hole and septa (CTC Combi PAL)					
Bimetal red/silver, central hole 8 mm	50° shore A	Butyl/PTFE grey	3,0	100	**548-0809**
Bimetal red/silver, central hole 8 mm	45° shore A	Silicone blue transparent/PTFE transparent	3,0	100	**548-0194**
Bimetal red/silver, central hole 8 mm	45° shore A	Silicone white/PTFE beige	3,2	1.000	**548-3320**

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Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Magnetic crimp caps, ND20 with central hole and septa (CTC Combi PAL)					
Gold, central hole 5 mm	50° shore A	Butyl/PTFE, grey	3,0	1.000	**548-0067**
Gold, central hole 5 mm	55° shore A	Butyl dark grey	3,0	1.000	**548-0591**
Gold, central hole 5 mm	50° shore A	Pharma-Fix butyl/PTFE	3,0	1.000	**548-0068**
Gold, central hole 5 mm	50° shore A	Silicone aluminium foil silver	3,0	1.000	**548-0590**
Gold, central hole 5 mm	45° shore A	Silicone blue transparent/PTFE transparent	3,0	1.000	**548-0066**
Gold, central hole 8 mm	50° shore A	Butyl/PTFE grey	3,0	1.000	**548-0116**
Gold, central hole 8 mm	55° shore A	Butyl dark grey	3,0	1.000	**548-0595**
Gold, central hole 8 mm	50° shore A	Pharma-Fix butyl/PTFE	3,0	1.000	**548-0117**
Gold, central hole 8 mm	45° shore A	Silicone blue transparent/PTFE transparent	3,0	1.000	**548-0152**
Gold, central hole 8 mm	45° shore A	Silicone white/PTFE beige	3,2	1.000	**548-1058**
Other aluminium crimp caps, ND20					
Centre Tear-off cap, clear lacquered	50° shore A	Butyl/PTFE grey	3,0	1.000	**548-0582**
Centre Tear-off cap, clear lacquered	55° shore A	Butyl dark grey	3,0	1.000	**548-0583**
Centre Tear-off cap, clear lacquered	50° shore A	Pharma-Fix butyl/PTFE	3,0	1.000	**548-0576**
Centre Tear-off cap, clear lacquered	45° shore A	Silicone blue transparent/PTFE white	3,0	1.000	**548-0585**
Complete Tear-off cap, clear lacquered	50° shore A	Butyl/PTFE grey	3,0	1.000	**548-0581**
Complete Tear-off cap, clear lacquered	55° shore A	Butyl dark grey	3,0	1.000	**548-0584**
Complete Tear-off cap, clear lacquered	50° shore A	Pharma-Fix butyl/PTFE	3,0	1.000	**548-0577**
Complete Tear-off cap, clear lacquered	45° shore A	Silicone blue transparent/PTFE white	3,0	1.000	**548-0586**
PE-caps with central hole, 4,3 mm and 6 mm for crimp neck, ND20					
Central hole 4,3 mm, Ø×H: 22×8,4** mm				1.000	**548-0619**
Central hole 4,3 mm, Ø×H: 22×9,1* mm				1.000	**548-0618**
Central hole 6 mm, Ø×H: 22×9,1* mm				1.000	**548-1060**

* For vials with flat crimp neck
** For vials with bevelled crimp neck

VWR COLLECTION

SELECTED FOR YOU

SPME crimp neck vial, ND20

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Clear glass for CTC PAL	20	22,5×75,5	100	**548-0613**

Type	Description	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Magnetic seals for SPME-vial 548-0613						
Gold, central hole 8 mm		55° shore A	Silicone white/PTFE blue	1,5	1.000	**548-0596**
Gold, central hole 8 mm		70° shore A	Viton black	1,0	1.000	**548-1081**
Septa/stoppers 20 mm						
Pharma-Fix butyl/PTFE		50° shore A		3,0	1.000	**548-0568**
Butyl/PTFE grey		50° shore A		3,0	1.000	**548-0569**
Butyl dark grey		55° shore A		3,0	1.000	**548-0570**
Silicone blue transparent/ PTFE white		45° shore A		3,0	1.000	**548-0571**
Silicone white/aluminium		50° shore A		3,0	1.000	**548-0572**
Silicone white/PTFE beige		45° shore A		3,25	1.000	**548-0573**
Silicone blue transparent/ PTFE transparent		45° shore A		3,0	1.000	**548-1059**
Butyl injection stopper, grey					1.000	**548-3369**
Crimpers and decappers						
	Crimper for 20 mm aluminium caps				1	**548-0073**
	Decapper for 20 mm aluminium caps				1	**548-0074**

Other caps for crimp neck ND20 with septum

PE, transparent

Combinations of PE caps with central hole 4,3 mm and septa.

For vials with bevelled neck, cap Ø×h: 22×8,4 mm

For vials with flat neck, cap Ø×h: 22×9,1 mm

Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
For bevelled neck	60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0153**
For bevelled neck	45° shore A	Silicone blue transparent/PTFE white	1,3	1.000	**548-0629**
For flat neck	60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0631**
For flat neck	45° shore A	Silicone blue transparent/PTFE white	1,3	1.000	**548-0632**
For flat neck	55° shore A	Butyl red/PTFE grey	1,3	1.000	**548-0800**
For bevelled neck	55° shore A	Butyl red/PTFE grey	1,3	1.000	**548-0870**
For flat neck	45° shore A	Silicone blue transparent/PTFE white, Y-slitted *	1,3	1.000	**548-1399**
For flat neck	45° shore A	Silicone blue transparent/PTFE white, Y-slitted	1,3	1.000	**548-3263**

* with central hole 6 mm

EPA screw neck vials, ND24

Supplied pre-assembled, upon request.

Certificate of cleanliness (for TOC analysis) also available on request - surcharges apply.

Type	Capacity (ml)	Ø×H (mm)	Septum	Pk	Cat. No.
EPA screw neck vials, ND24					
Clear glass	20	27,5×57		100	**548-0154**
Clear glass	30	27,5×72,5		100	**548-0155**
Clear glass	40	27,5×95		100	**548-0156**
Clear glass	60	27,5×140		100	**548-0640**
Clear glass, with certificate	40	27,5×95		100	**548-1390**
Amber glass	20	27,5×57		100	**548-0638**
Amber glass	30	27,5×72,5		100	**548-0637**
Amber glass	40	27,5×95		100	**548-0639**
Amber glass	60	27,5×140		100	**548-0641**
EPA screw neck vials, ND24 pre-assembled, with screw seals					
Clear glass, pre-assembled with white UltraBond screw cap central hole	20	27,5×57	Silicone natural/PTFE beige (EPA quality), 45° shore A, 3,2 mm	1.000	**548-1057**
Clear glass, pre-assembled with white screw cap central hole	40	27,5×95	Silicone natural/PTFE beige, 45° shore A, 3,2 mm	1.000	**548-0825**
Clear glass, pre-assembled with white UltraBond screw cap closed top	40	27,5×95	Silicone natural/PTFE beige (EPA quality), 45° shore A, 3,2 mm	1.000	**548-1090**

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Type	Capacity (ml)	Ø×H (mm)	Septum	Pk	Cat. No.
EPA screw neck vials, ND24 pre-assembled, with screw seals					
Clear glass, pre-assembled with white UltraBond screw cap central hole	40	27,5×95	Silicone natural/PTFE beige (EPA quality), 45° shore A, 3,2 mm	1.000	**548-3237**
Clear glass, pre-assembled with white screw cap central hole	60	27,5×140	Silicone natural/PTFE beige, 45° shore A, 3,2 mm	1.000	**548-3236**
Amber glass, pre-assembled with white screw cap central hole	40	27,5×95	Silicone natural/PTFE beige, 45° shore A, 3,2 mm	1.000	**548-3235**

Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
UltraBond™ seals, ND24: PP screw caps with silicone white/PTFE beige septa					
PP white with central hole 15 mm	45° shore A	Silicone natural/PTFE beige	3,2	1.000	**548-0157**
PP white, closed	45° shore A	Silicone natural/PTFE beige	3,2	1.000	**548-0636**
PP screw caps, ND24 without septum					
PP white with central hole 12,5 mm				1.000	**548-0160**
PP white, closed				1.000	**548-0161**
Septa 22 mm					
Silicone white/PTFE blue, cross-slitted	55° shore A		1,5	1.000	**548-0615**
Butyl red/PTFE grey	55° shore A		2,5	1.000	**548-0134**
Silicone aluminium foil silver	50° shore A		3,0	1.000	**548-0616**
Silicone natural/PTFE beige (EPA-quality)	45° shore A		3,2	1.000	**548-0159**
PP screw caps, ND24 with septum					
PP white, closed	55° shore A	Butyl red/PTFE grey	2,5	1.000	**548-0642**
PP white, with 12,5 mm central hole	55° shore A	Butyl red/PTFE grey	2,5	1.000	**548-0872**
PP white, closed	45° shore A	Silicone natural/PTFE beige	3,2	100	**548-0196**
PP white, with 12,5 mm central hole	45° shore A	Silicone natural/PTFE beige	3,2	1.000	**548-0031**

VWR COLLECTION

SELECTED FOR YOU

Snap cap vials, ND18, ND22 and ND28

For sample storage.

- Quick and easy to open and close, caps included

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Snap-cap vials, ND18, ND22 and ND28				
Clear glass with snap-cap, PE transparent, 18 mm	3	18×30	200	**548-0554**
Clear glass with snap-cap, PE transparent, 18 mm	5	20×40	200	**548-0555**
Clear glass with snap-cap, PE transparent, 22 mm	15	24×52	200	**548-0620**
Clear glass with snap-cap, PE transparent, 22 mm	10	22×50	200	**548-0621**
Clear glass with snap-cap, PE transparent, 22 mm	10	22×45	200	**548-0625**
Clear glass with snap-cap, PE transparent, 22 mm	20	26×70	200	**548-0622**
Clear glass with snap-cap, PE transparent, 22 mm	20	26×55	200	**548-0623**
Clear glass with snap-cap, PE transparent, 28 mm	25	30×50	250	**548-0649**
Clear glass with snap-cap, PE transparent, 22 mm	30	28×75	200	**548-0624**
Clear glass with snap-cap, PE transparent, 28 mm	40	30×80	200	**548-0650**
Clear glass with snap-cap, PE transparent, 28 mm	50	30×100	200	**548-0651**
Clear glass with snap-cap, PE transparent, 28 mm	100	34×145	100	**548-0652**
Vials without cap				
Clear glass ND18	5	20×40	1.000	**548-0141**
Clear glass ND18	10	22×50	1.000	**548-0142**
Clear glass ND22	15	26×48	1.000	**548-0143**
Clear glass ND22	25	26×65	100	**548-0144**

Type	Pk	Cat. No.
Separate snap caps		
Snap-cap PE ND18, transparent, closed	1.000	**548-0145**
Snap-cap PE ND22, transparent, closed	1.000	**548-0146**
Snap-cap PE ND28, transparent, closed	1.000	**548-0648**

Shell vials PP with PE plug

These vials are suitable for use with instruments from the following manufacturers: Alcott, Gilson, Shimadzu, Waters® (Wisp 96 respectively 48 position carousel).

- Vial/closure combination for non critical analyses
- Star-shaped diaphragm enables easy penetration of the PE plug
- Recommended for HPLC usage

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Clear, 8 mm plug	1	8×40	100	**548-1383**
Clear, with inner cone, 15 mm plug	3	14,65×44,6	100	**548-1384**
Clear, 15 mm plug	4	14,65×44,6	100	**548-1385**

Shell vials with PE plug

Handy and inexpensive vial and closure combination for non critical analysis in HPLC.

- Micro-insert can be fixed in PE-plug, no spring required
- Star-shaped diaphragm enables easy penetration of the plug with an injection needle
- 1 ml shell vials with no inner barrier for micro-insert are more convenient in handling and safer to penetrate

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Shell vials with PE plug				
Clear glass, 6 mm plug for Alcott	1	7,8×35	1.000	**548-0347**
Clear glass, 8 mm plug for Waters/Shimadzu with inner barrier for micro-insert	1	8,2×40	1.000	**548-0042**
Amber glass, 8 mm plug for Waters/Shimadzu with inner barrier for micro-insert	1	8,2×40	1.000	**548-0043**
Clear glass, 8 mm plug for Waters/Shimadzu no inner barrier for micro-insert	1	8,2×40	1.000	**548-0352**
Amber glass, 8 mm plug for Waters/Shimadzu no inner barrier for micro-insert	1	8,2×40	1.000	**548-0353**
Clear glass, 12 mm plug	2	11,6×31,5	1.000	**548-0045**
Amber glass, 12 mm plug	2	11,6×31,5	1.000	**548-0046**
Clear glass	2	11,6×31,5	1.000	**548-0449**
Clear glass, 15 mm plug for Waters	4	14,65×44,6	1.000	**548-0048**
Amber glass, 15 mm plug for Waters	4	14,65×44,6	1.000	**548-0049**

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Micro-inserts for wide opening				
Micro-insert, clear glass, 13 mm top	0,1	5×34	1.000	**548-0044**
Micro-insert, clear glass, 13 mm top	0,3	6×43	1.000	**548-0050**
Micro-insert, clear glass, 15 mm top	0,1	6×31	1.000	**548-0006**
Micro-insert, clear glass, 12 mm top	0,1	6×31	1.000	**548-0310**
Micro-insert, clear glass, 15 mm top, silanised	0,1	6×31	1.000	**548-0311**
Micro-insert, clear glass, flat bottom	0,2	6×31	1.000	**548-0001**

Special septa

Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Septa for Schott GL screw caps					
For screw caps Schott GL 14	55° shore A	Silicone cream/PTFE beige	3,2	100	**548-0480**
For screw caps Schott GL 18	55° shore A	Silicone cream/PTFE beige	3,2	100	**548-0532**
For screw caps Schott GL 25	55° shore A	Silicone cream/PTFE beige	3,2	100	**548-0633**
For screw caps Schott GL 32	55° shore A	Silicone cream/PTFE beige	3,2	100	**548-0654**
For screw caps Schott GL 45	55° shore A	Silicone cream/PTFE beige	3,2	100	**548-0662**
For screw caps Schott GL 45	55° shore A	Butyl red/PTFE grey	1,6	1.000	**548-3321**
Septa 13 mm					
Septum 13 mm	50° shore A	Pharma-Fix (butyl/PTFE)	2,0	1.000	**548-0482**
Septum 13 mm	55° shore A	Butyl red/PTFE grey	2,0	1.000	**548-0487**
Septum 13 mm	55° shore A	PTFE grey/butyl red/PTFE grey	1,3	1.000	**548-0793**
Septum 13 mm	60° shore A	Natural rubber red-orange/TEF transparent	1,3	1.000	**548-0483**

Crimp neck vials 8 mm crimp without caps, Chromacol™
Thermo Scientific

01-CVG

02-CTVG

1,2-CWV

Type	Description	Pk	Cat. No.
01-CVG	100 µl crimp round bottom vial, clear, GOLD grade	500	**548-1101**
02-CTVG	200 µl crimp tapered vial, clear, GOLD grade	500	**548-1102**
03-CVG	300 µl crimp round bottom vial, clear, GOLD grade	500	**548-1105**
1-CRV(A)	1 ml crimp round bottom vial, amber, 7×40 mm	500	**548-1180**
1-CWV*	1 ml crimp tapered vial, clear, 8×40 mm, for Waters	500	**548-1181**
1,2-CWV	1,2 ml crimp vial, clear, 8×40 mm, for Waters	500	**548-1128**

* Particularly suitable for micro sampling. Should be used with S-10 (10 mm steel support spring).

Closures for crimp top vials 8 mm, Chromacol™
Thermo Scientific

Description	Type	Hardness	Septum	Thickness (mm)	Pk	Cat. No.
Silver crimp cap, 4 mm hole, type 6 rubber/PTFE liner	8-AC6	38° shore	Red natural rubber/clear PTFE	1,0	1.000	**548-1219**
Blue crimp cap, 4 mm hole, type 6 rubber/PTFE liner	8-AC6(B)	38° shore	Red natural rubber/clear PTFE	1,0	1.000	**548-1220**
Red crimp cap, 4 mm hole, type 6 rubber/PTFE liner	8-AC6(R)	38° shore	Red natural rubber/clear PTFE	1,0	1.000	**548-1221**
Silver crimp cap, 4 mm hole, type 7 rubber/PTFE liner	8-AC7	60° shore	Red natural rubber/clear PTFE	1,0	1.000	**548-1222**
Silver crimp cap, 4 mm hole	8-ACB	-	-	-	1.000	**548-1223**
Silver crimp cap, 4 mm hole	8-AC-CBT1	52° shore	Grey chlorobutyl rubber/ clear PTFE	1,0	500	**548-1225**
Blue crimp cap, 4 mm hole	8-ACB-ST144	20° shore	Blue silicone/red PTFE	1,4	500	**548-1224**
Silver crimp cap, 4 mm hole	8-AC-ST15	50° shore	White silicone/red PTFE	1,3	500	**548-1228**
Silver crimp cap, 4 mm hole	8-AC-ST101	30° shore	Blue silicone/PTFE	1,0	500	**548-1226**
Silver crimp cap, 4 mm hole	8-AC-ST101X	30° shore	Blue silicone/PTFE, pre-slit	1,0	500	**548-1227**
Silver crimp cap, 4 mm hole	8-ACT	53° shore	White virgin PTFE, 0,01"	0,2	1.000	**548-1229**
Silver crimp cap, 4 mm hole	8-AC-TST1	57° shore	Red PTFE/white silicone/ red PTFE	1,0	500	**548-1230**
Silver crimp cap, 4 mm hole	8-AC-V1	-	Viton	-	500	**548-1231**
Clear snap cap with thinned penetration area	8-PEC1	-	Integral molded in PE	-	1.000	**548-1233**

Screw neck vials 8 mm, Chromacol™
Thermo Scientific

Type	Description	Pk	Cat. No.
2-SVG	2 ml screw neck vial, clear GOLD grade	500	**548-1210**
2-SV	2 ml screw neck vial with label and filling lines, clear	500	**548-1208**
2-SV(A)	2 ml screw neck vial with label and filling lines, amber	500	**548-1209**
1.1-STVG	1,1 ml screw neck vial, tapered, clear GOLD grade	500	**548-1127**

Type	Description	Pk	Cat. No.
Seals and closures for 8 mm screw vials, Chromacol™			
8-SC	Black PP screw cap with central hole	500	**548-1236**
8-SC-8RT1	Black PP screw cap with central hole and red natural rubber/clear PTFE seal	500	**548-1237**
8-SC-ST15	Black PP screw cap with central hole and white silicone/red PTFE seal	500	**548-1246**
8-ST101	Blue silicone/PTFE seal for ECD	500	**548-1249**
8-ST14	Blue silicone/PTFE seal	500	**548-1250**
8-ST15	Red silicone/white PTFE seal	500	**548-1253**
8-T02	PTFE seal	1.000	**548-1254**
Inserts for vials with screw cap 8 mm, Chromacol™			
02-MTV	200 µl tapered insert for wide necked 2 ml vials, 5×30 mm	1.000	**548-1103**
Support sleeves, Chromacol™			
MTS-1	13×5 mm PE support, for use with 02-MTV, 02-MTVWG inserts	500	**548-1300**

Wide neck screw top vials 9 mm, Chromacol™
Thermo Scientific

Type	Description	Pk	Cat. No.
2-SVW	2 ml clear wide neck screw neck vial with label and filling lines, 12×32 mm	500	**548-1211**
2-SVW(A)	2 ml amber wide neck screw neck vial with label and filling lines, 12×32 mm	500	**548-1212**

Crimp neck vials 11 mm, Chromacol™
Thermo Scientific

2.5-CV

1.1-CTVG

03-MTV

Type	Description	Pk	Cat. No.
4-CV	4 ml crimp vial, clear, 15×46 mm	500	**548-1213**
2.5-CV*	2,5 ml crimp vial, clear, 12×40 mm	500	**548-1183**
2-CV	2 ml crimp vial, clear, wide mouth, with label and filling lines, 12×32 mm	500	**548-1202**
2-CV(A)	2 ml crimp vial, amber, wide mouth, with label and filling lines, 12×32 mm	500	**548-1203**
2-CVG	2 ml crimp vial, clear, GOLD grade, with label and filling lines, 12×32 mm	500	**548-1204**
2-CRV	2 ml round bottom vial, clear, with label, 12×32 mm	500	**548-1201**
1.1-CTVG	1,1 ml crimp tapered vial, clear GOLD grade, 12×32 mm	500	**548-1126**

Type	Description	Pk	Cat. No.
Inserts for crimp neck vials 11 mm, Chromacol™			
02-MTVWG	200 µl tapered insert for wide necked 2 ml vials, GOLD grade, 6×30 mm	1.000	**548-1104**
03-MTV	300 µl tapered insert for 2,5-CV vial, 5×38 mm	1.000	**548-1110**
Support sleeves, Chromacol™			
MTS-1	13×5 mm PE support, for use with 02-MTV, 02-MTVWG inserts	500	**548-1300**

* The 11-AC-ST15 is the only crimp cap recommended for 2,5-CV vials. Alternatively please use 11-PEPC3 or 11-PEC1 (ideal for single injections).

VWR COLLECTION CATALOGUE

10 000 equipment, instrument and consumable products

Request your copy from your local VWR sales office or vwr.com

Closures for crimp neck vials 11 mm, Chromacol™
Thermo Scientific

Description	Type	Pk	Cat. No.
11 mm aluminium crimp caps			
Blank cap with hole	11-ACB	500	**548-1141**
Crimp cap, type 6 natural rubber/PTFE seal	11-AC6	500	**548-1137**
Blue crimp cap, type 6 natural rubber/ PTFE seal	11-AC6(B)	500	**548-1138**
Red crimp cap, type 6 natural rubber/ PTFE seal	11-AC6(R)	500	**548-1139**
Aluminium crimp cap type 7 rubber/PTFE seal	11-AC7	500	**548-1140**
Crimp cap, grey chlorobutyl/PTFE seal	11-AC-CBT1	500	**548-1142**
Blue crimp cap, silicone/PTFE liner	11-ACB-ST144	500	**548-0262**
Aluminium crimp cap white silicone/red PTFE seal	11-AC-ST15	500	**548-1146**
Crimp cap, blue silicone/PTFE seal	11-AC-ST101	500	**548-1144**
Crimp cap, blue silicone/PTFE seal, pre cut	11-AC-ST101X	500	**548-1145**
Crimp cap, PTFE seal	11-ACT	1.000	**548-1147**
Crimp cap, red PTFE/white silicone/red PTFE seal	11-AC-TST1	500	**548-1148**
Crimp cap, PP seal	11-AC-PP	500	**548-1143**
Blank cap with Viton seal	11-AC-V1	500	**548-1149**
11 mm PE caps and plugs			
Blue snap cap, PTFE seal	11-PEC(B)-T02	500	**548-1155**
Plug, for wide necked vials	11-PEP2W	1.000	**548-1157**
Plug, suitable for Varian autosamplers	11-PEP2	1.000	**548-1156**
Snap cap, ideal for single injections	11-PEC1	1.000	**548-1151**
Snap cap, red rubber/PTFE seal	11-PEC-8RT1	500	**548-1152**
Snap cap, suitable for Perkin Elmer (LC), pre-cut	11-PEC1X	1.000	**548-1154**
Snap cap plug, for wide necked vials, pre-cut	11-PEPC3XW	1.000	**548-1159**

Screw and crimp neck vials, Double Top™, Chromacol™
Thermo Scientific

Innovative Double Top™ vials accept both screw top and also conventional 11 mm aluminium crimp caps. They provide a more secure seal, as the Double Top™ cap spreads the load more evenly.

- Wider neck enables use of larger inserts and makes sample transfer easier
- Requires only half a turn to seal
- Compatible with all leading autosamplers, including robotic

Type	Description	Pk	Cat. No.
2-DV	2 ml, clear	500	**548-1205**

Type	Description	Pk	Cat. No.
Screw caps and seals for screw and crimp neck vials, Double Top™, Chromacol™			
11-6RT1	Seal, 11 mm, type 6 rubber/PTFE, 1 mm thickness	500	**548-1136**
11-ST14	Seal, 11 mm, blue silicone/PTFE, 1,4 mm thickness	500	**548-1162**
11-ST15	Seal, 11 mm, white silicone/red PTFE, 1,5 mm thickness	500	**548-1163**
11-T02	Seal, 11 mm, PTFE	1.000	**548-1164**

Snap cap vials and caps, 11 mm, Chromacol™
Thermo Scientific

For use with a cap with pre-fitted seal that needs only a light pressure to close and seal the vial.

Type	Description	Pk	Cat. No.
2-RV	2 ml flat bottom vial, clear glass with label and filling lines	500	**548-1206**
2-RV(A)	2 ml flat bottom vial, amber glass with label and filling lines	500	**548-1207**

Type	Description	Pk	Cat. No.
Snap caps			
11-PSN(B)-8RT1	Blue 11 mm PE snap cap with red rubber/clear PTFE seal, 6 mm hole	500	**548-1160**
11-PSN(B)	Blue 11 mm PE snap cap with integral seal	500	**548-0263**
11-PSN(B)-ST1	Blue 11 mm PE snap cap with white silicone/red PTFE seal, 6 mm hole	500	**548-1161**

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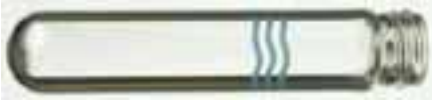
Type	Description	Pk	Cat. No.
Snap caps			
11-PSN(B)-ST1X	Blue 11 mm PE snap cap with red PTFE/white silicone seal, 6 mm hole	500	**548-0264**
11-PSN(B)-T02	Blue 11 mm PE snap cap with PTFE seal, 6 mm hole	500	**548-0265**
11-PSN(B)-TST1	Blue 11 mm PE snap cap with red PTFE/white silicone/red PTFE seal, 6 mm hole	500	**548-0266**

Screw neck vials using 12 mm screw caps, Chromacol™
Thermo Scientific

4-SV

4-SV(A)



5-SV

Type	Description	Pk	Cat. No.
4-SV	4 ml, clear, flat bottom, Ø15×46 mm	500	**548-1214**
4-SV(A)	4 ml, amber, flat bottom, Ø15×46mm	500	**548-1215**
5-SV	5 ml, clear, round bottom, Ø13×60 mm	125	**548-1216**
10-SV	10 ml, clear, round bottom, Ø13×100 mm	125	**548-1135**

Closures for screw neck vials 12 mm, Chromacol™
Thermo Scientific

PP

Screw caps with or without seals.

Description	Type	Pk	Cat. No.
12 mm screw caps			
Black PP screw cap	12-SC	500	**548-1169**
White PP screw cap	12-SC(W)	500	**548-1175**
Green PP screw cap	12-SC(G)	500	**548-1176**
Red PP screw cap	12-SC(R)	500	**548-1172**
Yellow PP screw cap	12-SC(Y)	500	**548-1177**
Black PP solid screw cap, no central hole	12-SCS	500	**548-1173**
Black PP screw cap, with type 8 rubber/PTFE seal	12-SC-8RT1	500	**548-1170**
Black PP screw cap, with white silicone/red PTFE seal	12-SC-ST2	500	**548-1174**
12 mm seals			
Seal, type 6 natural rubber, 1 mm thickness	12-6RT1	500	**548-1165**
Seal, white silicone/red PTFE, 1.8 mm thickness	12-ST18	500	**548-1178**
Seal, white silicone/red PTFE, 2 mm thickness	12-ST2	500	**548-1179**

Headspace crimp vials, Chromacol™
Thermo Scientific

- Clear borosilicate glass vials
- Bevelled edge, 20 mm crimp finish
- Round bottom (with exception of 27-CV which is flat)

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
6-CV	6	22×38	125	**548-1217**
9-CV	9	18×50	100	**548-1094**
10-CV	10	22×46	125	**548-1134**

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Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
20-CV	20	22×75	125	**548-1194**
22-CV	22	22×75	125	**548-1199**
27-CV	27	30×60	100	**548-1200**

Closures for headspace vials, Chromacol™
Thermo Scientific

Description	Type	Pk	Cat. No.
Crimp cap blank aluminium	20-ACB	500	**548-1185**
Magnetic crimp cap blank for CTC, Leap and Alpha MOS	20-MCB	500	**548-1195**
Butyl rubber plug	20-B3P	500	**548-1190**
Butyl rubber freeze drying bung	20-2FB3	2.000	**548-0742**
Blue chlorobutyl seal	20-CB3	1.000	**548-1191**
Blue chlorobutyl/PTFE seal	20-CBT3	1.000	**548-1192**
Blue chlorobutyl/PTFE seal, Pharma-Fix type	20-CBT3B	1.000	**548-1193**
Red silicone/aluminium face seal for >170 °C	20-ASH3	100	**548-1189**
White silicone/aluminium face seal for <170 °C	20-AS3	100	**548-1188**
Blue silicone/PTFE seal, very clean for selective detectors	20-ST3	500	**548-1198**
Blue silicone/PTFE seal, for wash waste vials, not headspace	20-ST101	500	**548-1197**
Crimp cap with blue chlorobutyl/PTFE seal	20-AC-CBT3	500	**548-1186**
Crimp cap with blue silicone/PTFE seal, for Shimadzu HSS-2B	20-AC-ST3	500	**548-1187**
PE snap cap plug only for short term storage	20-PEPC5	250	**548-1196**

Vials with glass insert, Micro+™, Chromacol™
Thermo Scientific

03-FISV(A)

09-FIV

03-FIRV

All Micro+™ vials have a 300 µl or 900 µl tapered glass insert fused top and bottom into a standard 12×32 mm vial, which means that analysts no longer have to assemble a number of small components before they can start to work. The insert is now an integral part of the vial, thus reducing the chance of the needle being damaged.

Type	Description	Pk	Cat. No.
300 µl screw top vials			
03-FISV(A)	300 µl glass insert, fused into an amber 2 ml screw top vial*	500	**548-1107**
03-FISV	300 µl glass insert, fused into a 2 ml screw top vial*	500	**548-1106**
300 µl and 900 µl crimp top vials, 11 mm			
03-FIV(A)	300 µl glass insert, fused into an amber 2 ml crimp top vial	500	**548-1109**
03-FIV	300 µl glass insert, fused into a 2 ml crimp top vial	500	**548-1108**
09-FIV	900 µl glass insert, fused into a 2 ml crimp top vial	500	**548-1125**
300 µl snap cap vials, 11 mm			
03-FIRV(A)	300 µl glass insert, fused into an amber 2 ml snap cap vial	500	**548-0261**
03-FIRV	300 µl glass insert, fused into a 2 ml snap cap vial	500	**548-0260**

* requires closure for 9 mm screw top vials

Screw neck, crimp neck and snap cap vials, high recovery, Chromacol™
Thermo Scientific

1,5-HRCV

1,5-HRRV

1,5-HRSV

Allows users to work with very small samples where the total amount has to be injected, residual volume <4 µl. Micro-insert not needed.

Type	Description	Pk	Cat. No.
1.5-HRCV	1,5 ml crimp neck vial, clear, high recovery, without 11-AC cap	100	**548-1129**
1.5-HRRV	1,5 ml Snap Cap™ vial, clear, high recovery, without 11-PSN cap	100	**548-1130**
1.5-HRSV	1,5 ml screw neck vial, clear, high recovery, without 9-SC cap	100	**548-1131**
1.5-HRSV(S)	1,5 ml screw neck vial, clear silanised, high recovery, without 9-SC cap	100	**548-1133**

Instrument select vial kits, Chromacol™
Thermo Scientific

Instrument select is a range of vials, caps and seals packed in chromatographically clean cases and selected specifically to match the needs of particular instruments.

Description	For	Pk	Cat. No.
For gas chromatography			
2 ml crimp top vial with blue silicone/red PTFE seal	CTC/Leap	100	**548-1287**
2 ml crimp top vial with type 7 rubber/ PTFE seal	Agilent	100	**548-1297**
2 ml crimp top vial with type 6 soft rubber/ PTFE seal	Perkin Elmer AutoSystem	100	**548-1301**
2 ml crimp top vial with soft blue silicone/ PTFE seal	Shimadzu	100	**548-1311**
2 ml crimp top vial with blue silicone/red PTFE seal	Thermo Scientific	100	**548-1329**
For liquid chromatography			
2 ml crimp top vial with blue silicone/red PTFE seal	CTC/Leap	100	**548-1288**
2 ml crimp top vial with type 7 rubber/ PTFE seal	Agilent	100	**548-1298**
2 ml crimp top vial with pre-cut blue silicone/PTFE seal	VWR-Hitachi/LaChrom	100	**548-1299**
2 ml screw top vial with soft blue silicone/ PTFE seal fitted to a wider screw cap	Shimadzu	100	**548-1312**
2 ml crimp top vial with type 7 rubber/ PTFE seal	Spark	100	**548-1313**
2 ml crimp top vial with white silicone/red PTFE seal	Thermo Scientific	100	**548-1330**

VWR COLLECTION

SELECTED FOR YOU

Crimpers and decappers

Manual crimping tools

- Chemical resistant hardened crimping jaws made of a special alloy
- Easy and convenient handling
- Adjustable crimping pressure

Additionally 11, 13 and 20 mm crimpers are available with adjustable crimping height.

Pneumatic handheld crimping tools

Crimping and decapping tool operated by compressed air (min. 6,2 bar)

- Easy handling: Just by pushing the button the vial is crimped or decapped
- Adjustable and constant crimping pressure
- Interchangeable crimping or decapping heads
- CE mark of conformity

Space saving installation with balancer (as an option - see ordering table) above the working bench to compensate weight of the crimper. Requires air supply connector with ¼" thread (female). Stand with foot switch also available as an accessory.

Description	Pk	Cat. No.
Manual crimping tools		
Crimper for 13 mm aluminium caps	1	**548-0499**
Crimper for 13 mm flip-top/flip-off seals	1	**548-0500**
Crimper for 13 mm flip tear up seals	1	**548-0503**
Crimper for 20 mm flip-top/flip-off seals	1	**548-0602**
Crimper for 20 mm flip tear up seals	1	**548-0605**
Crimper for 28 mm flip-top/flip-off seals	1	**548-0643**
Crimper for 28 mm aluminium caps	1	**548-0645**
Crimper for 32 mm aluminium caps	1	**548-0655**
Pneumatic handheld crimping tools		
Basic pneumatic crimping tool	1	**548-0304**
Hanging device with balancer	1	**548-0305**
Crimping head for 8 mm aluminium caps	1	**548-0333**
Crimping head for 11 mm aluminium caps	1	**548-0445**
Crimping head for 13 mm flip-top/flip-off seals	1	**548-0501**
Crimping head for 13 mm aluminium caps	1	**548-0502**
Crimping head for 20 mm aluminium caps	1	**548-0603**
Crimping head for 20 mm flip-top/flip-off seals	1	**548-0604**
Crimping head for 28 mm flip tear up seals	1	**548-0644**
Crimping head for 32 mm aluminium caps	1	**548-0656**

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Description	Pk	Cat. No.
Pneumatic handheld crimping tools		
Crimping head for 32 mm flip tear up seals	1	548-0657
Crimping head for 20 mm flip tear up seals	1	548-3262
Stand with foot switch	1	548-3286

Description	Pk	Cat. No.
Crimpers and decappers		
Crimper for 8 mm aluminium caps	1	548-0069
Decapper for 8 mm aluminium caps	1	548-0070
Crimper for 11 mm aluminium caps	1	548-0071
Decapper for 11 mm aluminium caps	1	548-0072
Crimper for 20 mm aluminium caps	1	548-0073
Decapper for 20 mm aluminium caps	1	548-0074
Decapper for 13 mm aluminium caps	1	548-0504
Decapper for 28 mm aluminium caps	1	548-0646
Decapper for 32 mm aluminium caps	1	548-0658
Pneumatic decappers		
Decapping head for 8 mm aluminium caps	1	548-0334
Decapping head for 11 mm aluminium caps	1	548-0446
Decapping head for 13 mm aluminium caps	1	548-0505
Decapping head for 20 mm aluminium caps	1	548-0606
Decapping head for 28 mm aluminium caps	1	548-0647
Decapping head for 32 mm aluminium caps	1	548-0659

VWR COLLECTION

SELECTED FOR YOU

Vial racks

In clear transparent acrylic

- Easy handling and transportation of sample vials
- Solid construction
- Safe storage of conical vials

Hole Ø (mm)	No. of holes	W×D×H (mm)	Pk	Cat. No.
3 - 8,5	50	173×95×20	1	548-0130
12	50	173×95×20	1	548-0131
15,1	40	175,8×115,5×20	1	548-0192
24	25	160×160×30	1	548-0132

VWR COLLECTION

SELECTED FOR YOU

Storage vials

Screw neck vials in clear or in amber, 1st hydrolytic class glass for sample storage. A broad range of closed top screw caps available with different types of septa.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Screw neck vials for storage purposes				
Clear glass	8	16,6×61	1.000	548-0821
Clear glass	20	27,5×57	100	548-0154
Clear glass	12	18,5×66	1.000	548-0820
Clear glass	1,5	11,6×32	1.000	548-0018
Clear glass	4	14,7×45	1.000	548-0051
Clear glass	30	27,5×72,5	100	548-0155
Clear glass	16	20,6×71	1.000	548-3027
Clear glass	40	27,5×95	100	548-0156
Clear glass	20	22,7×86	1.000	548-3231
Clear glass	60	27,5×140	100	548-0640
Amber glass	8	16,6×61	1.000	548-0889
Amber glass	4	14,7×45	1.000	548-0052
Clear glass, with certificate	40	27,5×95	100	548-1390
Amber glass	12	18,5×66	1.000	548-0903
Amber glass	1,5	11,6×32	1.000	548-0448
Amber glass	20	27,5×57	100	548-0638

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Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Screw neck vials for storage purposes				
Amber glass	30	27,5×72,5	100	**548-0637**
Amber glass	40	27,5×95	100	**548-0639**
Amber glass	60	27,5×140	100	**548-0641**

Type	Septum	Hardness	Thickness (mm)	Pk	Cat. No.
Closed top PP screw caps for storage vials					
PP black, closed, for 548-0821, 548-0889, 548-0820, 548-0903	Butyl red/PTFE grey	55° shore A	1,3	1.000	**548-0861**
PP black, closed, for 548-0821, 548-0889, 548-0820, 548-0903	Natural rubber red-orange/TEF transparent	60° shore A	1,3	1.000	**548-0862**
PP black, closed, for 548-0821, 548-0889, 548-0820, 548-0903	Silicone white/PTFE red	45° shore A	1,3	1.000	**548-0863**
PP black, closed, for 548-3027, 548-0549	Silicone white/PTFE red	55° shore A	1,5	1.000	**548-3363**
PP white, closed, for 548-0890	Butyl red/PTFE grey	45° shore A	1,3	1.000	**548-0901**
PP white, closed, for 548-0890	Natural rubber red-orange/TEF transparent	60° shore A	1,3	1.000	**548-0899**
PP white, closed, for 548-0154, 548-0638, 548-0155, 548-0637, 548-0156, 548-0639, 548-0640, 548-0641	PTFE/EPDM black/PTFE	-	2,0	1.000	**548-0871**
PP white, closed, for 548-0890	Silicone white/PTFE red	45° shore A	1,3	1.000	**548-0900**
PP screw caps with 9 mm centre hole for storage vials					
PP screw caps for 548-0821, 548-0889, 548-0820, 548-0903	Butyl red/PTFE grey	55° shore A	1,6	1.000	**548-1393**
PP screw cap for 548-0821, 548-0889, 548-0820, 548-0903	Natural rubber red-orange/TEF transparent	60° shore A	1,3	1.000	**548-3364**
PP screw cap for 548-0821, 548-0889, 548-0820, 548-0903	Silicone white/PTFE red	45° shore A	1,3	1.000	**548-3335**

Screw neck V-vials with screw cap

Wheaton

Clear glass, graduated, PP screw cap with hole and PTFE/rubber seal

Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
0,3	13×32	12	**548-0000**
1	13×41	12	**548-0124**
2	20×41	12	**548-0129**
3	20×47	12	**548-0128**
5	20×61	12	**548-0135**

Serum tubing vials
Wheaton

Clear glass

Amber glass

The clear glass vials are manufactured from Wheaton '200' low extractable borosilicate glass tubing to maintain uniform wall thickness. The amber vials are manufactured from Wheaton '320' borosilicate glass.

- With a blowback feature in the neck and a specially designed bottom radius for added strength
- These features are important for freeze drying applications
- Vials are provided in shrink-wrapped modules which greatly reduces particulate contamination

Meets ASTM Type 1, Class A/B and USP Type 1 standards

Delivery information: Vials are supplied without closures.

Type	Capacity (ml)	Ø×H (mm)	Pk	Cat. No.
Clear glass, flat bottom	2	15×32	144	**548-2010**
Clear glass, flat bottom	3	17×38	144	**548-2011**
Clear glass, flat bottom	5	22×40	144	**548-2012**
Clear glass, flat bottom	10	24×50	144	**548-2013**
Clear glass, flat bottom	20	30,5×58	120	**548-2014**
Amber glass, flat bottom	2	15×32	144	**548-2015**
Amber glass, flat bottom	5	22×40	144	**548-2016**
Amber glass, flat bottom	10	24×50	144	**548-2017**

Bottles, serum/sample
Wheaton

Borosilicate glass, clear or brown

Serum bottles are ideal for long and short term sample storage, lyophilisation and vaccine/injectable drug containers. These moulded bottles have excellent wall strength and chemical tolerances which are important for storage applications. Bottles are manufactured from Wheaton 400 borosilicate moulded glass that conforms to USP Type I requirements. Bottles are packaged in shrink-wrapped partitioned modules with the exception of 2 ml size, which has no partition.

- Fits most freeze drying applications
- Borosilicate glass conforms to USP Type I requirements
- Shrink-wrapped partitioned modules reduce breakage

Capacity (ml)	Ø×H (mm)	Neck-Ø (mm)	Pk	Cat. No.
Clear				
5	23×47	13×20	288	**216-3005**
10	25×54	13×20	288	**216-3006**
20	32×58	13×20	288	**216-3007**
30	37×63	13×20	288	**216-3008**
50	43×73	13×20	288	**216-3009**
60	41×91	13×20	144	**216-3010**
100	52×95	13×20	144	**216-3011**
125	54×107	13×20	144	**216-3012**
Brown				
5	23×47	13×20	288	**216-3013**
10	25×54	13×20	288	**216-3014**
20	32×58	13×20	288	**216-3015**
30	37×63	13×20	288	**216-3016**
50	43×73	13×20	288	**216-3017**
100	52×95	13×20	144	**216-3018**

Micro syringe ultra-minute volume

Micro syringe with fixed needle for high sensitivity GC analysis and ultra-minute volume.

- Zero dead volume between plunger and needle
- Fixed needle with bevelled tip for smooth septum penetration

Volume (µl)	Length (mm)	Type of tip	Pk	Cat. No.
1	50	Bevelled	1	549-0197
5	75	Bevelled	1	549-0198

Length in ordering table refers to needle length.

Standard micro syringes

Standard micro syringes for GC with fixed needle.

- All parts in contact with liquid are made of stainless steel and neutral borosilicate glass

Description	Volume (µl)	Length (mm)	Type of tip	Pk	Cat. No.
Standard micro syringe	10	50	Bevelled	1	549-0199
Standard micro syringe	25	50	Bevelled	1	549-0522
Standard micro syringe	50	50	Bevelled	1	549-0523
Standard micro syringe	100	50	Bevelled	1	549-0524

Length in ordering table refers to needle length.

HPLC micro syringes, Rheodyne

The fine fixed needle with special polished blunt tip, specific length and diameter ensures a complete seal, preventing damage to needle seals and rotor.

Volume (µl)	Length (mm)	Type of tip	Pk	Cat. No.
10 *	51	LC	1	549-0534
100	51	LC	1	549-0535

* with super flexible plunger
Length in ordering table refers to needle length.

Gas-tight micro syringes

Micro syringe without needle

Micro syringe with interchangeable needle

Micro syringes without needle

General purpose Luer lock connector for use with autosamplers and liquid handling instruments.

All parts in contact with sample are made from neutral borosilicate glass and PTFE. This provides excellent performance and an inert sample environment.

Ordering information: Needles must be ordered separately.

Interchangeable Luer lock needles

Made from 304 stainless steel

549-0560 needles for 1, 2,5, 5 and 10 ml gas-tight syringes. 549-0565 needles for 0,1 ml gas-tight syringes.

PTFE tips

Provides a complete leak-tight seal for both liquids and gases.

Description	Volume (ml)	Length (mm)	Type of tip	For	Pk	Cat. No.
Micro syringes without needle						
Gas-tight micro syringe	1				1	549-0536
Gas-tight micro syringe	2,5				1	549-0537
Gas-tight micro syringe	5				1	549-0538
Gas-tight micro syringe	10				1	549-0539
Micro syringe with interchangeable needle						
Gas-tight micro syringe	0,10	50	Bevelled		1	549-0559

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Description	Volume (ml)	Length (mm)	Type of tip	For	Pk	Cat. No.
PTFE tips						
PTFE tips				1 ml micro syringe	5	**549-0561**
PTFE tips				2,5 ml micro syringe	5	**549-0562**
PTFE tips				5 ml micro syringe	5	**549-0563**
PTFE tips				10 ml micro syringe	5	**549-0564**

Gauge	Length (mm)	Ø ext. (mm)	Ø int. (mm)	Type of tip	Pk	Cat. No.
Interchangeable Luer lock needles						
24	50	0,56	0,30	Bevelled	5	**549-0560**
-	50	0,52	0,18	Bevelled	5	**549-0565**

Microsyringes for GC autosampler Agilent 7673A

Gauge	Volume (µl)	Length (mm)	Type of tip	Pk	Cat. No.
23	5	43	AS	1	**549-0566**
23	10	43	AS	1	**549-0567**
23	10 *	43	AS	1	**549-0568**

* with super flexible plunger
Length in ordering table refers to needle length.

Needle types Hamilton

Point style 2

10-12° bevelled non coring needle point recommended for septum penetration; only needle gauges 26s-22 are recommended for optimum septum penetration.

Point style 3

Blunt needle point for use with HPLC injection valves and for sample pipetting.

Point style 4

10 -12° bevelled needle point recommended for life science applications; special point styles such as 12° and 45° are available on request.

Point style 5

Conical needle with side port for penetration of septa, thin-gauged vinyls and plastics without coring, minimises septum damage.

Point style AS (Autosampler)

Special conical style needle point designed to withstand the demands of multiple injections, exclusively used on autosamplers.

Legend

LTN: Luer tip cemented needle syringe

TLL: PTFE Luer lock tip

N: Cemented needle syringe

LT: Luer tip syringe

RN: Removable needle syringe

700 series Microliter™ syringes
Hamilton

Universal injection syringes for GC, HPLC and TLC.

- Plunger is individually fitted to the glass barrel
- High accuracy and precision
- Plunger and cylinder are not interchangeable

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Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
26s	5	51	0,48	75 N	2	1	**549-1230**
26s	5	51	0,48	75 RN	2	1	**549-1231**
-	10	-	-	701 LT	-	1	**549-0221**
23s-26s	10	43	0,72 - 0,47	701 N	AS	6	**549-1276**
26s	10	51	0,47	701 RN	2	1	**549-1137**
26s	10	51	0,47	701 N	2	6	**549-1140**
26s	10	51	0,47	701 N	3	1	**549-0223**
26s	10	51	0,47	701 N	2	1	**549-1135**
26s	10	70	0,47	701 N	2	1	**549-1138**
-	25	-	-	702 LT	-	1	**549-0363**
22s	25	51	0,72	702 RN	2	1	**549-1149**
22s	25	51	0,72	702 N	2	1	**549-1144**
-	50	-	-	705 LT	-	1	**549-0225**
22s	50	51	0,72	705 N	2	1	**549-1153**
22s	50	51	0,72	705 RN	2	1	**549-1154**
-	100	-	-	710 RN	-	1	**548-1535**
-	100	-	-	710 LT	-	1	**549-0227**
22s	100	51	0,72	710 N	2	1	**549-1156**
22s	100	51	0,72	710 RN	2	1	**549-1157**
-	250	-	-	725 LT	-	1	**549-0228**
22s	250	51	0,72	725 N	2	1	**549-1159**
22s	250	51	0,72	725 RN	2	1	**549-1162**
-	500	-	-	750 LT	-	1	**549-0229**
-	500	-	-	750 RN	-	1	**548-1536**
22	500	51	0,72	750 N	2	1	**549-1166**
22	500	51	0,72	750 RN	2	1	**549-1167**

800 series Microliter™ syringes
Hamilton

Universal injection syringes for GC. Similar to the 700 series but with a reinforced, protected plunger.

- Extended handle simplifies sampling from test tubes or long-necked flasks
- Available with a standard 51 mm needle: cemented (N) or removable (RN)

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
26s	5	51	0,47	85 N	2	1	**549-1202**
26s	5	51	0,47	85 RN	2	1	**549-1203**
26s	10	51	0,47	801 N	2	1	**549-1204**
26s	10	51	0,47	801 RN	2	1	**549-1205**
22s	25	51	0,72	802 N	2	1	**549-1206**
22s	25	51	0,72	802 RN	2	1	**549-1207**
22s	50	51	0,72	805 N	2	1	**549-1208**
22s	50	51	0,72	805 RN	2	1	**549-1209**
22s	100	51	0,72	810 N	2	1	**549-1210**
22s	100	51	0,72	810 RN	2	1	**549-1211**
22s	250	51	0,72	825 RN	2	1	**549-1213**

Description	Volume (µl)	Type	Pk	Cat. No.
Accessories				
Barrel/plunger assembly	10	801 RN	1	**549-0215**

1000 series Gastight® syringes
Hamilton

Gas-tight syringes for use with gases or liquids.

- PTFE plunger tip creates a leak-free seal
- Syringe glass barrel and plunger are interchangeable

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Gauge	Volume (ml)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
-	1	-	-	1001 LT	-	1	549-1189
-	1	-	-	1001 TLL *	-	1	613-1321
-	1	-	-	1001 TLL	-	1	549-0231
-	1,25	-	-	1001,25 LT	-	1	549-0250
-	2,5	-	-	1002 LT	-	1	549-1192
-	2,5	-	-	1002 TLL *	-	1	613-1322
-	5	-	-	1005 LT	-	1	549-1194
-	5	-	-	1005 TLL *	-	1	613-1323
-	10	-	-	1010 LT	-	1	549-1196
-	10	-	-	1010 TLL *	-	1	613-1324
22	1	51	0,72	1001 RN	2	1	549-0369
22	1	51	0,72	1001 LTN	2	1	549-1190
22	1	51	0,72	1001 LTN	3	1	613-1300
22	1	51	0,72	1001 LTN	5	1	549-1191
22	2,5	51	0,72	1002 RN	2	1	549-1265
22	2,5	51	0,72	1002 LTN	2	1	613-1302
22	2,5	51	0,72	1002 LTN	3	1	549-0370
22	5	51	0,72	1005 RN	2	1	549-1266
22	5	51	0,72	1005 LTN	2	1	613-1303
22	5	51	0,72	1005 LTN	5	1	549-1195
22	10	51	0,72	1010 RN	2	1	549-1267
22	10	51	0,72	1010 LTN	2	1	549-0232

* without slots

1700 series Gastight® syringes
Hamilton

Gas-tight syringes for use with gases or liquids.

- PTFE plunger tip creates a leak-free seal
- Syringe glass barrel and plunger are interchangeable

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
-	10	-	-	1701 LT	-	1	549-1125
-	25	-	-	1702 LT	-	1	549-1131
-	50	-	-	1705 LT	-	1	549-1170
-	50	-	-	1705 TLL **	-	1	613-0496
-	50	-	-	1705 TLLX *	-	1	613-1421
-	100	-	-	1710 LT	-	1	549-1175
-	100	-	-	1710 TLL **	-	1	549-0365
-	100	-	-	1710 TLLX *	-	1	613-1422
-	250	-	-	1725 LT	-	1	549-1180
-	250	-	-	1725 TLL **	-	1	549-0367
-	250	-	-	1725 TLLX *	-	1	613-1423
-	500	-	-	1750 LT	-	1	549-1184
-	500	-	-	1750 TLL **	-	1	613-1425
-	500	-	-	1750 TLLX *	-	1	613-1424
26s	10	51	0,47	1701 RN	2	1	549-1126
26s	10	51	0,47	1701 N	2	1	549-1124
26s	10	51	0,47	1701 N	3	1	549-0220
22s	25	51	0,72	1702 RN	2	1	549-1132
22s	25	51	0,72	1702 N	2	1	549-1130
22s	50	51	0,72	1705 RN	2	1	549-1171
22s	50	51	0,72	1705 N	2	1	549-1169
22s	100	51	0,72	1710 RN	2	1	549-1176
22s	100	51	0,72	1710 N	2	1	549-1174
22s	250	51	0,72	1725 RN	2	1	549-1181
22s	250	51	0,72	1725 N	2	1	549-1179
22s	250	51	0,72	1725 N	3	1	549-1183
22	500	51	0,72	1750 RN	2	1	549-1187
22	500	51	0,72	1750 N	2	1	549-1186

* for Microlab®
** without slots

1800 series Gastight® syringes
Hamilton

Gas-tight syringes for use with gases or liquids. Similar to the 1700 series but with a reinforced, protected plunger.

- PTFE plunger tip creates a leak-free seal
- Syringe glass barrel and plunger are interchangeable
- Available with a standard 51 mm needle: cemented (N) or removable (RN)

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
26s	10	51	0,47	1801 N	2	1	**549-1214**
26s	10	51	0,47	1801 RN	2	1	**549-1215**
22s	25	51	0,72	1802 N	2	1	**549-1216**
22s	25	51	0,72	1802 RN	2	1	**549-1217**
22s	50	51	0,72	1805 N	2	1	**549-1218**
22s	50	51	0,72	1805 RN	2	1	**549-1219**
22s	100	51	0,72	1810 N	2	1	**549-1220**
22s	100	51	0,72	1810 RN	2	1	**549-1221**
22s	250	51	0,72	1825 N	2	1	**549-1222**
22s	250	51	0,72	1825 RN	2	1	**549-1223**

7000 series modified Microliter™ syringes
Hamilton

Suitable for applications such as GC, TLC and micro pipetting. Manufactured according to the principle of dead volume by positive pressure. A tungsten piston is introduced into the syringe as far as the tip of the needle. Needle and piston are calibrated against each other and must be changed at the same time in the event of replacement.

- Volumetric dosage takes place in the needle
- Precision ±1% of the nominal volume

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
25	0,5	70	0,52	7000.5KH	3	1	**549-1226**
25	0,5	70	0,52	7000.5KH	2	1	**549-1227**
25	1	70	0,52	7001KH	3	1	**549-0904**
25	1	70	0,52	7001KH	2	1	**549-1128**
22	1	70	0,72	7101KH	3	1	**549-1224**
22	1	70	0,72	7101KH	2	1	**549-1225**
25	2	70	0,52	7002KH	3	1	**549-1237**
25	2	70	0,52	7002KH	2	1	**549-1238**
23	2	70	0,64	7102KH	3	1	**549-1239**
23	2	70	0,64	7102KH	2	1	**549-1240**
24	5	70	0,57	7105KH	3	1	**549-1235**
24	5	70	0,57	7105KH	2	1	**549-1236**

Syringes for GC Agilent autosampler 7673-7683, 6850
Hamilton

Gauge	Volume (µl)	Type	Type of tip	Pk	Cat. No.
Liquid tight syringes with removable needle					
23s	5	75 ASRN	AS	1	**613-1155**
26s	5	75 ASRN	AS	1	**613-1154**
23s	10	701 ASRN	AS	1	**613-1160**
26s	10	701 ASRN	AS	1	**613-1159**
Gastight syringes with removable needle					
23s	10	1701 ASRN	AS	1	**613-1164**
26s	10	1701 ASRN	AS	1	**554-1501**

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Gauge	Volume (µl)	Type	Type of tip	Pk	Cat. No.
Liquid tight syringes with fixed needle					
23s	5	75 ASN	AS	1	**549-1233**
23s	5	75 ASN	2	1	**549-1300**
23s-26s	5	75 ASN	AS	1	**549-1304**
26s	5	75 ASN	AS	1	**549-1234**
26s	5	75 ASN	2	1	**549-1302**
23s	10	701 ASN	2	1	**549-1301**
23s	10	701 ASN	AS	6	**549-1143**
23s	10	701 ASN	AS	1	**549-1141**
23s-26s	10	701 ASN	AS	1	**549-1305**
26s	10	701 ASN	AS	1	**549-1142**
26s	10	701 ASN	2	1	**549-1303**
Gastight syringes with fixed needle					
23s	10	1701 ASN	AS	1	**549-1256**
23s	10	1701 ASN	AS	6	**613-1162**
23s-26s	10	1701 ASN	AS	1	**549-1255**
23s-26s	10	1701 ASN	AS	6	**549-1258**

Constant rate CR700 series syringes
Hamilton

This adjustable Hamilton syringe delivers samples of identical volumes time after time, regardless of the pressure exerted on the piston by the operator. The micrometer control enables sample volumes to be chosen in increments as small as 0,05 µl. The locking bar serves to ensure that the sample volume always remains constant.

- Each syringe is tested in the factory for reproducibility and precision of flow
- Replacement tips are also available for ordering

Gauge	Volume (µl)	Length (mm)	Type	Type of tip	Pk	Cat. No.
22s	1 - 20	51	CR700-20	3	1	**549-1268**
22	10 - 200	51	CR700-200	3	1	**549-1269**

Repeating dispensing system, PB 600
Hamilton

The PB-600 works with Microliter™ or Gastight® syringes from 10 µl to 2,5 ml. Use the repeating dispenser with cemented needles (N), removable needles (RN), Luer tip (LT), or PTFE Luer lock (TLL) syringes.

- Up to 50 times with the push of a button
- Volumes are between 0,2 to 50 µl

Delivery information: Supplied without syringe.

Description	Volume (µl)	Pk	Cat. No.
Repeating dispenser, PB-600	0,2 - 50	1	**549-0233**

Microlitre™ syringes for manual HPLC injections on Rheodyne and Valco valves
Hamilton

NR = Rheodyne needle
RNR = Replacement Rheodyne needle

Model	1701 RNR	1702 RNR	1702 NR	1705 NR	1710 RNR	1710 NR	1725 RNR	1750 NR	1750 RNR
Replacement needle	613-1951						613-1966		

Gauge	Volume (µl)	Length (mm)	Type	Type of tip	Pk	Cat. No.
22s	2,5	51	62 RNR	3	1	**549-1277**
22s	5	51	65 RNR	3	1	**549-1278**
22s	10	51	701 NR	3	1	**549-1139**
22s	25	51	702 NR	3	1	**549-1151**
22s	50	51	705 NR	3	1	**549-1155**
22s	100	51	710 NR	3	1	**549-1158**
22	250	51	725 NR	3	1	**549-1164**
22	500	51	750 NR	3	1	**549-1168**

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Gauge	Volume (µl)	Length (mm)	Type	Type of tip	Pk	Cat. No.
Gastight® syringes						
22s	10	51	1701 RNR	3	1	**549-1127**
22s	25	51	1702 RNR	3	1	**549-1133**
22s	25	51	1702 NR	3	1	**549-1134**
22s	50	51	1705 RNR	3	1	**549-1172**
22s	50	51	1705 NR	3	1	**549-1173**
22s	100	51	1710 RNR	3	1	**549-1177**
22s	100	51	1710 NR	3	1	**549-1178**
22	250	51	1725 RNR	3	1	**549-1182**
22	500	51	1750 NR	3	1	**549-1185**
22	500	51	1750 RNR	3	1	**549-1188**

Syringes for gas chromatography autosamplers, CTC PAL® GC-xt and Combi PAL-xt liquid mode

Hamilton

These C-line syringes feature a direct attachment design of the needle to the barrel which eliminates contact between the sample solvent and adhesive, reducing carryover and ghost peaks. The inert plunger tip polymer provides enhanced solvent compatibility and longer lifetime.

Gauge	Volume (µl)	Type	Type of tip	Pk	Cat. No.
Microliter™ syringes					
26s	1,2	7701.2 KH CTC	AS	1	**549-1307**
26s	5	75 N CTC	AS	1	**549-1311**
26s	10	701 N CTC	AS	1	**549-1312**
23s	10	701 N CTC	AS	1	**549-1309**
23s-26s	10	701 N CTC	AS	1	**549-0525**
Gastight® syringes					
26s	25	1702 N CTC	AS	1	**549-1313**
22s	25	1702 N CTC	3	1	**549-1319**
26s	100	1710 N CTC	AS	1	**549-1314**
26	250	1725 N CTC	AS	1	**549-1315**
26	500	1750 N CTC	AS	1	**549-1316**

Headspace syringes for CTC GC PAL

Hamilton

Gauge	Volume (µl)	Length (mm)	Type	Type of tip	Pk	Cat. No.
23	1000	51	1001 LTN CTC	5	1	**549-1324**
23	2500	51	1002 LTN CTC	5	1	**549-1325**
23	5000	51	1005 LTN CTC	5	1	**549-1326**
26	1000	51	1001 LTN CTC	5	1	**549-1327**
26	2500	51	1002 LTN CTC	5	1	**549-1328**
26	5000	51	1005 LTN CTC	5	1	**549-1329**

Syringe codes SGE

Fixed needle F

Economical; for autosampler; one syringe – one method; sample <70 °C

Removable needle R

One syringe – many methods; sample <120 °C

Luer lock LL

For syringe filter and pump priming

Luer tip LT

For syringe filter and pump priming

Plunger in needle

Volumes 0,5 to 5 µl; plunger extends to needle tip

Gastight, PTFE tipped GT

Replaceable plunger; for dirty samples; easy to remove and clean plunger; gas or headspace

Guided plunger GP

Extended barrel; robust

Plunger protection

Prevents plunger bending

SuperfleX

Unbreakable flexible plunger made of titanium-nickel alloy

Plunger-in-needle syringes, 0,5 to 5 µl

SGE (Trajan)

Guaranteed liquid and gas tight to 3,5 bar. The plunger extends into the needle tip. Ideal for dispensing very small liquid volumes.

- Interchangeable needle and plunger

Replacement plunger/needle kits on request.

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
6,5 mm OD barrel							
23	0,5	50*	0,63*	0.5BNR-5	conical	1	**549-0253**
23	0,5	50*	0,63*	0.5BNR-5BV	bevelled	1	**549-0414**
26	0,5	50*	0,47*	0.5BNR-5/0.47	conical	1	**549-0415**
8 mm OD barrel							
23	0,5	70*	0,63*	0.5BR-7	conical	1	**549-0254**
23	0,5	70*	0,63*	0.5BR-BV	bevelled	1	**549-0416**
23	1,0	50*	0,63*	1BR-5C	conical	1	**549-0258**
23	1,0	50*	0,63*	1BR-5BV	bevelled	1	**549-0417**
23	1,0	70*	0,63*	1BR-7C	conical	1	**549-0259**
23	1,0	70*	0,63*	1BR-7BV	bevelled	1	**549-0418**
23	1,0	115*	0,63*	1BR-11.5C	conical	1	**549-0419**
26	1,0	70*	0,47*	1BR-7/0.47OC	conical	1	**549-0262**
23	5,0	50*	0,63*	5BR-5C	conical	1	**549-0263**
23	5,0	50*	0,63*	5BR-5BV	conical	1	**549-0420**
23	5,0	70*	0,63*	5BR-7C	conical	1	**549-0264**
23	5,0	70*	0,63*	5BR-7BV	bevelled	1	**549-0421**
23	5,0	70*	0,63*	5BR-7N	nozzle	1	**549-0423**
23	5,0	115*	0,63*	5BR-11.5C	conical	1	**549-0422**
6,5 mm OD barrel, with repeating adaptor							
23	0,5	50*	0,63*	0.5BNR-5-RAX	conical	1	**549-0255**
26	0,5	50*	0,47*	0.5BNR-5/0.47-RAX	conical	1	**549-0424**
8 mm OD barrel, with repeating adaptor							
23	0,5	70*	0,63*	0.5BR-7-RAX	conical	1	**549-0425**
23	1,0	50*	0,63*	1BR-5RAX	conical	1	**549-0260**
23	1,0	70*	0,63*	BR-7-RAX	conical	1	**549-0261**
23	5,0	50*	0,63*	5BR-5RAX	conical	1	**549-0265**
23	5,0	70*	0,63*	5BR-7RAX	conical	1	**549-0426**

* Mentioned Ø and length are those of the needle

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Microvolume syringes 5 µl
SGE (Trajan)

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
Fixed needle, barrel OD 6,5 mm							
26	5	50	0,47	5F	bevelled	1	**549-0267**
26	5	50	0,47	5FX *	bevelled	1	**549-0269**
Fixed needle with guided plunger, barrel OD 8 mm							
26	5	50	0,47	5F-GP	bevelled	1	**549-0272**
Removable needle, barrel OD 6,5 mm							
26	5	50	0,47	5R	bevelled	1	**549-0268**
Removable needle with guided plunger, barrel OD 8 mm							
26	5	50	0,47	5R-GP	bevelled	1	**549-0273**

Gauge	Length	Ø ext.	Type of tip	Type	Pk	Cat. No.
Spare needles for 5 µl syringes						
26	50	0,47	bevelled	N5-5	5	**549-0356**

* SuperfleX, with flexible plunger

Microvolume syringes 10 µl
SGE (Trajan)

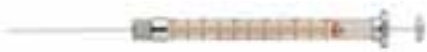
Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
Fixed needle, barrel OD 6,5 mm							
26	10	50	0,47	10F	bevelled	1	**549-0279**
26	10	50	0,47	10F	bevelled	6	**549-0280**
26	10	50	0,47	10F	bevelled	10	**548-0198**
26	10	50	0,47	10F	bevelled	25	**548-0199**
26	10	50	0,47	10F-5C	conical	1	**549-0431**
26	10	50	0,47	10FX *	bevelled	1	**549-0284**
26	10	50	0,47	10FX *	bevelled	6	**549-0285**
26	10	50	0,47	10FX-5C *	conical	1	**549-0434**
23	10	50	0,63	10FX-5/0.63C *	conical	6	**548-0934**
26	10	50	0,47	10FX-5C *	conical	6	**548-0779**
26	10	70	0,47	10F-7	bevelled	1	**549-0430**
Fixed needle with guided plunger, barrel OD 8 mm							
26	10	50	0,47	10F-GP	bevelled	1	**549-0290**
Removable needle, barrel OD 6,5 mm							
26	10	50	0,47	10R	bevelled	1	**549-0281**
26	10	50	0,47	10R	bevelled	6	**549-0283**
26	10	50	0,47	10RX *	bevelled	1	**549-0286**
26	10	50	0,47	10RX *	bevelled	6	**549-0287**
Removable needle with guided plunger, barrel OD 8 mm							
26	10	50	0,47	10R-GP	bevelled	1	**549-0291**

Gauge	Length (mm)	Ø ext. (mm)	Type of tip	Type	Pk	Cat. No.
Spare needles for 10 µl syringes						
26	50	0,47	conical	N10-5C	2	**548-0967**
23	50	0,63	conical	N10-5/0.63C	2	**548-0968**
26	70	0,47	conical	N10-7C	2	**548-0969**
23	70	0,63	conical	N10-7/0.63C	2	**548-0970**
26	50	0,47	bevelled	N10-5	5	**549-0357**
23	50	0,63	bevelled	N10-7/0.63	5	**548-0972**
26	70	0,47	bevelled	N10-7	5	**549-0358**
26	115	0,47	bevelled	N10-11.5	5	**548-0973**
22	2"	0,028"	LC	N10-LC	5	**549-0542**
26	50	0,47	side hole/dome	N10-5H	2	**548-0976**
-	100	0,17	on column	N10-OC-10/0.17VS	2	**548-0980**
-	75	0,23	on column	N10-OC-7.5/0.23	2	**549-0543**

* SuperfleX, with flexible plunger

Microvolume syringes 25 to 500 µl
SGE (Trajan)

50F



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Description	Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
Fixed needle								
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	25	50	0,5	25F	bevelled	1	**549-0293**
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	50	50	0,5	50F	bevelled	1	**549-0298**
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	100	50	0,5	100F	bevelled	1	**549-0308**
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	250	50	0,5	250F	bevelled	1	**549-0316**
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	500	50	0,5	500F	bevelled	1	**548-0943**
Removable needle								
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	25	50	0,5	25R	bevelled	1	**549-0294**
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	50	50	0,5	50R	bevelled	1	**549-0299**
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	100	50	0,5	100R	bevelled	1	**549-0309**
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	250	50	0,5	250R	bevelled	1	**549-0317**
Syringes, replacement for Hamilton C and CX syringes, PTFE tipped plunger, termination 1/4 - 28 UNF	25	500	50	0,5	500R	bevelled	1	**562-1063**

Gauge	Length (mm)	Ø ext. (mm)	Type of tip	Type	Pk	Cat. No.
Spare needles for 25-500 µl syringes						
25	50	0,5	conical	N25/500-5C	2	**548-0981**
25	70	0,5	conical	N25/500-7C	2	**548-0982**
25	115	0,5	conical	N25/500-11.5C	2	**548-0983**
25	50	0,5	bevelled	N25/500-5	5	**549-0359**
23	50	0,63	bevelled	N25/500-5/0.63	5	**548-0984**
25	70	0,5	bevelled	N25/500-7	5	**548-0985**
23	70	0,63	bevelled	N25/500-7/0.63	5	**548-0986**
25	115	0,5	bevelled	N25/500-11.5	5	**548-0987**
23	115	0,63	bevelled	N25/500-11.5/0.63	5	**548-0988**
22	2"	0,028"	LC	N25/500-LC	5	**549-0360**
25	50	0,5	LC	N25/500-WLC	5	**548-0989**
22	70	0,028"	LC	N25/500-LC-7	5	**548-0990**
25	50	0,5	side hole/dome	N25/500-5H	2	**548-0992**

Gas tight syringes 10 to 500 µl
SGE (Trajan)

10R-GT

Constructed from borosilicate glass, PTFE plunger tips and Kel-F® or PTFE Luer cones where applicable.

- Assembled with an interference fit between plunger tip and barrel to effect the gas sealing properties of the syringe
- Plungers are replaceable on these syringes (plungers on request)

Barrel OD: 10 µl = 6,5 mm; 25 - 500 µl = 8 mm

Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
Fixed needle							
26	10	50	0,47	10F-GT	bevelled	1	**549-0288**
26	10	50	0,47	10F-GT	bevelled	6	**548-0935**
26	10	70	0,47	10F-GT-7	bevelled	1	**549-0445**
25	25	50	0,5	25F-GT	bevelled	1	**549-0295**
25	50	50	0,5	50F-GT	bevelled	1	**549-0300**
25	100	50	0,5	100F-GT	bevelled	1	**549-0310**
25	250	50	0,5	250F-GT	bevelled	1	**549-0318**
25	500	50	0,5	500F-GT	bevelled	1	**549-0326**
Removable needle							
26	10	50	0,47	10R-GT	bevelled	1	**549-0289**
26	10	50	0,47	10R-GT	bevelled	6	**562-1031**
25	25	50	0,5	25R-GT	bevelled	1	**549-0296**
25	50	50	0,5	50R-GT	bevelled	1	**549-0303**
23	50	50	0,63	50R-V-GT, with RN Valve	cone	1	**549-0304**
25	100	50	0,5	100R-GT	bevelled	1	**549-0312**

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Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
Removable needle							
23	100	50	0,63	100R-V-GT, with RN valve	cone	1	**549-0313**
25	250	50	0,5	250R-GT	bevelled	1	**549-0446**
25	500	50	0,5	500R-GT	bevelled	1	**549-0447**
Removable needle with guided plunger							
	10			10R-GP-GT		1	**549-0448**
Removable needle, for on-column injections (older Carlo Erba instruments)							
	10			10R-GT-OC-CE		1	**549-0449**
Fixed Luer tip							
	50			50F-LT-GT		1	**549-0301**
	100			100F-LT-GT		1	**549-0311**
	250			250F-LT-GT		1	**549-0319**
	500			500F-LT-GT		1	**548-0945**
Fixed Luer lock tip							
	50			50F-LL-GT		1	**549-0302**
	100			100F-LL-GT		1	**548-0940**
	250			250F-LL-GT		1	**549-0320**
	500			500F-LL-GT		1	**548-0946**
Fixed Luer lock with plunger stop							
	50			50F-LLX-GT		1	**548-0938**
	100			100F-LLX-GT		1	**548-0941**
	250			250F-LLX-GT		1	**548-0942**
	500			500F-LLX-GT		1	**548-0947**

Gauge	Length (mm)	Ø ext. (mm)	Type of tip	Type	Pk	Cat. No.
Spare Luer lock needles for 10-500 µl gas tight syringes						
23	50	0,63	bevelled	NLL-5/23	5	**548-1009**
23	50	0,63	side hole/dome	NLL-5/23H	2	**548-1010**
23	70	0,63	bevelled	NLL-7/23	5	**548-1019**
23	115	0,63	bevelled	NLL-11.5/23	5	**548-1025**
19	50	1,07	bevelled	NLL-5/19	5	**548-1026**
19	50	1,07	side hole/dome	NLL-5/19H	2	**548-1027**
19	70	1,07	bevelled	NLL-7/19	5	**548-1028**
19	115	1,07	bevelled	NLL-11.5/19	5	**548-1029**
18	50	1,27	bevelled	NLL-5/18	5	**548-1030**
18	70	1,27	bevelled	NLL-7/18	5	**548-1031**
18	115	1,27	bevelled	NLL-11.5/18	5	**548-1032**
16	50	1,57	bevelled	NLL-5/16	5	**548-1033**
16	70	1,57	bevelled	NLL-7/16	5	**548-1034**
16	115	1,57	bevelled	NLL-11.5/16	5	**548-1035**
14	50	2,1	bevelled	NLL-5/14	5	**548-1036**
14	115	2,1	bevelled	NLL-11.5/14	5	**548-1037**
22	51	0,71	LC	NLL-LC	2	**548-1038**
25	50	0,5	LC	NLL-WLC	2	**548-1039**

Gas tight syringes 1 to 100 ml
SGE (Trajan)

Constructed from borosilicate glass, PTFE plunger tips and Kel-F® or PTFE Luer cones where applicable.

- Assembled with an interference fit between plunger tip and barrel to effect the gas sealing properties of the syringe
- Plungers are replaceable on these syringes
- Suitable for manual and dispenser/diluter application

Barrel OD: 1 ml = 9 mm; 2,5 ml = 11 mm; 5 ml = 14 mm; 10 ml = 18 mm; 25 ml = 27 mm; 50 ml = 32,8 mm; 100 ml = 40,8 mm

Gauge	Volume (ml)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
Fixed needle							
22	1	50	0,72	1MDF-GT	bevelled	1	**548-0948**
22	2,5	50	0,72	2.5MDF-GT	bevelled	1	**548-0949**
Removable needle							
23	1	50	0,63	1MDR-GT	bevelled	1	**549-0334**
23	2,5	50	0,63	2.5MDR-GT	bevelled	1	**549-0337**
23	5	50	0,63	5MDR-GT	bevelled	1	**549-0338**
23	10	50	0,63	10MDR-GT	bevelled	1	**549-0340**
Fixed Luer lock							
	1			1MDF-LL-GT		1	**549-0333**
	2,5			2.5MDF-LL-GT		1	**549-0336**
	5			5MDF-LL-GT		1	**548-0950**
	10			10MDF-LL-GT		1	**548-0951**
	25			25MDF-LL-GT		1	**548-0952**

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Gauge	Volume (ml)	Length (mm)	Ø ext. (mm)	Type	Type of tip	Pk	Cat. No.
Removable Luer lock							
	5			5MDR-LL-GT		1	**549-0339**
	10			10MDR-LL-GT		1	**549-0341**
	25			25MDR-LL-GT		1	**549-0342**
	50			50MR-LL-GT		1	**549-0343**
	100			100MR-LL-GT		1	**549-0344**
Fixed Luer							
	1			1MDF-LT-GT		1	**549-0332**
	2,5			2.5MDF-LT-GT		1	**549-0335**

Description	Gauge	Length (mm)	Ø ext. (mm)	Type of tip	Type	Pk	Cat. No.
Spare needles for 1-2,5 ml syringes							
	23	50	0,63	bevelled	NM1/2.5-5	5	**548-0998**
	23	50	0,63	dome	NM1/2.5-5/0.63D	2	**548-0999**
	23	70	0,63	bevelled	NM1/2.5-7	5	**548-1000**
	23	115	0,63	bevelled	NM1/2.5-11.5	5	**548-1007**
	22	51	0,028″	LC	NM1/2.5-LC	5	**549-0554**
	25	50	0,5	LC	NM1/2.5-WLC	5	**548-1008**
Spare needles for 5-10 ml syringes							
	23	50	0,63	bevelled	NM5/10-5	5	**548-0953**
	22	51	0,028″	LC	NM5/10-5	5	**548-0955**
	25	50	0,5	LC	NM5/10-5	5	**548-0956**
Spare Luer lock needles for 10-500 µl gas tight syringes							
	23	50	0,63	bevelled	NLL-5/23	5	**548-1009**
	23	50	0,63	side hole/dome	NLL-5/23H	2	**548-1010**
	23	70	0,63	bevelled	NLL-7/23	5	**548-1019**
	23	115	0,63	bevelled	NLL-11.5/23	5	**548-1025**
	19	50	1,07	bevelled	NLL-5/19	5	**548-1026**
	19	50	1,07	side hole/dome	NLL-5/19H	2	**548-1027**
	19	70	1,07	bevelled	NLL-7/19	5	**548-1028**
	19	115	1,07	bevelled	NLL-11.5/19	5	**548-1029**
	18	50	1,27	bevelled	NLL-5/18	5	**548-1030**
	18	70	1,27	bevelled	NLL-7/18	5	**548-1031**
	18	115	1,27	bevelled	NLL-11.5/18	5	**548-1032**
	16	50	1,57	bevelled	NLL-5/16	5	**548-1033**
	16	70	1,57	bevelled	NLL-7/16	5	**548-1034**
	16	115	1,57	bevelled	NLL-11.5/16	5	**548-1035**
	14	50	2,1	bevelled	NLL-5/14	5	**548-1036**
	14	115	2,1	bevelled	NLL-11.5/14	5	**548-1037**
	22	51	0,71	LC	NLL-LC	2	**548-1038**
	25	50	0,5	LC	NLL-WLC	2	**548-1039**
Spare plungers for Luer tip syringes							
100MAX-P, plunger, 100 ml						1	**549-0533**
P1MD-GT, plunger, 1 ml						1	**549-0496**
P2MD-GT, plunger, 2,5 ml						1	**549-0497**
P5MD-GT, plunger, 5 ml						1	**549-0529**
P10MD-GT, plunger, 10 ml						1	**549-0530**
P25MD-GT, plunger, 25 ml						1	**549-0531**

Handheld automated analytical syringe, eVol® XR

SGE (Trajan)

eVol® is the coupling of two precision devices: A digitally controlled electronic drive and an XCHANGE® enabled analytical syringe. The result is a digitally controlled positive displacement dispensing system that can be programmed to reproducibly and accurately perform a wide variety of liquid handling procedures.

Typical applications: Preparation of calibration standards, addition of internal standards, precise dispensing of non-aqueous liquids, sample dilution. Only five XCHANGE® syringes are required to dispense liquid volumes covering the range from 0,2 to 1000 µl.

- Precise user-independent handling procedures
- XCHANGE® analytical syringes can be easily and quickly changed allowing them to be dedicated to individual liquids and methods preventing possible cross-contamination of reagents
- Perfect solution for accurately aspirating and dispensing both aqueous and non-aqueous liquids

eVol® features a familiar Touch Wheel user interface and a full-colour screen. The smart menu allows all the functions to be accessed logically and quickly. The programming functions are intuitive and include help screens and prompts.

To comply with stringent laboratory standards (e.g. GLP, GMP, FDA) eVol® can be easily calibrated to ensure accurate dispensing at all times. The gravimetric calibration procedure is simple, intuitive and can be performed at appropriate intervals. Calibration factors can be stored for up to ten XCHANGE® syringes and can be quickly loaded when the syringe is changed.

eVol® XR automated analytical syringe starter kit

Delivery information: Supplied with eVol® XR electronic syringe, three eVol® syringes; 5 µl, 100 µl and 1 ml, stand, universal charger, instruction manual and disc with manual in multiple languages.

Replacement needles for 5 µl eVol® syringes

Note: All SGE 25 - 250 µl replacement needles can be used with the 50 and 100 µl eVol® syringes. All SGE 1 - 2,5 ml replacement needles can be used with the 500 µl eVol® syringe.

Description	Gauge	Volume (µl)	Length (mm)	Ø ext. (mm)	Type of tip	Pk	Cat. No.
eVol® XR automated analytical syringe starter kit							
eVol® XR syringe starter kit	-	-	-	-	-	1	**548-1532**
eVol® XR automated analytical syringe							
eVol® XR electronic syringe (handle only)	-	-	-	-	-	1	**548-1514**
eVol® syringes with removable needle							
eVol® syringe with removable needle	25	5 (0,2 - 5)	50	0,5	bevelled	1	**548-1349**
eVol® syringe with removable needle	25	50 (2 - 50)	50	0,5	bevelled	1	**548-1351**
eVol® syringe with removable needle	25	100	50	0,5	bevelled	1	**548-1430**
eVol® syringe with removable needle	23	500 (20 - 500)	50	0,63	bevelled	1	**548-1353**
eVol® syringe with removable needle	23	1000	50	0,63	bevelled	1	**548-1515**
eVol® syringes without needle							
eVol® syringe	-	5 (0,2 - 5)	-	-	-	1	**548-1350**
eVol® syringe	-	50 (2 - 50)	-	-	-	1	**548-1352**
eVol® syringe	-	500 (20 - 500)	-	-	-	1	**548-1354**
eVol® syringe for MEPS	-	50	-	-	-	1	**548-1428**
eVol® syringe for MEPS	-	500	-	-	-	1	**548-1427**
eVol® syringe for MEPS (2011 Firmware required)	-	100	-	-	-	1	**548-1429**

Description	Gauge	Length (mm)	Ø ext. (mm)	Type of tip	Type	Pk	Cat. No.
Spare needles for 25-500 µl syringes							
	25	50	0,5	bevelled	N25/500-5	5	**549-0359**
Spare needles for 1-2,5 ml syringes							
	23	50	0,63	bevelled	NM1/2.5-5	5	**548-0998**
Replacement plungers for eVol® syringes							
Replacement plunger for 5 µl eVol® syringes						1	**548-1356**
Replacement plunger for 50 µl eVol® syringes						1	**548-1357**
Replacement plunger for 500 µl eVol® syringes						1	**548-1358**
Accessories for handheld automated analytical syringe, eVol® XR							
Charger						1	**548-1348**
Charging stand						1	**548-1355**

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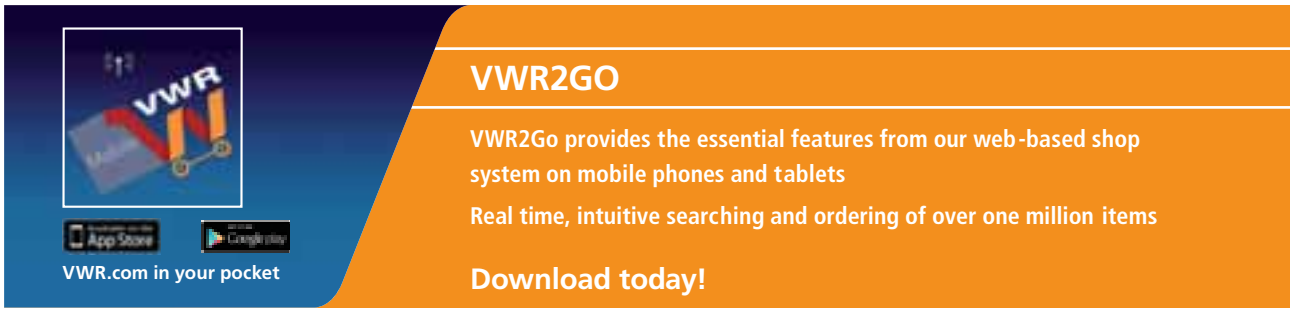
Description	Gauge	Length (mm)	Ø ext. (mm)	Type of tip	Type	Pk	Cat. No.
Replacement needles for 5 µl eVol® syringes							
	25	50	0,5	bevelled		5	**548-1342**
	23	50	0,63	cone		5	**548-1344**
	22	51	0,028"	LC		5	**548-1343**
	26	70	0,47	cone		5	**548-1346**
	25	70	0,5	bevelled		5	**548-1345**



Liquid-liquid extraction, EXtrelut® NT

EXtrelut® NT is a specially processed, inert, wide-pore kieselguhr with a high pore volume. It has been used for quite some time within research, for the sample preparation of urine, whole blood, plasma and other biological matrices. Other applications include environmental and residue testing such as analysis of industrial, domestic and waste water. EXtrelut® NT is supplied either pre-packed in cartridges or as a loose sorbent. EXtrelut® NT simplifies liquid-liquid extraction by replacing separation funnels. Using a single step is more efficient, saves solvent, as well as material and time, in contrast to classical funnel separation. The aqueous sample is simply applied to the EXtrelut® NT sorbent. It distributes itself over the chemically inert matrix and thus acts as a stationary phase. Subsequently, elution takes place using organic solvents that are non miscible with water. All the lipophilic substances are extracted from the aqueous into the organic phase.

- Saves solvent
- Easy to use
- Highly efficient

A comprehensive application guide is available. Contact VWR to receive a copy of the Merck ChromBook.

Description	Pk	Cat. No.
Extrelut® NT 1 glass columns for 0,1 - 1 ml sample	100	**1.15094.0001**
Extrelut® NT 3 glass columns for 1 - 3 ml sample	50	**1.15095.0001**
Extrelut® NT 20 PE columns for 5 - 20 ml sample	25	**1.15096.0001**
Extrelut® NT bulk packing for preparing large volume columns	1 kg	**1.15092.1000**
Extrelut® NT refill packs for refilling 50 Extrelut® NT 20 columns (including 50 replacement filters)	50	**1.15093.0001**

Solid phase extraction cartridges, LiChrolut®

LiChrolut® solid phase extraction (SPE) cartridges and accessories are manufactured to the highest standards. All SPE cartridges listed below are polypropylene unless otherwise stated. They are compatible with all automated SPE instruments and robots. Three important criteria are carefully controlled:

- Batch-to-batch reproducibility - each sorbent is tested for capacity towards polar and non-polar compounds
- Elimination of fines - sorbents have a narrow particle size distribution with virtually no fines
- Contamination - high purity sorbents and tubes are used and are pre-washed prior to packing ensuring contamination-free products

CN - For polar extractions

EN - For non-polar extraction on a polymeric phase

SCX- For cation exchange extraction

TSC- For mixed mode analysis of neutral and cationic analytes

Description	Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
LiChrolut® CN	200 mg	40 - 63	3	50	**1.19698.0001**
LiChrolut® EN glass*	200 mg	40 - 120	3	30	**1.19693.0001**
LiChrolut® EN	200 mg	40 - 120	3	30	**1.19870.0001**
LiChrolut® EN	200 mg	40 - 120	6	30	**1.19941.0001**
LiChrolut® EN	500 mg	40 - 120	6	30	**1.19691.0001**
LiChrolut® EN/RP-18 (top)	100/200 mg	40 - 120/40 - 63	6	30	**1.19912.0001**
LiChrolut® Florisil®	1000 mg	150 - 250	6	30	**1.19127.0001**
LiChrolut® RP18	100 mg	40 - 63	1	100	**1.19855.0001**
LiChrolut® RP18	200 mg	40 - 63	3	50	**1.02014.0001**
LiChrolut® RP18	500 mg	40 - 63	3	50	**1.02023.0001**
LiChrolut® RP18	500 mg	40 - 63	6	30	**1.19687.0001**
LiChrolut® RP18	1000 mg	40 - 63	6	30	**1.02122.0001**
LiChrolut® RP18	2000 mg	40 - 63	6	30	**1.19686.0001**
LiChrolut® RP18E	200 mg	40 - 63	3	50	**1.19847.0001**
LiChrolut® RP18E	500 mg	40 - 63	3	50	**1.19849.0001**
LiChrolut® SCX	200 mg	40 - 63	3	50	**1.02016.0001**
LiChrolut® SCX	500 mg	40 - 63	3	50	**1.02022.0001**
LiChrolut® Si	200 mg	40 - 63	3	50	**1.02021.0001**
LiChrolut® Si	500 mg	40 - 63	3	50	**1.02024.0001**
LiChrolut® TSC	300 mg	40 - 63	3	50	**1.19767.0001**

* For ultra-trace analysis

SOLA™ SPE columns
Thermo Scientific

This fritless SPE product range provides greater reproducibility with cleaner, more consistent extracts.

SOLA™ products provide unparalleled performance characteristics compared to conventional SPE, phospholipid removal and protein precipitation products. This includes:

- Higher levels of reproducibility
- Higher levels of extract cleanliness
- Reduced solvent requirements
- Increased sensitivity

This increased performance gives higher confidence in analytical results without compromising ease of use or requiring complex method development.

SOLA™ products provide reduced failure rates, higher analysis speeds and lower solvent requirements.

Description	Filling	Volume (nom.) (ml)	Pk	Cat. No.
SOLA™ HRP	10 mg	1	100	**554-1983**
SOLA™ SCX	10 mg	1	100	**554-1984**
SOLA™ SAX	10 mg	1	100	**554-1985**
SOLA™ WCX	10 mg	1	100	**554-4393**
SOLA™ WAX	10 mg	1	100	**554-4394**

HyperSep™ Retain™ PEP SPE columns
Thermo Scientific

HyperSep™ Retain™ PEP polymeric SPE material is a high purity, highly porous polystyrene DVB (divinyl benzene) material modified with urea functional groups to give balanced retention of polar and non-polar analytes.

HyperSep™ Retain™ PEP is ideal for a wide range of applications, such as drugs and metabolites in biological fluids, peptides in serum, plasma or biological fluids and environmental fluids.

HyperSep™ Retain™ PEP offers reproducible and reliable sample preparation through excellent batch-to-batch reproducibility. Many of the problems associated with traditional silica-based materials, such as inconsistent recoveries due to sorbent drying, are eliminated when using HyperSep™ Retain™ PEP. This can lead to fast sample preparation and method development.

- High and consistent recoveries
- Fast and easy sample preparation and method development
- pH stable 0 to 14

Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
30 mg	40 - 60	1	100	**549-0628**
30 mg	40 - 60	1	100	**549-0684**
30 mg	40 - 60	3	50	**549-0629**
60 mg	40 - 60	3	50	**549-0630**
60 mg	40 - 60	6	30	**549-0635**
100 mg	40 - 60	6	30	**549-0634**
150 mg	40 - 60	6	30	**549-0636**
200 mg	40 - 60	3	50	**549-0631**
200 mg	40 - 60	6	30	**549-0637**
500 mg	40 - 60	3	50	**549-0632**
500 mg	40 - 60	6	30	**549-0633**
1000 mg	40 - 60	25	20	**549-0639**
2000 mg	40 - 60	25	20	**549-0638**

VWR COLLECTION

Delivering high quality and superior performance

Please contact your local VWR sales office or go to vwr.com for the latest news and special offers

HyperSep™ Retain™-CX SPE columns
Thermo Scientific

HyperSep™ Retain™-CX polymeric SPE material is a high purity, highly porous, polystyrene DVB material partially functionalised with sulphonic acid groups to give balanced retention of basic and non-polar analytes.

HyperSep™ Retain™-CX is ideal for the retention of a wide range of drugs of abuse, including basic and neutral drugs.

HyperSep™ Retain™-CX offers reproducible and reliable sample preparation through excellent batch-to-batch reproducibility. Many of the problems associated with traditional silica-based materials, such as inconsistent recoveries due to sorbent drying, are eliminated when using HyperSep™ Retain™-CX. This can lead to fast sample preparation and method development.

- High and consistent recoveries
- Fast and easy sample preparation and method development
- pH stable 0 to 14

Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
30 mg	40 - 60	1	100	**549-0640**
30 mg	40 - 60	3	50	**549-0641**
60 mg	40 - 60	3	50	**549-0642**
60 mg	40 - 60	6	30	**549-0647**
100 mg	40 - 60	6	30	**549-0646**
150 mg	40 - 60	6	30	**549-0648**
200 mg	40 - 60	3	50	**549-0643**
200 mg	40 - 60	6	30	**549-0650**
500 mg	40 - 60	3	50	**549-0644**
500 mg	40 - 60	6	30	**549-0645**
1000 mg	40 - 60	25	20	**549-0651**
2000 mg	40 - 60	25	20	**549-0649**

HyperSep™ Retain™-AX SPE columns
Thermo Scientific

HyperSep™ Retain™-AX polymeric SPE material is a high purity, highly porous polystyrene DVB (divinyl benzene) material partially functionalised with quaternary amine groups to give balanced retention of acidic and non-polar analytes.

HyperSep™ Retain™-AX is ideal for the retention of THC and its metabolites.

HyperSep™ Retain™-AX offers reproducible and reliable sample preparation through excellent batch-to-batch reproducibility. Many of the problems associated with traditional silica-based materials, such as inconsistent recoveries due to sorbent drying, are eliminated when using HyperSep Retain-AX. This can lead to fast, reproducible sample preparation and method development.

- High and consistent recoveries
- Fast and easy sample preparation and method development
- pH stable 0 to 14

Filling	Particle size (µm)	Volume (nom.) (ml)	Pk	Cat. No.
30 mg	40 - 60	1	100	**549-0652**
30 mg	40 - 60	3	50	**549-0653**
60 mg	40 - 60	3	50	**549-0654**
60 mg	40 - 60	6	30	**549-0659**
100 mg	40 - 60	6	30	**549-0658**
150 mg	40 - 60	6	30	**549-0660**
200 mg	40 - 60	3	50	**549-0655**
200 mg	40 - 60	6	30	**549-0661**
500 mg	40 - 60	3	50	**549-0656**
500 mg	40 - 60	6	30	**549-0657**
1000 mg	40 - 60	25	20	**549-0663**
2000 mg	40 - 60	25	20	**549-0662**

HyperSep™ Hypercarb™ SPE columns
Thermo Scientific

Flat, 100% porous graphitic carbon (PGC) with selectivity for structurally similar compounds, offering separation of compounds with simple solvents.

Hydrophobic reversed phase; normal phase adsorption; polar retention

- Provides total pH stability and the retention and separation of highly polar species where silica and resin columns fail
- High batch-to-batch reproducibility
- Strong retention properties allow use of low bed weights for concentrated extracts
- No restriction on eluents

Filling	Volume (nom.) (ml)	Pk	Cat. No.
25 mg	1	50	**549-0624**
50 mg	1	50	**549-0623**
100 mg	1	30	**549-0622**
200 mg	3	30	**549-0621**
500 mg	6	20	**549-0625**
1000 mg	6	10	**549-0626**
2000 mg	15	10	**549-0627**

HyperSep™ silica SPE columns
Thermo Scientific

A polar sorbent primarily used to retain analytes in non-polar matrices.

- Effectively separates compounds of very similar structure
- Adsorbs analytes from non-polar solvents like hydrocarbons, less polar esters and ethers
- Suitable for use as an intermediate strength cation exchanger in aqueous medium

Filling	Volume (nom.) (ml)	Pk	Cat. No.
50 mg	1	100	**549-0889**
100 mg	1	100	**549-0888**
200 mg	3	50	**549-0890**
500 mg	3	50	**549-0887**
500 mg	6	30	**549-0891**
500 mg	10	50	**549-0896**
1000 mg	6	30	**549-0892**
2000 mg	15	20	**549-0893**
5000 mg	25	20	**549-0894**
10000 mg	75	10	**549-0895**
10000 mg	25	20	**549-0956**
20000 mg	75	10	**549-0898**
50000 mg	150	10	**549-0897**
70000 mg	150	10	**549-0899**

QuEChERS extraction products
Thermo Scientific

The QuEChERS (Quick, Easy, Cheap, Effective, Rugged and Safe) technique is increasingly becoming the technique of choice for the extraction of pesticide residues in fruit, vegetables and other foods.

The QuEChERS method offers the advantage of high recoveries, accurate results and high sample throughput, combined with the associated cost savings with low solvent and labour requirements. Yet the procedure is robust and rugged.

- Simple procedure with non automation required
- Determine wide range of pesticide types
- Less solvent usage than conventional techniques
- High recoveries, accurate results and high sample throughput

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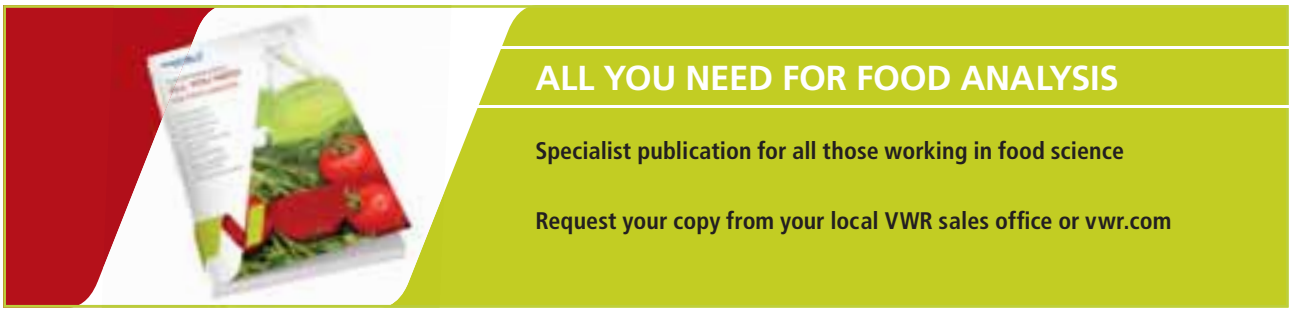
Description	Pk	Cat. No.
HyperSep™ dispersive SPE extraction products		
Tube with 6 g magnesium sulphate, 1,5 g sodium acetate	250	**549-0617**
Tube with 4 g magnesium sulphate, 1,1 g sodium chloride	250	**549-0618**
Tube with 4 g magnesium sulphate, 1 g sodium chloride, 1 g sodium citrate tribasic dihydrate, 0,5 g sodium citrate dibasic sesquihydrate	250	**549-0620**
Tube with 6 g magnesium sulphate, 1,5 g sodium chloride, 1,5 g sodium citrate tribasic dihydrate, 0,75 g sodium citrate dibasic sesquihydrate	250	**549-0619**
HyperSep™ dispersive SPE clean-up products		
Tube with 150 mg anhydrous magnesium sulphate, 50 mg PSA	100	**549-0759**
Tube with 150 mg anhydrous magnesium sulphate, 50 mg PSA and 50 mg endcapped C18	100	**549-0760**
Tube with 150 mg magnesium sulphate, 25 mg PSA	100	**549-0769**
Tube with 150 mg magnesium sulphate, 25 mg PSA, 2,5 mg graphitised carbon	100	**549-0770**
Tube with 150 mg magnesium sulphate, 25 mg PSA, 7,5 mg graphitised carbon	100	**549-0771**
Tube with 150 mg magnesium sulphate, 50 mg PSA, 50 mg endcapped C18, 50 mg graphitised carbon	100	**549-0772**
Column with 200 mg graphatised carbon on top, 400 mg PSA on bottom, separated by a PTFE frit	30	**549-0763**
Column with 250 mg graphatised carbon on top, 500 mg PSA on bottom, separated by a PTFE frit	30	**549-0764**
Column with 500 mg graphatised carbon on top, 500 mg PSA on bottom, separated by a PTFE frit	30	**549-0765**
Tube with 900 mg anhydrous magnesium sulphate, 300 mg PSA and 150 mg carbon	50	**549-0761**
Tube with 900 mg anhydrous magnesium sulphate, 300 mg PSA and 150 mg endcapped C18	50	**549-0762**
Tube with 900 mg magnesium sulphate, 150 mg PSA	50	**549-0766**
Tube with 900 mg magnesium sulphate, 150 mg PSA, 45 mg graphitised carbon	50	**549-0767**
Tube with 900 mg magnesium sulphate, 150 mg PSA, 15 mg graphitised carbon	50	**549-0768**
Tube with 1200 mg magnesium sulphate, 400 mg PSA	50	**549-0773**
Tube with 1200 mg magnesium sulphate, 400 mg PSA, 400 mg endcapped C18	50	**549-0774**
Tube with 1200 mg magnesium sulphate, 400 mg PSA, 400 mg endcapped C18, 400 mg graphitised carbon	50	**549-0775**
Tube with 900 mg magnesium sulphate, 150 mg PSA, 150 mg endcapped C18	50	**549-0776**



TLC plates, silica gel 60, unmodified and chemically modified layers, aluminium backed

TLC plates, unmodified silica gel 60

This range of plates uses Merck silica gel 60 with a unique polymeric binder that results in a uniform and hard surface that will not easily crack or blister. The smooth and extremely dense plate coating ensures narrow bands and maximum separation efficiency with the lowest background noise.

- Layer thickness 200 µm, particle size of 10 - 12 µm
- Flexible aluminium plates that can easily be cut to match individual separation requirements
- Two inorganic fluorescent indicators for UV detection of colourless substances
- Samples which absorb shortwave UV at 254 nm are detected due to fluorescence quenching

TLC plates, concentrating zone

These plates are based on the different adsorption properties of two silica adsorbents: An inert large pore concentrating adsorbent where the samples are applied and a selective layer for the separation. Independent of the shape, size or position of the spots the sample always concentrates within seconds as a narrow band at the interface of the two adsorbents, where the separation begins.

- Quick and easy sample application
- Includes a purification and concentration step
- Better resolution due to sharp bands

TLC plates, modified silica gel 60

Modified silica layers (layer thickness 200 µm) are well suited for most problem separations that cannot be adequately resolved using unmodified silica.

- Results less dependent on atmospheric humidity
- Allows use of aqueous solvent systems
- RP-modified silica provides a ready correlation with HPLC
- No catalytic activity for unstable substances (oxidative degradation)

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC silica gel 60, unmodified	50×100	200	50	**1.16835.0001**
TLC silica gel 60, unmodified	200×200	200	25	**1.05553.0001**
TLC silica gel 60 F254**, unmodified	50×75	200	20	**1.05549.0001**
TLC silica gel 60 F254**, unmodified	50×100	200	50	**1.16834.0001**
TLC silica gel 60 F254**, unmodified	100×200	200	25	**1.05570.0001**
TLC silica gel 60 F254**, unmodified	200×200	200	25	**1.05554.0001**
TLC silica gel 60 F254**, unmodified	5000×200	200	1 Roll	**1.05562.0001**
TLC silica gel 60 W*, unmodified	200×200	200	25	**1.16487.0001**
TLC silica gel 60 W* F254s***, unmodified	200×200	200	25	**1.16484.0001**
TLC silica gel 60 F254** with concentrating zone 25×200 mm	200×200	200	25	**1.05583.0001**
TLC silica gel 60 with concentrating zone 25×200 mm	200×200	200	25	**1.05582.0001**
TLC silica gel 60 NH_2 F254**, modified	200×200	200	20	**1.05533.0001**
TLC silica gel 60 RP-18 F254s***, modified	50×75	200	20	**1.05560.0001**
TLC silica gel 60 RP-18 F254s***, modified	200×200	200	20	**1.05559.0001**

* W: wettable with water
** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

TLC and GLP plates, silica gel 60, unmodified layers, glass backed

TLC plates, unmodified silica gel 60

Merck silica gel 60 with a unique polymeric binder that results in a uniform and hard surface that will not easily crack or blister. The smooth and extremely dense plate coating ensures narrow bands and maximum separation efficiency with the lowest background noise

- Layer thickness 250 µm, particle size of 10 - 12 µm
- Two inorganic fluorescent indicators for UV detection of colourless substances

TLC plates, concentrating zone

These plates are based on different adsorption properties of two silica adsorbents: An inert large pore concentrating adsorbent where the samples are applied and a selective layer for the separation. Independent of the shape, size or position of the spots the sample always concentrates within seconds as a narrow band at the interface of the two adsorbents, where the separation begins.

- Quick and easy sample application
- Includes a purification and concentration step

GLP plates

Laser coded GLP plates that are individually marked with item, batch and individual plate number. Based on the same proven Merck silica gel 60, GLP plates perform exactly as the corresponding TLC or HPTLC plates.

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC silica gel 60, unmodified	25×75	250	100	**1.15326.0001**
TLC silica gel 60, unmodified	50×200	250	100	**1.05724.0001**
TLC silica gel 60, unmodified	100×200	250	50	**1.05626.0001**
TLC silica gel 60, unmodified	200×200	250	25	**1.05721.0001**
TLC silica gel 60 F254**, unmodified	25×75	250	100	**1.15327.0001**
TLC silica gel 60 F254**, unmodified	25×75	250	500	**1.15341.0001**
TLC silica gel 60 F254**, unmodified	50×100	250	200	**1.05719.0001**
TLC silica gel 60 F254**, unmodified	50×100	250	25	**1.05789.0001**
TLC silica gel 60 F254**, unmodified	50×200	250	100	**1.05714.0001**
TLC silica gel 60 F254**, unmodified	50×200	250	25	**1.05808.0001**
TLC silica gel 60 F254**, unmodified	100×200	250	50	**1.05729.0001**
TLC silica gel 60 F254**, unmodified	200×200	250	25	**1.05715.0001**
TLC silica gel 60 F254** with concentrating zone	100×200	250	50	**1.11846.0001**
TLC silica gel 60 F254** with concentrating zone	200×200	250	25	**1.11798.0001**
TLC silica gel 60 W* F254s***, unmodified	200×200	250	25	**1.16485.0001**
TLC silica gel 60 with concentrating zone	100×200	250	50	**1.11844.0001**
TLC silica gel 60 with concentrating zone	200×200	250	25	**1.11845.0001**
GLP silica gel 60 F254**	100×200	250	25	**1.05702.0001**
GLP silica gel 60 F254**	200×200	250	25	**1.05566.0001**

* W: wettable with water
** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

TLC plates, silica gel 60G, glass backed

Highly robust plates with gypsum as binder, fully compliant with international pharmacopoeia (Ph Eur and USP).

Traditionally, TLC monographs in the pharmacopoeia refer to products using silica G, containing gypsum as binder, or silica H with no foreign binder. There are about 200 monograph methods in the European Pharmacopoeia (Ph Eur) referring to these plates*. Fully compliant with international pharmacopoeia, these new TLC silica gel 60G plates are recommended for customers in QA/QC labs using older Ph Eur monograph methods, which require TLC plates with a gypsum binder and who do not wish to switch to classical Merck Millipore TLC plates with organic binders. Merck Millipore's classical TLC plates fulfill the performance test requirements of Ph Eur for G plates with gypsum, even though they use modern organic binders. Today, many customers routinely use these classical TLC plates in place of gypsum plates and indeed several monographs have been updated to officially confirm this change.

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
TLC silica gel 60G	200×200	250	25	**1.00384.0001**
TLC silica gel 60G F254**	200×200	250	25	**1.00390.0001**

* The United States Pharmacopoeia (USP) does not distinguish between TLC plates with gypsum or organic binder, thus Merck Millipore standard plates can always be used.
** F254: fluorescent indicator

HPTLC and GLP plates, silica gel 60, unmodified layers, glass backed

HPTLC plates, unmodified silica gel 60

This range of plates uses an optimised Merck silica gel 60 with a particle size of only 5 - 6 µm, which results in higher packing density and a smoother surface and therefore reduced band diffusion. Less sample is required, 0,1 to 0,5 µl than for classical TLC.

- Faster analysis, only 3 - 20 min for optimum separations
- 5 - 10 fold increased sensitivity compared to classical TLC
- Extra thin (100 µm) HPTLC automated multiple development (AMD) plates

HPTLC plates, concentrating zone

HPTLC concentrating zone plates that allow easy application of large volumes of diluted samples.

- Quick and easy sample application
- Includes a purification and concentration step

GLP plates

Laser coded GLP plates that are individually marked with item, batch and individual plate number. Based on the same proven Merck silica 60, GLP plates perform exactly as the corresponding TLC or HPTLC plates.

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
HPTLC silica gel 60	100×100	200	25	**1.05631.0001**
HPTLC silica gel 60	100×100	200	100	**1.05633.0001**
HPTLC silica gel 60	200×100	200	50	**1.05641.0001**
HPTLC silica gel 60 F254**	50×100	200	25	**1.05616.0001**
HPTLC silica gel 60 F254**	100×100	200	25	**1.05628.0001**
HPTLC silica gel 60 F254**	100×100	200	100	**1.05629.0001**
HPTLC silica gel 60 F254**	200×100	200	50	**1.05642.0001**
HPTLC silica gel 60 F254** AMD, extra thin	200×100	100	25	**1.11764.0001**
HPTLC silica gel 60 F254** with concentrating zone 25×50	50×100	200	25	**1.13187.0001**
HPTLC silica gel 60 F254** with concentrating zone 25×200 mm	200×100	200	50	**1.13728.0001**
HPTLC silica gel 60 F254** with concentrating zone 25×100 mm	100×100	200	25	**1.13727.0001**
HPTLC silica gel 60 F254s***	200×100	200	25	**1.15696.0001**
HPTLC silica gel 60 RP-18 F254s*** with concentrating zone 25×200 mm	200×100	200	25	**1.15498.0001**
HPTLC silica gel 60 W*RF254s***	200×100	200	25	**1.15552.0001**
HPTLC silica gel 60 W*RF254s*** AMD, extra thin	200×100	100	25	**1.12363.0001**
HPTLC silica gel 60 with concentrating zone 25×100 mm	100×100	200	25	**1.13748.0001**
HPTLC silica gel 60 with concentrating zone 25×200 mm	200×100	200	50	**1.13749.0001**
GLP silica gel 60 F254**	100×100	200	25	**1.05564.0001**
GLP silica gel 60 F254**	100×200	200	25	**1.05613.0001**

* W: wettable with water
** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

HPTLC and TLC plates, silica gel 60, MS-grade

Coupling TLC plates to mass spectrometry is a new field of high interest, which will contribute strongly to the progress of planar chromatography. The MS-grade plates are much cleaner than standard TLC/HPTLC plates providing higher sensitivity and reduced background signals. This allows trace analysis with mass spectrometry detection in lower nanogram range.

Description	Format (mm)	Thickness (µm)	Pk	Cat. No.
HPTLC silica gel 60 F254** MS-grade, 25 glass plates	200×100	100	25	**1.00934.0001**
TLC silica gel 60 F254** MS-grade, 25 glass plates	200×200	200	25	**1.00933.0001**

** F254: fluorescent indicator
*** F254s: acid stable fluorescent indicator

TLC/HPTLC plates cutter, smartCut
CAMAG

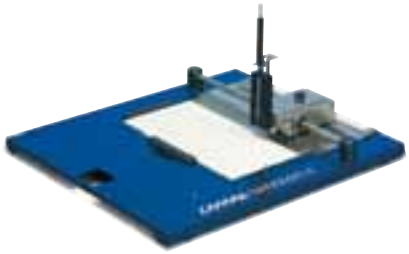
Ideal instrument for exact cutting of TLC/HPTLC plates that are frequently used in method development and pre-testing. The smartCut can cut glass plates up to 3 mm in thickness without damaging the sensitive layer.

- Cuts plates easily and precisely
- Easy to handle, size required can be read directly from the scale
- Saves material cost by eliminating waste

Description	Pk	Cat. No.
TLC/HPTLC plates cutter, smartCut	1	**552-0077**

Description	Pk	Cat. No.
Spare parts		
Spare cutter for TLC/HPTLC plates cutter, smartCut	1	**552-0349**

Nanomat 4
CAMAG



The Nanomat 4 is used for easy application of samples in the form of spots onto TLC and HPTLC layers. A notch system ensures that sample positioning meets the requirements for automatic scanning with a densitometer. Samples are dispensed in volumes of 0,5 to 5 µl with disposable capillaries loaded into the universal capillary holder (552-0044) using the capillary guide (552-0039).

- Easy to use and convenient
- Fast, accurate reproducible spotting
- Suitable for TLC and HPTLC plates

Description	Pk	Cat. No.
Nanomat 4, without capillary pipettes and capillary holder	1	**552-0007**

TLC/HPTLC plates developing system, smartAlert
CAMAG

Ideal solution for monitoring the solvent front in development of TLC/HPTLC plates without relying on a stopwatch. User sets the desired developing distance and as soon as the solvent front has reached this position, visual and acoustic signals alert the operator. This allows more constructive and efficient time/tasks management as well as guaranteeing accurate results. Designed to work with TLC/HPTLC glass chambers and plates up to 200×200 mm, battery-powered (up to 1000 developments).

- Improved reproducibility of results
- Easy to operate
- Cost and time efficient, no waste of over-developed plates

Description	Pk	Cat. No.
TLC/HPTLC plates developing system, smartAlert	1	**552-0078**

UV lamps and cabinet
CAMAG

UV lamps

These UV lamps with plastic housing are designed for TLC applications. They can be ordered either with a stand, shielding out visible light on three sides, or in combination with a viewing box. The stand holds the lamp in a position optimised for viewing 200×200 mm plates. TLC plates up to 2 mm thickness can be slid through under the back screen. The lamp can be easily lifted off the stand and directed against a larger object when required. Instantaneous ignition without flickering and optimum light efficiency due to operation at 25 - 30 kHz AC.

- User friendly and versatile
- Available in two wavelengths 254/366 nm
- Automatic switch off timer after 10 minutes reduces the risk of exposure to radiation

UV lamps are supplied as 2×8 W or 1×8 W light tubes.

Viewing box

The viewing box is suitable for inspecting thin-layer chromatograms and other objects in an undarkened room. The front of the box is closed with a roller shutter which can be pushed open to the left or to the right as required for inserting or marking objects. A glass filter in the viewing window protects the eyes against reflected short-wave UV light.

- Compact design
- Good illumination
- Convenient viewing

UV cabinet includes a dual UV lamp and a viewing box (552-0050).

Description	Output (W)	Wavelength (nm)	Pk	Cat. No.
UV lamp, UK plug	2×8	254	1	**552-0354**
UV lamp, UK plug	2×8	366	1	**552-0355**
Dual UV lamp, UK plug	8	254/366	1	**552-0356**
UV cabinet, 490×350×290 mm, incl. viewing box; UV lamp for two wave lengths, UK plug	2×8	254/366	1	**552-0353**
Viewing box			1	**552-0050**

Flat bottom chambers
CAMAG

The flat bottom chamber permits the chromatogram to be developed under conditions of partial or complete saturation of the tank atmosphere with solvent vapours. The degree of layer pre-saturation cannot be controlled unless additional accessories are used.

Description	Pk	Cat. No.
Chamber, lightweight, for 200×100 mm plates, with glass lid	1	**552-0026**
Chamber, lightweight, for 200×200 mm plates, with glass lid	1	**552-0027**
Chamber for 100×100 mm plates, without lid	1	**552-0010**
Chamber for 100×100 mm plates, with stainless steel lid	1	**552-0009**
Chamber for 200×200 mm plates, with glass lid	1	**552-0015**
Chamber for 200×200 mm plates, without lid	1	**552-0022**
Chamber for 200×200 mm plates, with stainless steel lid	1	**552-0024**
Glass lid for all lightweight developing chambers, 200×200 and 200×100 mm	1	**552-0028**
Glass lid for 200×200 mm and 200×100 mm chambers (not for lightweight chambers)	1	**552-0017**
Stainless steel lid for 100×100 mm chambers	1	**552-0008**
Stainless steel lid for 200×200 mm and 200×100 mm chambers (not for lightweight chambers)	1	**552-0025**
Saturation pads	100	**552-0079**

Twin trough chambers
CAMAG

Twin trough chambers offer several ways to improve the results of TLC/HPTLC developing techniques.

- Low solvent consumption
- Reproducible pre-equilibration of the plate with solvent vapour is possible by placing it in the empty trough opposite that containing the solvent

Development only starts when the solvent is introduced into the trough with the plate.

Description	Pk	Cat. No.
Chamber for 100×100 mm plates, without lid	1	**552-0012**
Chamber for 100×100 mm plates, with stainless steel lid	1	**552-0011**
Chamber for 200×100 mm plates, optimised for ADC2 *, without lid	1	**552-0352**
Chamber for 200×100 mm plates, with glass lid	1	**552-0018**
Chamber for 200×100 mm plates, without lid	1	**552-0016**
Chamber for 200×100 mm plates, with stainless steel lid	1	**552-0019**
Chamber for 200×200 mm plates, with glass lid	1	**552-0020**
Chamber for 200×200 mm plates, without lid	1	**552-0023**
Chamber for 200×200 mm plates, with stainless steel lid	1	**552-0021**
Chamber, lightweight, for 200×100 mm plates, with glass lid	1	**552-0029**
Chamber, lightweight, for 200×200 mm plates, with glass lid	1	**552-0030**

* ADC: automatic developing chamber

Horizontal developing chambers
CAMAG

Horizontal developing chambers permit the number of samples to be doubled when compared to a vertical tank. Plates are developed from opposite sides simultaneously towards the middle.

- Choice of two configurations: sandwich or tank
- Suitable for all types of solvents
- Available for two plates sizes

Description	Pk	Cat. No.
Chamber for 100×100 mm plates	1	**552-0047**
Chamber for 200×100 mm plates	1	**552-0048**

Capillary dispensers
CAMAG

Compact capillary dispensers can be used on the Nanomat or independently. The capillary pipettes are loaded into the dispenser in magazines from a package of 100 capillaries. Capillaries of 0,5, 1, 2, and 5 µl volume are available in boxes of 500 capillaries (5 belts).

- Easy to use
- All components are interchangeable from old to new systems

Description	Pk	Cat. No.
Capillary dispenser without capillary pipettes and holder	1	**552-0063**
Capillary dispenser kit*	1	**552-0062**
Universal capillary holder	1	**552-0044**
Dispenser magazine for 0,5 µl capillaries	1	**552-0064**
Dispenser magazine for 1,0 µl capillaries	1	**552-0065**
Dispenser magazine for 2,0 µl capillaries	1	**552-0066**
Dispenser magazine for 5,0 µl capillaries	1	**552-0067**
Disposable capillary pipettes 0,5 µl, on belts, 5×100 pack	500	**552-0068**
Disposable capillary pipettes 1,0 µl, on belts, 5×100 pack	500	**552-0069**
Disposable capillary pipettes 2,0 µl, on belts, 5×100 pack	500	**552-0070**
Disposable capillary pipettes 5,0 µl, on belts, 5×100 pack	500	**552-0071**

* With universal capillary holder (552-0044), a dispenser magazine for 1 µl capillaries (552-0065), and one box of 5×100 capillary pipettes of 1,0 µl (552-0069).

Glass capillaries and graduated micropipettes, disposable
CAMAG

Disposable glass capillaries for manual sample application of 0,5, 1, 2, 5 or 10 µl. Handheld and can be positioned with the Multipurpose Spotting Guide (551-4230). Can also be used with Universal Capillary Holder (552-0044). Graduated 5 µl glass micropipettes are suitable for qualitative analysis on conventional TLC layers.

- Colour coded vials
- Convenient and user-friendly
- Micropipettes are graduated in microlitres

Description	Volume (µl)	Pk	Cat. No.
Disposable glass capillaries	0,5	100	**552-0040**
Disposable glass capillaries	1,0	100	**552-0041**
Disposable glass capillaries	2,0	100	**552-0042**
Disposable glass capillaries	5,0	100	**552-0043**
Disposable glass capillaries	10,0	100	**551-7730**
Graduated disposable micropipettes	5,0	250	**552-0061**
Capillary guide, aluminium	-	1	**552-0039**

TLC sprayer

The Merck Millipore TLC sprayer allows derivatisation reagents to be sprayed homogeneously onto developed chromatograms. It is equipped with two different spray heads, 0,8 and 1,25 mm, optimised for low and high viscosity solutions respectively. The electro-pneumatically operated sprayer uses compressed air driven by accumulator power and inductive charging.

Description	Pk	Cat. No.
TLC sprayer with two spray heads, 1×0,8 and 1×1,25 mm	1	**1.08540.0001**

Description	Pk	Cat. No.
Accessories		
Spray heads for TLC sprayer, 5×0,8 and 1×1,25 mm	6	**1.08541.0001**

Description	Pk	Cat. No.
Accessories		
Dragendorff's spray solution for TLC	100 ml	**1.02035.0100**
Ninhydrin spray solution for TLC	100 ml	**1.06705.0100**

Reagent sprayer
CAMAG

Glass, atomiser

Cost efficient alternative for TLC sprayer.

- Can be used with compressed air or nitrogen
- Reagents are atomised into a fine aerosol spray

Description	Pk	Cat. No.
Reagent sprayer, all glass, with 100 ml Erlenmeyer flask	1	**552-0031**

Description	Pk	Cat. No.
Spare parts		
Spray head for 552-0031	1	**551-6101**
Erlenmeyer flask for 552-0031	1	**551-6102**
Rubber pump for 552-0031	1	**551-6103**

Spray gun assembly, chromatography

The spray gun assembly consists of a 250 ml conical glass flask (FE 250/3; 201-8419), an all-glass fine spray head (560-0009) with a 24/29 standard glass joint and a blowing ball (612-9953). The spray head features an instantaneous pressure relief vent to affect a sharp cut-off at the end of spraying.

Description	Pk	Cat. No.
Spray gun assembly, complete	1	**560-0010**
Spray head assembly, spare	1	**560-0009**

HPTLC Vario system
CAMAG

Time saving by optimisation of development conditions

- Development with six different solvents can be tested side by side
- Both sandwich and tank configurations can be simulated side by side, making results directly comparable
- Six different conditions of pre-equilibration, including relative humidity, can be tested simultaneously
- These variations of developing conditions can be freely combined

Delivery information: The HPTLC Vario system comprises an HPTLC Vario chamber for 100×100 mm plates and an HPTLC scoring unit for preparation of TLC/HPTLC plates.

Description	Pk	Cat. No.
HPTLC Vario system	1	**552-0049**

Description	Pk	Cat. No.
Accessories		
HPTLC Vario chamber for 100×100 mm plates	1	**551-8555**
HPTLC Scoring unit for the preparation of TLC/HPTLC plates	1	**551-8556**
Scoring blades for 551-8556	10	**551-8558**

Cellulose chromatography papers
Whatman (GE Healthcare)

Whatman chromatography papers are widely used across the world, reflecting their purity, high quality and consistency. They are made from specially selected cotton cellulose and rigorously quality controlled to ensure uniformity within the grade.

- Pure cellulose produced from the highest quality cotton linters, with no additives, ensures that no contamination will occur during the transfer steps
- Manufactured and tested specifically for chromatographic techniques to ensure the wicking capability and uniformity of capillary action that is important in obtaining clean and even transfers during blotting

Grade	Application
1 Chr	Smooth surface, 0,18 mm thick with a linear flow rate (water) of 130 mm/30 min. Good resolution for general analytical separations.
2 Chr	Thickness 0,18 mm. Flow rate 115 mm/30 min. Slower than 1 Chr for higher resolution applications. Smooth surface. Particularly recommended for optical or radiometric scanning.
3 Chr	A medium thickness paper (0,36 mm) with a flow rate of 130 mm/30 min. For general applications with medium/heavy solute loadings. Frequently used for separation of inorganic compounds and for electrophoresis.
3MM Chr	Though widely used as a blotting paper, 3MM Chr is also used both in electrophoresis and for general chemistry. A medium thickness paper (0,34 mm) used extensively for general chromatography and electrophoresis. Flow rate is 130 mm/30 min.
4 Chr	Thickness 0,21 mm. Flow rate 180 mm/30 min. Fastest of the thin papers. Recommended for routine and/or repetitive chromatography when loadings are relatively low. Smooth surface. Very suitable where speed is important and very high resolution is not required.
17 Chr	Thickness 0,92 mm. Flow rate 190 mm/30 min. Highly absorbent paper suitable for heavy loadings. Recommended for preparative paper chromatography and electrophoresis.
20 Chr	Thickness 0,17 mm. Flow rate 85 mm/30 min. For maximum resolution, this grade is supreme giving the greatest possible separation of closely related compounds. Smooth surface. Recommended for separation of samples of unknown composition, with outstanding resolution at low loadings.
31ET Chr	Thickness 0,50 mm. Flow rate 225 mm/30 min. Extremely fast. Flow rate is the highest of all chromatography papers in the Whatman range. Thick paper with fairly soft surface. Principal application is in electrophoresis of large molecules.
54 SFC	Thin (0,18 mm) hardened paper with high speed (180 mm/30 min.) and fair to good resolution. Recommended for routine chromatography. High wet strength.
2668 Chr	Thickness 0,9 mm. Flow rate 155 mm/10 min. For separation of relatively large molecules by electrophoresis.
2727 Chr	Thickness 1,40 mm. Flow rate 180 mm/30 min. For separation of very large amounts of substance.

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Description	Size (mm)	Pk	Cat. No.
Grade 1 Chr			
Roll	10 mm × 100 m	1 Roll	**588-3001**
Roll	20 mm × 100 m	1 Roll	**588-3002**
Roll	30 mm × 100 m	1 Roll	**588-3003**
Roll	38,1 mm × 91,44 m	1 Roll	**552-0097**
Roll	40 mm × 100 m	1 Roll	**588-3004**
Roll	50 mm × 100 m	1 Roll	**588-3005**
Roll	100 mm × 100 m	1 Roll	**588-3006**
Roll	150 mm × 100 m	1 Roll	**588-3007**
Sheets	100×300	100	**588-3111**
Sheets	200×200	100	**588-3112**
Sheets	250×250	100	**588-3113**
Sheets	460×570	100	**588-3114**
Sheets	580×680	100	**552-0098**
Strips, 15 mm lanes for running up to 12 samples in parallel	110×213	100	**552-0099**
Grade 2 Chr			
Sheets	460×570	100	**552-0107**
Sheets	580×600	100	**552-0106**
Grade 3 Chr			
Sheets	460×570	100	**588-0000**
Grade 3MM Chr			
Circles	24	100	**552-0092**
Circles	25	100	**516-3476**
Pre-cut sheets	102×133	100	**731-2504**
Pre-cut sheets	110×140	100	**731-2502**
Pre-cut sheets	120×140	100	**731-2501**
Pre-cut sheets	150×175	100	**552-0117**
Pre-cut sheets	150×200	100	**731-2503**
Pre-cut sheets	152,4×203,2	100	**552-0118**
Pre-cut sheets	180×340	100	**731-2500**
Pre-cut sheets	200×200	100	**588-3145**
Pre-cut sheets	203,2×254	100	**552-0122**
Pre-cut sheets	260×410	100	**552-0119**
Pre-cut sheets	315×335	100	**588-3146**
Pre-cut sheets	350×430	100	**731-2505**
Pre-cut sheets	350×450	100	**588-3192**
Pre-cut sheets	460×570	100	**514-8013**
Pre-cut sheets	580×680	100	**588-3148**
Roll	20 mm × 100 m	1 Roll	**588-3182**
Roll	75 mm × 100 m	100 m	**552-0120**
Roll	100 mm × 100 m	1 Roll	**588-3186**
Roll	125 mm × 100 m	100 m	**552-0121**
Roll	150 mm × 100 m	1 Roll	**588-3188**
Roll	190 mm × 100 m	1 Roll	**588-3189**
Roll	230 mm × 100 m	1 Roll	**588-3190**
Roll	270 mm × 100 m	1 Roll	**588-3191**
Grade 4 Chr			
Roll	20 mm × 100 m	1 Roll	**552-0109**
Sheets	460×570	100	**588-3009**
Grade 17 Chr			
Sheets	460×570	100	**552-0115**

Further chromatography consumables, instruments and accessories are available in our AYN for Chromatography catalogue.

VWR HITACHI

HPLC columns, LaChromUltra II and LaChrom II

Base gel: grafted material comprised of organic-inorganic silica

Carbon content (%): approx. 20

Bonding type: polymeric

Endcapping: yes

Description	Pore size	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
LaChromUltra II C18	12 nm	1,9	2×50	1	**554-4078**
LaChromUltra II C18	12 nm	1,9	2×100	1	**554-4079**
LaChromUltra II C18	12 nm	1,9	2×150	1	**554-4080**
LaChromUltra II C18	12 nm	1,9	3×50	1	**554-4081**
LaChromUltra II C18	12 nm	1,9	3×100	1	**554-4082**
LaChromUltra II C18	12 nm	1,9	3×150	1	**554-4083**
LaChromUltra II C18	12 nm	1,9	3×250	1	**554-4084**
LaChromUltra II C18	12 nm	1,9	4,6×250	1	**554-4085**
LaChrom II C18	12 nm	3	4,6×100	1	**554-4086**
LaChrom II C18	12 nm	3	4,6×150	1	**554-4087**
LaChrom II C18	12 nm	5	4,6×150	1	**554-4088**
LaChrom II C18	12 nm	5	4,6×250	1	**554-4089**

VWR HITACHI

HPLC columns, LaChromUltra and LaChrom

Type	Features	Carbon content (%)
LaChrom C18	Standard C18 column The first choice for a wide variety of analyses.	16
LaChrom C18-AQ	Low-Carbon C18 column Compatible with aqueous mobile phases including 100% water. Useful for separating highly polar compounds including saccharides, nucleic acids and organic acids.	12
LaChrom C18-PM	Polymeric C18 column Usable over a wide pH range (pH 1-10). Especially useful for separating isomers and other structurally similar compounds.	22
LaChrom C18-NE	Non-endcapped C18 column Unique separations are achieved as a result of the unprotected silanol groups.	17
LaChrom C8	Useful for separating highly hydrophobic compounds as their strength of interaction with the resin is reduced (compared to C18). A reduction in analysis time is also realised.	10
LaChrom Ph	The phenyl group modifier is useful for separating aromatic compounds based on π-electron interactions.	9
LaChrom CN	The cyano group modifier can be employed in both reverse and normal phase separations. Its unique selectivity is useful for separating extremely hydrophobic compounds (reversed phase) or based on polar interactions (normal phase).	7
LaChrom SIL	The first choice for normal phase separations. It can be used for separating fat-soluble compounds or positional isomers, which are difficult or impossible to separate in reverse phase systems.	-
LaChrom Diol	Separation is based on the interaction with hydroxyl groups. This distinctive column chemistry can be used in both HILIC (hydrophilic interaction chromatography) and normal phase applications.	-
LaChrom NH_2	The advanced surface modification of this amino phase exhibits excellent durability and is particularly useful for analysing saccharides and oligosaccharides.	-

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Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
LaChromUltra column series for ultra-fast HPLC applications				
LaChromUltra C18	2	2,0×50	1	**903-0200**
LaChromUltra C18	2	2,0×75	1	**554-2276**
LaChromUltra C18	2	2,0×100	1	**554-2277**
LaChromUltra C18	2	3,0×50	1	**554-2278**
LaChromUltra C18	2	3,0×75	1	**554-2279**
LaChromUltra C18	2	3,0×100	1	**554-2280**
LaChromUltra C18-AQ	2	2,0×50	1	**554-2281**
LaChromUltra C18-AQ	2	2,0×75	1	**554-2282**
LaChromUltra C18-AQ	2	2,0×100	1	**554-2283**
LaChromUltra C18-AQ	2	3,0×50	1	**554-2284**
LaChromUltra C18-AQ	2	3,0×75	1	**554-2285**
LaChromUltra C18-AQ	2	3,0×100	1	**554-2286**
LaChrom column series for conventional HPLC applications				
LaChrom C18	3	4,6×100	1	**903-0201**
LaChrom C18	3	4,6×150	1	**554-4504**
LaChrom C18-AQ	3	4,6×100	1	**554-4505**
LaChrom C18-AQ	3	4,6×150	1	**554-4506**
LaChrom C18-PM	3	4,6×100	1	**554-4507**
LaChrom C18-PM	3	4,6×150	1	**554-4508**
LaChrom C18	5	4,6×150	1	**903-0202**
LaChrom C18	5	4,6×250	1	**554-4509**
LaChrom C18-AQ	5	4,6×150	1	**554-4510**
LaChrom C18-AQ	5	4,6×250	1	**554-4511**
LaChrom C18-PM	5	4,6×150	1	**554-4512**
LaChrom C18-PM	5	4,6×250	1	**554-4513**
LaChrom C18-NE	5	4,6×150	1	**554-4514**
LaChrom C18-NE	5	4,6×250	1	**554-4515**
LaChrom C8	5	4,6×150	1	**554-4516**
LaChrom C8	5	4,6×250	1	**554-4517**
LaChrom Ph	5	4,6×150	1	**554-4518**
LaChrom Ph	5	4,6×250	1	**554-4519**
LaChrom CN	5	4,6×150	1	**554-4520**
LaChrom CN	5	4,6×250	1	**554-4521**
LaChrom SIL	5	4,6×150	1	**554-4522**
LaChrom SIL	5	4,6×250	1	**554-4523**
LaChrom Diol	5	4,6×150	1	**554-4524**
LaChrom Diol	5	4,6×250	1	**554-4525**
LaChrom NH_2	5	4,6×150	1	**554-4526**
LaChrom NH_2	5	4,6×250	1	**554-4527**

HPLC columns, Chromolith® HighResolution RP-18e

- High efficiencies at lower back pressure
- Improved peak symmetry
- Can be used for standard HPLC/UHPLC/LC-MS instruments
- Back pressure 2 times lower compared to particulate packed columns
- 30% longer column lifetime compared to particulate packed columns

Technical information:

Macropore size: 1,15 µm

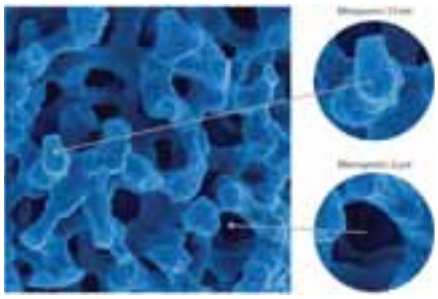
Mesopore size: 15 nm

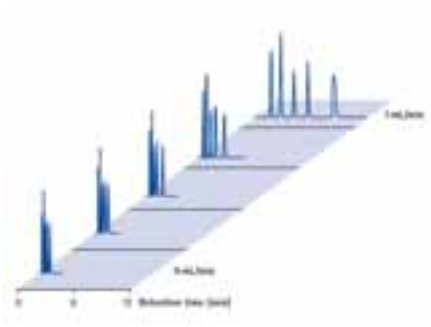
Surface area: 250 m^2/g

Pore volume: 2,9 ml/g

Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® HighResolution RP-18e	4,6×100	1	**1.52022.0001**
Chromolith® HighResolution RP-18e	4,6×50	1	**1.52021.0001**
Chromolith® HighResolution RP-18e	4,6×25	1	**1.52020.0001**
Chromolith® HighResolution RP-18e guard column	4,6×5	3	**1.52025.0001**
Chromolith® HighResolution RP-18e guard column kit (1 holder and 3 guard columns)	4,6×5	1	**1.52024.0001**

HPLC columns, Chromolith®





Monolithic silica technology: A new age in chromatography

Chromolith® columns are based on silica so existing methods can be easily transferred with only minimal investment in new method development work. "Sol-Gel" technology allows highly porous monolithic rods of silica to be formed. These feature a bimodal pore structure which provides a unique combination of macropores and mesopores.

- Due to the extremely high porosity of the Chromolith® column very high flow rates can be used with low pressures
- Reduce separation time, for high-speed analysis
- Long lifetime of columns and HPLC systems
- Several hundred scientific papers published

Macroporous structure

Each macropore is on average 2 µm in diameter and in total forms a dense network of pores through which the eluent can rapidly flow. This dramatically reduces separation times.

Mesoporous structure

These mesopores form the further fine porous structure (13 nm) of the column interior and create a very large surface area over which adsorption of the target compounds can occur. This unique combination of macropores, to allow rapid transit of the eluent, and mesopores to create a large surface area, means that Chromolith® columns can provide excellent separations in a fraction of the time that a standard column will take. Separations, which previously may have taken up to 30 minutes, can now be performed in a few minutes with Chromolith® HPLC columns.

Chromolith® SpeedROD RP-18e endcapped

Acceleration of the analysis process has become one of the most important issues in high performance liquid chromatography. High-throughput analysis using conventional particle packed columns has always been a compromise between column efficiency and pressure drop. The demands of the pharmaceutical industry, especially in the field of drug discovery where the number of samples is constantly increasing, is clearly focused on new methods and tools to dramatically reduce the time of analysis and significantly increase productivity. This cannot be sufficiently realised by using particulate HPLC columns due to the problem of high column back pressure associated with small silica particles. An answer to this "high-throughput" demand is the Chromolith® SpeedROD column, which opens the door to an era of chromatographic high-speed separations. Chromolith® SpeedROD RP-18e possesses a selectivity comparable to common C18 reversed phase columns and provides the user with an excellent tool to solve separation problems.

Chromolith® Performance RP-18e endcapped

For high-speed analysis just like the Chromolith® SpeedROD columns, but with a higher separation efficiency due to the doubled column length of 100 mm. Chromolith Performance is the best tool for the scientist who wants to combine rapid analysis with the separation performance of a true analytical column. Even more impressively, by using a simple column coupler it is possible to further increase the plate count by coupling several columns in series. This creates a column with a theoretical plate count which is significantly higher than any particulate column available, while still producing pressures well below the HPLC system limit. This added column performance is the key to solving even the most critical separation problems where resolution is often the limiting factor.

Chromolith® Flash RP-18e endcapped

Faster than modern high-speed columns (typically column length of 50 mm), but with a separation efficiency that is still better than a normal guard column. At 25 mm long, the number of theoretical plates is sufficient for easy separations. The major focus of this column is clearly speed of analysis, since it provides the chromatographer with the fastest HPLC column on the market.

Chromolith® RP-18e columns: Technical information:

- Silica type: High purity
- Selectivity equivalent to: L1 (USP)
- Macropore size: 2 µm
- Mesopore size: 13 nm
- Pore volume: 1 ml/g
- Surface area: 300 m^2/g
- Carbon content: 18%

For more information and the latest applications contact VWR to receive a copy of the Merck ChromBook.

Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® SpeedROD RP-18 endcapped	4,6×50	1	**1.51450.0001**
Chromolith® Performance RP-18 endcapped	2,0×100	1	**1.52006.0001**
Chromolith® Performance RP-18 endcapped	3,0×100	1	**1.52001.0001**
Chromolith® Performance RP-18 endcapped	4,6×100	1	**1.02129.0001**
Chromolith® Performance RP-8 endcapped	4,6×100	1	**1.51468.0001**

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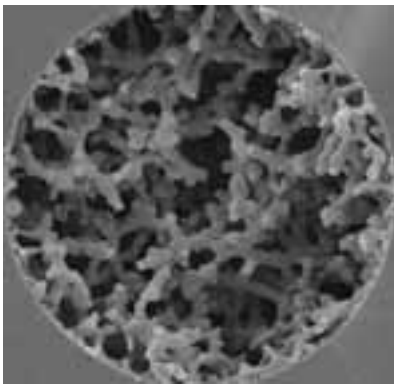
Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® Performance Si	4,6×100	1	**1.51465.0001**
Chromolith® Flash RP-18 endcapped	2,0×25	1	**1.52014.0001**
Chromolith® Flash RP-18 endcapped	3,0×25	1	**1.52003.0001**
Chromolith® RP-18 endcapped, guard column	2,0×5	3	**1.52009.0001**
Chromolith® RP-18 endcapped, guard column	3,0×5	3	**1.52005.0001**
Chromolith® RP-18 endcapped, guard column	4,6×5	3	**1.51451.0001**
Chromolith® RP-18 endcapped, guard column	4,6×10	3	**1.51452.0001**
Chromolith® RP-18 endcapped guard column kit (1 holder & 3 guard cartridges)	2,0×5	1	**1.52008.0001**
Chromolith® RP-18 endcapped guard column kit (1 holder & 3 guard cartridges)	3,0×5	1	**1.52004.0001**
Chromolith® RP-18 endcapped guard column kit (1 holder & 3 guard cartridges)	4,6×5	1	**1.51470.0001**
Chromolith® RP-18 endcapped guard column kit (1 holder & 3 guard cartridges)	4,6×10	1	**1.51471.0001**
Chromolith® RP-8 endcapped, guard column	4,6×5	1	**1.52013.0001**
Chromolith® RP-8 endcapped guard column kit (1 holder & 3 guard cartridges)	4,6×5	1	**1.52012.0001**
Chromolith® FastGradient RP-18 endcapped	2,0×50	1	**1.52007.0001**
Chromolith® FastGradient RP-18 endcapped	3,0×50	1	**1.52002.0001**
Chromolith® SemiPrep RP-18 endcapped	10,0×100	1	**1.52016.0001**
Chromolith® SemiPrep RP-18 endcapped, guard column	10,0×10	1	**1.52036.0001**
Chromolith® SemiPrep Si	10,0×100	1	**1.52015.0001**
Chromolith® SemiPrep Si, guard column	10,0×10	1	**1.52035.0001**
Chromolith® Si, guard column	4,6×5	1	**1.52011.0001**
Chromolith® Si guard column kit (1 holder & 3 guard cartridges)	4,6×5	1	**1.52010.0001**
Validation kit Chromolith® Performance RP-18 endcapped (3 columns from different batches)	4,6×100	3	**1.51466.0001**

Description	Pk	Cat. No.
Accessories for Chromolith®		
Chromolith® SemiPrep guard cartridge holder	1	**1.52037.0001**
Chromolith® column coupler	1	**1.51467.0001**

Capillary columns, Chromolith® CapRod®



Fast nano-LC for proteins and peptides.

Chromolith® CapRod® capillaries combine the speed of monolithic silica technology with the sensitivity of nano-LC, thus enabling high speed high sensitivity LC-MS analytics.

- High flow rates at low pressure
- Long lifetime of the column
- Robust handling

Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® CapRod® RP-18e	0,05×150	1	**1.50403.0001**
Chromolith® CapRod® RP-8e	0,1×150	1	**1.50400.0001**
Chromolith® CapRod® RP-8e Trap	0,1×50	1	**1.52031.0001**
Chromolith® CapRod® RP-18e Trap	0,1×50	1	**1.50426.0001**
Chromolith® CapRod® RP-18e	0,1×150	1	**1.50402.0001**
Chromolith® CapRod® RP-18e	0,1×300	1	**1.50424.0001**
Chromolith® CapRod® RP-18e HR	0,1×150	1	**1.50404.0001**
Chromolith® CapRod® RP-18e Trap	0,2×50	1	**1.50409.0001**
Chromolith® CapRod® RP-18e	0,2×150	1	**1.50405.0001**
Chromolith® CapRod® RP-18e HR	0,2×150	1	**1.50407.0001**

HPLC columns, Chromolith® NH_2

Made of highly porous monolithic rods of silica with a revolutionary bimodal pore structure, therefore high separation efficiencies are reached under low back pressures. These columns have long lifetimes within pH range of 2,5 to 7,5, high matrix tolerance and speed of analysis.

The major application area for amino-phases is the separation of carbohydrates (mono- and disaccharides such as fructose, glucose, sucrose, maltose and lactose), anions and organic acids. These columns may be used for normal phase chromatography, reversed phase chromatography and weak anion exchange separations.

Technical information:

Macropore size: 2 µm

Mesopore size: 13 nm (130 Å)

Pore volume: 1 ml/g

Total pore volume: 3,2 ml/g

Surface area: 300 m^2/g

Surface modification: aminopropyl

Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® Performance NH_2	4,6×100	1	**1.52028.0001**
Chromolith® SpeedROD NH_2	4,6×50	1	**1.52027.0001**
Chromolith® Flash NH_2	4,6×25	1	**1.52026.0001**
Chromolith® NH_2 guard columns (3 guard columns)	4,6×5	3	**1.52030.0001**
Chromolith® NH_2 guard column kit (1 holder and 3 guard columns)	4,6×5	1	**1.52029.0001**

HPLC columns, Chromolith® DIOL

Chromolith® DIOL columns are useful as an intermediate polarity media between C18 and silica. Diol functionalised media is less polar and can have different selectivity. Chromolith® DIOL can be used with a wide range of solvents in both normal and reverse phases. In normal phase mode, the diol phase provides an alternative selectivity compared to silica whilst additionally demonstrating longer retention times that help to obtain separation. In reverse phase mode, compounds such as water-soluble vitamins, sugars or amino acids are easily baseline separated using simple mobile phases.

Chromolith® DIOL columns have long lifetimes within pH range of 2,5 to 7,5, high matrix tolerance and speed of analysis.

Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® DIOL	4,6×100	1	**1.53172.0001**
Chromolith® DIOL	4,6×50	1	**1.53171.0001**
Chromolith® DIOL	4,6×25	1	**1.53170.0001**
Chromolith® DIOL guard columns	4,6×5	1	**1.53175.0001**

HPLC columns, Chromolith® CN

Cyano columns are generally more polar than traditional alkyl silica columns. The functional groups are highly ordered, reducing steric hindrance for the solute. The modification also allows cation exchange activity, which is higher at neutral pH than in acidic conditions. Chromolith® CN columns are suitable for the separation of alkaloids, oils, flavonoids, glycols, phenols, phthalates, steroids and sulfonamides.

Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® CN	4,6×100	1	**1.52048.0001**
Chromolith® CN	4,6×50	1	**1.52047.0001**
Chromolith® CN	4,6×25	1	**1.52046.0001**
Chromolith® CN guard columns	4,6×5	1	**1.52050.0001**

HPLC columns, preparative scale, Chromolith® Prep

Chromolith® Prep monolithic stationary phases are new ultrapure silica phases which gain their special properties from a bimodal pore structure. This structure is a property of a new 'Sol-Gel' technology and consists of macropores and mesopores. The mesopores with an average diameter of 12 nm, form the fine porous structure of the column interior and create a very large surface area on which adsorption of the target compounds occurs.

The large macropores, with a pore diameter ranging from 3 µm, form a dense network of pores and allow a high flow rate due to a low resistance factor. The resulting excellent accessibility of the mesopores (total porosity > 80%) assures fast adsorption and desorption kinetics because of the short diffusion length inside the pores. This results in dramatically reduced separation times and thus greatly increased productivity.

To operate a monolithic column it is necessary to ensure that no flow-through occurs in the wall region. Therefore the monolith is cladded with a polymeric material (special PEEK) and can be connected directly to each HPLC system and used as 'ready to use' column.

Description	I-Ø×L (mm)	Pk	Cat. No.
Chromolith® Prep Si	25×100	1	**1.25251.0001**
Chromolith® Prep RP-18e	25×100	1	**1.25252.0001**

Description	Pk	Cat. No.
Accessories for HPLC columns, preparative scale, Chromolith® Prep		
Chromolith® Prep, sealing set	1 SET	**1.25254.0001**
Chromolith® Prep, tool set	1 SET	**1.25255.0001**
Chromolith® Prep, end cap set	1 SET	**1.25256.0001**
Chromolith® Prep, frit set	1 SET	**1.25257.0001**
Chromolith® Prep column coupler for Ø 25 mm	1	**1.25259.0001**

HPLC and UHPLC columns, Purospher® STAR

High-purity HPLC columns

The key component for modern RP-HPLC sorbents is a high purity silica as starting material. Purospher® STAR HPLC columns are based on high purity, metal-free silica for outstanding separations with excellent peak symmetry. The base silica for Purospher® STAR high purity HPLC columns is made from tetraalkoxysilane in sol-gel process. Due to the absence of metals in the silica matrix and combined with an optimised surface coating and shielding process, Purospher® STAR columns provide tailing-free separations of acidic, basic and chelating compounds. This is of particular advantage for any kind of method development in Research and Development (R&D) and Quality Control (QC) laboratories.

- Enhanced performance and excellent peak symmetry due to high purity silica gel
- Outstanding batch-to-batch reproducibility for reliable analyses
- Balanced chromatographic properties
- Excellent separation efficiency for reliable results
- Extended column lifetime for higher laboratory efficiency

HPLC columns, Purospher® STAR RP-18 endcapped

Fast method development of complex samples across the pH range from 1,5 to 10,5 with different mobile phases and temperature conditions.

Purospher® STAR RP-18 endcapped HPLC columns are designed for universal use. Basic, neutral and metal chelating compounds can easily be separated with simple mobile phases – naturally without peak tailing. Thanks to its outstanding performance and stability, Purospher® STAR RP-18 endcapped offers maximum flexibility in method development. Robust methods can be developed over the entire pH range from 1,5 to 10,5. The high pH-stability up to pH 10,5 allows the separation of strongly basic compounds with alkaline eluents. The combination of high purity silica, best all-round retention characteristics, outstanding pH stability up to pH 10,5, and suitability for up to 100% aqueous mobile phases, make Purospher® STAR RP-18 endcapped an all-round top performance column, almost universal in its range of applications.

- Highest silica purity (99,999%) for excellent peak symmetry
- High separation efficiency
- Absolutely reproducible results from run-to-run and from batch-to-batch
- Best all-round RP-selectivity
- No phase collapse when using highly aqueous mobile phases
- Good suitability for LC-MS applications

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Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR RP-18e, stainless steel LiChroCART® cartridges				
Purospher® STAR RP-18e LiChroCART® cartridge set (includes 1 cartridge and 1 cartridge holder)	3	2×30	1 SET	**1.50237.0001**
Purospher® STAR RP-18e LiChroCART® cartridge set (includes 1 cartridge and 1 cartridge holder)	3	2×55	1 SET	**1.50240.0001**
Purospher® STAR RP-18e LiChroCART®	3	2×55	3	**1.50241.0001**
Purospher® STAR RP-18e LiChroCART®	5	2×100	1	**1.50623.0001**
Purospher® STAR RP-18e LiChroCART®	5	2×125	1	**1.50255.0001**
Purospher® STAR RP-18e LiChroCART®	5	2×150	1	**1.50624.0001**
Purospher® STAR RP-18e LiChroCART®	5	2×250	1	**1.50256.0001**
Purospher® STAR RP-18e LiChroCART®	5	3×100	1	**1.50625.0001**
Purospher® STAR RP-18e LiChroCART®	5	3×125	1	**1.50253.0001**
Purospher® STAR RP-18e LiChroCART®	5	3×150	1	**1.50626.0001**
Purospher® STAR RP-18e LiChroCART®	5	3×250	1	**1.50254.0001**
Purospher® STAR RP-18e LiChroCART® cartridge set (includes 1 cartridge and 1 cartridge holder)	3	4×30	1 SET	**1.50239.0001**
Purospher® STAR RP-18e LiChroCART®	3	4×30	3	**1.50225.0001**
Purospher® STAR RP-18e LiChroCART® cartridge set (includes 1 cartridge and 1 cartridge holder)	3	4×55	1 SET	**1.50242.0001**
Purospher® STAR RP-18e LiChroCART®	3	4×55	3	**1.50231.0001**
Purospher® STAR RP-18e LiChroCART®	3	4×75	1	**1.51460.0001**
Purospher® STAR RP-18e LiChroCART®	5	4×4	10	**1.50250.0001**
Purospher® STAR RP-18e LiChroCART®	5	4×125	1	**1.50251.0001**
Purospher® STAR RP-18e LiChroCART®	5	4×250	1	**1.50252.0001**
Purospher® STAR RP-18e LiChroCART®	5	4,6×100	1	**1.50627.0001**
Purospher® STAR RP-18e LiChroCART®	5	4,6×150	1	**1.50358.0001**
Purospher® STAR RP-18e LiChroCART®	5	4,6×250	1	**1.50359.0001**
Purospher® STAR RP-18e LiChroCART®	5	10×250	1	**1.50257.0001**
Purospher® STAR RP-18e, stainless steel Hibar® RT columns				
Purospher® STAR RP-18e Hibar® RT	3	3×125	1	**1.50413.0001**
Purospher® STAR RP-18e Hibar® RT	3	3×150	1	**1.50414.0001**
Purospher® STAR RP-18e Hibar® RT	3	3×250	1	**1.50427.0001**
Purospher® STAR RP-18e Hibar® RT	3	4×125	1	**1.50431.0001**
Purospher® STAR RP-18e Hibar® RT	3	4×250	1	**1.50468.0001**
Purospher® STAR RP-18e Hibar® RT	3	4,6×100	1	**1.50469.0001**
Purospher® STAR RP-18e Hibar® RT	3	4,6×150	1	**1.50470.0001**
Purospher® STAR RP-18e Hibar® RT	3	4,6×250	1	**1.50471.0001**
Purospher® STAR RP-18e Hibar® RT	5	2×125	1	**1.50596.0001**
Purospher® STAR RP-18e Hibar® RT	5	2×250	1	**1.50597.0001**
Purospher® STAR RP-18e Hibar® RT	5	2×250	1	**1.50598.0001**
Purospher® STAR RP-18e Hibar® RT	5	3×125	1	**1.50615.0001**
Purospher® STAR RP-18e Hibar® RT	5	3×150	1	**1.50617.0001**
Purospher® STAR RP-18e Hibar® RT	5	3×250	1	**1.50620.0001**
Purospher® STAR RP-18e Hibar® RT	5	4×125	1	**1.50036.0001**
Purospher® STAR RP-18e Hibar® RT	5	4×250	1	**1.50037.0001**
Purospher® STAR RP-18e Hibar® RT	5	4,6×100	1	**1.50622.0001**
Purospher® STAR RP-18e Hibar® RT	5	4,6×150	1	**1.51455.0001**
Purospher® STAR RP-18e Hibar® RT	5	4,6×250	1	**1.51456.0001**

These LiChroCART® cartridges require part number 1.51486.0001 manu-CART® cartridge column holder, which can be used to hold one cartridge column with or without a 4×4 mm guard column. LiChroCART® columns 250×10 mm require part number 1.51419.0001 manu-CART® 10. The short LiChroCART® columns can be ordered as a set including the corresponding cartridge holder and one cartridge, or as a pack of 3 cartridges without cartridge holder. The separate part numbers for the cartridge are as follows: 1.50227.0001 LiChroCART® cartridge holder for 30 mm cartridge and 1.50226.0001 LiChroCART® cartridge holder for 55 mm cartridge.
The Hibar® RT columns are complete with end fittings. When using a guard column with a Hibar® RT column, we recommend part number 1.51487.0001 guard column cartridge holder for 4×4 mm guard column cartridges LiChroCART®.

UHPLC columns, Purospher® STAR RP-18 endcapped

Available with optimised 2 µm particulate silica, these UHPLC columns based on Purospher® STAR RP-18 endcapped are ideal for ultra-fast applications, where resolution, sensitivity and sample throughput are crucial. They are the first choice for high-throughput screening & QC analyses, process monitoring, method development, and LC/MS applications.

Due to its balanced selectivity, Purospher® STAR RP-18 endcapped UHPLC columns cover almost all demanding separations with tailing-free chromatograms. The Purospher® STAR RP-18 endcapped 3 µm columns are recommended for difficult samples where clogging and back pressure present an issue.

- In UHPLC environment, speed is increased by a factor of 10
- Solvent consumption is drastically cut
- Excellent peak shape for all types of acidic, basic and metal chelating analytes
- Extraordinary pH stability from pH 1,5 - 10,5 for an extremely wide application range
- Enhanced sensitivity due to improved signal-to-noise ratio

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Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR RP-18e Hibar® HR	2	2,1×30	1	**1.50645.0001**
Purospher® STAR RP-18e Hibar® HR	2	2,1×50	1	**1.50646.0001**
Purospher® STAR RP-18e Hibar® HR	2	2,1×100	1	**1.50648.0001**
Purospher® STAR RP-18e Hibar® HR	2	2,1×150	1	**1.50649.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×30	1	**1.50650.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×50	1	**1.50651.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×100	1	**1.50653.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×150	1	**1.50654.0001**
Purospher® STAR RP-18e Hibar® HR	3	2,1×250	1	**1.50655.0001**

Hibar® HR columns are complete with end fittings and pressure stable (600 bar) for UHPLC use.

HPLC columns, Purospher® STAR RP-8 endcapped

Purospher® STAR RP-8 endcapped, like Purospher® STAR RP-18 endcapped, is based on high purity silica and an almost complete surface coverage. Thus, Purospher® STAR RP-8 provides excellent peak symmetry for acidic, basic and even chelating compounds, highest column efficiency in terms of the number of theoretical plates, and exceptional stability from pH 1,5 to 10,5. In addition, Purospher® STAR RP-8 endcapped columns offer a wide applicability. As the sorbent is less hydrophobic than Purospher® STAR RP-18 endcapped, analytes will typically elute faster on the C8 phase. Purospher® STAR RP-8 endcapped provides enhanced selectivity for positional isomers and symmetrical peak shapes for strongly basic and less hydrophobic compounds.

- Enhanced selectivity for positional isomers
- Excellent peak symmetry for polar and basic compounds

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR RP-8e, stainless steel LiChroCART® cartridges				
Purospher® STAR RP-8e LiChroCART®	3	2×30	1	**1.50229.7220**
Purospher® STAR RP-8e LiChroCART®	3	2×55	1	**1.50234.7220**
Purospher® STAR RP-8e LiChroCART®	3	4×55	1	**1.50228.7220**
Purospher® STAR RP-8e LiChroCART®	3	4×75	1	**1.50171.7220**
Purospher® STAR RP-8e LiChroCART®	5	2×125	1	**1.50274.0001**
Purospher® STAR RP-8e LiChroCART®	5	2×250	1	**1.50275.0001**
Purospher® STAR RP-8e LiChroCART®	5	3×125	1	**1.50038.0001**
Purospher® STAR RP-8e LiChroCART®	5	3×250	1	**1.50273.0001**
Purospher® STAR RP-8e LiChroCART®	5	4×4	10	**1.50270.0001**
Purospher® STAR RP-8e LiChroCART®	5	4×125	1	**1.50271.0001**
Purospher® STAR RP-8e LiChroCART®	5	4×250	1	**1.50272.0001**
Purospher® STAR RP-8e LiChroCART®	5	4,6×150	1	**1.50031.0001**
Purospher® STAR RP-8e LiChroCART®	5	4,6×250	1	**1.50032.0001**
Purospher® STAR RP-8e LiChroCART®	5	10×250	1	**1.50276.0001**
Purospher® STAR RP-8e, stainless steel Hibar® RT columns				
Purospher® STAR RP-8e Hibar® RT	5	4×125	1	**1.50033.0001**
Purospher® STAR RP-8e Hibar® RT	5	4×250	1	**1.50035.0001**
Purospher® STAR RP-8e Hibar® RT	5	4,6×150	1	**1.51453.0001**
Purospher® STAR RP-8e Hibar® RT	5	4,6×250	1	**1.51454.0001**

These LiChroCART® cartridges require part number 1.51486.0001 manu-CART® cartridge column holder, which can be used to hold one cartridge column with or without a 4×4 mm guard column. LiChroCART® columns 250×10 mm require part number 1.51419.0001 manu-CART® 10.
The Hibar® RT columns are complete with end fittings. When using a guard column with a Hibar® RT column, part number 1.51487.0001 guard column cartridge holder for 4×4 mm guard column cartridges LiChroCART® is recommended.

HPLC columns, Purospher® STAR Si and NH_2

Purospher® STAR HPLC columns based on highest purity silica are also available for normal phase separations.

Purospher® STAR Si (silica) offers the highest separation efficiency for normal phase chromatography of low molecular weight compounds soluble in organic solvents.

Purospher® STAR NH_2 (amino phase) is primarily designed for carbohydrate analysis with a typical mobile phase consisting of acetonitrile and water. Additionally, Purospher® STAR NH_2 can also be used in the normal phase retention mode.

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR Si LiChroCART®	5	4×4	10	**1.50249.0001**
Purospher® STAR Si LiChroCART®	5	4×125	1	**1.50268.0001**
Purospher® STAR Si LiChroCART®	5	4×250	1	**1.50269.0001**
Purospher® STAR Si LiChroCART®	5	4,6×150	1	**1.50356.0001**
Purospher® STAR Si LiChroCART®	5	4,6×250	1	**1.50357.0001**
Purospher® STAR NH_2 LiChroCART®	5	4×4	10	**1.50267.0001**
Purospher® STAR NH_2 LiChroCART®	5	4×125	1	**1.50244.0001**

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Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR NH_2 LiChroCART®	5	4×250	1	**1.50245.0001**
Purospher® STAR NH_2 LiChroCART®	5	4,6×150	1	**1.50247.0001**
Purospher® STAR NH_2 LiChroCART®	5	4,6×250	1	**1.50248.0001**

These LiChroCART® cartridges require part number 1.51486.0001 manu-CART® cartridge column holder, which can be used to hold one cartridge column with or without a 4×4 mm guard column.

HPLC columns, Purospher® STAR Phenyl

Purospher® STAR Phenyl HPLC columns show an enhanced selectivity compared to standard alkyl phases. They are the first alternative to RP-8 or RP-18 selectivities for separation of aromatic compounds, fatty acids, purines and pyrimidines due to π-π interactions.

The new Purospher® STAR Phenyl columns are based on high purity silica particles providing symmetrical peaks for basic compounds, high stability and excellent reproducibility.

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® STAR Phenyl, stainless steel LiChroCART® cartridges				
Purospher® STAR Phenyl LiChroCART®	5	4,6×250	1	**1.51921.0001**
Purospher® STAR Phenyl LiChroCART®	5	4,6×150	1	**1.51922.0001**
Purospher® STAR Phenyl, stainless steel Hibar® RT columns				
Purospher® STAR Phenyl Hibar® RT	5	4,6×250	1	**1.51918.0001**
Purospher® STAR Phenyl Hibar® RT	5	4,6×150	1	**1.51919.0001**
Purospher® STAR Phenyl Hibar® RT	5	3×150	1	**1.51920.0001**

The LiChroCART® cartridges (150 and 250 mm length) in the list above (4,6 mm i.d.) require part number 1.51486.0001 manu-CART® cartridge column holder.
The Hibar® RT columns are complete with end fittings.

HPLC columns, Purospher®

HPLC columns Purospher® are based upon a high-purity, metal free silica for excellent separations with very good peak symmetry. The base material for Purospher® high-purity HPLC columns is made from tetraalkoxysilane. Due to the absence of heavy metals in the silica matrix and in combination with a complete coverage of the silica surface, this stationary phase enables tailing-free chromatography of acidic, basic and chelating compounds. This is of particular advantage for method development.

The Purospher® product family comprises different Purospher® HPLC packing materials:

Purospher® RP-18

is polar endcapped and suitable for separations of strong basic or chelating compounds (no acidic compounds) and separations of hydrophilic compounds with a high percentage of water in the mobile phase.

Purospher® RP-18 endcapped

is a versatile column with good chemical stability and produces excellent peak symmetry with either basic or strongly acidic compounds.

Purospher® RP-18 HC

is not endcapped. It is well suited for high resolution separations of explosives and related compounds.

HPLC columns, Purospher®

Purospher® RP-18

Purospher® RP-18 is designed for the separation of problematic basic compounds with simple neutral eluents. In addition Purospher® RP-18 allows the separation of hydrophilic compounds with aqueous mobile phase. Purospher® RP-18 is based upon a high-purity, metal free silica. The multi-step chemical modification and deactivation of the surface and the polar endcapping enables a peak-tailing free elution of basic and chelating compounds. Purospher® RP-18 is not suitable for the separation of acidic compounds. The good chemical stability of Purospher® RP-18 enables the use of mobile phase conditions at pH 8 for a long period of time.

Purospher® RP-18e

Purospher® RP-18e is a versatile high-purity HPLC column producing excellent peak shapes, designed for both the separation of basic compounds with simple neutral eluents and for the elution of strongly acidic compounds. Excellent separations in a shorter period of time with very good peak symmetry saves time and money. The excellent balance of Purospher® RP-18e in the sum of its chromatographic properties is the key to better separations of complex samples with simpler, neutral eluents. The good chemical stability of Purospher® RP-18e enables the use of mobile phase conditions at pH 8 for a long period of time.

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Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® RP-18					
Purospher® RP-18 LiChroCART® guard column	90	5	4×4	10	**1.50141.0001**
Purospher® RP-18 LiChroCART®	90	5	4×125	1	**1.50142.0001**
Purospher® RP-18 LiChroCART®	90	5	4×250	1	**1.50144.0001**
Purospher® RP-18e					
Purospher® RP-18 endcapped LiChroCART® guard column	90	5	4×4	10	**1.50167.0001**
Purospher® RP-18 endcapped LiChroCART®	90	5	4×125	1	**1.50168.0001**
Purospher® RP-18 endcapped LiChroCART®	90	5	4×250	1	**1.50169.0001**
Purospher® RP-18 endcapped LiChroCART®	90	5	3×125	1	**1.50798.0001**
Purospher® RP-18 endcapped LiChroCART®	90	5	3×125	3	**1.50799.0001**
Purospher® RP-18 endcapped LiChroCART®	90	5	3×250	1	**1.51384.0001**

HPLC columns, Purospher® RP-18 HC

Purospher® RP-18 HC is excellently suitable for high resolution separation of explosives and related compounds. The determination of explosives is of great importance, including the quantification of their by-products like nitrotoluene and nitrophenol, as well as nitroaminotoluene and aminotoluene. Purospher® RP-18 HC is also suitable for the separation of picric acid from hexyl and ethyleneglycol dinitrate from ethyleneglycol nitrate.

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Purospher® RP-18 HC LiChroCART®	5	4×250	1	**1.51436.0001**

HPLC columns, LiChrospher®

LiChrospher® is Merck's reliable and versatile traditionally produced spherical silica. LiChrospher® is available with different modifications:

LiChrospher® Si 60 and Si 100 are versatile HPLC spherical silica sorbents for normal phase chromatography.

LiChrospher® CN has polar and hydrophobic properties, thus can be used as a less polar alternative to LiChrospher® Si 60 in normal phase applications or as a less hydrophobic alternative to LiChrospher® RP-8 in reversed phase applications. In addition, the possibility of selective charged interactions makes it even more versatile.

LiChrospher® NH_2 possesses polar and hydrophobic properties and can be used for normal phase, reversed phase and ion exchange chromatography. Typical applications are the separations of carbohydrates by reversed phase chromatography or the separation of nucleotides by ion exhange chromatography.

LiChrospher® DIOL has polar and hydrophobic properties, thus can be used as a less polar alternative to LiChrospher® Si 60 in normal phase applications or as a less hydrophobic alternative to LiChrospher® RP-8 in reversed phase applications. LiChrospher® DIOL is also suitable for exclusion chromatography.

LiChrospher® RP-select B is a highly reproducible traditionally produced spherical silica gel with reversed phase properties. This sorbent is very well suited for the separation of basic compounds but can also be used with neutral and acidic samples.

LiChrospher® RP-8, RP-18 and RP-18 endcapped are highly reproducible and versatile traditionally produced spherical silica gel sorbents with reversed phase properties. They are well suited for the separation of neutral, acidic and weak basic compounds.

LiChrospher® WP 300 RP-18 is a highly selective and reliable HPLC column for the separation of peptides and low molecular weight proteins. LiChrospher® WP 300 RP-18 enables the tailing-free separation of basic compounds and is ideally suited for the separation of tRNA.

LiChrospher® PAH is a highly efficient and selective HPLC column especially designed for the high resolution separation of 16 PAH (polycyclic aromatic hydrocarbons) according to EPA 610 and 550, plus benzo(e)pyrene and perylene.

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
LiChrospher® LiChroCART® 3 mm ID cartridges					
LiChrospher® 60 RP-Select B LiChroCART®	60	5	3×125	1	**1.50158.0001**
LiChrospher® 60 RP-Select B LiChroCART®	60	5	3×250	1	**1.50155.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	3×125	1	**1.50159.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	3×250	1	**1.50154.0001**
LiChrospher® LiChroCART® 4/4,6 mm ID cartridges					
LiChrospher® 60 RP-select B LiChroCART®	60	5	4×25	3	**1.50937.0001**
LiChrospher® 60 RP-select B LiChroCART®	60	5	4×75	3	**1.50993.0001**
LiChrospher® 60 RP-select B LiChroCART®	60	5	4×125	3	**1.50981.0001**
LiChrospher® 60 RP-select LiChroCART®	60	5	4×125	1	**1.50829.0001**
LiChrospher® 60 RP-select B LiChroCART®	60	5	4×250	3	**1.50984.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4×125	1	**1.50828.0001**
LiChrospher® 100 NH_2 LiChroCART®	100	5	4×250	1	**1.50834.0001**

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Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
LiChrospher® LiChroCART® 4/4,6 mm ID cartridges					
LiChrospher® Si 60 LiChroCART®	60	5	4×250	1	**1.50830.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4×250	1	**1.50832.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4×250	1	**1.50833.0001**
LiChrospher® Si 60 LiChroCART®	60	5	4×25	3	**1.50928.0001**
LiChrospher® 100 DIOL LiChroCART®	100	5	4×250	1	**1.50836.0001**
LiChrospher® 100 RP-8 endcapped LiChroCART®	100	5	4×250	1	**1.50837.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4×250	1	**1.50838.0001**
LiChrospher® WP 300 RP-18 LiChroCART®	300	5	4×250	1	**1.50137.0001**
LiChrospher® 100 CN LiChroCART®	100	5	4×250	1	**1.50892.0001**
LiChrospher® 100 CN LiChroCART®	100	10	4×250	1	**1.50845.0001**
LiChrospher® WP 300 RP-18 endcapped LiChroCART®	300	5	4×250	1	**1.50224.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4,6×100	1	**1.50600.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4,6×150	1	**1.50601.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4,6×250	1	**1.50602.0001**
LiChrospher® 100 NH_2 LiChroCART®	100	10	4×250	1	**1.50844.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4×25	3	**1.50931.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4×75	3	**1.50987.0001**
LiChrospher® 60 RP-select LiChroCART®	60	5	4,6×100	1	**1.50640.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4×125	3	**1.50943.0001**
LiChrospher® 60 RP-select LiChroCART®	60	5	4,6×150	1	**1.50641.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4×250	3	**1.50983.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	10	4×250	1	**1.50843.0001**
LiChrospher® 100 RP-8 endcapped LiChroCART®	100	5	4,6×100	1	**1.50637.0001**
LiChrospher® 100 RP-8 endcapped LiChroCART®	100	5	4,6×150	1	**1.50638.0001**
LiChrospher® 100 RP-8 endcapped LiChroCART®	100	5	4,6×250	1	**1.50639.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4×25	3	**1.50936.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4,6×100	1	**1.50634.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4,6×150	1	**1.50635.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4,6×250	1	**1.50636.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4×250	3	**1.50995.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	10	4×250	1	**1.50848.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4,6×100	1	**1.50603.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4,6×150	1	**1.50604.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4,6×250	1	**1.50605.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4×25	3	**1.50930.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4×75	3	**1.50986.0001**
LiChrospher® 100 DIOL LiChroCART®	100	5	4×125	1	**1.50826.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4×125	3	**1.50942.0001**
LiChrospher® 100 RP-8 endcapped LiChroCART®	100	5	4×125	1	**1.50827.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4×250	3	**1.50982.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	10	4×250	1	**1.50842.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4×125	1	**1.50823.0001**
LiChrospher® 100 NH_2 LiChroCART®	100	5	4×125	1	**1.50824.0001**
LiChrospher® 100 CN LiChroCART®	100	5	4×125	1	**1.50825.0001**
LiChrospher® Si 60 LiChroCART®	60	5	4×125	1	**1.50820.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4×125	1	**1.50822.0001**
LiChrospher® 100 RP-8 endcapped LiChroCART®	100	10	4×250	1	**1.50847.0001**
LiChrospher® 60 RP-select LiChroCART®	60	5	4,6×250	1	**1.50642.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4×125	3	**1.50734.0001**
LiChrospher® 60 RP-select B LiChroCART®	60	10	4×250	1	**1.50742.0001**
LiChrospher® Si 60 LiChroCART®	60	10	4×250	1	**1.50840.0001**
LiChrospher® 60 RP-select B LiChroCART®	60	5	4×250	1	**1.50839.0001**
LiChrospher® LiChroCART® 10 mm ID cartridges					
LiChrospher® Si 60 LiChroCART®	60	10	10×250	1	**1.50850.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	10	10×250	1	**1.50853.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	10	10×250	1	**1.50858.0001**
LiChrospher® guard cartridges					
LiChrospher® 60 RP-select B LiChroCART®	60	5	4×4	10	**1.50963.0001**
LiChrospher® Si 60 LiChroCART®	60	5	4×4	10	**1.50955.0001**
LiChrospher® 100 CN LiChroCART®	100	5	4×4	10	**1.50959.0001**
LiChrospher® 100 DIOL LiChroCART®	100	5	4×4	10	**1.50960.0001**
LiChrospher® 100 NH_2 LiChroCART®	100	5	4×4	10	**1.50958.0001**
LiChrospher® 100 RP-18 endcapped LiChroCART®	100	5	4×4	10	**1.50962.0001**
LiChrospher® 100 RP-18 LiChroCART®	100	5	4×4	10	**1.50957.0001**
LiChrospher® 100 RP-8 endcapped LiChroCART®	100	5	4×4	10	**1.50961.0001**
LiChrospher® 100 RP-8 LiChroCART®	100	5	4×4	10	**1.50956.0001**
LiChrospher® WP 300 RP-18 LiChroCART®	300	5	4×4	10	**1.50140.0001**
LiChrospher® Hibar® RT colums fixed with end-fittings					
LiChrospher® 60 RP-select B Hibar® RT	60	5	4,6×100	1	**1.50573.0001**
LiChrospher® 60 RP-select B Hibar® RT	60	5	4,6×150	1	**1.50574.0001**
LiChrospher® 60 RP-select B Hibar® RT	60	5	4,6×250	1	**1.50575.0001**
LiChrospher® 100 RP-18 Hibar® RT	100	5	4×125	1	**1.50477.0001**
LiChrospher® 100 RP-18 Hibar® RT	100	5	4×250	1	**1.50377.0001**
LiChrospher® 100 RP-18 Hibar® RT	100	5	4,6×100	1	**1.50545.0001**

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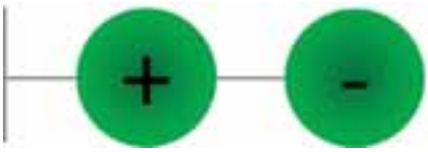
Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
LiChrospher® Hibar® RT colums fixed with end-fittings					
LiChrospher® 100 RP-18 Hibar® RT	100	5	4,6×150	1	**1.50546.0001**
LiChrospher® 100 RP-18 Hibar® RT	100	5	4,6×250	1	**1.50547.0001**
LiChrospher® 100 RP-18 endcapped Hibar® RT	100	5	4,6×100	1	**1.50548.0001**
LiChrospher® 100 RP-18 endcapped Hibar® RT	100	5	4,6×150	1	**1.50549.0001**
LiChrospher® 100 RP-18 endcapped Hibar® RT	100	5	4,6×250	1	**1.50550.0001**
LiChrospher® 100 RP-8 Hibar® RT	100	5	4×250	1	**1.50329.0001**
LiChrospher® 100 RP-8 Hibar® RT	100	5	4,6×100	1	**1.50578.0001**
LiChrospher® 100 RP-8 Hibar® RT	100	5	4,6×150	1	**1.50579.0001**
LiChrospher® 100 RP-8 Hibar® RT	100	5	4,6×250	1	**1.50580.0001**
LiChrospher® 100 RP-8 endcapped Hibar® RT	100	5	4,6×100	1	**1.50581.0001**
LiChrospher® 100 RP-8 endcapped Hibar® RT	100	5	4,6×150	1	**1.50582.0001**
LiChrospher® 100 RP-8 endcapped Hibar® RT	100	5	4,6×250	1	**1.50583.0001**
LiChrospher® Si 100 Hibar® RT	100	5	4×250	1	**1.50316.0001**
LiChrospher® PAH LiChroCART® cartridges					
LiChrospher® PAH LiChroCART®	150	5	3×250	1	**1.50156.0001**
LiChrospher® PAH LiChroCART®	150	5	4×250	1	**1.50149.0001**
LiChrospher® PAH LiChroCART®, guard cartridge	150	5	4×4	10	**1.50148.0001**

The LiChroCART® cartridges (2, 3, 4, 4,6 mm I-Ø) require the use of the manu-CART® cartridge holder 1.51486.0001
The LiChroCART® cartridges (10×250 mm) require the use of the manu-CART® cartridge holder 1.51419.0001
The guard cartridges have to be connected to the LiChroCART® cartridges using the manu-CART® cartridge holder 1.51486.0001

HPLC columns, SeQuant® ZIC®-HILIC



The selectivity offered by ZIC®-HILIC is suitable for a wide variety of molecules containing hydrophilic or ionisable functional groups. This includes compounds such as carbohydrates, metabolites, acids and bases, organic and inorganic ions, metal complexes, amino acids, peptides, protein digests, plant and cell extracts, plus much more. Such compounds are normally characterised by a small or negative LogP value and have poor retention on reversed phase columns.

- Straightforward separation of polar and hydrophilic compounds
- Orthogonal selectivity compared to reversed phase
- High-density bonded sulphobetaine zwitterionic stationary phase
- Low cost per analysis due to robust stationary phase

* HILIC = Hydrophilic Interaction Liquid Chromatography. *LogP = Octanol-water partition coefficient.

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ZIC®-HILIC, analytical columns					
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×20	1	**1.50439.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×50	1	**1.50440.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×100	1	**1.50441.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×150	1	**1.50442.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	2,1×250	1	**1.50443.0001**
ZIC®-HILIC metal-free HPLC column	100	3,5	4,6×150	1	**1.50444.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	2,1×50	1	**1.50445.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	2,1×100	1	**1.50447.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	2,1×150	1	**1.50448.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	4,6×50	1	**1.50446.0001**
ZIC®-HILIC metal-free HPLC column	200	3,5	4,6×150	1	**1.50449.0001**
ZIC®-HILIC metal-free HPLC column	200	5	2,1×50	1	**1.50450.0001**
ZIC®-HILIC metal-free HPLC column	200	5	2,1×100	1	**1.50452.0001**
ZIC®-HILIC metal-free HPLC column	200	5	2,1×150	1	**1.50454.0001**
ZIC®-HILIC metal-free HPLC column	200	5	2,1×250	1	**1.50457.0001**
ZIC®-HILIC metal-free HPLC column	200	5	4,6×50	1	**1.50451.0001**
ZIC®-HILIC metal-free HPLC column	200	5	4,6×100	1	**1.50453.0001**
ZIC®-HILIC metal-free HPLC column	200	5	4,6×150	1	**1.50455.0001**
ZIC®-HILIC metal-free HPLC column	200	5	4,6×250	1	**1.50458.0001**
ZIC®-HILIC guard fitting column kit	200	5	1,0×14	5	**1.50434.0001**
ZIC®-HILIC guard column	200	5	2,1×20	1	**1.50435.0001**
ZIC®-HILIC guard column kit with coupler	200	5	2,1×20	3	**1.50436.0001**
ZIC®-HILIC, Nano and capillary columns					
ZIC®-HILIC nano HPLC column	200	3,5	0,1×150	1	**1.50466.0001**
ZIC®-HILIC nano HPLC column	200	5	0,075×150	1	**1.50465.0001**
ZIC®-HILIC capillary HPLC column	200	3,5	0,3×30	1	**1.50489.0001**
ZIC®-HILIC capillary HPLC column	200	3,5	0,3×150	1	**1.50479.0001**
ZIC®-HILIC capillary HPLC column	200	5	0,3×30	1	**1.50491.0001**
ZIC®-HILIC capillary HPLC column	200	5	0,3×150	1	**1.50481.0001**
ZIC®-HILIC capillary HPLC column	100	3,5	1,0×150	1	**1.50487.0001**
ZIC®-HILIC capillary HPLC column	200	3,5	1,0×30	1	**1.50478.0001**
ZIC®-HILIC capillary HPLC column	200	3,5	1,0×150	1	**1.50480.0001**

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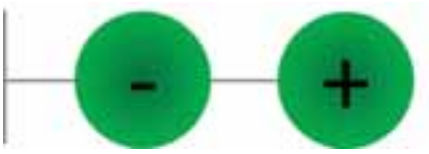
Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ZIC®-HILIC, Nano and capillary columns					
ZIC®-HILIC capillary HPLC column	200	5	1,0×150	1	**1.50482.0001**
ZIC®-HILIC guard column kit	200	5	0,3×5	5	**1.50492.0001**
ZIC®-HILIC guard column kit	200	5	1,0×5	5	**1.50490.0001**
ZIC®-HILIC, semi-preparative columns					
ZIC®-HILIC metal-free (PEEK) HPLC column	200	5	7,5×150	1	**1.50456.0001**
ZIC®-HILIC stainless steel HPLC column	200	5	10,0×50	1	**1.50495.0001**
ZIC®-HILIC stainless steel HPLC column	200	5	10,0×150	1	**1.50493.0001**
ZIC®-HILIC stainless steel HPLC column	200	5	10,0×250	1	**1.50494.0001**
ZIC®-HILIC stainless steel HPLC column	200	5	21,2×50	1	**1.50496.0001**
ZIC®-HILIC stainless steel HPLC column	200	5	21,2×150	1	**1.50497.0001**
ZIC®-HILIC stainless steel HPLC column	200	5	21,2×250	1	**1.50671.0001**

HPLC columns, SeQuant® ZIC®-cHILIC



ZIC®-cHILIC is based on the same technology platform as ZIC®-HILIC, but has a different functional group and an improved manufacturing procedure. The different charge orientation of the zwitterionic functional group leads to a different – and complementary – selectivity for polar hydrophilic compounds.

The selectivity is especially beneficial for hydrophilic compounds that are negatively charged, positively charged, zwitterionic or neutral, for example organic acids, amino acids, metabolites, aminoglycosides and nucleotides.

- Complementary selectivity by reoriented charges in zwitterionic functional group
- Perfect LC-MS compatibility due to low eluent buffer strengths and very low bleeding
- High-density bonded phosphorylcholine zwitterionic stationary phase
- Very high stability and excellent batch-to-batch reproducibility

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ZIC®-cHILIC, analytical columns					
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	2,1×50	1	**1.50656.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	2,1×100	1	**1.50657.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	2,1×150	1	**1.50658.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	4,6×50	1	**1.50659.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	4,6×100	1	**1.50660.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	4,6×150	1	**1.50661.0001**
ZIC®-cHILIC metal-free (PEEK) HPLC column	100	3	4,6×250	1	**1.50662.0001**
ZIC®-cHILIC guard column kit with coupler	100	5	2,1×20	1	**1.50664.0001**
ZIC®-cHILIC, capillary columns					
ZIC®-cHILIC capillary HPLC column	100	3	0,3×150	1	**1.50669.0001**
ZIC®-cHILIC capillary HPLC column	100	3	1,0×150	1	**1.50670.0001**
ZIC®-cHILIC guard column kit	100	5	0,3×5	1	**1.50665.0001**
ZIC®-cHILIC guard column kit	100	5	1,0×5	1	**1.50666.0001**

HPLC columns, SeQuant® ZIC®-pHILIC

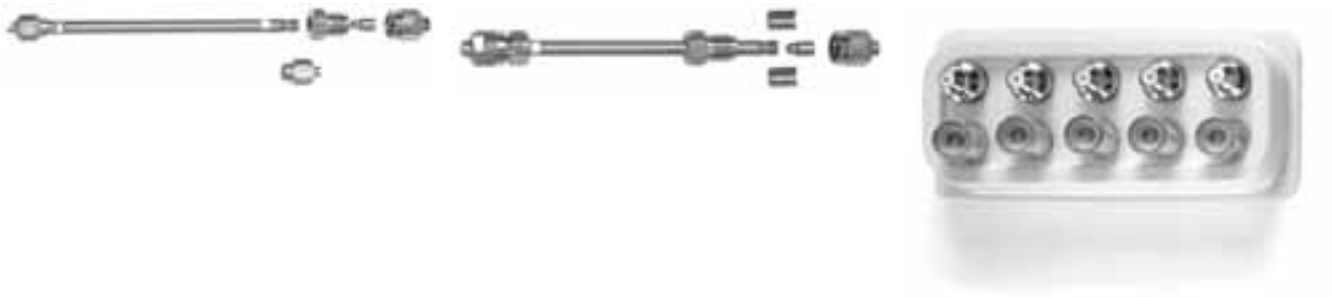
ZIC®-pHILIC is polymer-based

ZIC®-pHILIC has the same stationary phase as ZIC®-HILIC, but is instead based on a polymeric particle for enhanced pH stability. The lack of silica practically nullifies background in high-sensitivity detectors such as charged aerosol used for determination of organic and inorganic ions.

- Solves extra challenging separations of polar and hydrophilic compounds
- Enhanced selectivity optimisation potential due to very broad pH application range
- Extremely low background with high-sensitivity charged aerosol evaporative ion detectors

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ZIC®-pHILIC metal-free HPLC column	5	2,1×50	1	**1.50459.0001**
ZIC®-pHILIC metal-free HPLC column	5	2,1×100	1	**1.50462.0001**
ZIC®-pHILIC metal-free HPLC column	5	2,1×150	1	**1.50460.0001**
ZIC®-pHILIC metal-free HPLC column	5	4,6×50	1	**1.50463.0001**
ZIC®-pHILIC metal-free HPLC column	5	4,6×100	1	**1.50464.0001**
ZIC®-pHILIC metal-free HPLC column	5	4,6×150	1	**1.50461.0001**
ZIC®-pHILIC guard column	5	2,1×20	1	**1.50437.0001**
ZIC®-pHILIC guard column kit with coupler	5	2,1×20	3	**1.50438.0001**

HPLC column accessories



Merck columns come in three formats:

1. The Hibar® RT is a traditional column with standard 1/16" female end fittings. The Hibar® stand-alone guard cartridge holder in conjunction with the LiChrospher® 4-4 guard cartridges can be used to protect the column.

2. The LiChroCART® cartridge columns utilise the manuCART® removable end fittings, which have standard 1/16" female connections. ManuCART® end fittings incorporate a guard cartridge holder as an integral part of the assembly which minimises dead volume. It can be used with any Merck column between 75 and 250 mm in length.

3. Chromolith® columns - monolithic silica rods are clad in PEEK and are in ready to use format with end fittings, see relevant catalogue entry for details and pictures of columns and guard columns.

LiChroCART® cartridge with LiChroCART® pre-cartridges and coupling kit

Connecting a LiChroCART® cartridge with LiChroCART 25-4 and 25-2 pre-cartridge with coupling kit.

LiChroCART® cartridge with manuCART® end fittings

The manuCART® system incorporates a guard cartridge holder and will take 2, 3 and 4 mm I.D. columns with lengths from 75 to 250 mm.

Guard cartridges

Merck 4-4 mm pre-columns or guard cartridges offer excellent value. With the appropriate holder they can be used with both Merck and non-Merck columns. Use the ManuCART® integral fittings for Merck cartridge columns and the Hibar® 4-4 pre-column holder for end-fitted columns. Merck 4-4 guard cartridges are available in C18, C8 RP Select B, Si, NH_2, CN and DIOL phases.

- Minimal loss of column efficiency
- Economical an easy to use
- Increases lifetime of analytical column

Description	Pk	Cat. No.
LiChroCART® cartridge accessories		
LiChroCART® frit elements for 4 and 4.6 mm cartridges	10	**1.51496.0001**
LiChroCART® mounting tool for replacement of frits	1	**1.15576.0001**
ManuCART® "10"-II cartridge holder for 10 mm I.D. LiChroCART® cartridges	1	**1.51419.0001**
ManuCART® coupling kit for coupling with LiChroCART® 25-4 pre-cartridges	1	**1.50082.0001**
ManuCART® coupling kit to connect 2 LiChroCART® cartridges	1	**1.50083.0001**
ManuCART® holder 25-4 and 25-2	1	**1.50017.0001**
ManuCART® holder 30 mm for 30-2, 30-3 and 30-4 LiChroCART® cartridges	1	**1.50227.0001**
ManuCART® holder 55 mm for 55-2, 55-3 and 55-4 LiChroCART® cartridges	1	**1.50226.0001**
ManuCART® NT cartridge holder for 2, 3, 4 and 4,6 mm I.D. LiChroCART® cartridges	1	**1.51486.0001**
Pre-column holder for direct coupling of LiChroCART® 4-4 pre-columns	1	**1.51487.0001**
Pressure cone for manu-CART® end fitting	2	**1.51258.0001**
Split collets for manu-CART® endfitting	4	**1.51257.0001**
Hibar® RT column accessories		
Hibar® replacement frits with PTFE sealing rings, 10 mm	3	**1.51220.0001**
Hibar® tool for removal of frit	1	**1.51210.0001**

Accessories for Merck HPLC columns

1.15545.0001

Description	Pk	Cat. No.
Dead-volume free coupling unit for capillary connection OD 1/16" or 0.5 mm	3	**1.51252.0001**
Flexible capillary stainless steel 1000×0.2 mm	3	**1.51236.0001**
Hibar® capillary for micro-HPLC 120×0.25 mm	10	**1.51231.0001**
Knurled nuts for capillary connection with PVDF double cones	4	**1.15545.0001**
Knurled nuts with long bushing for Rheodyne	1	**1.51237.0001**
PVDF double cones for capillary connection OD 0.5 mm	10	**1.15546.0001**
PVDF double cones for capillary tubing 1/16" with knurled screw	10	**1.51238.0001**
PVDF plugs	20	**1.51218.0001**

HPLC columns, Accucore™ aQ
Thermo Scientific

These columns are compatible with 100% aqueous mobile phases and offer special selectivity for polar analytes. Based on Core Enhanced Technology, they provide fast, high-resolution separations without the elevated back pressures required by sub-2 µm particles.

- Ideal for highly aqueous mobile phases
- Retention and resolution of polar analytes
- Polar endcapped C18 stationary phase for alternative selectivity

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
80	2,6	2,1×30	1	**554-1891**
80	2,6	3,0×30	1	**554-1895**
80	2,6	4,6×30	1	**554-1896**
80	2,6	2,1×50	1	**554-1897**
80	2,6	3,0×50	1	**554-1898**
80	2,6	4,6×50	1	**554-1899**
80	2,6	2,1×100	1	**554-1900**
80	2,6	3,0×100	1	**554-1901**
80	2,6	4,6×100	1	**554-1902**
80	2,6	2,1×150	1	**554-1903**
80	2,6	3,0×150	1	**554-1904**
80	2,6	4,6×150	1	**554-1905**

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ defender guard columns				
80	2,6	2,1×10	4	**554-1948**
80	2,6	3,0×10	4	**554-1949**
80	2,6	4,6×10	4	**554-1950**

Description	Pk	Cat. No.
Uniguard™ direct connection guard cartridge holders for Accucore™ columns		
Uniguard™ drop-in holder for 2,0 – 3,0 mm I-Ø	1	**554-2202**
Uniguard™ drop-in holder for 4,0 – 4,6 mm I-Ø	1	**554-6080**

HPLC columns, Accucore™ C18
Thermo Scientific

These columns offer optimum retention for non-polar compounds and separation of a broad range of analytes. Based on Core Enhanced Technology, they provide fast, high-resolution separations without the elevated back pressures required by sub-2 µm particles.

- Lower back pressures
- Hydrophobic interaction mechanism

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
80	2,6	2,1×30	1	**554-1858**
80	2,6	3,0×30	1	**554-1859**
80	2,6	4,6×30	1	**554-1860**
80	2,6	2,1×50	1	**554-1861**
80	2,6	3,0×50	1	**554-1862**
80	2,6	4,6×50	1	**554-1863**
80	2,6	1,0×100	1	**554-2564**
80	2,6	2,1×100	1	**554-1864**
80	2,6	3,0×100	1	**554-1865**
80	2,6	4,6×100	1	**554-1866**
80	2,6	2,1×150	1	**554-1867**
80	2,6	3,0×150	1	**554-1868**
80	2,6	4,6×150	1	**554-1869**

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ defender guard columns				
80	2,6	2,1×10	4	**554-1942**
80	2,6	3,0×10	4	**554-1943**
80	2,6	4,6×10	4	**554-1944**

Description	Pk	Cat. No.
Uniguard™ direct connection guard cartridge holders for Accucore™ columns		
Uniguard™ drop-in holder for 2,0 – 3,0 mm I-Ø	1	**554-2202**
Uniguard™ drop-in holder for 4,0 – 4,6 mm I-Ø	1	**554-6080**

HPLC columns, Accucore™ RP-MS
Thermo Scientific

These columns are optimised for MS detection with an excellent combination of speed and quality of separation. RP-MS offers slightly lower retention than C18 which, when combined with high efficiencies and low peak tailing, makes this the phase of choice for MS detection. Based on Core Enhanced Technology, they provide fast, high-resolution separations without the elevated back pressures required by sub-2 µm particles.

- Lower back pressures
- Excellent peak shapes

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
80	2,6	2,1×30	1	**554-1870**
80	2,6	3,0×30	1	**554-1871**
80	2,6	4,6×30	1	**554-1874**
80	2,6	2,1×50	1	**554-1882**
80	2,6	3,0×50	1	**554-1883**
80	2,6	4,6×50	1	**554-1884**
80	2,6	2,1×100	1	**554-1885**
80	2,6	3,0×100	1	**554-1886**
80	2,6	4,6×100	1	**554-1887**
80	2,6	2,1×150	1	**554-1888**
80	2,6	3,0×150	1	**554-1889**
80	2,6	4,6×150	1	**554-1890**

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ defender guard columns				
80	2,6	2,1×10	4	**554-1945**
80	2,6	3,0×10	4	**554-1946**
80	2,6	4,6×10	4	**554-1947**

Description	Pk	Cat. No.
Uniguard™ direct connection guard cartridge holders for Accucore™ columns		
Uniguard™ drop-in holder for 2,0 – 3,0 mm I-Ø	1	**554-2202**
Uniguard™ drop-in holder for 4,0 – 4,6 mm I-Ø	1	**554-6080**

HPLC columns, Accucore™ HILIC
Thermo Scientific

These columns offer enhanced retention of polar and hydrophilic analytes. Based on Core Enhanced Technology, they provide fast, high-resolution separations without the elevated back pressures required by sub-2 µm particles.

- Lower back pressures
- Alternative selectivity to C18 without ion-pair or derivatisation
- Improved sensitivity for MS detection

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
80	2,6	2,1×30	1	**554-1930**
80	2,6	3,0×30	1	**554-1931**
80	2,6	4,6×30	1	**554-1932**
80	2,6	2,1×50	1	**554-1933**
80	2,6	3,0×50	1	**554-1934**
80	2,6	4,6×50	1	**554-1935**
80	2,6	2,1×100	1	**554-1936**
80	2,6	3,0×100	1	**554-1937**
80	2,6	4,6×100	1	**554-1938**
80	2,6	2,1×150	1	**554-1939**
80	2,6	3,0×150	1	**554-1940**
80	2,6	4,6×150	1	**554-1941**

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ defender guard columns				
80	2,6	2,1×10	4	**554-1957**
80	2,6	3,0×10	4	**554-1958**
80	2,6	4,6×10	4	**554-1959**

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Description	Pk	Cat. No.
Uniguard™ direct connection guard cartridge holders for Accucore™ columns		
Uniguard™ drop-in holder for 2,0 – 3,0 mm I-Ø	1	**554-2202**
Uniguard™ drop-in holder for 4,0 – 4,6 mm I-Ø	1	**554-6080**

HPLC columns, Accucore™ PFP

Thermo Scientific

These columns offer alternative selectivity to C18, particularly for halogenated analytes. Based on Core Enhanced Technology, they provide fast, high-resolution separations without the elevated back pressures required by sub-2 µm particles.

- Lower back pressures
- Extra retention for halogenated species
- Unique selectivity for non-halogenated polar compounds

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
80	2,6	2,1×30	1	**554-1918**
80	2,6	3,0×30	1	**554-1919**
80	2,6	4,6×30	1	**554-1920**
80	2,6	2,1×50	1	**554-1921**
80	2,6	3,0×50	1	**554-1922**
80	2,6	4,6×50	1	**554-1923**
80	2,6	2,1×100	1	**554-1924**
80	2,6	3,0×100	1	**554-1925**
80	2,6	4,6×100	1	**554-1926**
80	2,6	2,1×150	1	**554-1927**
80	2,6	3,0×150	1	**554-1928**
80	2,6	4,6×150	1	**554-1929**

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ defender guard columns				
80	2,6	2,1×10	4	**554-1954**
80	2,6	3,0×10	4	**554-1955**
80	2,6	4,6×10	4	**554-1956**

Description	Pk	Cat. No.
Uniguard™ direct connection guard cartridge holders for Accucore™ columns		
Uniguard™ drop-in holder for 2,0 – 3,0 mm I-Ø	1	**554-2202**
Uniguard™ drop-in holder for 4,0 – 4,6 mm I-Ø	1	**554-6080**

HPLC columns, Accucore™ 150-C4 and 150-C18

Thermo Scientific

Based on Core Enhanced Technology, these columns provide fast resolution separation of peptides and proteins and generate only 50% of the back pressure associated with columns packed with sub-2µm materials.

- Fast biomolecule separation
- Rugged and easy to use analytical and nano scale columns

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ 150-C4 standard columns				
150	2,6	2,1×30	1	**554-2415**
150	2,6	3,0×30	1	**554-2416**
150	2,6	4,6×30	1	**554-2417**
150	2,6	2,1×50	1	**554-2418**
150	2,6	3,0×50	1	**554-2419**
150	2,6	4,6×50	1	**554-2420**
150	2,6	2,1×100	1	**554-2421**
150	2,6	3,0×100	1	**554-2422**
150	2,6	4,6×100	1	**554-2423**
150	2,6	2,1×150	1	**554-2424**
150	2,6	3,0×150	1	**554-2425**
150	2,6	4,6×150	1	**554-2426**
Accucore™ 150-C4 nano columns				
150	2,6	0,075×150	1	**554-2427**
150	2,6	0,075×500	1	**554-2428**

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Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ 150-C18 standard columns				
150	2,6	2,1×30	1	**554-2398**
150	2,6	3,0×30	1	**554-2399**
150	2,6	4,6×30	1	**554-2400**
150	2,6	2,1×50	1	**554-2401**
150	2,6	3,0×50	1	**554-2402**
150	2,6	4,6×50	1	**554-2403**
150	2,6	2,1×100	1	**554-2404**
150	2,6	3,0×100	1	**554-2405**
150	2,6	4,6×100	1	**554-2406**
150	2,6	2,1×150	1	**554-2407**
150	2,6	3,0×150	1	**554-2408**
150	2,6	4,6×150	1	**554-2409**
Accucore™ 150-C18 nano columns				
150	2,6	0,075×150	1	**554-2410**
150	2,6	0,075×500	1	**554-2411**
Accucore™ defender guard columns				
150	2,6	2,1×10	4	**554-2395**
150	2,6	3,0×10	4	**554-2396**
150	2,6	4,6×10	4	**554-2397**
150	2,6	2,1×10	4	**554-2412**
150	2,6	3,0×10	4	**554-2413**
150	2,6	4,6×10	4	**554-2414**

HPLC columns, Accucore™ Phenyl-Hexyl

Thermo Scientific

These columns offer unique selectivity for aromatic and moderately polar analytes. Suitable for complex samples where some peaks are well resolved on a phenyl phase whilst others require a conventional alkyl phase. Based on Core Enhanced Technology, they provide fast, high-resolution separations without the elevated back pressures required by sub-2 µm particles.

- Lower back pressures
- Mixed-mode selectivity for aromatic and moderately polar analytes
- Enhanced pi-pi interactions with aromatics
- Moderate hydrophobicity

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
80	2,6	2,1×30	1	**554-1906**
80	2,6	3,0×30	1	**554-1907**
80	2,6	4,6×30	1	**554-1908**
80	2,6	2,1×50	1	**554-1909**
80	2,6	3,0×50	1	**554-1910**
80	2,6	4,6×50	1	**554-1911**
80	2,6	2,1×100	1	**554-1912**
80	2,6	3,0×100	1	**554-1913**
80	2,6	4,6×100	1	**554-1914**
80	2,6	2,1×150	1	**554-1915**
80	2,6	3,0×150	1	**554-1916**
80	2,6	4,6×150	1	**554-1917**

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ defender guard columns				
80	2,6	2,1×10	4	**554-1951**
80	2,6	3,0×10	4	**554-1952**
80	2,6	4,6×10	4	**554-1953**

Description	Pk	Cat. No.
Uniguard™ direct connection guard cartridge holders for Accucore™ columns		
Uniguard™ drop-in holder for 2,0 – 3,0 mm I-Ø	1	**554-2202**
Uniguard™ drop-in holder for 4,0 – 4,6 mm I-Ø	1	**554-6080**

HPLC columns, Accucore™ XL C18 and XL C8

Thermo Scientific

Based on Core Enhanced Technology using 4 µm solid core particles, these columns allow users of conventional HPLC methods to enjoy performance far beyond that of columns packed with 5 µm, 4 µm or even 3 µm fully porous particles. Very high separation efficiencies using standard HPLC instruments and conditions provide increased peak resolution and lower limits of detection. An ultra-stable packed bed results in exceptionally robust columns that demonstrate excellent retention and response reproducibility.

Accucore™ XL C18

- Optimum retention of non-polar compounds
- Hydrophobic interaction mechanism
- Separates a broad range of analytes

Accucore™ XL C8

- Similar selectivity to C18 with lower retention
- Recommended for analytes with moderate hydrophobicity

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ XL C18				
80	4	2,1×50	1	**554-2239**
80	4	3,0×50	1	**554-2243**
80	4	4,6×50	1	**554-2247**
80	4	2,1×100	1	**554-2240**
80	4	3,0×100	1	**554-2244**
80	4	4,6×100	1	**554-2248**
80	4	2,1×150	1	**554-2241**
80	4	3,0×150	1	**554-2245**
80	4	4,6×150	1	**554-2249**
80	4	2,1×250	1	**554-2269**
80	4	3,0×250	1	**554-2246**
80	4	4,6×250	1	**554-2250**
Accucore™ XL C18 defender guard columns				
80	4	2,1×10	4	**554-2263**
80	4	3,0×10	4	**554-2264**
80	4	4,6×10	4	**554-2265**
Accucore™ XL C8				
80	4	2,1×50	1	**554-2251**
80	4	3,0×50	1	**554-2254**
80	4	4,6×50	1	**554-2259**
80	4	2,1×100	1	**554-2252**
80	4	3,0×100	1	**554-2255**
80	4	4,6×100	1	**554-2260**
80	4	2,1×150	1	**554-2253**
80	4	3,0×150	1	**554-2256**
80	4	4,6×150	1	**554-2261**
80	4	2,1×250	1	**554-2242**
80	4	3,0×250	1	**554-2258**
80	4	4,6×250	1	**554-2262**
Accucore™ XL C8 defender guard columns				
80	4	2,1×10	4	**554-2266**
80	4	3,0×10	4	**554-2267**
80	4	4,6×10	4	**554-2268**

Description	Pk	Cat. No.
Uniguard™ direct connection guard cartridge holders for Accucore™ columns		
Uniguard™ drop-in holder for 2,0 – 3,0 mm I-Ø	1	**554-2202**
Uniguard™ drop-in holder for 4,0 – 4,6 mm I-Ø	1	**554-6080**

Accucore™ kits

Thermo Scientific

Accucore™ kits allow validation of the reproducibility of Accucore™ HPLC columns, or verification of which Accucore™ HPLC column offers the best separation.

Accucore™ validation kit

Validate the reproducibility of Accucore™ HPLC columns.

Delivery information: Contains three Accucore™ C18 columns.

Accucore™ narrow selectivity kit

Verify which Accucore™ HPLC column offers the best separation over a narrow selectivity range.

Delivery information: Contains one each of Accucore™ C18, RP-MS and aQ columns.

Accucore™ wide selectivity kit

Verify which Accucore™ HPLC column offers the best separation over a wide selectivity range.

Delivery information: Contains one each of Accucore™ C18, Phenyl-Hexyl and PFP columns.

Accucore™ polar selectivity kit

Verify which Accucore™ HPLC column offers the best separation for polar analytes.

Delivery information: Contains one each of Accucore™ aQ, PFP and HILIC columns.

Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Accucore™ validation kit			
2,6	2,1×50	3	**554-1960**
2,6	2,1×100	3	**554-1961**
2,6	2,1×150	3	**554-1962**
Accucore™ narrow selectivity kit			
2,6	2,1×50	3	**554-1963**
2,6	2,1×100	3	**554-1964**
2,6	2,1×150	3	**554-1965**
Accucore™ wide selectivity kit			
2,6	2,1×50	3	**554-1966**
2,6	2,1×100	3	**554-1967**
2,6	2,1×150	3	**554-1968**
Accucore™ polar selectivity kit			
2,6	2,1×50	3	**554-1969**
2,6	2,1×100	3	**554-1970**
2,6	2,1×150	3	**554-1971**

HPLC columns, Hypersil GOLD™ C18

Thermo Scientific

Endcapped, ultrapure, silica-based columns with exceptional peak shape and resolution designed for HPLC and LC/MS.

- Significant reduction in peak tailing while retaining C18 selectivity
- Excellent resolution, efficiency and sensitivity
- Confidence in the accuracy and quality of analytical data

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	3	2,1×20	1	**554-4533**
175	3	3,0×20	1	**554-4534**
175	3	4,0×20	1	**554-4535**
175	3	1,0×30	1	**554-4536**
175	3	2,1×30	1	**554-4537**
175	3	3,0×30	1	**554-4538**
175	3	4,6×30	1	**554-4539**
175	3	1,0×50	1	**554-4540**
175	3	2,1×50	1	**554-4287**
175	3	3,0×50	1	**554-4541**
175	3	4,0×50	1	**554-4542**
175	3	4,6×50	1	**554-4288**
175	3	2,1×75	1	**554-4543**
175	3	4,6×75	1	**554-4544**
175	3	1,0×100	1	**554-4545**
175	3	2,1×100	1	**554-4289**
175	3	3,0×100	1	**554-4546**
175	3	4,0×100	1	**554-4547**
175	3	4,6×100	1	**554-4290**
175	3	4,0×125	1	**554-4548**
175	3	4,6×125	1	**554-4549**
175	3	1,0×150	1	**554-4550**

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Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
175	3	2,1×150	1	554-4291
175	3	3,0×150	1	554-4551
175	3	4,0×150	1	554-4552
175	3	4,6×150	1	554-4292
175	3	4,0×250	1	554-4553
175	5	2,1×30	1	554-4558
175	5	3,0×30	1	554-4559
175	5	4,6×30	1	554-4379
175	5	1,0×50	1	554-4560
175	5	2,1×50	1	554-4293
175	5	3,0×50	1	554-4561
175	5	4,0×50	1	554-4562
175	5	4,6×50	1	554-4294
175	5	1,0×100	1	554-4563
175	5	2,1×100	1	554-4295
175	5	3,0×100	1	554-4564
175	5	4,0×100	1	554-4565
175	5	4,6×100	1	554-4296
175	5	1,0×150	1	554-4566
175	5	2,1×150	1	554-4297
175	5	3,0×150	1	554-4567
175	5	4,0×150	1	554-4380
175	5	4,6×150	1	554-4298
175	5	1,0×250	1	554-4568
175	5	2,1×250	1	554-4569
175	5	3,0×250	1	554-4570
175	5	4,0×250	1	554-4381
175	5	4,6×250	1	554-4299

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Hypersil GOLD™ C18 drop-in guard cartridges				
175	3	1,0×10	4	554-4529
175	3	2,1×10	4	554-4530
175	3	3,0×10	4	554-4531
175	3	4,0/4,6×10	4	554-4532
175	5	1,0×10	4	554-4554
175	5	2,1×10	4	554-4555
175	5	3,0×10	4	554-4556
175	5	4,0/4,6×10	4	554-4557

Description	Pk	Cat. No.
Uniguard™ direct connection guard cartridge holders for Accucore™ columns		
Uniguard™ drop-in holder for 2,0 – 3,0 mm I-Ø	1	554-2202
Uniguard™ drop-in holder for 4,0 – 4,6 mm I-Ø	1	554-6080

HPLC columns, Acclaim™ Organic Acid

Thermo Scientific

These columns offer unparalleled separations of hydrophilic aliphatic and aromatic organic acids. They are compatible with 100% aqueous mobile phases and low pH conditions. They feature a patented polar-embedded stationary phase that is optimised and use-tested for hydroxyl aliphatic organic acid separations.

- Hydrolytic stability at low pH conditions, optimum for reversed-phase retention of organic acids
- Ideal selectivity for separating a wide spectrum of organic acids
- Excellent peak shapes for organic acids

Particle type: ultra pure, spherical silica

Carbon load: 17%

Surface area: 300 m^2/g

pH range: 2 - 8

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
120	3	2,1×150	1	554-4406
120	3	3,0×150	1	554-4405
120	5	4,0×150	1	554-4396
120	5	4,0×250	1	554-4395

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Guard cartridges				
120	5	3×10	2	554-4407
120	5	4,6×10	2	554-4401

Description	Pk	Cat. No.
Guard cartridge holder for HPLC columns, Acclaim™		
Stainless steel guard cartridge holder, V-2	1	554-4528

HPLC columns, Acclaim™ Surfactant
Thermo Scientific

These high-efficiency, silica-based columns provide excellent resolution and throughput for HPLC separations using UV-Vis, evaporative light scattering (ELSD) or refractive index (RI) detection. The novel surface chemistry creates a unique polarity that offers significantly improved resolution for individual oligomers of ethoxylated surfactants compared with conventional C18 columns.

- Ideal selectivity for separation of anionic, nonionic, cationic and amphoteric surfactants
- Resistant to dewetting or phase collapse under highly aqueous mobile phase conditions
- Retains highly hydrophilic compounds, such as hydrotropes
- Excellent peak shapes, especially for cationic surfactants
- Rugged separations under a variety of conditions

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
120	3	2,1×150	1	**554-4404**
120	3	3,0×150	1	**554-4403**
120	5	2,1×150	1	**554-4399**
120	5	4,6×150	1	**554-4397**
120	5	4,6×250	1	**554-4398**

Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Guard cartridges				
120	5	2,1×10	2	**554-4400**
120	5	3,0×10	2	**554-4408**
120	5	4,6×10	2	**554-4402**

Description	Pk	Cat. No.
Guard cartridge holder for HPLC columns, Acclaim™		
Stainless steel guard cartridge holder, V-2	1	**554-4528**

Size exclusion chromatography columns, Acclaim™ SEC-300 and SEC-1000
Thermo Scientific

These high performance size exclusion chromatography columns are specifically designed for the separation of water soluble polymers and oligomers.

- Proprietary mono-dispersed multi-pore hydrophilic resin: no inflection points in calibration curve
- Wide linear calibration range
- High-resolution analysis at reduced solvent consumption
- Stable surface bonding with low column bleed and compatibility with UV, RI, MS, ELSD and Thermo Scientific Dionex™ Corona™ Charged Aerosol Detectors

Separation range for PEO*: SEC-300 columns; 100 - 50 000 Da, SEC-1000 columns; 1000 - 1 000 000 Da

Type	SEC-300			SEC-1000		
Dimensions	4,6×300 mm	7,8×150 mm	7,8×300 mm	4,6×300 mm	7,8×150 mm	7,8×300 mm
Flow rate (ml/min)	≤0,35	≤1,00		≤0,35	≤1,00	
pH Range	2 - 12					
Pressure	<1200 psi	<700 psi	<1200 psi	<600 psi	<350 psi	<600 psi
Sample volume (µl)	<100	<150	<300	<100	<150	<300
Temperature	<60 °C					

Description	Exclusion limit (PEO)	I-Ø×L (mm)	Particle size (µm)	Pore size (Å)	Pk	Cat. No.
SEC-300	50000-150000	4,6×300	5	300	1	**554-4412**
SEC-300	50000-150000	7,8×150	5	300	1	**554-4414**
SEC-300	50000-150000	7,8×300	5	300	1	**554-4413**
SEC-1000	300000-7500000	4,6×300	7	1000	1	**554-4411**
SEC-1000	300000-7500000	7,8×150	7	1000	1	**554-4410**
SEC-1000	300000-7500000	7,8×300	7	1000	1	**554-4409**

Description	I-Ø×L (mm)	Particle size (µm)	Pore size (Å)	Pk	Cat. No.
Guard cartridges					
SEC-300	4,6×33	5	300	1	**554-4416**
SEC-1000	4,6×33	7	1000	1	**554-4415**

* PEO = polyethylene oxides

Size exclusion chromatography columns, GPC KF-800 series
Showa Denko

A complete range of general purpose gel permeation columns (GPC) packed with tetrahydrofuran (THF). Columns packed with other solvents are also available. Please enquire for further details.

- Column types KF-801 to 802.5 for compounds with a molecular weight of less than 2000 g.mol^{-1}, such as liposoluble vitamins (KF-801), oligomers (KF-802-803) and polymer additives (KF-801-802)
- Column types KF-802.5 to 807L for compounds with a molecular weight of 2000 g.mol^{-1} or more, such as THF-soluble synthetic polymers (KF803-807L) and oligomers (KF802-803)
- L represents "linear column" which exhibits linearity in the calibration curve over a wide range of molecular weights

Description	Exclusion limit (PS)	I-Ø×L (mm)	Particle size (µm)	Pore size (Å)	Pk	Cat. No.
GPC KF-801	1500	8,0×300	6	50	1	**554-0864**
GPC KF-802.5	20000	8,0×300	6	300	1	**554-0865**
GPC KF-802	5000	8,0×300	6	150	1	**554-0866**
GPC KF-803	70000	8,0×300	6	500	1	**554-0867**
GPC KF-803L	70000	8,0×300	6	500	1	**554-0868**
GPC KF-804	400000	8,0×300	7	1500	1	**554-0869**
GPC KF-804L	400000	8,0×300	7	1500	1	**554-0870**
GPC KF-805	4000000	8,0×300	10	5000	1	**554-0871**
GPC KF-805L	4000000	8,0×300	10	5000	1	**554-0872**
GPC KF-806	20000000*	8,0×300	10	10000	1	**554-0873**
GPC KF-806M	20000000*	8,0×300	10	10000	1	**554-0875**
GPC KF-806L	20000000*	8,0×300	10	10000	1	**554-0874**
GPC KF-807	20000000*	8,0×300	18	20000	1	**554-0876**
GPC KF-807L	20000000*	8,0×300	18	20000	1	**554-0877**
GPC KF-G	-	4,6×10	8	-	1	**554-1765**
GPC KF-800D	-	8,0×100	10	-	1	**554-2429**

* Estimated value

Size exclusion chromatography columns, Asahipak GF-HQ series
Showa Denko

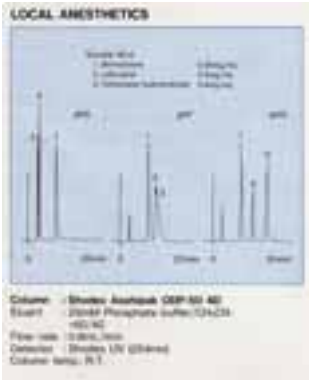
The GF-HQ series are designed for aqueous (GFC) and organic (GPC) size exclusion chromatography. High performance analysis of samples containing hydrophilic and hydrophobic parts, such as surfactants is possible.

- Polymer-based SEC columns with excellent solvent resistance
- Supports both aqueous and organic solvent systems

Description	Exclusion limit (Pullulan)	I-Ø×L (mm)	Particle size (µm)	Pore size	Pk	Cat. No.
GF-1G 7B	-	7,5×50	9	-	1	**554-1763**
GF-310 HQ	40000	7,5×300	5	400	1	**554-1757**
GF-510 HQ	300000	7,5×300	5	2000	1	**554-1756**
GF-710 HQ	10000000*	7,5×300	9	10 000	1	**554-1755**
GF-7M HQ	10000000*	7,5×300	9	10 000	1	**554-1758**

* Estimated value

Reversed phase HPLC columns, Asahipak ODP-40, ODP-50, C4P-50 and C8P-50
Showa Denko



- Polymer-based amino columns that incorporate an amino group in the polyvinyl alcohol-based gel, they are suitable for analysis of saccharides in normal phase C18 (octadecyl) and C8 (octyl): for pharmaceutical products and metabolites that are soluble in physiological fluids
- Polarity: ODP<C8P
- ODP-40 (particle size: 4 µm) improved version of ODP-50 (particle size: 5 µm)

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Asahipak ODP-40 4D	250	4	4,6×150	1	**554-0881**
Asahipak ODP-40 4E	250	4	4,6×250	1	**554-0882**
Asahipak ODP-50 6D	250	5	6,0×150	1	**554-0886**
Asahipak ODP-50 6E	250	5	6,0×250	1	**554-0887**
Asahipak ODP-50G 6A	-	5	6,0×10	1	**554-0889**
Asahipak ODP-50 4B	250	5	4,6×50	1	**554-2432**
Asahipak ODP-50 4D	250	5	4,6×150	1	**554-0884**
Asahipak ODP-50 4E	250	5	4,6×250	1	**554-0885**
Asahipak ODP-50G 4A	-	5	4,6×10	1	**554-0888**

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Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Asahipak ODP-50 2D	250	5	2,0×150	1	**554-0883**
Asahipak ODP-50G 2A	-	5	2,0×10	1	**554-2433**
Asahipak C8P-50 4D	250	5	4,6×150	1	**554-0862**
Asahipak C8P-50 4E	250	5	4,6×250	1	**554-0863**
Asahipak C8P-50G 4A	-	5	4,6×10	1	**554-2431**
Asahipak C4P-50 4D	250	5	4,6×150	1	**554-2435**
Asahipak C4P-50 4E	250	5	4,6×250	1	**554-2434**
Asahipak C4P-50G 4A	-	5	4,6×10	1	**554-2430**

Hydrophilic interaction chromatography columns (HILIC), Asahipak NH2P

Showa Denko

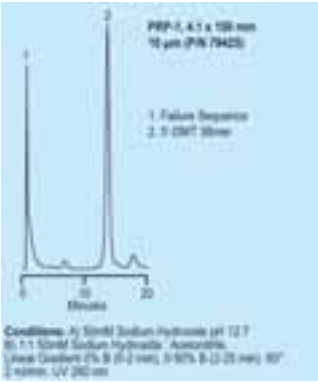
Polymer-based packed columns ideal for saccharides analysis

- Excellent chemical stability and resistance to degradation over time
- Washable with alkaline solutions
- Suitable for evaporative light scattering detector, corona-charged aerosol detector and LC-MS
- NH2P-40 is the high performance version of NH2P-50

Description	Pore size (Å)	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Asahipak NH2P-50 4D	100	5	4,6×150	1	**554-0879**
Asahipak NH2P-50 4E	100	5	4,6×250	1	**554-0880**
Asahipak NH2P-50G 4A guard column	-	5	4,6×10	1	**554-2234**
Asahipak NH2P-50 2D	100	5	2,0×150	1	**554-0878**
Asahipak NH2P-50G 2A guard column	-	5	2,0×10	1	**554-2236**
Asahipak NH2P-40 3E	100	4	3,0×250	1	**554-1776**
Asahipak NH2P-50G 3A guard column	-	5	3,0×10	1	**554-1773**
Asahipak NH2P-LF line filter	-	-	8,0×75	1	**554-2235**

Reversed phase HPLC columns, PRP-1

Hamilton



Polymeric 100 Å columns for general reversed phase separations. PRP-1 columns are packed with a polystyrene - divinyl benzene material.

- Better sample recovery than silica-based columns (there are no silanol groups)
- Excellent durability (stable to any concentration of water or organic solvent)
- pH stable from 0 to 14

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Stainless steel	5	1,0×150	1	**554-0431**
Stainless steel	5	2,1×50	1	**554-0211**
Stainless steel	5	2,1×100	1	**554-0466**
Stainless steel	5	4,1×50	1	**554-0245**
Stainless steel	5	4,1×100	1	**554-0258**
Stainless steel	5	4,1×150	1	**554-1259**
Stainless steel	5	4,1×250	1	**554-0484**
PEEK	5	4,6×100	1	**554-1308**
PEEK	5	4,6×150	1	**554-0230**
PEEK	5	4,6×250	1	**554-1313**
Stainless steel	5	7,0×305	1	**554-0468**
Stainless steel	5	10,0×100	1	**554-2537**
Stainless steel	5	21,2×75	1	**554-2531**
Stainless steel	7	1,0×50	1	**554-0433**
Stainless steel	7	4,1×150	1	**554-0294**
Stainless steel	7	4,1×250	1	**554-0229**
PEEK	7	4,6×250	1	**554-0213**
Stainless steel	7	10,0×250	1	**554-0295**
Stainless steel	7	10,0×50	1	**554-1494**
Stainless steel	7	21,2×250	1	**554-0203**
Stainless steel	10	4,1×150	1	**554-0231**
Stainless steel	10	4,1×250	1	**554-0233**
PEEK	10	4,6×150	1	**554-0202**
PEEK	10	4,6×250	1	**554-0214**

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Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Stainless steel	10	7,0×100	1	**554-0285**
Stainless steel	10	7,0×305	1	**554-0232**
Stainless steel	10	10,0×100	1	**554-0289**
Stainless steel	10	10,0×250	1	**554-0286**
Stainless steel	10	21,2×250	1	**554-0257**
Stainless steel	10	50,8×250	1	**554-1312**
Stainless steel	12 - 20	21,2×250	1	**554-0234**
Stainless steel	12 - 20	30×250	1	**554-2536**
Stainless steel	12 - 20	50,8×250	1	**554-0284**
Stainless steel	12 - 20	101,6×250	1	**554-0290**

Description	I-Ø×L (mm)	Pk	Cat. No.
Analytical guard columns			
Starter kit (1 holder, 2 cartridges) for PRP-1 steel columns	2,3×20	1	**554-1262**
Starter kit (1 holder, 2 cartridges) for PRP-1 PEEK columns	3×8	1	**554-1240**
Replacement cartridge for PRP-1 steel analytical guard columns	2,3×20	5	**554-1260**
Replacement cartridge for PRP-1 PEEK analytical guard columns	3×8	5	**554-1241**
Semi-preparative/preparative guard columns			
Starter kit (1 holder, 1 cartridge) for PRP-1 steel columns	4,6×20	1	**554-1221**
Replacement cartridges PRP-1	4,6×20	2	**554-1222**

Anion exchange HPLC columns, PRP-X100

Hamilton

Polymeric anion exchange packing for separation of inorganic and organic anions. Use with organic solvent from 0 to 100% for elution of hydrophobic anions or column cleaning.

- Easily separates the eight common anions (fluoride through to sulphate)
- Good separation of fluoride from the water dip
- Use conductivity or UV detection
- pH stable from 0 to 13

Material	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
PEEK	5	2,1×150	1	**554-1498**
Stainless steel	5	2,1×250	1	**554-2533**
Stainless steel	5	4,1×50	1	**554-0476**
Stainless steel	5	4,1×100	1	**554-0297**
Stainless steel	5	4,1×150	1	**554-0478**
PEEK	5	4,6×150	1	**554-1495**
PEEK	5	4,6×250	1	**554-1496**
Stainless steel	10	2,1×150	1	**554-0228**
Stainless steel	10	2,1×250	1	**554-0198**
Stainless steel	10	4,1×50	1	**554-0210**
Stainless steel	10	4,1×100	1	**554-0241**
Stainless steel	10	4,1×150	1	**554-0238**
Stainless steel	10	4,1×250	1	**554-0237**
PEEK	10	4,6×150	1	**554-0205**
PEEK	10	4,6×250	1	**554-0246**
Stainless steel	10	10,0×150	1	**554-0400**
Stainless steel	10	21,5×250	1	**554-1497**
Stainless steel	12 - 20	21,5×250	1	**554-0204**

Description	Material	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Analytical guard columns					
Analytical guard column starter kit (1 holder, 2 cartridges)	Stainless steel	10	2,0×20	1	**554-1263**
Analytical guard column starter kit (1 holder, 2 cartridges)	PEEK	10	3,0×8	1	**554-1255**
Analytical guard column replacement cartridges	Stainless steel	10	2,0×20	5	**554-1261**
Analytical guard column replacement cartridges	PEEK	10	3,0×8	5	**554-1256**
Semi-preparative/preparative guard columns					
Semi-preparative/preparative guard column starter kit (1 holder, 1 cartridge)	Stainless steel	12 - 20	4,6×20	1	**554-1225**
Semi-preparative/preparative guard column replacement cartridges	Stainless steel	12 - 20	4,6×20	2	**554-1226**

Further chromatography consumables, instruments and accessories are available in our AYN for Chromatography catalogue.

Chiral columns, Daicel

Daicel HPLC chiral columns are identified by the trademarks CHIRALCEL®, CHIRALPAK® and CROWNPAK® and have become recognised worldwide as the leading chromatography products for enantiomeric analysis and the separation of chiral compounds. A Daicel chiral HPLC column has two remarkable performance characteristics that separate it from all others - wide selectivity and a truly dynamic loading capacity. The combination of the two provides you with a powerful tool that is unique in the industry. Daicel chiral columns represent the most effective means of analysing chiral compounds and obtaining pure enantiomers, i.e. to levels of 99% enantiomeric excess. Samples often require no prior derivatisation, all chiral columns can be used directly on standard HPLC or Supercritical Fluid Chromatography instrumentation. Daicel chiral columns exhibit a dynamic loading capacity and have been in continual use by a large number of laboratories for many years. Daicel chiral columns offer the ability to scale up in a linear fashion, minimising changes in methodology and operating conditions.

- Excellent resolution of racemates
- Fast, easy method development
- Columns are durable and long lasting
- Smooth transition from laboratory to development, pilot plant and production

CHIRALPAK® IA, Daicel

CHIRALPAK® IA is based upon a new immobilised polysaccharide chiral stationary phase. This new technology allows the use of many different organic solvents as mobile phase and mobile phase modifiers.

CHIRALCEL® and CHIRALPAK® polysaccharide phases are a derivatised cellulose or amylose coated on a cellulose support.

Applications of the different polysaccharide phases:

- OB: small aliphatic and aromatic compounds
- OD: alkaloids, tropines, amines, beta blockers
- OJ: aryl methyl esters, aryl methoxy esters
- AD: alkaloids, tropines, amines, beta blockers
- AS: alkaloids, tropines, amines

CROWNPAK® crown ether columns are specific for primary amino groups at the chiral centre.

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Chiralcel®				
Chiralcel® OB-H analytical column	5	4,6×150	1	**554-0014**
Chiralcel® OD analytical column	10	4,6×250	1	**554-0017**
Chiralcel® OD semi-preparative column	10	10×250	1	**554-0019**
Chiralcel® OD semi-preparative column	10	20×250	1	**554-0021**
Chiralcel® OD semi-preparative guard column	10	10×50	1	**554-0018**
Chiralcel® OD semi-preparative guard column	10	10×250	1	**554-0020**
Chiralcel® OD-H analytical column	5	2,1×150	1	**554-0115**
Chiralcel® OD-H analytical column	5	4,6×150	1	**554-0025**
Chiralcel® OD-H analytical column	5	4,6×250	1	**554-0026**
Chiralcel® OD-H guard cartridges	5	4×10	3	**554-0024**
Chiralcel® OD-H semi-preparative column	5	10×250	1	**554-0028**
Chiralcel® OD-H semi-preparative column	5	20×250	1	**554-0029**
Chiralcel® OD-H semi-preparative guard column	5	20×10	1	**554-3742**
Chiralcel® OD-R analytical column	10	4,6×250	1	**554-0031**
Chiralcel® OD-RH guard cartridges	5	4×10	3	**554-3743**
Chiralcel® OD-RH analytical column	5	4,6×150	1	**554-0033**
Chiralcel® OJ analytical column	10	4,6×250	1	**554-0103**
Chiralcel® OJ semi-preparative guard column	10	10×50	1	**554-0040**
Chiralcel® OJ semi-preparative guard column	10	20×50	1	**554-0041**
Chiralcel® OJ-H analytical column	5	4,6×250	1	**554-0044**
Chiralcel® OJ-H guard cartridges	5	4×10	3	**554-3744**
Chiralcel® OJ-H semi-preparative column	5	10×250	1	**554-0046**
Chiralcel® OJ-H semi-preparative column	5	20×250	1	**554-0047**
Chiralcel® OJ-H semi-preparative guard column	5	20×10	1	**554-3745**
Chiralcel® OJ-H/SFC semi-preparative column	5	10×250	1	**554-3766**
Chiralcel® OJ-R guard cartridges	5	4×10	3	**554-0048**
Chiralcel® OJ-RH analytical column	5	2,1×150	1	**554-3747**
Chiralcel® OJ-RH analytical column	5	4,6×150	1	**554-3746**
Chiralpak®				
Chiralpak® AD analytical column	10	2,1×150	1	**554-0062**
Chiralpak® AD analytical column	10	4,6×250	1	**554-0056**
Chiralpak® AD semi-preparative column	10	10×250	1	**554-0058**
Chiralpak® AD semi-prep column	10	20×250	1	**554-0060**
Chiralpak® AD semi-preparative guard column	10	10×50	1	**554-0057**
Chiralpak® AD semi-preparative guard column	10	20×50	1	**554-0059**
Chiralpak® AD-H analytical column	5	4,6×150	1	**554-0066**
Chiralpak® AD-H analytical column	5	4,6×250	1	**554-0067**
Chiralpak® AD-H guard cartridges	5	4×10	3	**554-0065**
Chiralpak® AD-H semi-preparative column	5	10×250	1	**554-0069**
Chiralpak® AD-H semi-preparative column	5	20×250	1	**554-0070**
Chiralpak® AD-H/SFC semi-preparative column	5	10×250	1	**554-3767**
Chiralpak® AD-RH analytical column	5	4,6×150	1	**554-0072**

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Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
Chiralpak®				
Chiralpak® AD-RH guard cartridges	5	4×10	3	**554-3768**
Chiralpak® AS analytical column	10	2,1×150	1	**554-0080**
Chiralpak® AS analytical column	10	4,6×250	1	**554-0074**
Chiralpak® AS guard cartridges	5	4×10	3	**554-3759**
Chiralpak® AS semi-preparative column	10	10×250	1	**554-0076**
Chiralpak® AS semi-preparative column	10	20×250	1	**554-0078**
Chiralpak® AS semi-preparative guard column	10	10×50	1	**554-0075**
Chiralpak® AS semi-preparative guard column	10	20×50	1	**554-0077**
Chiralpak® AS-H analytical column	5	4,6×150	1	**554-0084**
Chiralpak® AS-H analytical column	5	4,6×250	1	**554-0085**
Chiralpak® AS-H semi-preparative column	5	10×250	1	**554-0087**
Chiralpak® AS-H semi-preparative column	5	20×250	1	**554-0088**
Chiralpak® AS-H semi-preparative guard column	5	10×20	1	**554-3758**
Chiralpak® AS-RH analytical column	5	4,6×150	1	**554-0090**
Chiralpak® AS-RH guard cartridges	5	4×10	3	**554-3757**
Chiralpak® IA analytical column	5	4,6×150	1	**554-0105**
Chiralpak® IA analytical column	5	4,6×250	1	**554-0106**
Chiralpak® IA guard cartridges	5	4×10	3	**554-3760**
Chiralpak® IA semi-preparative column	5	10×250	1	**554-0108**
Chiralpak® IA semi-preparative column	5	20×250	1	**554-0109**
Chiralpak® IA semi-preparative guard column	5	10×20	1	**554-3761**
Chiralpak® IB analytical column	5	4,6×250	1	**554-0111**
Chiralpak® IB guard cartridges	5	4×10	3	**554-3762**

Chiral columns, ReproSil® Chiral-AM

Dr. Maisch

USP L51 column: amylose tris-3,5-dimethylphenylcarbamate coated on porous silica particles.

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ReproSil® Chiral-AM column	3	4,6×50	1	**554-2605**
ReproSil® Chiral-AM column	3	4,6×100	1	**554-2606**
ReproSil® Chiral-AM column	3	4,6×150	1	**554-2607**
ReproSil® Chiral-AM column	5	4,6×50	1	**554-2618**
ReproSil® Chiral-AM column	5	4,6×100	1	**554-2619**
ReproSil® Chiral-AM column	5	4,6×150	1	**554-2620**
ReproSil® Chiral-AM column	5	10×250	1	**554-2621**
ReproSil® Chiral-AM column	10	4,6×50	1	**554-2590**
ReproSil® Chiral-AM column	10	4,6×250	1	**554-2592**
ReproSil® Chiral-AM column	10	10×250	1	**554-2591**
ReproSil® Chiral-AM guard column	5	4×10	5	**554-2622**

Chiral columns, ReproSil® Chiral-OM

Dr. Maisch

USP L40 column: cellulose tris-3,5-dimethylphenylcarbamate coated on porous silica particles.

Description	Particle size (µm)	I-Ø×L (mm)	Pk	Cat. No.
ReproSil® Chiral-OM column	3	4,6×100	1	**554-2612**
ReproSil® Chiral-OM column	3	4,6×150	1	**554-2613**
ReproSil® Chiral-OM column	5	4,6×50	1	**554-2627**
ReproSil® Chiral-OM column	5	4,6×150	1	**554-2628**
ReproSil® Chiral-OM column	5	4,6×250	1	**554-2631**
ReproSil® Chiral-OM column	5	10×250	1	**554-2629**
ReproSil® Chiral-OM column	5	20×250	1	**554-2630**
ReproSil® Chiral-OM column	10	4,6×50	1	**554-2596**
ReproSil® Chiral-OM column	10	4,6×100	1	**554-2597**
ReproSil® Chiral-OM column	10	4,6×150	1	**554-2598**
ReproSil® Chiral-OM column	10	4,6×250	1	**554-2601**
ReproSil® Chiral-OM column	10	10×250	1	**554-2599**
ReproSil® Chiral-OM column	10	20×250	1	**554-2600**
ReproSil® Chiral-OM guard column	3	4×10	5	**554-2614**

Capillaries and fingertight fitting system, Dionex™ Viper™
Thermo Scientific

This fingertight fitting system provides virtually dead-volume-free plumbing for every conventional HPLC and modern UHPLC system. It improves chromatographic results, independent of different connection geometries and system backpressures. Connecting LC modules, valves and columns quickly, easily and reproducibly without any additional tools.

- Virtually zero-dead-volume HPLC & UHPLC fingertight fittings suitable for system pressures of up to 125 MPa (18,130 psi)
- Suitable for temperatures up to 120 °C
- Flexible stainless steel capillaries and one-piece fingertight fitting design
- Works with virtually any valve and any column from any manufacturer
- Fits narrow connections, such as 10-port valves and enables mixed use with different fitting designs

Description	I-Ø×L (mm)	Pk	Cat. No.
Individual capillaries, RS/Micro			
Viper™ flexible, stainless steel capillary	0,13×65	1	**554-4418**
Viper™ flexible, stainless steel capillary	0,13×150	1	**554-4420**
Viper™ flexible, stainless steel capillary	0,13×250	1	**554-4422**
Viper™ flexible, stainless steel capillary	0,13×350	1	**554-4424**
Viper™ flexible, stainless steel capillary	0,13×450	1	**554-4426**
Viper™ flexible, stainless steel capillary	0,13×550	1	**554-4417**
Viper™ flexible, stainless steel capillary	0,13×650	1	**554-4419**
Viper™ flexible, stainless steel capillary	0,13×750	1	**554-4421**
Viper™ flexible, stainless steel capillary	0,13×850	1	**554-4423**
Viper™ flexible, stainless steel capillary	0,13×950	1	**554-4425**
Individual capillaries, SD/Analytical			
Viper™ flexible, stainless steel capillary	0,18×65	1	**554-4428**
Viper™ flexible, stainless steel capillary	0,18×150	1	**554-4429**
Viper™ flexible, stainless steel capillary	0,18×250	1	**554-4434**
Viper™ flexible, stainless steel capillary	0,18×350	1	**554-4432**
Viper™ flexible, stainless steel capillary	0,18×450	1	**554-4430**
Viper™ flexible, stainless steel capillary	0,18×550	1	**554-4427**
Viper™ flexible, stainless steel capillary	0,18×650	1	**554-4436**
Viper™ flexible, stainless steel capillary	0,18×750	1	**554-4431**
Viper™ flexible, stainless steel capillary	0,18×850	1	**554-4433**
Viper™ flexible, stainless steel capillary	0,18×950	1	**554-4435**

Two-piece fingertight fittings, Upchurch Scientific®
IDEX Health & Science

PEEK

Fittings

Double winged fittings with 10-32 thread, designed to be used with 1/16" OD tubing. They are rated to 6000 psi (414 bar).

Replacement ferrules

F-142x ferrules are designed to be used with 1/16" OD tubing. They are rated to 6000 psi (414 bar). F-113 ferrules are designed to be used with 1/32" OD tubing. They are rated at 3500 - 6000 psi (241 - 414 bar).

Description	Pk	Cat. No.
Fittings		
F-300x, natural, with F-142x ferrules	10	**554-1789**
Replacement ferrules		
F-113, natural	1	**554-1785**
F-142x, natural	10	**554-1788**

Stainless steel fittings, Upchurch Scientific®
IDEX Health & Science

U-410x / U 401x

- For coned ports
- Rated to 10 000 psi (690 bar)

Note: Do not use metal fittings in plastic ports, as this can damage the port.

Description	Pk	Cat. No.
U-400x nuts, (use with U-401x ferrules), for 1/16" OD tubing, 10-32	10	**554-1808**
U-401x ferrules, for 1/16" OD tubing	10	**554-1809**
U-320x nuts, VICI® (VALCO) compatible, for 1/16" OD tubing, 10-32	10	**554-1806**
U-321x ferrules, VICI® (VALCO) compatible, for 1/16" OD tubing, 10-32	10	**554-1807**
U-410x nuts, Waters® compatible (use with U 401x ferrules), for 1/16" OD tubing, 10-32	10	**554-1810**

Very high pressure (VHP) fittings, Upchurch Scientific®
IDEX Health & Science

VHP-205

Reusable fittings

Stainless steel and proprietary PEEK polymer blend

- Reusable up to 10 cycles without tubing damage or impact on pressure holding ability or carry-over (5 cycles if tightened to 1,6 N.m)
- Pressure rating up to 30 000 psi (2070 bar)
- Required torque 10 in-lbs (1,13 N-m)/14 in-lbs (1,6 N-m)

Stainless steel fittings

Stainless steel

- Double compression ferrule design
- Pressure rating up to 30 000 psi (2070 bar)
- Required torque 20 in-lbs (2,25 N-m), not for VHP-200-01

Description	Pk	Cat. No.
Reusable fittings		
VHP-300 fitting, for 1/16" OD tubing, 1/4" hex head, 10-32, fitting length 20 mm	1	**554-1824**
VHP-310 fitting, for 1/16" OD tubing, 8 mm hex head, 10-32, fitting length 20 mm	1	**554-1825**
Stainless steel fittings		
VHP-200 fitting, for 1/16" OD tubing, 1/4" hex head, 10-32, nut length 10 mm	1	**554-1821**
VHP-205 long fitting, for 1/16" OD tubing, 1/4" hex head, 10-32, nut length 17 mm	1	**554-1823**
VHP-200-01 ferrule, for 1/16" OD tubing, 10-32, length 4,4 mm	1	**554-1822**

Sample injectors, Rheodyne®
IDEX Health & Science

3725-038

Stainless steel

Manual sample injectors have two positions, "Load" and "Inject". The "Load" position allows sample loading into the sample loop or sample chamber. A syringe is commonly used to load sample into the sample injector. After loading, manual rotation of the sample injector's handle to the "Inject" position permits the flushing of loaded sample onto a column.

Description	Material	Capacity (ml)	Pk	Cat. No.
Preparative-scale sample injectors				
2-position, 6-port, model 3725-038	Stainless steel		1	**554-1543**
2-position, 6-port, with position sensor, model 3725I-038	Stainless steel		1	**554-1545**
2-position, 6-port, with position sensor, model 3725I	PEEK		1	**554-1544**
Sample loops, for preparative Rheodyne® injectors				
Sample loop	PEEK	2	1	**554-1534**
Sample loop	PEEK	5	1	**554-1535**
Sample loop	PEEK	10	1	**554-1536**
Sample loop	PEEK	20	1	**554-1537**
Sample loop	Stainless steel	2	1	**554-1538**
Sample loop	Stainless steel	5	1	**554-1539**
Sample loop	Stainless steel	10	1	**554-1540**
Sample loop	Stainless steel	20	1	**554-1541**
Analytical scale sample injectors				
7725 2/6 front loading manual injection valve with MBB™ *	Stainless steel		1	**554-2149**
7725I 2/6 front loading manual injection valve with MBB™ * and position sensor	Stainless steel		1	**554-2152**
7725I-005 2/6 front loading manual injection valve with MBB™ *, with titanium sample loop, titanium fittings (nuts and ferrules) and ETFE rotor seal and PSS	Titanium		1	**554-2657**
7725I-006 2/6 front loading manual injection valve with MBB™ *, with position sensing switch (PSS) and special PSS cable	Stainless steel		1	**901-0075**

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Description	Material	Capacity (ml)	Pk	Cat. No.
Analytical scale sample injectors				
7725I/100UL 2/6 front loading manual injection valve with MBB™ *, with position sensing switch (PSS) and 100 µl sample loop	Stainless steel		1	**554-2656**
9725 2/6 front loading manual injection valve with MBB™ *	PEEK		1	**554-2194**
9725I 2/6 front loading manual injection valve with MBB™ * and position sensor	PEEK		1	**554-2196**
Sample loops, for analytical Rheodyne® injectors				
Sample loop, for model 7725, 7725i, 9725(i)	PEEK	2	1	**554-2154**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	5	1	**554-2155**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	10	1	**554-2156**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	20	1	**554-2157**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	50	1	**554-2158**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	100	1	**554-2159**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	200	1	**554-2160**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	500	1	**554-1548**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	1000	1	**554-2161**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	2000	1	**554-2162**
Sample loop, for model 7725, 7725I, PR/EV 700-100, PR/EV 703-100	Stainless steel	5000	1	**554-2163**
Micro-scale sample injectors				
2-position, 6-port, with position sensor, model 8125	Stainless steel		1	**554-2168**
Sample loops, for Micro Rheodyne® injectors				
Sample loop, for model 8125	Stainless steel	5	1	**554-2164**
Sample loop, for model 8125	Stainless steel	10	1	**554-2165**
Sample loop, for model 8125	Stainless steel	20	1	**554-2166**
Sample loop, for model 8125	Stainless steel	50	1	**554-2167**

* MBB™ (Make-Before-Break): Models incorporating Rheodyne's patented MBB architecture design provide uninterrupted flow when switching between "Load" and "Inject" positions.

One-piece fingertight fittings, Upchurch Scientific®
IDEX Health & Science

F-130x

PEEK

Standard knurled fittings with 10-32 thread, designed to be used with 1/16" OD tubing. They are rated to 345 bar.

Description	Pk	Cat. No.
F-120x, natural	10	**554-1786**
F-130x, natural, long	10	**554-1787**

High pressure unions, Upchurch Scientific®
IDEX Health & Science

P-779

Zero-dead-volume unions

PEEK

Zero-dead-volume (ZDV) unions come complete with two F-300 fingertight fittings for 1/16" OD tubing and are pressure rated to 5000 psi (344 bar).

NanoTight™ union

PEEK

The unions come complete with two F-331N fingertight fittings and are pressure rated to 5000 psi (344 bar). The internal design of the unions reduces tubing misalignment. When using 1/16" OD tubing sleeves to connect capillary tubing, the webbed thru-hole minimises breaking of fused silica while adding only miniscule swept volume. The results are:

- Fewer blockages
- Fewer flow rate reductions
- Fewer back pressure problems

Column coupler

PCTFE

These couplers will connect most columns with 10-32 internal threads to a pre-column filter or guard column with the same threads. They may also be used to join two columns in series.

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Description	Pk	Cat. No.
Zero-dead-volume unions		
P-704 union for 1/16″ OD tubing (10-32 threads), 0,50 mm thru-hole, 0,28 µl swept volume	1	**554-1802**
P-742 union for 1/16″ OD tubing (10-32 threads), 0,25 mm thru-hole, 0,07 µl swept volume	1	**554-1803**
P-760 union for 1/16″ OD tubing (10-32 threads), 1,25 mm thru-hole, 1,2 µl swept volume	1	**554-1804**
NanoTight™ union		
P-779 union for 1/16″ OD tubing and tubing sleeves (10-32 threads), 125 µm thru-hole, 8 nl swept volume	1	**554-1805**
Column coupler		
U-281 column coupler (10-32 threads), 0,50 mm thru-hole, 6,0 µl swept volume	1	**554-3242**

Inlet solvent filters, Upchurch Scientific®
IDEX Health & Science

A-302A

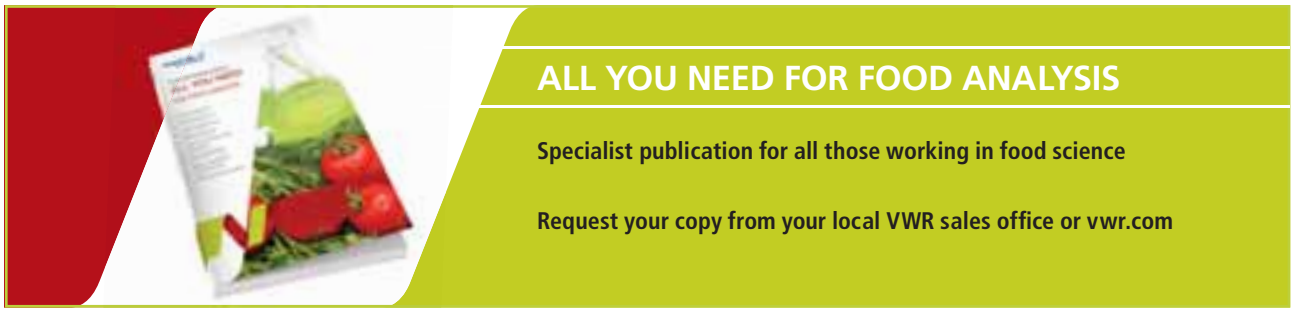
A-310

A-225A

The filters with stems are 100% 316 stainless steel. Filters with threaded fittings have threaded Kel-F® (PCTFE) caps.

- Disposable
- Easy to replace without tools
- Max. flow rate 40 ml/min (A-302, A-302A and A-310) and 100 ml/min (A-255, A-225A and A-230A)

Description	Pk	Cat. No.
For analytical HPLC		
A-302 10 µm inlet solvent filter with stem, for 1/16″ ID tubing	1	**554-1778**
A-302A 10 µm inlet solvent filter with P-315/P-300 flangeless fittings, for 1/8″ OD tubing	1	**554-1779**
For Waters® analytical HPLC systems		
A-310 10 µm inlet solvent filter with stem, for 1/8″ ID tubing	1	**554-1780**
For preparative HPLC systems		
A-225 20 µm inlet solvent filter with stem, for 1/16″ OD tubing	1	**554-3016**
A-225A 20 µm inlet solvent filter with P-315/P-300N flangeless fittings, for 1/8″ OD tubing	1	**554-1777**
A-230A 20 µm inlet solvent filter with XU-655 flangeless fittings, for 1/4″ OD tubing	1	**554-3017**



Quick connect Luer adapters, Upchurch Scientific®
IDEX Health & Science

P-678

Upchurch Scientific® quick connect Luer adapters provide the opportunity to adapt either a female Luer connection or a male Luer connection to a threaded connection. Conform to ISO requirements for medical Luer taper configuration and performance (45 psi/3,1 bar).

Description	Pk	Cat. No.
P-618 adapter, female Luer to male 1/4-28 flat-bottom, 0,05" thru-hole. Natural PP body	1	**554-1790**
P-619 adapter, male slip Luer to male 1/4-28 flat-bottom, 0,05" thru-hole. Natural PP body	1	**554-1791**
P-624 adapter, female Luer to male 1/4-28 flat-bottom, 0,05" thru-hole. Natural ETFE body	1	**554-1792**
P-625 adapter, male slip Luer to male 1/4-28 flat-bottom, 0,04" thru-hole. Natural ETFE body	1	**554-1793**
P-628 adapter, female Luer to female 1/4-28 flat-bottom, 0,04" thru-hole. Natural ETFE body	1	**554-1794**
P-642 adapter, female Luer to male 10-32 coned, 0,05" thru-hole. Natural ETFE body	1	**554-1795**
P-655 adapter, male Luer to female 1/4-28 flat-bottom, 0,04" thru-hole. Red PEEK body, black PEEK lock hub	1	**554-1796**
P-656 adapter, male Luer to female 10-32 coned, 0,05" thru-hole. Natural PEEK body, black PEEK lock hub	1	**554-1797**
P-657 adapter, male Luer to female M6 flat-bottom, 0,05" thru-hole. Black PEEK body and lock hub	1	**554-3139**
P-658 adapter, female Luer to female 1/4-28 flat-bottom, 0,05" thru-hole. Red PEEK body	1	**554-1798**
P-659 adapter, female Luer to female 10-32 coned, 0,05" thru-hole. Natural PEEK body	1	**554-1799**
P-660 adapter, female Luer to female M6 flat-bottom, 0,05" thru-hole. Black PEEK body	1	**554-3140**
P-661 adapter, female Luer to male 5/16-24 flat-bottom, 0,05" thru-hole. Natural ETFE body	1	**554-3141**
P-675 adapter, male Luer to female 1/4-28 flat-bottom, 0,05" thru-hole. Red ETFE body, natural PP lock hub	1	**554-1800**
P-677 adapter, male Luer to female M6 flat-bottom, 0,05" thru-hole. Black ETFE body, natural PP lock hub	1	**554-3147**
P-678 adapter, female Luer to female 1/4-28 flat-bottom, 0,05" thru-hole. Red ETFE body	1	**554-1801**
P-680 adapter, female Luer to female M6 flat-bottom, 0,05" thru-hole. Black ETFE body	1	**554-3148**
P-683 adapter, male Luer to male 1/4-28 flat-bottom, 0,04" thru-hole. Natural PEEK body, black PEEK lock hub	1	**554-3150**
P-686 adapter, female Luer to male M6 flat-bottom, 0,05" thru-hole. Black ETFE body	1	**554-3151**

VWR COLLECTION

SELECTED FOR YOU

Safety caps

590-1501 / 590-1507 / 590-1508

590-1514 / 590-1515

Extract the solvents or mobile phases safely from reservoirs and bottles, without being exposed to hazardous gases and solvent vapours. With air valve and air filter. High quality materials (PTFE and PP) ensure maximum safety for your laboratory staff and environment.

- Recommended for HPLC systems
- Chemically resistant against aggressive organic solvents

Air filter and valves should be changed every six month for maximum safety.

The shut-off on the safety caps can be closed to keep capillaries and inlet filters in the solvent during HPLC pump maintenance and ensure that the frits are not in contact with the ambient air. The pump can then be quickly and easily flushed during purging. Safety caps with shut-off also prevent air ingress into the tubing during solvent changes and guarantees that the analysis continues without a problem.

Delivery information: Supplied with an air valve/filter and corresponding fitting.

Description	Connector	Pk	Cat. No.
Safety caps standard			
Safety cap, GL 45	1× for tubing 3,2 mm (1/8") OD	1	**590-1501**
Safety cap, GL 45	2× for tubing 3,2 mm (1/8") OD	1	**590-1507**
Safety cap, GL 45	3× for tubing 3,2 mm (1/8") OD	1	**590-1508**

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Description	Connector	Pk	Cat. No.
Safety caps with shut-off function			
Safety cap, GL 45	1× for tubing 3,2 mm (1/8") OD	1	**590-1502**
Safety cap, GL 45	2× for tubing 3,2 mm (1/8") OD	1	**590-1514**
Safety cap, GL 45	3× for tubing 3,2 mm (1/8") OD	1	**590-1515**
Accessories			
Air valve for safety caps		1	**590-1500**
PP fitting for 1,6, 2,3 and 3,2 mm OD tubing		10	**590-1503**
PTFE ferrules for fitting 1,6 mm		10	**590-1504**
PTFE ferrules for fitting 2,3 mm		10	**590-1505**
PTFE ferrules for fitting 3,2 mm		10	**590-1506**
Air filter for air valve		10	**590-1519**

Safety waste caps

590-1510 / 590-1516 / 590-1509 / 590-1511

Collect your solvent waste safely without being exposed to solvent vapours or hazardous gases. High quality materials (PTFE, PP) ensure maximum safety for your laboratory staff and environment.

- Recommended for HPLC systems
- Chemically resistant against aggressive organic solvents

Safety waste caps with tube connections

Tubing connector for e.g. leak connection of HPLC instruments.

Delivery information: Fittings and ferrules for tubing with 2,3 and 3,2 mm (1/8") OD are included. Exhaust air filter has to be ordered separately. Bottle not included.

Description	Connector	Pk	Cat. No.
Safety waste caps, standard			
Safety waste cap, GL 45	3× for tubing 2,3/3,2 mm (1/8") OD	1	**590-1510**
Safety waste cap, S 55	3× for tubing 2,3/3,2 mm (1/8") OD	1	**590-1512**
Safety waste cap, S 60/61	3× for tubing 2,3/3,2 mm (1/8") OD	1	**590-1513**
Safety waste caps with tube connections			
Safety waste cap, GL 45	2× for tubing 2,3/3,2 mm (1/8") OD + 1× for tubing 6,4 mm ID	1	**590-1516**
Safety waste cap, S 55	2× for tubing 2,3/3,2 mm (1/8") OD + 1× for tubing 6,4 mm ID	1	**590-1517**
Safety waste cap, S 60/61	2× for tubing 2,3/3,2 mm (1/8") OD + 1× for tubing 6,4 mm ID	1	**590-1518**
Accessories			
Exhaust filter S for safety waste caps, ±30000 m^2 filtering surface (for container <5 l)		1	**590-1509**
Exhaust filter M for safety waste caps, ±60000 m^2 filtering surface (for container <20 l)		1	**590-1511**

SafetyCaps against hazardous vapours
SCAT Europe

SafetyCap II, GL 45

SafetyCap I, GL 45 with shut-off

SafetyCap for NS 29/32 bottles

Extract your solvents safely from bottles and reservoirs without being exposed to hazardous gases and solvent vapours. With integrated air valve for pressure equalisation. High quality materials (PTFE, PP) ensure maximum safety for your laboratory staff and environment.

- Especially recommended for HPLC Systems
- Chemically resistant against aggressive organic solvents

Renew air valve twice a year for maximum safety.

Delivery information: All SafetyCaps are delivered with an air valve and corresponding fittings.

SafetyCaps with shut-off

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During repairs on HPLC pumps, the shut-off on the SafetyCaps can be closed to keep capillaries and inlet filters in the solvent. The frit does not come into contact with the ambient air. The pump can be quickly and easily flushed during purging after repairs. The SafetyCaps with shut-off also prevent air pockets in the tube when the supply bottle is being changed and guarantees that the analysis continues without a problem.

SafetyCaps combined

The SafetyCap combi and its all-around connector provide a stable baseline and reliable reproducibility for RI detection. For fast and simple solvent degassing with helium.

SafetyCaps for NS 29/32 ground neck bottles

The locknut allows the stopper to be easily loosened and removed, even after long usage. For bottles with NS 29/32 mm standard ground joints.

Description	Connector	Pk	Cat. No.
SafetyCap Basic			
Mini SafetyCap I, GL 28	1× for tubing 3,2 mm (1/8") OD	1	**590-0851**
Mini SafetyCap II, GL 28	2× for tubing 3,2 mm (1/8") OD	1	**590-0852**
SafetyCap I, GL 45	1× for tubing 3,2 mm (1/8") OD	1	**590-0506**
SafetyCap I, GL 80	1× for tubing 3,2 mm (1/8") OD	1	**590-0516**
SafetyCap II, GL 45	2× for tubing 3,2 mm (1/8") OD	1	**590-0614**
SafetyCap II, GL 80	2× for tubing 3,2 mm (1/8") OD	1	**590-0517**
SafetyCap III, GL 45	3× for tubing 3,2 mm (1/8") OD	1	**590-0615**
SafetyCap III, GL 80	3× for tubing 3,2 mm (1/8") OD	1	**590-0518**
SafetyCap IV, 83B	4× for tubing 3,2 mm (1/8") OD	1	**590-0521**
SafetyCap IV, GL 45	4× for tubing 3,2 mm (1/8") OD	1	**590-0901**
SafetyCap VI, GL 45	6× for tubing 3,2 mm (1/8") OD	1	**590-0904**
SafetyCap Basic for preparative HPLC			
SafetyCap I, GL 45	1× for tubing 4,76 mm (3/16") OD	1	**590-0722**
SafetyCap II, GL 45	2× for tubing 4,76 mm (3/16") OD	1	**590-0865**
SafetyCap III, GL 45	3× for tubing 4,76 mm (3/16") OD	1	**590-0866**
SafetyCap II Prep, GL 45	2× for tubing 6,35 mm (1/4") OD	1	**590-0854**
SafetyCap II Prep, GL 45	1× for tubing 3,2 mm (1/8") OD, 1× for tubing 6,35 mm (1/4") OD	1	**590-0855**
SafetyCap I Prep, GL 45	1× for tubing 6,35 mm (1/4") OD	1	**590-0853**
SafetyCaps with shut-off			
SafetyCap I, GL 45	1× for tubing 3,2 mm (1/8") OD	1	**590-0537**
SafetyCap II, GL 45	2× for tubing 3,2 mm (1/8") OD	1	**590-0624**
SafetyCap III, GL 45	3× for tubing 3,2 mm (1/8") OD	1	**590-0625**
SafetyCap IV, GL 45	4× for tubing 3,2 mm (1/8") OD	1	**590-0902**
SafetyCap VI, GL 45	6× for tubing 3,2 mm (1/8") OD	1	**590-0903**
SafetyCaps combined			
SafetyCap II, GL 45	1 standard port, 1 port with shut-off for tubing 3,2 mm (1/8") OD	1	**590-0538**
SafetyCap III, GL 45	1 standard port, 2 ports with shut-off for tubing 3,2 mm (1/8") OD	1	**590-0549**
SafetyCaps for NS 29/32 ground neck bottles			
Adapter from GL 45 to NS 29/32 mm	-	1	**590-0552**
Adapter from NS 29/32 mm to GL 45	-	1	**590-0551**
PTFE plug for NS 29/32 bottles	-	1	**590-0550**
SafetyCap for NS 29/32 bottles	2× for tubing 3,2 mm (1/8") OD	1	**590-0553**
Accessories			
Air filter with PTFE membrane for air valve		10	**590-0676**

Description	Pk	Cat. No.
Air valve with filter function for SCAT SafetyCaps		
Air valve for SafetyCaps, 150 ml/min	1	**590-0000**
Air valve for SafetyCaps, preparative, 400 ml/min	1	**554-1767**

SafetyWasteCaps
SCAT Europe

590-0616 / 590-0619 / 590-0554
590-0679 / 590-0678 / 590-0680

For safe disposal of fluid waste.

Collect your solvent waste safely, without being exposed to hazardous gases and solvent vapours. The integrated exhaust filter absorbs 99% of solvent vapours, thereby protecting staff and the working environment. High quality materials (PTFE, PP) ensure maximum safety for your laboratory staff and environment.

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- Especially recommended for HPLC systems
- Chemically resistant to aggressive organic solvents

Available for multiple screw threads and container sizes.

Ordering information: Exhaust filter has to be ordered separately.

With safety funnel

Safety funnels are solely opened when disposing waste fluids. When releasing the opening mechanism, the waste container closes automatically. Furthermore you can discharge fluids permanently through the tubing ports (e.g. for HPLC applications).

Description	Pk	Cat. No.
Basic		
SafetyWasteCap 83B, connections for 4× tubing 2,3/3,2 mm (1/8") OD	1	**590-0522**
SafetyWasteCap GL 45, connections for 3× tubing 2,3/3,2 mm (1/8") OD	1	**590-0617**
SafetyWasteCap GL 80, connections for 4× tubing 2,3/3,2 mm (1/8") OD	1	**590-0515**
SafetyWasteCap S 50, connections for 3× tubing 2,3/3,2 mm (1/8") OD	1	**590-0713**
SafetyWasteCap S 50, connections for 3× tubing 2,3/3,2 mm (1/8") OD, 1× anti-static port	1	**590-0714**
SafetyWasteCap S 51, connections for 3× tubing 2,3/3,2 mm (1/8") OD	1	**590-0634**
SafetyWasteCap S 51, connections for 3× tubing 2,3/3,2 mm (1/8") OD, 1× anti-static port	1	**590-0635**
SafetyWasteCap S 55, connections for 3× tubing 2,3/3,2 mm (1/8") OD	1	**590-0622**
SafetyWasteCap S 55, connections for 3× tubing 2,3/3,2 mm (1/8") OD, 1× anti-static port	1	**590-0636**
SafetyWasteCap S 60/61, connections for 3× tubing 2,3/3,2 mm (1/8") OD	1	**590-0623**
SafetyWasteCap S 60/61, connections for 3× tubing 2,3/3,2 mm (1/8") OD, 1× anti-static port	1	**590-0621**
SafetyWasteCap S 65, connections for 5× tubing 2,3/3,2 mm (1/8") OD	1	**590-0735**
SafetyWasteCap S 70/71, connections for 3× tubing 2,3/3,2 mm (1/8") OD	1	**590-0618**
SafetyWasteCap S 70/71, connections for 3× tubing 2,3/3,2 mm (1/8") OD, 1× anti-static port	1	**590-0620**
SafetyWasteCap S 90, connections for 4× tubing 2,3/3,2 mm (1/8") OD	1	**590-0631**
SafetyWasteCap S 90, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× anti-static port	1	**590-0632**
GL-thread with large ID tube connection / leak port		
SafetyWasteCap GL 45, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0627**
SafetyWasteCap GL 45, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6,4 - 9,0 mm ID	1	**590-0906**
SafetyWasteCap GL 80, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0519**
S-thread with large ID tube connection / leak port		
SafetyWasteCap S 50, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0715**
SafetyWasteCap S 50, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID, 1× anti-static port	1	**590-0716**
SafetyWasteCap S 51, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0626**
SafetyWasteCap S 51, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID, 1× anti-static port	1	**590-0640**
SafetyWasteCap S 55, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0628**
SafetyWasteCap S 55, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID, 1× anti-static port	1	**590-0641**
SafetyWasteCap S 60/61, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0629**
SafetyWasteCap S 60/61, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID, 1× anti-static port	1	**590-0642**
SafetyWasteCap S 65, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0736**
SafetyWasteCap S 70/71, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0630**
SafetyWasteCap S 70/71, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID, 1× anti-static port	1	**590-0643**
SafetyWasteCap S 90, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0645**
SafetyWasteCap S 90, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID, 1× anti-static port	1	**590-0646**
B-thread with large ID tube connection / leak port		
SafetyWasteCap 53B, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6,4 - 9,0 mm ID	1	**590-0523**
SafetyWasteCap 63B, connections for 2× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**554-1546**
SafetyWasteCap 63B, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0524**
SafetyWasteCap 83B, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6-8 mm ID	1	**590-0520**
With safety funnel		
SafetyWasteCap 83B, connections for 4× tubing 2,3/3,2 mm (1/8") OD	1	**590-0761**
SafetyWasteCap GL 45, connections for 1× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6,4 mm ID	1	**590-0905**
SafetyWasteCap S 50/61, connections for 2× tubing 2,3/3,2 mm (1/8") OD	1	**590-0751**
SafetyWasteCap S 55, connections for 2× tubing 2,3/3,2 mm (1/8") OD	1	**590-0723**
SafetyWasteCap S 60/61, connections for 2× tubing 2,3/3,2 mm (1/8") OD	1	**590-0724**
SafetyWasteCap S 65, connections for 4× tubing 2,3/3,2 mm (1/8") OD	1	**590-0760**
SafetyWasteCap S 70/71, connections for 4× tubing 2,3/3,2 mm (1/8") OD	1	**590-0725**
SafetyWasteCap S 90, connections for 4× tubing 2,3/3,2 mm (1/8") OD	1	**590-0762**
SafetyWasteCap S 95, connections for 4× tubing 2,3/3,2 mm (1/8") OD, 1× tubing 6,4 mm ID	1	**590-0763**
Exhaust filters and adapters		
Exhaust filter S for SafetyWasteCaps, 28800 m^2 filtering surface	1	**590-0616**
Exhaust filter M for SafetyWasteCaps, 57600 m^2 filtering surface	1	**590-0619**
Exhaust filter L for SafetyWasteCaps, 120000 m^2 filtering surface	1	**590-0554**
Exhaust filters with splash guard S, 28800 m^2 filtering surface	1	**590-0679**
Exhaust filters with splash guard M, 57600 m^2 filtering surface	1	**590-0678**
Exhaust filters with splash guard L, 120000 m^2 filtering surface	1	**590-0680**
Economy pack of 4 exhaust filters S, blue	4	**590-0898**
Economy pack of 3 exhaust filters M, blue	3	**590-0900**
Vertical extension adapter for exhaust filter	1	**590-0556**
Lateral off-set adapter (movable) for exhaust filter	1	**590-0558**
Lateral off-set adapter (fixed) for exhaust filter	1	**590-0557**
90° adapter for exhaust filter	1	**590-0559**

SafetyCaps, fire resistant
SCAT Europe

SafetyCap IV, fire resistant, GL 45

Fire resistant SCAT caps incorporate a self-extinguishing component with a special plastic.
In the event of a fire, the SCAT fire resistant material builds an insulating coating that acts as a heating brake. A barrier is formed which prevents oxygen from entering and so stops the flames spreading.

- Integrated air valve with PTFE membrane for pressure equalisation while extracting fluids
- Reliable protection for operator and environment
- Air valve blocks escaping vapours and absorbs dust and dirt particles of inflowing air

Ordering information: Suitable for capillaries with 3,2 mm OD. For other diameters use other fittings.

SafetyCaps with shut-off

With stopcock to shut-off the tubing connections when exchanging the solvent bottle. Recommended for safe operation of HPLC systems.

Description	Connector	Pk	Cat. No.
SafetyCap I, fire resistant, GL 45	1× capillary connection 3,2 mm OD	1	**590-0867**
SafetyCap II, fire resistant, GL 45	2× capillary connections 3,2 mm OD	1	**590-0872**
SafetyCap III, fire resistant, GL 45	3× capillary connections 3,2 mm OD	1	**590-0873**
SafetyCap IV, fire resistant, GL 45	4× capillary connections 3,2 mm OD	1	**590-0908**
SafetyCap VI, fire resistant, GL 45	6× capillary connections 3,2 mm OD	1	**590-0871**

Description	Material	Connector	Pk	Cat. No.
SafetyCaps with shut-off				
SafetyCap I, fire resistant, with shut-off, GL 45		1× capillary connection 3,2 mm OD	1	**590-0868**
SafetyCap II, fire resistant, with shut-off, GL 45		2× capillary connections 3,2 mm OD	1	**590-0877**
SafetyCap III, fire resistant, with shut-off, GL 45		3× capillary connections 3,2 mm OD	1	**590-0878**
SafetyCap IV, fire resistant, with shut-off, GL 45		4× capillary connections 3,2 mm OD	1	**590-0909**
SafetyCap VI, fire resistant, with shut-off, GL 45		6× capillary connections 3,2 mm OD	1	**590-0870**
PTFE fittings for capillaries				
Fitting for capillary connector for 1,6 mm OD	PTFE		10	**590-0525**
Fitting for capillary connector for 2,3 mm OD	PTFE		10	**590-0526**
Fitting for capillary connector for 3,2 mm OD	PTFE		10	**590-0527**
Blind plug for capillary connector for 1,6/2,3/3,2 mm OD	PFA		10	**554-2211**

Description	Pk	Cat. No.
Air valve with filter function for SCAT SafetyCaps		
Air valve for SafetyCaps, fire resistant, 150 ml/min	1	**590-0907**
Air valve for SafetyCaps, fire resistant, 150 ml/min	10	**554-1827**

SafetyWasteCaps, fire resistant
SCAT Europe

No unfiltered evaporation of hazardous gases. Keep your laboratory safe and protect your health and environment.

- The exhaust filter absorbs 99% of all volatile substances, vapours and gases, even of organic solvents
- Suitable for any HPLC system by multiple capillary and tubing connectors
- Only pure PTFE is used to guarantee maximum chemical resistance

Description	Material	Pk	Cat. No.
GL 45 screw caps, PP/PTFE			
For exhaust filter, 1× tubing 6,4 mm ID and 2× capillary connections 2,3/3,2 mm (1/8") OD		1	**590-0880**
For exhaust filter, 1× tubing 6,4 mm ID and 4× capillary connections 2,3/3,2 mm (1/8") OD		1	**590-0879**
For exhaust filter and 3× capillary connections 2,3/3,2 mm (1/8") OD		1	**590-0875**
Manifolds, PTFE			
3-in-1 collector, angled for 1× tubing 6,4 mm ID and 2× capillaries 2,3/3,2 mm OD	PTFE/PFA/PP	1	**590-0815**
3-in-1 collector, angled for 3× capillaries 2,3/3,2 mm OD	PTFE/PFA/PP	1	**590-0816**
Blind plug for tube connector	PTFE	1	**590-0826**

Description	Pk	Cat. No.
PTFE fittings for capillaries		
Fitting for capillary connector for 1,6 mm OD	10	**590-0525**
Fitting for capillary connector for 2,3 mm OD	10	**590-0526**
Fitting for capillary connector for 3,2 mm OD	10	**590-0527**
Blind plug for capillary connector for 1,6/2,3/3,2 mm OD	10	**554-2211**

Accessories for SCAT SafetyCaps
SCAT Europe

590-0528

590-0593 / 590-0591 / 590-0589

590-0816

Description	Material	Colour	Pk	Cat. No.
PP fittings				
Fittings for ferrules Ø 1,6 / 2,3 / 3,2 mm	PP		10	**590-0821**
PTFE ferrules				
Ferrules ID 1,6 mm	PTFE		10	**590-0611**
Ferrules ID 2,3 mm	PTFE		10	**590-0612**
Ferrules ID 3,2 mm	PTFE		10	**590-0613**
One-piece PTFE fittings with integrated ferrule				
Fitting for preparative HPLC for 6,35 (1/4") mm OD	PTFE		1	**590-0528**
Fitting for preparative HPLC for 4,76 (3/16") mm OD	PTFE		1	**590-0529**
PTFE angled collectors for leak port				
2-in-1 collector, angled for 2× tubing 6,4 mm ID	PTFE		1	**590-0894**
3-in-1 collector, angled for 3× tubing 6,4 mm ID	PTFE		1	**590-0893**
PTFE collectors for leak port				
2-in-1 collector for 2× capillaries 2,3/3,2 mm OD	PTFE		1	**554-2711**
2-in-1 collector for 2× capillaries 2,3/3,2 mm OD	PTFE/PFA		1	**554-2708**
3-in-1 collector for 3× capillaries 2,3/3,2 mm OD	PTFE/PFA		1	**590-0817**
8-in-1 collector for 8× capillaries 2,3/3,2 mm OD	PTFE/PFA		1	**590-0892**
8-in-1 collector for 1× tubing 6,4 mm ID and 7× capillaries 2,3/3,2 mm OD	PTFE/PFA/PP		1	**554-2707**
PTFE manifold for tubing				
Distributor, 3-way for capillary connector for 2,3/3,2 mm OD tubing	PTFE/PFA		1	**590-0818**
Installation wrenches for fittings				
Installation wrench, square, for PP fittings	PP		1	**590-0822**
Installation wrench, hexagonal, for PFA fittings	Aluminium		1	**590-0823**

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Description	Material	Colour	Pk	Cat. No.
PTFE plugs for SafetyCaps				
Blind plug for exhaust filter connector	PTFE		1	**590-0555**
Thread adapters				
Thread adapter 2" BSP (f) to S 60/61 (m)	PE	Grey	1	**590-0711**
Thread adapter 2"-Tri-Sure (f) electroconductive to S 60/61 (f)	HDPE	Black	1	**554-2692**
Thread adapter 63 mm ASTM (f) to R 2" fine (f)	PE	White	1	**590-0785**
Thread adapter 63 mm ASTM (f) to S 65 (m)	PP	Natural	1	**554-2698**
Thread adapter B 63 (f) to S 60/61 (m)	PP	Natural	1	**590-0859**
Thread adapter GL 32 (f) to GL 45 (m)	PP	Natural	1	**590-0688**
Thread adapter GL 32 (f) to GL 45 (m)	PTFE	White	1	**590-0685**
Thread adapter GL 38 (f) to GL 45 (m)	PP	Natural	1	**590-0687**
Thread adapter GL 38 (f) to GL 45 (m)	PTFE	White	1	**590-0684**
Thread adapter GL 45 (f) to R1½" (m)	PP	Natural	1	**554-2695**
Thread adapter GL 45 (f) to S 55 (m)	PP	White	1	**590-0531**
Thread adapter GL 45 (f) to S 55 (m)	PTFE	White	1	**590-0807**
Thread adapter GL 45 (m) to 2" Tri-Sure (m)	PP	Neutral	1	**554-2682**
Thread adapter GL 45 (m) to 2" Tri-Sure (m)	PTFE	White	1	**554-2684**
Thread adapter GL 45 (m) to R 2" BSP (m)	PP	Neutral	1	**554-2681**
Thread adapter GL 45 (m) to R 2" BSP (m)	PTFE	White	1	**554-2683**
Thread adapter GPI 38-23(f) to GL 45 (m)	PTFE	White	1	**590-0806**
Thread adapter Mason thread 70 (f) to S 70/71 (m)	PP	Natural	1	**554-2693**
Thread adapter R 1/2" (f) to GL 45 (m)	PP	Natural	1	**554-2686**
Thread adapter R 2" fine (f) to 2" Mauser, coarse (m)	PE	Blue	1	**590-0508**
Thread adapter R 2" fine (f) to 2" Tri-Sure, coarse (m)	PE	Orange	1	**590-0509**
Thread adapter R 3" Schütz, coarse (f) to S 60/61 (m)	PE	Grey	1	**590-0513**
Thread adapter R 3" Werit, fine (f) to S 60/61 (m)	PE	Natural	1	**590-0514**
Thread adapter S 100/BB 70 (f) to S 90 (m)	HDPE	Black	1	**554-2685**
Thread adapter S 40/GL 40 (f) to GL 45 (m)	PP	Natural	1	**590-0686**
Thread adapter S 40/GL 40 (f) to GL 45 (m)	PTFE	White	1	**590-0683**
Thread adapter S 40/GL 40 (f) to S 55 (m)	PP	Natural	1	**554-2689**
Thread adapter S 47 x 4 (f) to S 51 (m)	PP	Natural	1	**554-2691**
Thread adapter S 50 (f) to S 55 (m)	PP	Natural	1	**554-2694**
Thread adapter S 51 (f) to GL 45 (m)	PP	Natural	1	**590-0530**
Thread adapter S 51 (f) to S 55 (m)	PP	White	1	**590-0532**
Thread adapter S 51 (f) to S 55 (m)	PTFE	White	1	**590-0808**
Thread adapter S 51 (f) to S 60/61 (m)	PP	Natural	1	**590-0534**
Thread adapter S 55 (f) to GL 45 (m)	PP	Natural	1	**590-0536**
Thread adapter S 55 (f) to R 2" fine (f)	PE	Green	1	**590-0511**
Thread adapter S 55 (f) to S 51 (m)	PP	Natural	1	**590-0860**
Thread adapter S 55 (f) to S 60/61 (m)	PP	Natural	1	**590-0533**
Thread adapter S 60/61 (f) to GL 45 (m)	PP	Natural	1	**590-0858**
Thread adapter S 60/61 (f) to R 2" fine (f)	PE	Yellow	1	**590-0510**
Thread adapter S 60/61 (f) to S 51 (m)	PP	Natural	1	**554-2696**
Thread adapter S 60/61 (f) to S 55 (m)	PP	Natural	1	**554-2699**
Thread adapter S 60/61 (m) to 2" BSP (m)	PE	Black	1	**590-0712**
Thread adapter S 60/61 (m) to 2" Tri-Sure (m)	PP	Neutral	1	**590-0719**
Thread adapter S 60/61 (m) to 63 mm ASTM (m)	PP	Neutral	1	**554-2697**
Thread adapter S 65 (f) to S 60/61 (m)	PP	Natural	1	**554-2687**
Thread adapter S 70/71 (f) to GL 45 (m)	PP	Natural	1	**554-2690**
Thread adapter S 70/71 (f) to R 2" fine (f)	PE	Brown	1	**590-0512**
Thread adapter S 70/71 (m) to S 70/71 (m)	PTFE	White	1	**590-0535**
Thread adapter Sakura Tissue Tek (f) to S 55 (m)	PP	Natural	1	**554-2688**
Straight connectors for leak port				
Straight connector for leak port ID 2 - 3 mm	PP		1	**590-0588**
Straight connector for leak port ID 3 - 4 mm	PP		1	**590-0589**
Straight connector for leak port ID 4 - 6 mm	PP		1	**590-0590**
Straight connector for leak port ID 5 - 7 mm	PP		1	**590-0591**
Straight connector for leak port ID 6 - 8 mm	PP		1	**590-0593**
Straight connector for leak port ID 9,5 - 11 mm	PP		1	**590-0594**
Straight connector for leak port ID 6,4 - 8 mm	PTFE		1	**554-2709**
Angled connectors for leak port				
Angled connector for leak port ID 6,4 - 8 mm	PP		1	**590-0586**
Angled connector for leak port ID 9,5 - 10,5 mm	PP		1	**590-0587**
Curved connector for leak port ID 6,4 - 8 mm	PTFE		1	**554-2710**

Description	Pk	Cat. No.
Manifolds, PTFE		
3-in-1 collector, angled for 1× tubing 6,4 mm ID and 2× capillaries 2,3/3,2 mm OD	1	**590-0815**
3-in-1 collector, angled for 3× capillaries 2,3/3,2 mm OD	1	**590-0816**
Blind plug for tube connector	1	**590-0826**
PTFE fittings for capillaries		
Fitting for capillary connector for 1,6 mm OD	10	**590-0525**
Fitting for capillary connector for 2,3 mm OD	10	**590-0526**
Fitting for capillary connector for 3,2 mm OD	10	**590-0527**
Blind plug for capillary connector for 1,6/2,3/3,2 mm OD	10	**554-2211**

HPLC safety set
SCAT Europe

This safety set can be used with any HPLC system. One single set for solvent supply and waste.

- SafetyCap with air valve: Blocks solvent vapours, avoids underpressure, catches dust, keeps solvents clean, protects your health
- SafetyWasteCap with exhaust filter: Blocks solvent vapours, avoids overpressure, protects your health, indicator shows filter status

Delivery information: The set includes 4 x SafetyCap III GL 45, 4 x air valve, 4 x solvent bottle 1 litre GL 45 (glass), 12 x blanking plug for capillary connections, 1 x tube connector 6,4 - 9 mm, 1 x SafetyWasteCap GL 45, 1 x exhaust filter size M, 1 x container 5 litres GL 45 HDPE, 10 x fitting 2,3 mm Ø grey, 2 x tube connector 6 - 8 mm, 4 x fitting 3,2 mm Ø blue, 4 x fitting 3,2 mm Ø red, 6 x fitting 3,2 mm Ø yellow, 10 x fitting 1,6 mm Ø green.

Description	Pk	Cat. No.
HPLC safety set for mobile phases and waste solvent	1 SET	**590-0028**

VWR COLLECTION

Delivering high quality and superior performance

Please contact your local VWR sales office or go to vwr.com for the latest news and special offers

Preparative HPLC columns, Selfpacker®
Merklinger

Stainless steel

The column packing technology is based on a combination of vacuum suction with subsequent column bed compression; this stabilises the packing. A common water-jet pump is used to generate the vacuum. The sorbent slurry is sucked through a packing reservoir into the column by applying low pressure at the bottom end of the column.

- Allows precise adjustment of the desired packing volume or sorbent bed height
- Facilitates the determination of the column geometry
- Makes direct scale-up from analytical to preparative scale easy

Packing stand NW25

Min./max. packing height: 185/220 mm

Max. working pressure: 200 bar

Packing stand NW50

Min./max. packing height: 185/220 mm

Max. working pressure: 100 bar

Packing stand NW100

Min./max. packing height: 295/350 mm

Max. working pressure: 100 bar

Description	I-Ø×L (mm)	Pk	Cat. No.
Packing stand NW25			
Packing stand NW25 complete with hydraulics stand	25×260	1	**556-0017**
PEEK connection set for NW25 and NW50		5	**556-0073**
Packing stand NW50			
Complete packing stand NW50 top flange with screw seal, incl. hydraulics stand	50×250	1	**556-0006**
Complete packing stand NW50 with top flange chain bolted , incl. hydraulics stand	50×250	1	**556-0011**
Gasket set (top flange) (included in 556-0006 and 556-0011)		2	**556-0072**
Packing stand NW100			
Complete packing stand NW100 top flange with screw seal, incl. hydraulics stand	100×400	1	**556-0010**

Flash chromatography cartridges

Resistant to all normal phase solvents used.

- Allow for liquid or solid sample loading
- Connection to any flash or prep system
- Axial compression of silica: no dead volume

Type	Loading	Flow rate (depending on the solvent used)	Ext. Ø×L	Max. pressure	Feature
MiniVarioFlash®, internal Ø 12 mm	20 to 100 mg of sample	5 - 10 ml/min	14×73 mm	3 bar	Luer-Lock outlet
SuperVarioFlash®, internal Ø 22 mm	100 to 700 mg of sample	10 - 20 ml/min	24×122 mm	3 bar	Luer-Lock outlet
SuperVarioFlash®, internal Ø 26 mm	200 mg to 1,5 g of sample	10 - 30 ml/min	33×135 mm	3 bar	Luer-Lock outlet
SuperVarioPrep®, internal Ø 40 mm	700 mg to 10 g of sample	30 - 80 ml/min	SVP70: 47×185 mm SVP90: 47×185 mm SVP180: 55×370 mm SVP200: 55×370 mm SVP300: 55×560 mm	6 bar	-
EasyVarioPrep® and SuperVarioPrep®, internal Ø 57 mm	2 to 30 g of sample	50 - 200 ml/min	EVP150: 65×180 mm EVP200: 65×210 mm EVP300: 65×340 mm EVP350: 65×340 mm EVP400: 65×340 mm SVP400: 65×340 mm	16 bar	SuperVarioPrep® (SVP), adjustable piston needed
EasyVarioPrep®, internal Ø 75 mm	6 to 40 g of sample	80 - 350 ml/min	EVP600: 95×320 mm EVP800: 95×410 mm	16 bar	-
EasyVarioPrep®, internal Ø 90 mm	8 to 120 g of sample	100 - 500 ml/min	EVP800: 110×320 mm EVP1200: 110×435 mm	16 bar	-

Description	Pk	Cat. No.
EasyVarioPrep® and SuperVarioPrep®, internal Ø 57 mm		
Empty cartridge PVDF for 150 g of normal phase silica	2	**554-3505**
Empty cartridge PVDF for 600 g of normal phase silica	2	**554-3506**
EVP cartridge with 150 g Si60 15 - 40 µm irregular	3	**554-0261**
EVP cartridge with 150 g Si60 40 - 63 µm irregular	3	**554-0280**
EVP cartridge with 170 g RP18 25 - 40 µm irregular	1	**554-3543**
EVP cartridge with 200 g Si60 15 - 40 µm irregular	3	**554-0262**
EVP cartridge with 200 g Si60 40 - 63 µm irregular	3	**554-0281**
EVP cartridge with 230 g RP18 25 - 40 µm irregular	1	**554-3545**
EVP cartridge with 300 g Si60 15 - 40 µm irregular	2	**554-0283**
EVP cartridge with 300 g Si60 40 - 63 µm irregular	2	**554-0282**
EVP cartridge with 340 g RP18 25 - 40 µm irregular	1	**554-3547**
EVP cartridge with 350 g Si60 15 - 40 µm irregular with solid deposit frits and filters	2	**554-0174**
EVP cartridge with 350 g Si60 40 - 63 µm irregular with solid deposit frits and filters	2	**554-0175**
EVP cartridge with 400 g RP18 25 - 40 µm irregular with solid deposit frits and filters	1	**554-0267**
EVP cartridge with 400 g Si60 15 - 40 µm irregular	2	**554-0193**
EVP cartridge with 400 g Si60 40 - 63 µm irregular	2	**554-0195**
EVP cartridge with 450 g RP18 25 - 40 µm irregular	1	**554-0194**
EVP cartridge with 600 g Si60 15 - 40 µm irregular	2	**554-3549**
EVP cartridge with 600 g Si60 40 - 63 µm irregular	2	**554-3550**
SVP cartridge with 400 g Si60 15 - 40 µm irregular	2	**554-0172**
SVP cartridge with 400 g Si60 40 - 63 µm irregular	2	**554-0173**
Accessories for EasyVarioPrep® and SuperVarioPrep®, internal Ø 57 mm		
Adjustable piston 1/4 turn, 1/4" - 28 connection for SVP	1	**554-0189**
Kit for on-column solid deposit: filters and frits for SVP	20	**554-0143**
Tools for screwing and unscrewing piston of SVP	2	**554-0263**
Tube for frits insertion	1	**554-3609**
Viton® O-ring seals for SVP	20	**554-0184**
EasyVarioPrep®, internal Ø 75 mm		
EVP cartridge with 600 g Si60 15 - 40 µm irregular	2	**554-3551**
EVP cartridge with 600 g Si60 40 - 63 µm irregular	2	**554-3552**
EVP cartridge with 800 g Si60 15 - 40 µm irregular	2	**554-3606**
EVP cartridge with 800 g Si60 40 - 63 µm irregular	2	**554-3553**
EasyVarioPrep®, internal Ø 90 mm		
EVP cartridge with 800 g Si60 15 - 40 µm irregular	2	**554-3607**
EVP cartridge with 800 g Si60 40 - 63 µm irregular	2	**554-3555**
EVP cartridge with 1200 g Si60 15 - 40 µm irregular	1	**554-3608**
EVP cartridge with 1200 g Si60 40 - 63 µm irregular	1	**554-3554**

Flash chromatography cartridges, EasyVarioFlash®

Type	Loading	Flow rate (depending on the solvent used)	Max. pressure
EasyVarioFlash®, internal Ø 17 mm	150 to 450 mg of sample	18 - 36 ml/min	10 bar
EasyVarioFlash®, internal Ø 24 mm	600 to 900 mg of sample	36 - 72 ml/min	10 bar
EasyVarioFlash®, internal Ø 31 mm	1,2 to 2,1 g of sample	60 - 120 ml/min	10 bar
EasyVarioFlash®, internal Ø 44 mm	2,4 to 4,5 g of sample	120 - 240 ml/min	7 bar

Description	Pk	Cat. No.
EasyVarioFlash®, internal Ø 17 mm		
Empty cartridge 5 g with seals, frits and filters, Luer	50	**554-3621**
Empty cartridge 5 g with seals, frits and filters, Luer-Lock	50	**554-3633**
Cartridge with 5 g CN 40 - 63 µm irregular, Luer	10	**554-3618**
Cartridge with 5 g CN 40 - 63 µm irregular, Luer-Lock	10	**554-3630**
Cartridge with 5 g Diol 40 - 63 µm irregular, Luer	10	**554-3620**
Cartridge with 5 g Diol 40 - 63 µm irregular, Luer-Lock	10	**554-3632**
Cartridge with 5 g NH_2 40 - 63 µm irregular, Luer	10	**554-3619**
Cartridge with 5 g NH_2 40 - 63 µm irregular, Luer-Lock	10	**554-3631**
Cartridge with 5 g RP18 25 - 40 µm irregular, Luer	10	**554-3616**
Cartridge with 5 g RP18 25 - 40 µm irregular, Luer-Lock	10	**554-3628**
Cartridge with 5 g Si60 15 - 40 µm irregular, Luer	30	**554-3610**
Cartridge with 5 g Si60 15 - 40 µm irregular, Luer-Lock	30	**554-3622**
Cartridge with 5 g Si60 40 - 63 µm irregular, Luer	30	**554-3611**
Cartridge with 5 g Si60 40 - 63 µm irregular, Luer-Lock	30	**554-3623**
Cartridge with 9 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	30	**554-3928**
Cartridge with 9 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	30	**554-3926**
Cartridge with 9 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	30	**554-3929**
Cartridge with 9 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	30	**554-3927**
Empty cartridge 10 g Luer with seals, frits and filters	50	**554-3669**
Empty cartridge 10 g with seals, frits and filters, Luer	50	**554-3645**
Empty cartridge 10 g with seals, frits and filters, Luer-Lock	50	**554-3657**
Cartridge with 10 g aluminium oxide acidic 63 - 200 µm, Luer	30	**554-3613**
Cartridge with 10 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	30	**554-3625**
Cartridge with 10 g aluminium oxide basic 63 - 200 µm, Luer	30	**554-3615**
Cartridge with 10 g aluminium oxide basic 63 - 200 µm, Luer-Lock	30	**554-3627**
Cartridge with 10 g aluminium oxide neutral 63 - 200 µm, Luer	30	**554-3614**
Cartridge with 10 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	30	**554-3626**
Cartridge with 10 g CN 40 - 63 µm irregular, Luer	10	**554-3642**
Cartridge with 10 g CN 40 - 63 µm irregular, Luer-Lock	10	**554-3654**
Cartridge with 10 g Diol 40 - 63 µm irregular, Luer	10	**554-3644**
Cartridge with 10 g Diol 40 - 63 µm irregular, Luer-Lock	10	**554-3656**
Cartridge with 10 g NH_2 40 - 63 µm irregular, Luer	10	**554-3643**
Cartridge with 10 g NH_2 40 - 63 µm irregular, Luer-Lock	10	**554-3655**
Cartridge with 10 g RP18 25 - 40 µm irregular, Luer	10	**554-3640**
Cartridge with 10 g RP18 25 - 40 µm irregular, Luer-Lock	10	**554-3652**
Cartridge with 10 g Si60 15 - 40 µm irregular, Luer	30	**554-3634**
Cartridge with 10 g Si60 15 - 40 µm irregular, Luer-Lock	30	**554-3646**
Cartridge with 10 g Si60 40 - 63 µm irregular, Luer	30	**554-3635**
Cartridge with 10 g Si60 40 - 63 µm irregular, Luer-Lock	30	**554-3647**
Cartridge with 14 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	30	**554-3932**
Cartridge with 14 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	30	**554-3930**
Cartridge with 14 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	30	**554-3933**
Cartridge with 14 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	30	**554-3931**
Empty cartridge 15 g with seals, frits and filters, Luer-Lock	50	**554-3681**
Cartridge with 15 g CN 40 - 63 µm irregular, Luer	10	**554-3666**
Cartridge with 15 g CN 40 - 63 µm irregular, Luer-Lock	10	**554-3678**
Cartridge with 15 g Diol 40 - 63 µm irregular, Luer	10	**554-3668**
Cartridge with 15 g Diol 40 - 63 µm irregular, Luer-Lock	10	**554-3680**
Cartridge with 15 g NH_2 40 - 63 µm irregular, Luer	10	**554-3667**
Cartridge with 15 g NH_2 40 - 63 µm irregular, Luer-Lock	10	**554-3679**
Cartridge with 15 g RP18 25 - 40 µm irregular, Luer	10	**554-3664**
Cartridge with 15 g RP18 25 - 40 µm irregular, Luer-Lock	10	**554-3676**
Cartridge with 15 g Si60 15 - 40 µm irregular, Luer	30	**554-3658**
Cartridge with 15 g Si60 15 - 40 µm irregular, Luer-Lock	30	**554-3670**
Cartridge with 15 g Si60 40 - 63 µm irregular, Luer	30	**554-3659**
Cartridge with 15 g Si60 40 - 63 µm irregular, Luer-Lock	30	**554-3671**
Cartridge with 20 g aluminium oxide acidic 63 - 200 µm, Luer	30	**554-3637**
Cartridge with 20 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	30	**554-3649**

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Description	Pk	Cat. No.
EasyVarioFlash®, internal Ø 17 mm		
Cartridge with 20 g aluminium oxide basic 63 - 200 µm, Luer	30	**554-3639**
Cartridge with 20 g aluminium oxide basic 63 - 200 µm, Luer-Lock	30	**554-3651**
Cartridge with 20 g aluminium oxide neutral 63 - 200 µm, Luer	30	**554-3638**
Cartridge with 20 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	30	**554-3650**
Cartridge with 30 g aluminium oxide acidic 63 - 200 µm, Luer	30	**554-3661**
Cartridge with 30 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	30	**554-3673**
Cartridge with 30 g aluminium oxide basic 63 - 200 µm, Luer	30	**554-3663**
Cartridge with 30 g aluminium oxide basic 63 - 200 µm, Luer-Lock	30	**554-3675**
Cartridge with 30 g aluminium oxide neutral 63 - 200 µm, Luer	30	**554-3662**
Cartridge with 30 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	30	**554-3674**
EasyVarioFlash®, internal Ø 24 mm		
Cartridge with 18 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	30	**554-3936**
Cartridge with 18 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	30	**554-3934**
Cartridge with 18 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	30	**554-3937**
Cartridge with 18 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	30	**554-3935**
Empty cartridge 20 g Luer-Lock with seals, frits and filters	50	**554-3705**
Empty cartridge 20 g Luer with seals, frits and filters	50	**554-3693**
Cartridge with 20 g CN 40 - 63 µm irregular, Luer	10	**554-3690**
Cartridge with 20 g CN 40 - 63 µm irregular, Luer-Lock	10	**554-3702**
Cartridge with 20 g Diol 40 - 63 µm irregular, Luer	10	**554-3692**
Cartridge with 20 g Diol 40 - 63 µm irregular, Luer-Lock	10	**554-3704**
Cartridge with 20 g NH_2 40 - 63 µm irregular, Luer	10	**554-3691**
Cartridge with 20 g NH_2 40 - 63 µm irregular, Luer-Lock	10	**554-3703**
Cartridge with 20 g RP18 25 - 40 µm irregular, Luer	10	**554-3688**
Cartridge with 20 g RP18 25 - 40 µm irregular, Luer-Lock	10	**554-3700**
Cartridge with 20 g Si60 15 - 40 µm irregular, Luer	30	**554-3682**
Cartridge with 20 g Si60 15 - 40 µm irregular, Luer-Lock	30	**554-3694**
Cartridge with 20 g Si60 40 - 63 µm irregular, Luer	30	**554-3683**
Cartridge with 20g Si60 40 - 63 µm irregular, Luer-Lock	30	**554-3695**
Cartridge with 27 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	30	**554-3940**
Cartridge with 27 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	30	**554-3938**
Cartridge with 27 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	30	**554-3941**
Cartridge with 27 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	30	**554-3939**
Empty cartridge 30 g Luer-Lock with seals, frits and filters	50	**554-3729**
Empty cartridge 30 g Luer with seals, frits and filters	50	**554-3717**
Cartridge with 30 g CN 40 - 63 µm irregular, Luer	10	**554-3714**
Cartridge with 30 g CN 40 - 63 µm irregular, Luer-Lock	10	**554-3726**
Cartridge with 30 g Diol 40 - 63 µm irregular, Luer	10	**554-3716**
Cartridge with 30 g Diol 40 - 63 µm irregular, Luer-Lock	10	**554-3728**
Cartridge with 30 g NH_2 40 - 63 µm irregular, Luer	10	**554-3715**
Cartridge with 30 g NH_2 40 - 63 µm irregular, Luer-Lock	10	**554-3727**
Cartridge with 30 g RP18 25 - 40 µm irregular, Luer	10	**554-3712**
Cartridge with 30 g RP18 25 - 40 µm irregular, Luer-Lock	10	**554-3724**
Cartridge with 30 g Si60 15 - 40 µm irregular, Luer	30	**554-3706**
Cartridge with 30 g Si60 15 - 40 µm irregular, Luer-Lock	30	**554-3718**
Cartridge with 30 g Si60 40 - 63 µm irregular, Luer-Lock	30	**554-3719**
Cartridge with 40 g aluminium oxide acidic 63 - 200 µm, Luer	30	**554-3685**
Cartridge with 40 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	30	**554-3697**
Cartridge with 40 g aluminium oxide basic 63 - 200 µm, Luer	30	**554-3687**
Cartridge with 40 g aluminium oxide basic 63 - 200 µm, Luer-Lock	30	**554-3699**
Cartridge with 40 g aluminium oxide neutral 63 - 200 µm, Luer	30	**554-3686**
Cartridge with 40 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	30	**554-3698**
Cartridge with 60 g aluminium oxide acidic 63 - 200 µm, Luer	30	**554-3709**
Cartridge with 60 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	30	**554-3721**
Cartridge with 60 g aluminium oxide basic 63 - 200 µm, Luer	30	**554-3711**
Cartridge with 60 g aluminium oxide basic 63 - 200 µm, Luer-Lock	30	**554-3723**
Cartridge with 60 g aluminium oxide neutral 63 - 200 µm, Luer	30	**554-3710**
Cartridge with 60 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	30	**554-3722**
Cartridge with 530g Si60 40 - 63 µm irregular, Luer	30	**554-3707**
EasyVarioFlash®, internal Ø 31 mm		
Cartridge with 36 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	20	**554-3944**
Cartridge with 36 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	20	**554-3942**
Cartridge with 36 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	20	**554-3945**
Cartridge with 36 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	20	**554-3943**
Empty cartridge 40 g Luer-Lock with seals, frits and filters	50	**554-3781**
Empty cartridge 40 g Luer with seals, frits and filters	50	**554-3741**
Cartridge with 40 g CN 40 - 63 µm irregular, Luer	5	**554-3738**
Cartridge with 40 g CN 40 - 63 µm irregular, Luer-Lock	5	**554-3778**
Cartridge with 40 g Diol 40 - 63 µm irregular, Luer	5	**554-3740**
Cartridge with 40 g Diol 40 - 63 µm irregular, Luer-Lock	5	**554-3780**
Cartridge with 40 g NH_2 40 - 63 µm irregular, Luer	5	**554-3739**
Cartridge with 40 g NH_2 40 - 63 µm irregular, Luer-Lock	5	**554-3779**
Cartridge with 40 g RP18 25 - 40 µm irregular, Luer	5	**554-3736**
Cartridge with 40 g RP18 25 - 40 µm irregular, Luer-Lock	5	**554-3776**

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Description	Pk	Cat. No.
EasyVarioFlash®, internal Ø 31 mm		
Cartridge with 40 g Si60 15 - 40 µm irregular, Luer	20	**554-3730**
Cartridge with 40 g Si60 15 - 40 µm irregular, Luer-Lock	20	**554-3748**
Cartridge with 40 g Si60 40 - 63 µm irregular, Luer	20	**554-3731**
Cartridge with 40 g Si60 40 - 63 µm irregular, Luer-Lock	20	**554-3749**
Cartridge with 45 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	20	**554-3948**
Cartridge with 45 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	20	**554-3946**
Cartridge with 45 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	20	**554-3949**
Cartridge with 45 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	20	**554-3947**
Empty cartridge 50 g Luer-Lock with seals, frits and filters	50	**554-3805**
Empty cartridge 50 g Luer with seals, frits and filters	50	**554-3793**
Cartridge with 50 g CN 40 - 63 µm irregular, Luer	5	**554-3790**
Cartridge with 50 g CN 40 - 63 µm irregular, Luer-Lock	5	**554-3802**
Cartridge with 50 g CN 40 - 63 µm irregular, Luer-Lock	5	**554-3826**
Cartridge with 50 g Diol 40 - 63 µm irregular, Luer	5	**554-3792**
Cartridge with 50 g Diol 40 - 63 µm irregular, Luer-Lock	5	**554-3804**
Cartridge with 50 g NH_2 40 - 63 µm irregular, Luer	5	**554-3791**
Cartridge with 50 g NH_2 40 - 63 µm irregular, Luer-Lock	5	**554-3803**
Cartridge with 50 g RP18 25 - 40 µm irregular, Luer	5	**554-3788**
Cartridge with 50 g RP18 25 - 40 µm irregular, Luer-Lock	5	**554-3800**
Cartridge with 50 g Si60 15 - 40 µm irregular, Luer	20	**554-3782**
Cartridge with 50 g Si60 15 - 40 µm irregular, Luer-Lock	20	**554-3794**
Cartridge with 50 g Si60 40 - 63 µm irregular, Luer	20	**554-3783**
Cartridge with 50 g Si60 40 - 63 µm irregular, Luer-Lock	20	**554-3795**
Cartridge with 63 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	20	**554-3952**
Cartridge with 63 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	20	**554-3950**
Cartridge with 63 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	20	**554-3953**
Cartridge with 63 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	20	**554-3951**
Empty cartridge 70 g Luer-Lock with seals, frits and filters	50	**554-3829**
Empty cartridge 70 g Luer with seals, frits and filters	50	**554-3817**
Cartridge with 70 g CN 40 - 63 µm irregular, Luer	5	**554-3814**
Cartridge with 70 g Diol 40 - 63 µm irregular, Luer	5	**554-3816**
Cartridge with 70 g Diol 40 - 63 µm irregular, Luer-Lock	5	**554-3828**
Cartridge with 70 g NH_2 40 - 63 µm irregular, Luer	5	**554-3815**
Cartridge with 70 g NH_2 40 - 63 µm irregular, Luer-Lock	5	**554-3827**
Cartridge with 70 g RP18 25 - 40 µm irregular, Luer	5	**554-3812**
Cartridge with 70 g RP18 25 - 40 µm irregular, Luer-Lock	5	**554-3824**
Cartridge with 70 g Si60 15 - 40 µm irregular, Luer	20	**554-3806**
Cartridge with 70 g Si60 15 - 40 µm irregular, Luer-Lock	20	**554-3818**
Cartridge with 70 g Si60 40 - 63 µm irregular, Luer	20	**554-3807**
Cartridge with 70 g Si60 40 - 63 µm irregular, Luer-Lock	20	**554-3819**
Cartridge with 80 g aluminium oxide acidic 63 - 200 µm, Luer	20	**554-3733**
Cartridge with 80 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	20	**554-3773**
Cartridge with 80 g aluminium oxide basic 63 - 200 µm, Luer	20	**554-3735**
Cartridge with 80 g aluminium oxide basic 63 - 200 µm, Luer-Lock	20	**554-3775**
Cartridge with 80 g aluminium oxide neutral 63 - 200 µm, Luer	20	**554-3734**
Cartridge with 80 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	20	**554-3774**
Cartridge with 100 g aluminium oxide acidic 63 - 200 µm, Luer	20	**554-3785**
Cartridge with 100 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	20	**554-3797**
Cartridge with 100 g aluminium oxide basic 63 - 200 µm, Luer	20	**554-3787**
Cartridge with 100 g aluminium oxide basic 63 - 200 µm, Luer-Lock	20	**554-3799**
Cartridge with 100 g aluminium oxide neutral 63 - 200 µm, Luer	20	**554-3786**
Cartridge with 100 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	20	**554-3798**
Cartridge with 140 g aluminium oxide acidic 63 - 200 µm, Luer	20	**554-3809**
Cartridge with 140 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	20	**554-3821**
Cartridge with 140 g aluminium oxide basic 63 - 200 µm, Luer	20	**554-3811**
Cartridge with 140 g aluminium oxide basic 63 - 200 µm, Luer-Lock	20	**554-3823**
Cartridge with 140 g aluminium oxide neutral 63 - 200 µm, Luer	20	**554-3810**
Cartridge with 140 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	20	**554-3822**
EasyVarioFlash®, internal Ø 44 mm		
Cartridge with 72 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	20	**554-3956**
Cartridge with 72 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	20	**554-3954**
Cartridge with 72 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	20	**554-3957**
Cartridge with 72 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	20	**554-3955**
Empty cartridge 80 g Luer-Lock with seals, frits and filters	20	**554-3853**
Empty cartridge 80 g Luer with seals, frits and filters	20	**554-3841**
Cartridge with 80 g CN 40 - 63 µm irregular, Luer	5	**554-3838**
Cartridge with 80 g CN 40 - 63 µm irregular, Luer-Lock	5	**554-3850**
Cartridge with 80 g Diol 40 - 63 µm irregular, Luer	5	**554-3840**
Cartridge with 80 g Diol 40 - 63 µm irregular, Luer-Lock	5	**554-3852**
Cartridge with 80 g NH_2 40 - 63 µm irregular, Luer	5	**554-3839**
Cartridge with 80 g NH_2 40 - 63 µm irregular, Luer-Lock	5	**554-3851**
Cartridge with 80 g Si60 15 - 40 µm irregular, Luer	20	**554-3830**
Cartridge with 80 g Si60 15 - 40 µm irregular, Luer-Lock	20	**554-3842**
Cartridge with 80 g Si60 40 - 63 µm irregular, Luer	20	**554-3831**

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Description	Pk	Cat. No.
EasyVarioFlash®, internal Ø 44 mm		
Cartridge with 80 g Si60 40 - 63 µm irregular, Luer-Lock	20	**554-3843**
Cartridge with 90 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	10	**554-3960**
Cartridge with 90 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	10	**554-3958**
Cartridge with 90 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	10	**554-3961**
Cartridge with 90 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	10	**554-3959**
Empty cartridge 100 g Luer-Lock with seals, frits and filters	10	**554-3877**
Empty cartridge 100 g Luer with seals, frits and filters	10	**554-3865**
Cartridge with 100 g CN 40 - 63 µm irregular, Luer	3	**554-3862**
Cartridge with 100 g CN 40 - 63 µm irregular, Luer-Lock	3	**554-3874**
Cartridge with 100 g Diol 40 - 63 µm irregular, Luer	3	**554-3864**
Cartridge with 100 g Diol 40 - 63 µm irregular, Luer-Lock	3	**554-3876**
Cartridge with 100 g NH_2 40 - 63 µm irregular, Luer	3	**554-3863**
Cartridge with 100 g NH_2 40 - 63 µm irregular, Luer-Lock	3	**554-3875**
Cartridge with 100 g Si60 15 - 40 µm irregular, Luer	10	**554-3854**
Cartridge with 100 g Si60 15 - 40 µm irregular, Luer-Lock	10	**554-3866**
Cartridge with 100 g Si60 40 - 63 µm irregular, Luer	10	**554-3855**
Cartridge with 100 g Si60 40 - 63 µm irregular, Luer-Lock	10	**554-3867**
Cartridge with 117 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	10	**554-3964**
Cartridge with 117 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	10	**554-3962**
Cartridge with 117 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters	10	**554-3965**
Cartridge with 117 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	10	**554-3963**
Empty cartridge 130 g Luer-Lock with seals, frits and filters	10	**554-3901**
Empty cartridge 130 g Luer with seals, frits and filters	10	**554-3889**
Cartridge with 130 g CN 40 - 63 µm irregular, Luer	3	**554-3886**
Cartridge with 130 g CN 40 - 63 µm irregular, Luer-Lock	3	**554-3898**
Cartridge with 130 g Diol 40 - 63 µm irregular, Luer	3	**554-3888**
Cartridge with 130 g Diol 40 - 63 µm irregular, Luer-Lock	3	**554-3900**
Cartridge with 130 g NH2 40 - 63 µm irregular, Luer	3	**554-3887**
Cartridge with 130 g NH2 40 - 63 µm irregular, Luer-Lock	3	**554-3899**
Cartridge with 130 g Si60 15 - 40 µm irregular, Luer	10	**554-3878**
Cartridge with 130 g Si60 15 - 40 µm irregular, Luer-Lock	10	**554-3890**
Cartridge with 130 g Si60 40 - 63 µm irregular, Luer	10	**554-3879**
Cartridge with 130 g Si60 40 - 63 µm irregular, Luer-Lock	10	**554-3891**
Cartridge with 135 g Si60 15 - 40 µm irregular, Luer-Lock, with solid deposit frits and filters	10	**554-3968**
Cartridge with 135 g Si60 15 - 40 µm irregular, Luer, with solid deposit frits and filters	10	**554-3966**
Cartridge with 135 g Si60 40 - 63 µm irregular, Luer-Lock, with solid deposit frits and filters, with solid deposit frits and filters	10	**554-3969**
Cartridge with 135 g Si60 40 - 63 µm irregular, Luer, with solid deposit frits and filters	10	**554-3967**
Empty cartridge 150 g Luer-Lock with seals, frits and filters	10	**554-3925**
Empty cartridge 150 g Luer with seals, frits and filters	10	**554-3913**
Cartridge with 150 g CN 40 - 63 µm irregular, Luer	3	**554-3910**
Cartridge with 150 g CN 40 - 63 µm irregular, Luer-Lock	3	**554-3922**
Cartridge with 150 g Diol 40 - 63 µm irregular, Luer	3	**554-3912**
Cartridge with 150 g Diol 40 - 63 µm irregular, Luer-Lock	3	**554-3924**
Cartridge with 150 g NH_2 40 - 63 µm irregular, Luer	3	**554-3911**
Cartridge with 150 g NH_2 40 - 63 µm irregular, Luer-Lock	3	**554-3923**
Cartridge with 150 g Si60 15 - 40 µm irregular, Luer	10	**554-3902**
Cartridge with 150 g Si60 40 - 63 µm irregular, Luer	10	**554-3903**
Cartridge with 150 g Si60 40 - 63 µm irregular, Luer-Lock	10	**554-3915**
Cartridge with 150g Si60 15 - 40 µm irregular, Luer-Lock	10	**554-3914**
Cartridge with 160 g aluminium oxide acidic 63 - 200 µm, Luer	20	**554-3833**
Cartridge with 160 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	20	**554-3845**
Cartridge with 160 g aluminium oxide basic 63 - 200 µm, Luer	20	**554-3835**
Cartridge with 160 g aluminium oxide basic 63 - 200 µm, Luer-Lock	20	**554-3847**
Cartridge with 160 g aluminium oxide neutral 63 - 200 µm, Luer	20	**554-3834**
Cartridge with 160 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	20	**554-3846**
Cartridge with 200 g aluminium oxide acidic 63 - 200 µm, Luer	10	**554-3857**
Cartridge with 200 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	10	**554-3869**
Cartridge with 200 g aluminium oxide basic 63 - 200 µm, Luer	10	**554-3859**
Cartridge with 200 g aluminium oxide basic 63 - 200 µm, Luer-Lock	10	**554-3871**
Cartridge with 200 g aluminium oxide neutral 63 - 200 µm, Luer	10	**554-3858**
Cartridge with 200 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	10	**554-3870**
Cartridge with 260 g aluminium oxide acidic 63 - 200 µm, Luer	10	**554-3881**
Cartridge with 260 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	10	**554-3893**
Cartridge with 260 g aluminium oxide basic 63 - 200 µm, Luer	10	**554-3883**
Cartridge with 260 g aluminium oxide basic 63 - 200 µm, Luer-Lock	10	**554-3895**
Cartridge with 260 g aluminium oxide neutral 63 - 200 µm, Luer	10	**554-3882**
Cartridge with 260 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	10	**554-3894**
Cartridge with 300 g aluminium oxide acidic 63 - 200 µm, Luer	10	**554-3905**
Cartridge with 300 g aluminium oxide acidic 63 - 200 µm, Luer-Lock	10	**554-3917**
Cartridge with 300 g aluminium oxide basic 63 - 200 µm, Luer	10	**554-3907**
Cartridge with 300 g aluminium oxide basic 63 - 200 µm, Luer-Lock	10	**554-3919**
Cartridge with 300 g aluminium oxide neutral 63 - 200 µm, Luer	10	**554-3906**
Cartridge with 300 g aluminium oxide neutral 63 - 200 µm, Luer-Lock	10	**554-3918**

VWR HITACHI

HPLC system, Chromaster

The VWR Hitachi Chromaster delivers highly reliable results. This is achieved with the high precision delivered by the pump, the low carry-over and high precision of the autosampler, the stability of the column oven and the sensitivity of the detectors.

VWR's relationship with Hitachi started over 30 years ago as a Merck Hitachi cooperation. During this time, the robustness and reliability of the Hitachi HPLC instruments has helped to build and develop a strong partnership.

Chromaster key parameters:

- 600 bar (60 MPa) maximum operating pressure as standard
- Very low carry-over (<0,003%)
- Highly sensitive fluorescence detector (optimised 30 nm slit)
- Very low drift diode array detector (1,0 × 10^{-4} AU hr^{-1})
- Excellent gradient reproducibility
- Automatic wavelength check in UV and DAD detectors
- Unique touch screen user interface

Chromaster HPLC 5160 pump	**Key features**
Pumping system	Dual plunger reciprocating pump system Series connection, pulsation elimination system
Operating flow rate range	0,001 to 5,000 ml/min
Maximum operating pressures	60 MPa (0,001 to 2,500 ml /min) 30 MPa (2,501 to 5,000 ml /min)
Chromaster HPLC 5260 autosampler	**Key features**
Sample capacity	195×1 ml (optional) 120×1,5 ml (standard) 72×4 ml (optional) 2×MTP (in 96 well or 384 well) (optional)
Sample injection system	Loop injection method (Cut injection, all volume injection, full loop injection method)
Syringe volume	175 µl (standard)
Chromaster HPLC 5310 column oven	**Key features**
Temperature control system	Heating/cooling block with air circulation system
Temperature setting range	1 to 85 °C (1 °C step)
Temperature control range	RT -15 to RT+60 °C and range of the temperature setting
Chromaster HPLC 5410 UV detector	**Key features**
Optical system	Double beam ratio photometric system
Light source	D_2 lamp, Hg lamp for checking wavelength
Wavelength range	190 - 600 nm
Chromaster HPLC 5420 UV-VIS detector	**Key features**
Optical system	Double beam ratio photometric system
Light source	D_2 lamp, W lamp, Hg lamp for checking wavelength
Wavelength range	190 - 900 nm
Chromaster HPLC 5430 diode array detector	**Key features**
Detection type	1,024 bit PDA
Light source	D_2 lamp, W lamp, Hg lamp for checking wavelength
Wavelength range	190 - 900 nm
Chromaster HPLC 5440 fluorescence detector	**Key features**
Light source	Xe lamp, Hg lamp for checking wavelength
Wavelength range	Ex: 200 to 850 nm Em: 250 to 900 nm (change photomultiplier at 731 nm or more)
Wavelength accuracy	±3 nm
Chromaster HPLC 5450 RI detector	**Key features**
Refractive index range	1 - 1,75
Noise	≤2,5 x 10^{-9} RIU
Drift	≤0,2 x 10^{-6} RIU/h
Chromaster HPLC System Manager Software	**Key features**
For control of	VWR Hitachi Chromaster system
PC requirements	Windows 7 Professional English 32 bit version
Functions	Method creation, data acquisition, chromatograph data processing, DAD data processing and report generation

Description	Pk	Cat. No.
Main modules		
Chromaster 5110 pump with manual purge valve. 400 bar max. operating pressure (9,99 ml/min max. flow rate)	1	**903-0500**
Chromaster 5110 pump with auto-purge valve. 400 bar max. operating pressure (9,99 ml/min max. flow rate)	1	**903-0501**
Chromaster 5160 pump with manual purge valve. 600 bar max. operating pressure	1	**903-0554**
Chromaster 5160 pump with auto-purge valve. 600 bar max. operating pressure	1	**903-0555**
Chromaster 5260 autosampler with 175 µl syringe. 600 bar max. operating pressure	1	**903-0556**
Chromaster 5260 autosampler with thermostat and 175 µl syringe. 600 max. operating pressure	1	**903-0557**
Chromaster 5310 column oven	1	**903-0520**
Chromaster 5410 UV detector	1	**903-0524**
Chromaster 5420 UV-VIS detector	1	**903-0525**
Chromaster 5430 diode array detector without flow cell	1	**903-0597**

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Description	Pk	Cat. No.
Main modules		
Chromaster 5440 fluorescence detector	1	**903-0527**
Chromaster 5450 refractive index detector	1	**903-0528**
Chromaster organiser for solvent placement and power supply	1	**903-0537**

Description	For	Pk	Cat. No.
Chromaster System Manager			
Chromaster system manager software for control and data acquisition		1	**906-0144**
System accessories for HPLC system, Chromaster			
Chromaster HPLC low pressure internal gradient unit. Includes proportioning valves, conventional mixer and capillaries	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0562**
Chromaster HPLC 6-channel degassing unit. 6-channel (4 for solvents, 2 for AS washing solution), 480 µl/flow path	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0503**
Chromaster HPLC built-in dedicated mini pump for washing the plunger of the main pump	Chromaster HPLC 5110 and 5160 pumps (built into the pump upon installation in laboratory)	1	**903-0563**
Chromaster HPLC Interface Control Board for Chromaster system control. USB cable and e-line cable (0,5 m) included. Built into the autosampler upon installation in laboratory. If no autosampler is used, then the interface box (S) must be ordered instead	Chromaster HPLC connection of all modules via one USB connection (built into the autosampler upon installation in laboratory)	1	**903-0545**
Chromaster HPLC graphical user interface (GUI) touch screen controller for Chromaster 5000 series.	Chromaster HPLC operation of all modules	1	**903-0546**

* Low pressure gradient, degasser and piston wash pump for 5110 and 5160 pumps must be ordered separately as required.

VWR HITACHI

UHPLC systems, ChromasterUltra Rs

The ChromasterUltra Rs is the result of many years of research, development and customer consultation leading to the introduction of one of the most advanced, robust and easy to use UHPLC system available on the market today. Hitachi-High Technologies is a world leader in fluid control and optical analysis technology as well as in high performance electronics. Hitachi has focused on combining the knowledge of these three key disciplines to give the world of Chromatography one of the best instruments for today's demands.

Resolution - Very high pressure rating (1400 bar) for high resolution columns.

Owing to the high pressure capabilities of the ChromasterUltra Rs, 250 mm or 300 mm UHPLC columns can be used. It is possible to couple two 3×250 mm 1,9 µm columns together in series in order to give the highest possible number of theoretical plates.
Band broadening is kept low owing to a low system delay volume of 120 µl (including one 55 µl mixer). The novel double corkscrew mixer ensures excellent mixing with a very low composition ripple of ≤0,1 mAU. (Conditions: A H20 + 0,1% TFA, B: MeCN + 0,1% TFA, flow rate: 0,5 ml/min, A:B = 45:55 at 25 °C)

Sensitivity - Extra long optional total internal reflection flow cell.

The diode array detector is equipped with a 10 mm total internal capillary flow cell for low noise and high sensitivity. An optional 65 mm total internal reflection flow cell is available with very low noise and the highest sensitivity, meaning that the best in resolution and sensitivity is obtained with the ChromasterUltra Rs.

Easy column fitting with ChromasterUltra Rs MEM fitting.

The MEM column fitting in the oven allows for the easy installation of columns from all manufacturers with near zero dwell volume. Fitted with a patented, spring loaded coupling mechanism, the MEM fitting allows the user complete flexibility on column choice with no concern about the pre-frit volume variability between different columns.

To arrange a demonstration with one of our experts, please email chromatography@eu.vwr.com.

ChromasterUltra Rs UHPLC 6170 pump	**Key features**
Pumping system	High pressure binary gradient solution. With Liquid Beat Technology for maintaining a highly stable gradient
Maximum pressure	1400 bar (140 MPa)
Mixer	55 µl double cork mixer for optimal gradient performance. (Two mixers included as standard)
Solvent treatment	Degassing unit for 6 solvents. Solvent selector for 4 solvents (Two per pump)
ChromasterUltra Rs UHPLC 6270 autosampler	**Key features**
Injection volume range	0,1 to 500 µl (dependent upon loop installed)
Carry-over	<0,001%
Sample capacity	120 x 1,5 ml vials (other optional sample trays available)
Heating/Cooling	1 - 45 °C (Peltier block)
ChromasterUltra Rs 6310 UHPLC peltier column oven	**Key features**
Temperature range	4 - 90 °C
Capacity	3×300 mm columns without MEM fitting, 3×250 mm columns with MEM fitting
Column coupling	MEM column fitting – near zero dead volume column connection suitable for all column manufacturers
ChromasterUltra Rs 6430 diode array detector	**Key features**
Wavelength range	190 - 650 nm (D_2 Lamp with Hg lamp for wavelength check)
Flow cell	Total reflection capillary 10 mm flow cell. 2,2 µl volume (Optional 65 mm flow cell: 14 µl volume)

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Noise	≤0,5 x 10^{-5} AU/hr (4 nm slit width, response time = 2 sec at 250 nm with 0,5 ml/min MeOH)
Absorbance linearity	2,0 AU (5%) at 250 nm
ChromasterUltra Rs 6420 UV-VIS detector	**Key features**
Wavelength range	190 - 900 nm (D,&W lamps with Hg lamp for wavelength check)
Flow cell	Standard flow cell with 5 mm optical path, 3,5 µl
Noise	<0,5 x 10^{-5} AU/hr

Description	Pk	Cat. No.
Main modules		
ChromasterUltra Rs UHPLC system including 6170 binary pump, 6270 autosampler with cooling, 6310 column oven, 6430 diode array detector, organiser (including interface control board)	1	**903-0400**
ChromasterUltra Rs UHPLC system including 6170 binary pump, 6270 autosampler with cooling, 6310 column oven, 6420 UV-VIS detector, organiser (including interface control board)	1	**903-0401**
ChromasterUltra Rs 6420 UHPLC UV-VIS detector	1	**903-0402**
ChromasterUltra Rs 6430 UHPLC diode array detector	1	**903-0403**

VWR HITACHI

HPLC system, Primaide™

The Primaide™ is a standard HPLC system designed and manufactured to the highest quality by Hitachi. Suitable for academic and other small laboratories that need a sturdy and reliable standard HPLC system.

- Flexible modular system
- Auto calibrating UV and DAD detectors
- Easy to use and simple software
- Direct injection autosampler
- Highly robust and proven technology

Delivery information: All main system modules include an accessory set, an E-line cable, an instruction manual, a validation certificate and a test report.

Primaide™ 1110 pump	**Key features**
Flow rate	0,001 - 9,999 ml/min
Max. pressure	400 bar (5 ml/min), 200 bar (5 - 10 ml/min)
Low pressure gradient	Up to 4 solvents with 0 to 100% mixing ratio
Primaide™ 1210 direct injection autosampler	**Key features**
Capacity	200 vials (1,5 ml) (microtitre plates available)
Sample injection volumes	0,1 to 4500 µl (dependant on syringe)
Injection volume linearity	>0,999
Primaide™ 1310 column oven	**Key features**
Temperature setting range	1 to 65 °C in 1 °C steps
Capacity	3 columns (max. 250 mm)
Temperature control system	Block heating with peltier
Primaide™ 1410 variable wavelength UV detector	**Key features**
Light source	Deuterium lamp
Auto calibration source	Mercury lamp
Wavelength range	190 - 600 nm
Primaide™ 1430 diode array detector	**Key features**
Light source	Deuterium lamp, tungsten lamp
Auto calibration source	Mercury lamp
Wavelength range	190 - 900 nm
Detecting element	1024 channel photo diode array
Primaide™ System Manager Software	**Key features**
Acquisition channels	2
Sampling period	50 ms to 3,200 ms
No. of concentration on calibration curve	max: 20

Description	Pk	Cat. No.
Main modules		
Primaide™ PM1110 low-pressure gradient pump, programmable	1	**903-0700**
Primaide™ PM1110 isocratic pump, programmable	1	**903-0701**
Primaide™ PM1210 autosampler	1	**903-0703**
Primaide™ PM1210TS autosampler with cooling unit	1	**903-0702**
Primaide™ PM1310 column oven	1	**903-0704**
Primaide™ PM1410 UV detector, programmable	1	**903-0705**
Primaide™ PM1430 diode array detector	1	**903-0706**

Description	For	Pk	Cat. No.
Primaide™ system manager			
Primaide™ System Manager software for full control and data acquisition		1	**903-0708**

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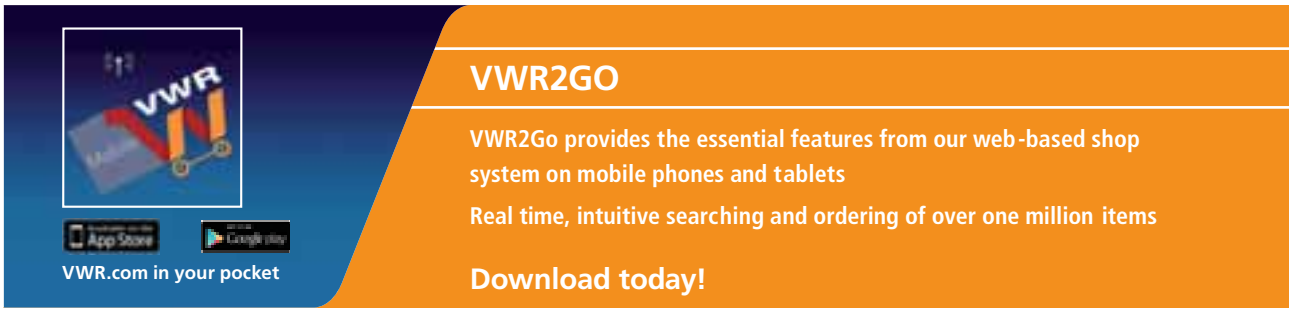
Description	For	Pk	Cat. No.
Primaide™ organiser			
Primaide™ PMORG organiser		1	**903-0707**
Primaide™ interface board			
HPLC USB interface board for communication between Primaide™ modules and PC		1	**903-0709**
Options for main modules for HPLC system, Primaide™			
Primaide™ HPLC solvent degasser	Primaide™ PM1110 pumps	1	**903-0710**
Primaide™ HPLC low pressure gradient accessory with mixer	Primaide™ PM1110 pumps	1	**903-0711**
Primaide™ HPLC pump seal washing kit	Primaide™ PM1110 pumps	1	**903-0712**
Primaide™ HPLC UI control keypad	Primaide™ PM1110 pumps	1	**903-0713**
Primaide™ HPLC UI control keypad	Primaide™ PM1210 autosamplers	1	**903-0714**
Primaide™ HPLC UI control keypad	Primaide™ PM1310 column ovens	1	**903-0715**
Primaide™ HPLC UI control keypad	Primaide™ PM1410 UV detectors	1	**903-0716**
System accessories for HPLC system, Primaide™			
Primaide™ HPLC manual injector holder	Attaching to Primaide™ PM1110 pumps. Used instead of Primaide™ PM1210 autosampler	1	**903-0717**
Primaide™ HPLC syringe kit 5,0 ml for semi-preparative HPLC applications		1	**903-0720**
Primaide™ HPLC syringe kit 0,5 ml		1	**903-0721**
Primaide™ HPLC sample rack for 128×4 ml vials	Use with Primaide™ PM1210 autosamplers	1	**903-0722**
Primaide™ HPLC sample rack for 128×4 ml vials	Use with Primaide™ PM1210TS cooled autosamplers	1	**903-0723**
Primaide™ HPLC preparative flow cell	Use with Primaide™ PM1410 UV detectors	1	**903-0724**
Primaide™ HPLC preparative flow cell	Use with Primaide™ PM1430 diode array detectors	1	**903-0725**
Primaide™ HPLC analogue output	UV detectors (1 channel) to use the detector as a standalone or to connect to a different manufacturer's instrument	1	**903-0726**
Primaide™ HPLC analogue output	UV detectors (2 channels) to use the detector as a standalone or to connect to a different manufacturer's instrument	1	**903-0727**
Primaide™ HPLC AID (analogue input device)	Connection of external devices such as another manufacturer's detector to the Primaide™ system	1	**903-0729**
Primaide™ HPLC 60 W AC adaptor		1	**903-0731**
Primaide™ HPLC 150 W AC adaptor		1	**903-0730**
Primaide™ HPLC EDIO 3 part e-line start, stop, busy cable	Connection with other manufacturer's modules	1	**903-0732**
Primaide™ HPLC e-line cable, 50 cm		1	**903-0733**
Primaide™ HPLC e-line cable, 80 cm		1	**903-0734**
Primaide™ HPLC e-line cable, 200 cm		1	**903-0735**
Primaide™ HPLC e-dio cable		1	**903-0736**
Primaide™ HPLC e-dio cable with M4 connection		1	**903-0737**
Primaide™ HPLC e-dio cable with M3 connection		1	**903-0738**
Primaide™ HPLC signal cord (3P - M4×3)		1	**903-0739**
Primaide™ HPLC signal cord (3P - 3P)		1	**903-0740**



Preparative HPLC system, LaPrep Sigma

The LaPrep Sigma is a highly robust and compact preparative chromatography system running on the intuitive EZChrom platform. Being a truly modular system with many possible configurations, it has one of the smallest footprints in the market (242×352 mm). With an easy to use touch screen panel and ethernet connection, it is an ideal addition to any laboratory needing a flexible preparative HPLC solution.

The LaPrep Sigma has capabilities ranging from analytical to preparative scale, pump capacity from 1 ml to 600 ml/min and can be easily connected to a fully automated fraction collector. Along with the options of a single or multiple wavelength UV detector and autosampler or single injection sample delivery, the LaPrep Sigma is an excellent choice for any preparative laboratory whatever the configuration requirements.

Key to the flexibility of LaPrep Sigma is the assistant module. The assistant houses the fractionation valve, injection valve and automated injection pump, meaning that minimal bench space is used. A variety of configuration options are available.

For further information, demo requests or application support please get in touch with your local VWR chromatography specialist or email chromatography@eu.vwr.com.

Description	For	Pk	Cat. No.
Main modules			
LaPrep Sigma LP 1100 semi-preparative solvent pump with 20 ml titanium pump head and integrated quaternary low pressure gradient		1	**905-0502**
LaPrep Sigma LP 1200 preparative solvent pump with 200 ml titanium pump head		1	**905-0503**
LaPrep Sigma LP 1200 preparative solvent pump with 600 ml titanium pump head		1	**905-0504**
LaPrep Sigma LP 3101 UV detector, 1 channel		1	**905-0505**
LaPrep Sigma assistant module for sample delivery and fractionation. Includes: 1/8": LP 1000 pump with 50 ml pump head without pressure sensor, LP 2002 injection valve, LP 2012 fractionation valve		1	**905-0515**
LaPrep Sigma assistant module for sample delivery and fractionation. Includes: 1/16": LP 1000 pump with 10 ml pump head without pressure sensor, LP 2002 injection valve, LP 2016 fractionation valve		1	**905-0514**
LaPrep Sigma assistant module, 1/8": two LP 2002 valves, for fractionation, solvent selection or column switching, 242×352×137 mm		1	**905-0516**
LaPrep Sigma assistant module, 1/16": two LP 2002 valves, for fractionation, solvent selection or column switching, 242×352×137 mm		1	**905-0517**
Flow cells for LaPrep Sigma UV detectors			
LaPrep Sigma analytical flow cell, 1/16'', 3 mm path length, max. flow rate 50 ml/min, 2 µl volume, max. pressure 300 bar	LaPrep Sigma LP 3101 and LP 3104 UV detectors	1	**905-0529**
LaPrep Sigma preparative flow cell, 1/8'', 0,5/1,25/2 mm selectable path length, max. flow rate 1000 ml/min, 25 µl volume, max. pressure 200 bar	LaPrep Sigma LP 3101 and LP 3104 UV detectors	1	**905-0530**
LaPrep Sigma semi-preparative flow cell, 1/16'', 0,5 mm path length, max. flow rate 250 ml/min, 3 µl volume, max. pressure 200 bar	LaPrep Sigma LP 3101 and LP 3104 UV detectors	1	**905-0531**
Low pressure gradient accessories			
LaPrep Sigma LPG accessory with ternary low pressure gradient flow rate of 10 to 220 ml/min	LaPrep Sigma LP 1200 preparative solvent pump with 200 ml titanium pump head	1	**905-0522**
LaPrep Sigma LPG accessory with binary low pressure gradient flow rate of 10 to 1000 ml/min	LaPrep Sigma LP 1200 preparative solvent pump with 600 ml titanium pump head	1	**905-0521**
Accessories			
Dynamic mixing chamber, 5,9 ml, with 1/8" tubing and adapter for 1/16", max. pressure 250 bar	Use with LP 1200 or LP 1100 with flow rates up to 250 ml/min	1	**905-0014**
Extension for dynamic mixing chamber, 4,8 ml, max. pressure 250 bar, for flow rates >250 ml/min	Up to two extensions with dynamic mixing chamber	1	**905-0015**
Capillary start-up kits for LaPrep Sigma			
LaPrep Sigma start-up kit, 1/8", necessary for 1/8" systems. Contains all fittings and tubing needed for 1/8" set up	The connection of modules with a 1/8" flow path	1	**905-0519**
LaPrep Sigma start-up kit, 1/16", necessary for 1/16" systems. Contains all fittings and tubing needed for 1/16" set up	The connection of modules with a 1/16" flow path	1	**905-0520**
Other modules and accessories - Modules with single LP1000 pump in one module			
LaPrep Sigma LP 1000 sample injection pump with 10 ml titanium pump head		1	**905-0500**
LaPrep Sigma LP 1000 sample injection pump with 50 ml titanium pump head		1	**905-0501**

Why gas generators?

The main reasons and arguments why more and more laboratories are replacing their traditional gas supply systems with gas generators are:

Low cost

- Gas generators produce the gas directly in or near the laboratory
- No costly transport of gas cylinders
- No timely/costly interruptions of equipment during gas cylinder changes
- No rental fees for gas cylinders
- No handling charges or administrative costs
- No expensive installation of tubing and manometers required

Safety

- Gases are produced "on-line" with small buffer volumes
- No high pressure cylinders required for storage
- Internal volume of gas generators are small
- Safer than transporting and handling high pressure cylinders
- Gas generators stop gas production automatically in case of leaks

Purity

- Gas generators produce "on-line" with no risk of contamination as may occur with gas cylinders during cylinder changes
- Gas generators control the purity of the gases permanently
- No risk of contaminating systems (GC, LCMS) with poor quality gas from a central supply

Flexibility

- Gas generators are stand-alone units which can be moved depending on the requirements of the laboratory
- Gas generators make a laboratory independent from central gas supplies
- Possibility to select flow rates, pressure and purity of gases
- Expansion of systems using multiple gas generators in cascading mode for back-up
- There are gas generators with built-in compressors and others which require compressed air from a central air supply

Hydrogen generators, Parker Domnick Hunter

The Parker Domnick Hunter hydrogen generators produce a continuous flow of pure hydrogen from deionised water.

These hydrogen generators provide a safe and hassle-free alternative to high pressure gas cylinders. Hydrogen is only generated on demand at low pressure and the volume of stored gas is minimal.

The generators are ideal for supplying fuel gas to all known combustion detectors used routinely in GC and can also be used to supply hydrogen for GC carrier gas applications and for ELCD reaction gas.

- Automatic hydrogen leak detection
- Patented seven-stage explosion protection system
- Continuous monitoring of "vital parameters"
- Easy to use controller, high visibility/audible alarms
- Large capacity water tank/optional auto water fill
- Optional remote control and monitoring

To ensure optimum performance and longevity of these hydrogen generators, preventative maintenance kits are recommended.

Contact VWR for your installation and service requirements.

Type	Flow rate (ml/min)	W×D×H (mm)	Pk	Cat. No.
Ultra high purity: >99,99995% H_2; 0,69 - 6,89 bar for GC and GC/MS carrier gas applications				
20H-MD	160	342×470×456	1	**564-0067**
40H-MD	250	342×470×456	1	**564-0068**
60H-MD	500	342×470×456	1	**564-0069**
110H-MD	1100	342×470×456	1	**564-0073**
High purity: >99,9995% H_2; 0,3 - 6,89 bar for GC combustion detector applications				
20H	160	342×437×456	1	**564-0070**
40H	250	342×437×456	1	**564-0071**
60H	500	342×437×456	1	**564-0072**

Description	Pk	Cat. No.
Maintenance kits		
Desiccant cartridge for H models	1	**564-0001**
24 month preventative maintenance kit, for H models	1	**564-0002**
6 month preventative maintenance kit, for H models	1	**564-0003**
24 month preventative maintenance kit, for H-MD models	1	**564-0004**
6 month preventative maintenance kit, for H-MD models	1	**564-0076**

Hydrogen generators, Precision Hydrogen series, Peak Scientific

The Precision Hydrogen series hydrogen generators are suitable for carrier gas and flame gas at standard detection limits. Hydrogen purity: 99,9995%.

- Proven PEM Technology to generate hydrogen safely and reliably
- Desiccant dryers to ensure high level of purity
- Automatic loading pump as standard
- Maintenance limited to replacing de-ioniser cartridge and silica gel
- Internal leak detection with automatic shutdown features

Delivery pressure: 0 - 6,9 bar

Type	Flow rate (ml/min)	W×D×H (mm)	Pk	Cat. No.
Precision Hydrogen, 100cc	100	380×540×406	1	**564-0169**
Precision Hydrogen, 200cc	200	380×540×406	1	**564-0170**
Precision Hydrogen, 300cc	300	380×540×406	1	**564-0171**
Precision Hydrogen, 450cc	450	380×540×406	1	**564-0172**

Hydrogen generator, Precision Hydrogen Trace, Peak Scientific

This generator is suitable for carrier gas and flame gas at trace detection limits. Hydrogen purity 99,9999%. Moisture content <1 ppm.

- Proven PEM Technology to generate hydrogen safely and reliably
- Regenerative PSA Dryers to ensure highest level of purity
- Automatic loading pump as standard
- Maintenance limited to replacing de-ionizer cartridge
- Internal leak detection with automatic shutdown features
- Series option to combine multiple units for higher flow requirements
- Remote shutdown
- GC In Oven Hydrogen Leak Detector available as an optional extra

Delivery pressure: 0 - 6,9 bar

Type	Flow rate (ml/min)	W×D×H (mm)	Pk	Cat. No.
Precision Hydrogen Trace, 500cc	500	380×540×406	1	**564-0173**

High purity nitrogen generators, Parker Domnick Hunter

These nitrogen gas generators employ robust, field proven technology to produce high purity nitrogen for life science, chemical analysis and spectroscopy applications. Flow rates range from 5 to 12,5 l/min, with purities from 99,8 to 99,999%. The generators provide a continuous stream of high purity nitrogen from a single "plug & play" unit. Models are available with and without an integral oil free compressor.

- Economy mode as standard, increases compressor life
- Integral oil-free compressor, with advanced noise reduction technology
- Eliminate inconvenient and potentially dangerous nitrogen cylinders

Type	Description	Flow rate (l/min)	W×D×H (mm)	Pk	Cat. No.
HPN2-5000-E	Without integral compressor, purity >99,999%	5	345×667×869	1	**564-0138**
HPN2-5000-W	Without integral compressor, purity >99,999%	5	345×667×869	1	**564-0139**
HPN2-5000C-E	With integral compressor, purity >99,999%	5	345×667×869	1	**564-0136**
HPN2-5000C-W	With integral compressor, purity >99,999%	5	345×667×869	1	**564-0137**
HPN2-7000-E	Without integral compressor, purity >99,9%	7	345×667×869	1	**564-0142**
HPN2-7000-W	Without integral compressor, purity >99,9%	7	345×667×869	1	**564-0143**
HPN2-7000C-E	With integral compressor, purity >99,9%	7	345×667×869	1	**564-0140**
HPN2-7000C-W	With integral compressor, purity >99,9%	7	345×667×869	1	**564-0141**
HPN2-10000-E	Without integral compressor, purity >99,8%	10	345×667×869	1	**564-0130**
HPN2-10000-W	Without integral compressor, purity >99,8%	10	345×667×869	1	**564-0131**
HPN2-10000C-E	With integral compressor, purity >99,8%	10	345×667×869	1	**564-0128**
HPN2-10000C-W	With integral compressor, purity >99,8%	10	345×667×869	1	**564-0129**
HPN2-12500-E	Without integral compressor, purity >99,5%	12,5	345×667×869	1	**564-0134**
HPN2-12500-W	Without integral compressor, purity >99,5%	12,5	345×667×869	1	**564-0135**
HPN2-12500C-E	With integral compressor, purity >99,5%	12,5	345×667×869	1	**564-0132**
HPN2-12500C-W	With integral compressor, purity >99,5%	12,5	345×667×869	1	**564-0133**

Suffix"'E" for 207 - 253 V 50/60 Hz
Suffix "W" for 103 - 126 V 60 Hz

Ultra high purity nitrogen generators, Parker Domnick Hunter

These gas generators employ robust, field proven technology to produce ultra high purity nitrogen for critical life science, chemical analysis and spectroscopy applications. Flow rates range from 0,55 l/min to 3 l/min, with purities >99,9995%. The generators provide a continuous stream of ultra high purity nitrogen from a single "plug & play" unit. Models are available with and without an integral oil free compressor.

- Economy mode as standard, increases compressor life
- Integral oil-free compressor, with advanced noise reduction technology
- Eliminate inconvenient and potentially dangerous nitrogen cylinders

Type	Description	Flow rate (l/min)	W×D×H (mm)	Pk	Cat. No.
UHPN2-550-E	Without integral compressor	0,55	345×417×869	1	**564-0154**
UHPN2-550-W	Without integral compressor	0,55	345×417×869	1	**564-0155**
UHPN2-550C-E	With integral compressor	0,55	345×417×869	1	**564-0152**
UHPN2-550C-W	With integral compressor	0,55	345×417×869	1	**564-0153**
UHPN2-750-E	Without integral compressor	0,75	345×417×869	1	**564-0158**
UHPN2-750-W	Without integral compressor	0,75	345×417×869	1	**564-0159**
UHPN2-750C-E	With integral compressor	0,75	345×417×869	1	**564-0156**
UHPN2-750C-W	With integral compressor	0,75	345×417×869	1	**564-0157**
UHPN2-1500-E	Without integral compressor	1,50	345×667×869	1	**564-0146**
UHPN2-1500-W	Without integral compressor	1,50	345×667×869	1	**564-0147**
UHPN2-1500C-E	With integral compressor	1,50	345×667×869	1	**564-0144**
UHPN2-1500C-W	With integral compressor	1,50	345×667×869	1	**564-0145**
UHPN2-3000-E	Without integral compressor	3,00	345×667×869	1	**564-0150**
UHPN2-3000-W	Without integral compressor	3,00	345×667×869	1	**564-0151**
UHPN2-3000C-E	With integral compressor	3,00	345×667×869	1	**564-0148**
UHPN2-3000C-W	With integral compressor	3,00	345×667×869	1	**564-0149**

Suffix"'E" for 207 - 253 V 50/60 Hz
Suffix "W" for 103 - 126 V 60 Hz

Ultra high purity zero nitrogen generators, Parker Domnick Hunter

These generators are designed for GC makeup gas and carrier gas applications. An integral heated platinum catalyst ensures carrier grade nitrogen free from organic impurities to <0,1 ppm. The generators provide a continuous stream of ultra high purity nitrogen from a single "plug & play" unit. Models are available with and without an integral oil free compressor.

- Ultra high purity (>99,999%), organic-free, nitrogen
- Economy mode as standard, increases compressor life
- Integral oil-free compressor, with advanced noise reduction technology
- Eliminate inconvenient and potentially dangerous nitrogen cylinders

Type	Description	Flow rate (l/min)	W×D×H (mm)	Pk	Cat. No.
UHPZN2-1000-E	Without integral compressor	1	345×667×869	1	**564-0162**
UHPZN2-1000-W	Without integral compressor	1	345×667×869	1	**564-0163**
UHPZN2-1000C-E	With integral compressor	1	345×667×869	1	**564-0160**
UHPZN2-1000C-W	With integral compressor	1	345×667×869	1	**564-0161**
UHPZN2-3000-E	Without integral compressor	3	345×667×869	1	**564-0166**
UHPZN2-3000-W	Without integral compressor	3	345×667×869	1	**564-0167**
UHPZN2-3000C-E	With integral compressor	3	345×667×869	1	**564-0164**
UHPZN2-3000C-W	With integral compressor	3	345×667×869	1	**564-0165**

Suffix"'E" for 207 - 253 V 50/60 Hz
Suffix "W" for 103 - 126 V 60 Hz

LC/MS nitrogen generators, Parker Domnick Hunter

Parker Domnick Hunter LC/MS nitrogen generators are specifically designed to meet the gas flow, purity and pressure requirements of the latest generation of LC/MS instruments.

Utilising the pressure swing adsorption technique, the generators provide a continuous stream of clean, dry nitrogen without the need for secondary purification and are fully compatible with all known APCI and ESI interfaces.

Models featuring integral oil-free compressors give increased security of supply, completely removing the reliance on external air supplies.

- Suitable for nebulising, sheath and drying gas
- Fully regenerative, proven durability PSA technology
- Phthalate-free componentry

To ensure optimum performance and longevity of the LC/MS nitrogen generator, we recommend the use of maintenance kits.

Contact VWR for your installation and service requirements.

Type	Description	Flow rate (l/min)	W×D×H (mm)	Pk	Cat. No.
With integral oil-free compressor and soundproofed box					
LCMS15-1-E	N_2 purity: 99,5%	15	510×826×705	1	**564-0104**
LCMS20-1-E	N_2 purity: 99,0%	20	510×826×705	1	**564-0105**
LCMS30-1-E	N_2 purity: 98,0%	30	510×826×705	1	**564-0106**
Without compressor					
LCMS15-0-E	N_2 purity: 99,5%	15	510×559×705	1	**564-0020**
LCMS20-0-E	N_2 purity: 99,5%	20	510×559×705	1	**564-0015**
LCMS30-0-E	N_2 purity: 99,0%	30	510×760×705	1	**564-0016**
LCMS40-0-E	N_2 purity: 99,0%	40	510×760×705	1	**564-0017**
LCMS50-0-E	N_2 purity: 98,0%	50	510×760×705	1	**564-0093**

Description	Pk	Cat. No.
Maintenance kits		
Maintenance kit 4000 hours for all LCMS	1	**564-0005**
Maintenance kit 8000 hours for LCMS 15-1, 20-1, 30-1	1	**564-0006**
Maintenance kit 24000 hours for LCMS 15-0, 20-0, 30-0, 40-0	1	**564-0007**

Nitrogen generator, Genius NM32LA, Peak Scientific

Extensive testing of the generator by mass spec manufacturers throughout the development process guarantees an ideal nitrogen solution for LCMS.

- No external compressor required
- Insulated compressor compartment for minimum disruption

Min/ max operating temperature: 5 to 35 °C

Max relative humidity: 80% non condensing

Gas outlet: 1× 1/4" BSP female

Delivery information: Supplied with castor wheels for easy mobility.

Type	Flow rate (l/min)	W×D×H (mm)	Pk	Cat. No.
Genius NM32LA with compressor	32	600×750×712	1	**564-0118**

Nitrogen generators, Infinity NM range, Peak Scientific

These generators are designed to be connected to an existing air supply and can cater for the requirements of LCMS, LCMSMS, sample evaporators, ELSD and NMR applications.

Inlet air requirement: Infinity NM18L 50 l/min; Infinity NM32L 90 l/min; Infinity NM45L 135 l/min

Min/ max air inlet pressure: 125 - 145 psi

Min/ max operating temperature: 5 - 30 °C

Pressure dewpoint: –40 °C

Type	Flow rate (l/min)	W×D×H (mm)	Pk	Cat. No.
Infinity NM18L without compressor	18	250×160×760	1	**564-0116**
Infinity NM32L without compressor	32	250×160×760	1	**564-0117**
Infinity NM45L without compressor	45	470×160×760	1	**564-0168**

Zero air generators, Parker Domnick Hunter

For combustion detector applications

Parker Domnick Hunter zero air generators produce a continuous flow of clean, dry air with an ultra low residual methane content of less than 0,1 ppm from an existing compressed air supply.

An interchangeable top panel allows for direct mounting of a Parker Domnick Hunter UHP hydrogen generator to provide an all-in-one flame gas solution for GC-FID, FPD and NPD applications.

The generators can also be used to supply zero air to many additional applications including nebulizer and exhaust gas for LC/MS applications, zero gas and combustion gas for total hydrocarbon analysers and calibration / dilution gas for gas sensing equipment.

- Increased resolution and analytical detection limits
- Digital temperature display
- Minimal maintenance

Type	Connection	Flow rate (l/min)	W×D×H (mm)	Pk	Cat. No.
UHP-10ZA-S-E	in 1/8"; out 1/8"	1,0	340×425×325	1	**564-0055**
UHP-35ZA-S-E	in 1/8"; out 1/8"	3,5	340×425×455	1	**564-0064**
UHP-50ZA-S-E	in 1/4"; out 1/4"	5,0	340×425×455	1	**564-0065**
UHP-75ZA-S-E	in 1/4"; out 1/4"	7,5	340×425×455	1	**564-0066**
UHP-150ZA-S-E	in 1/4"; out 1/4"	15	340×425×455	1	**564-0062**
UHP-200ZA-S-E	in 1/4"; out 1/4"	20	340×425×455	1	**564-0063**
UHP-300ZA-S-E	in 1/4"; out 1/4"	30	340×425×455	1	**564-0094**

Description	Pk	Cat. No.
In- and outlet filter		
Inlet filter preventative maintenance kit for all models	1	**564-0074**
Outlet filter preventative maintenance kit for all models	1	**564-0075**

Zero air generators, ZA range, Peak Scientific

The ZA range of zero air generators is designed specifically for use as flame gas for GC applications which require zero air for operation. The catalyst chambers inside these zero air generators make sure that compressed air is stripped of all hydrocarbons before it is fed into your application.

- Forced air ventilation, self-checks for leaks and automatic shut-down function
- Units are available with or without internal air compressors
- Total hydrocarbon concentration <0,1 ppm

Type	Flow rate (ml/min)	W×D×H (mm)	Pk	Cat. No.
ZA015 without compressor, UK-plug	1500	250×160×510	1	**564-0120**
ZA035 without compressor, UK-plug	3500	250×160×510	1	**564-0121**
ZA070 without compressor, UK-plug	7000	250×160×510	1	**564-0122**
ZA180 without compressor, UK-plug	18000	250×160×510	1	**564-0123**
ZA300 without compressor, UK-plug	30000	430×410×880	1	**564-0124**
ZA035A with compressor, UK-plug	3500	430×410×880	1	**564-0125**
ZA070A with compressor, UK-plug	7000	430×410×880	1	**564-0126**
ZA180A with compressor, UK-plug	18000	430×410×880	1	**564-0127**

ALL YOU NEED FOR CHROMATOGRAPHY

Just for chromatographers – whatever the industry

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GC injection port septa

Long-life GC-septa for inlet temperature of up to 340 °C.

- Low bleeding
- Easy exchange, no sticking to hot surfaces
- Good penetration and sealing properties

Description	Ø (mm)	Pk	Cat. No.
Shimadzu plug, transparent	-	25	548-0181
Universal high temperature injection port septa, transparent	9,5	25	548-0182
Universal high temperature injection port septa, transparent	10	25	548-0183
Universal high temperature injection port septa, transparent	11	25	548-0184
Universal high temperature injection port septa, transparent	12,5	25	548-0185
Universal high temperature injection port septa, transparent	17	25	548-0186

Gas-clean filters
Agilent Technologies

Clean gases reduce the risk of column damage and improve accuracy and sensitivity. These unbreakable and self-indicating filters give high sensitivity to oxygen and moisture and can be installed in seconds without tools.

Description	Pk	Cat. No.
Oxygen filter	1	558-0235
Moisture filter	1	569-7971
Charcoal filter	1	558-0236
GC/MS filter	1	558-0237
Installation kit GC/MS	1	558-0228
Connecting unit for 4 filters (1/8" tube)	1	558-0229
Connecting unit for 2 filters (1/4" tube)	1	558-0049
Connecting unit for 2 filters (1/8" tube)	1	558-0231
Connecting unit for 1 filter (1/4" tube)	1	558-0233
Connecting unit for 1 filter (1/8" tube)	1	558-0048
Connecting unit for 4 filters (1/4" tube)	1	558-0051
FID-kit 1/8" includes 2 charcoal, 1 oxygen, 1 moisture filter, connecting unit for 4 filters	1	558-0230
TCD-kit 1/8" includes 1 oxygen, 1 moisture filter, connecting unit for 2 filters	1	558-0232
Wall mounting bracket/single connecting unit	1	558-0053
FID-kit 1/4" includes 2 charcoal, 1 oxygen, 1 moisture filter, connecting unit for 4 filters	1	558-0234

Capillary columns, BPX70
SGE (Trajan)

70% cyanopropyl polysilphenylene-siloxane

Polarity has been designed for fatty acid methyl ester (FAME) analysis.

Max. temperature: 260 °C

Suitable replacement for: CP-Sil88, DB-23, HP-23, Rtx-2330, SP-2330, SP-2380.

Length (m)	Ø int. (mm)	Film (µm)	Pk	Cat. No.
10	0,1	0,2	1	568-0170
15	0,25	0,25	1	568-0180
25	0,22	0,25	1	558-0332
25	0,32	0,25	1	558-0334
30	0,22	0,25	1	568-0174
30	0,25	0,25	1	558-0252
30	0,32	0,25	1	568-0176
30	0,53	0,5	1	568-0179
50	0,22	0,25	1	558-0333
50	0,32	0,25	1	568-0172
60	0,22	0,25	1	568-0175
60	0,25	0,25	1	558-0335
60	0,32	0,25	1	568-0177
120	0,25	0,25	1	568-0181

Further chromatography consumables, instruments and accessories are available in our AYN for Chromatography catalogue.

His SpinTrap™ columns
GE Healthcare

His SpinTrap™ is designed for efficient, small-scale purification of histidine-tagged proteins directly from clarified or unclarified cell lysates. The columns are also used for screening of large numbers of small-scale bacterial lysates, as well as optimisation of purification conditions.

Purification of unclarified samples on His SpinTrap™ columns minimises loss of target protein caused by manual operations such as sample pre-centrifugation, transfer to centrifugation tubes and collecting supernatant. In addition, loading unclarified sample directly to His SpinTrap™ columns reduces sample preparation time, which minimises degradation and oxidation of sensitive target proteins.

- Used together with a standard microcentrifuge
- Prepacked with Ni Sepharose High Performance

Description	Pk	Cat. No.
100 µl column His SpinTrap™	50	**28-4013-53**

HiTrap™ protein G HP columns
GE Healthcare

HiTrap™ Protein G HP affinity columns are prepacked with 1 or 5 ml of Protein G Sepharose™ High Performance for purification and isolation of monoclonal and polyclonal IgG from ascites, serum and cell culture supernatants.

- Can be operated with a syringe, peristaltic pump or liquid chromatography system such as ÄKTAdesign™ or FPLC™ System
- Polypropylene column material which is biocompatible and non-interactive with biomolecules
- The top and bottom frits are manufactured from porous polyethylene

Delivery information: Delivered with a stopper on the inlet and a snap-off end on the outlet.

Description	Pk	Cat. No.
1 ml columns HiTrap™ G HP	2	**17-0404-03**
1 ml columns HiTrap™ G HP	5	**17-0404-01**
5 ml columns HiTrap™ G HP	1	**17-0405-01**
5 ml columns HiTrap™ G HP	5	**17-0405-03**

HisTrap™ HP columns
GE Healthcare

HisTrap™ HP columns are designed for simple, one step purification of histidine-tagged proteins. The columns are prepacked with Ni Sepharose™ High Performance.

- Maintains biological activity and increases product yield
- High binding capacity and low nickel ion leakage
- Ensures reliable capture of target protein in repeated IMAC purifications
- Compatible with a wide range of reducing agents, detergents, denaturants and other additives
- Simple manual operation with a syringe, pump or chromatography system such as ÄKTAdesign™

Description	Pk	Cat. No.
1 ml column HisTrap™ HP	5	**17-5247-01**
1 ml column HisTrap™ HP	100	**17-5247-05**
5 ml column HisTrap™ HP	1	**17-5248-01**
5 ml column HisTrap™ HP	5	**17-5248-02**
5 ml column HisTrap™ HP	100	**17-5248-05**

HisTrap™ FF columns
GE Healthcare

HisTrap™ FF columns are designed for simple, one step purification and scaling up purification of histidine-tagged proteins. The columns are prepacked with Ni Sepharose™ 6 Fast Flow.

- High binding capacity and low nickel ion leakage
- Ensures reliable capture of histidine-tagged proteins in repeated IMAC purifications
- Compatible with a wide range of reducing agents, detergents, denaturants and other additives
- Simple manual operation with a syringe, pump or chromatography system such as ÄKTAdesign™

Description	I-Ø×L (mm)	Pk	Cat. No.
5×1 ml column HisTrap™ FF	16×25	5	**17-5319-01**
5×5 ml column HisTrap™ FF	7×25	5	**17-5255-01**
100×1 ml column HisTrap™ FF	16×25	100	**17-5319-02**
100×5 ml column HisTrap™ FF	7×25	100	**17-5255-02**

Affinity chromatography media, IgG Sepharose™ 6 Fast Flow
GE Healthcare

IgG Sepharose™ 6 Fast Flow is based on the rigid Sepharose™ 6 Fast Flow matrix, with human IgG covalently coupled to it. This media allows high flow rates to be used for rapid and convenient single step purification of proteins.

- IgG coupled to the highly cross-linked 6% agarose matrix Sepharose™ 6 Fast Flow, designed for the rapid purification of protein A and protein A fusion conjugates
- Binds at least 2 mg protein A/ml medium
- Suitable for tandem affinity purification (TAP) of protein complexes

Description	Pk	Cat. No.
IgG Sepharose™ 6 Fast Flow	10 ml	**17-0969-01**

Affinity chromatography media, Streptavidin Sepharose™ High Performance
GE Healthcare

Streptavidin Sepharose™ High Performance is an affinity chromatography medium designed for fast and reliable, high resolution purification of biotinylated biomolecules. Purified Streptavidin isolated from *Streptomyces avidinii* is immobilised on Sepharose™ High Performance. The base matrix is a rigid, highly crosslinked beaded agarose with high chemical stability. The immobilised streptavidin binds biotin and biotinylated substances through affinity chromatography.

- Extremely useful for exploiting either the strong interactions of biotin and streptavidin or the somewhat weaker interactions of 2-iminobiotin and streptavidin
- 34 µm bead size for improved resolution

Description	Pk	Cat. No.
Streptavidin Sepharose™ High Performance	5 ml	**17-5113-01**

Protein G Sepharose™ 4 Fast Flow
GE Healthcare

High capacity, high flow rate fractionation of monoclonal antibodies at both laboratory and process scales, without binding albumin.

- Rapid processing of large volumes, recoveries of 70-90%
- Binds to all IgG subclasses from human, mouse, and rat; binds total IgG from guinea pig, rabbit, goat, cow, sheep, and horse

Description	Pk	Cat. No.
Protein G Sepharose™ 4 Fast Flow	5 ml	**17-0618-01**
Protein G Sepharose™ 4 Fast Flow	25 ml	**17-0618-02**
Protein G Sepharose™ 4 Fast Flow	200 ml	**17-0618-05**

Glutathione Sepharose™ 4B
GE Healthcare

Fast and simple purification of GST-tagged proteins from bacterial lysates and other glutathione S-tranferases or glutathione-dependent proteins.

Description	Pk	Cat. No.
Glutathione Sepharose™ 4B	10 ml	**17-0756-01**
Glutathione Sepharose™ 4B	100 ml	**17-0756-05**
Glutathione Sepharose™ 4B	300 ml	**17-0756-04**

Description	Pk	Cat. No.
Glutathione Sepharose™ 4B	10 ml	**17-0756-01**
Glutathione Sepharose™ 4B	100 ml	**17-0756-05**

Columns, Tricorn™ Superose™ 6 GL
GE Healthcare

Superose™ 6 GL are prepacked Tricorn™ columns for high performance gel filtration with a broad protein fractionation range of 5000 to 5 000 000.

- Easy, efficient scale up from prepacked Superose™ 10/300 GL columns to Superose™ prep grade lab packs
- Low ionic strength eluents (<0,05 M) can utilise a hydrophobic interaction component to alter the selectivity of Superose™ for some lipids, peptides, and small aromatic compounds
- Prepacked Tricorn™ columns are durable, high performance galss columns for reliable and reproducible separations

Description	I-Ø×L (mm)	Pk	Cat. No.
Superose™ 6 10/300 GL, 24 ml	10×300	1	**17-5172-01**

Columns, Tricorn™ Superdex™
GE Healthcare

Superdex™ prepacked Tricorn™ columns are designed for high performance, laboratory scale separations of proteins, peptides, and other biomolecules according to size. High performance gel filtration offers fast separations with high resolution for a variety of applications including protein purification, studies of complex formation, and screening of uncharacterised samples. Superdex™ 75 5/150 GL and Superdex™ 200 5/150 GL have small bed volumes, which is useful for a range of applications such as screening solubilisation conditions for membrane proteins, the study of protein-protein interactions, and rapid purity check of proteins. These columns are an excellent choice when time and sample/buffer consumption is more important than the highest resolution since less buffer and sample volumes are required.

Superdex™ 75 has a separation range for molecules with molecular weights between 3000 and 70 000, Superdex™ 200 has a separation range for molecules with molecular weights between 10 000 and 600 000, and Superdex™ Peptide has a separation range for biomolecules with molecular weights between 100 and 7000.

- Well suited for the polishing step in a purification procedure
- Excellent reproducibility and durability

Description	I-Ø×L (mm)	Pk	Cat. No.
Superdex™ 75 5/150 GL, 3 ml	5×150	1	**28-9205-04**
Superdex™ 75 10/300 GL, 24 ml	10×300	1	**17-5174-01**
Superdex™ 200 5/150 GL, 3 ml	5×150	1	**28-9065-61**
Superdex™ 200 10/300 GL, 24 ml	10×300	1	**17-5175-01**
Superdex™ Peptide 10/300 GL, 24 ml	10×300	1	**17-5176-01**

Columns, HiLoad™ Superdex™ prep grade
GE Healthcare

HiLoad™ Superdex™ prep grade are prepacked XK columns designed for preparative gel filtration. Superdex™ prep grade is a composite matrix of dextran and highly cross-linked agarose. The steep selectivity of dextran and the high chemical and physical stability of agarose enable high resolution separations. The chromatography media combines high mechanical strength with high hydrophilicity, allowing high flow rates and minimal non-specific interactions.

- High resolution with short run times and good recovery
- High capacity at high flow rates
- Separations can be scaled up to production levels
- Prepacked for convenience and reproducibility

Description	I-Ø×L (mm)	Pk	Cat. No.
HiLoad™ 16/600 Superdex™ 30 prep grade, 120 ml	16×600	1	**28-9893-31**
HiLoad™ 26/600 Superdex™ 30 prep grade, 320 ml	26×600	1	**28-9893-32**
HiLoad™ 16/600 Superdex™ 75 prep grade, 120 ml	16×600	1	**28-9893-33**
HiLoad™ 26/600 Superdex™ 75 prep grade, 320 ml	26×600	1	**28-9893-34**
HiLoad™ 16/600 Superdex™ 200 prep grade, 120 ml	16×600	1	**28-9893-35**
HiLoad™ 16/600 Superdex™ 200 prep grade, 180 ml	16×900	1	**90-1001-37**
HiLoad™ 16/600 Superdex™ 200 prep grade, 480 ml	26×900	1	**90-1002-73**
HiLoad™ 16/600 Superdex™ 200 prep grade, 1000 ml	50×500	1	**90-1000-40**
HiLoad™ 26/600 Superdex™ 200 prep grade, 320 ml	26×600	1	**28-9893-36**

Gel filtration media, Sephacryl® S-400 HR
GE Healthcare

Sephacryl S-400 HR is designed for separating polysaccharides, macromolecules with extended structures and even small particles such as plasmids (fractionation range globular proteins 2×10^4 - 8×10^6).

Description	Pk	Cat. No.
Sephacryl® S-400 HR	150 ml	**17-0609-10**
Sephacryl® S-400 HR	750 ml	**17-0609-01**

Disposable PD-10 desalting columns
GE Healthcare

Columns for fast, high recovery, desalting and buffer exchange, as well as removal of low molecular weight compounds packed with Sephadex™ G-25 medium.

- Flexible protocols allow runs by gravity flow or centrifugation
- Preparation of the samples in the range of 1,0 to 2,5 ml by gravity flow and 1,75 to 2,5 ml with centrifugation
- Desalt multiple samples in parallel with a desalting capacity >90%
- Recovery in the range 70 to >95%
- Stable over pH 2 to 13 and tolerates all commonly used aqueous buffers

Delivery information: Each pack contains 30 prepacked disposable PD-10 desalting columns containing 8,3 ml of Sephadex™ G-25 medium, four PD-10 spin adapters and user instructions.

Description	Pk	Cat. No.
Disposable PD-10 desalting columns	30	**17-0851-01**

PALL Life Sciences

Acrodisc® units with Mustang® Q and S membranes

Disposable chromatography units with high binding capacities and fast flow rate.

Mustang® Q, strong anion exchanger:

Provides contaminant removal such as DNA viral particles, host cell proteins or endotoxins. Ideal for isolation via capture and release of plasmid DNA, virus or target protein from a complex mixture. Offer protein polishing for negatively charged proteins. Purifies virus and oligo nucleotides.

Mustang® S, strong cation exchanger:

Purifies and concentrates positively-charged proteins and viral particles. Ideal for evaluation, process development and validation.

Flow rate	1 - 4 ml/min
Inlet/outlet	Female Luer lock/male Luer
Max. pressure (bar)	5,5
Operating temperature range (°C)	+21...+24
Pore size	0,8 µm
Ø (mm)	25

Type	Pk	Cat. No.
Mustang® Q	10	**514-4236**
Mustang® S	10	**514-4237**

PALL Life Sciences

STERILE

Acrodisc® units with Mustang® E membrane

Remove endotoxin from water, buffer, neutral sugars and certain biological solutions. Also for plasmid preparation for transfection.

Sterilised by gamma irradiation and individually packaged.

Flow rate	1 - 4 ml/min
Inlet/outlet	Female Luer lock/male Luer
Max. pressure (bar)	5,5
Operating temperature range (°C)	+21...+24
Pore size	0,2 µm
Ø (mm)	25

Type	Pk	Cat. No.
Mustang® E	10	**514-4235**

PALL Life Sciences

Ion exchange chromatography sorbents, Ceramic HyperD® (Q, S, DEAE and CM)

Q, S, DEAE, CM Ceramic HyperD® ion exchangers are high capacity sorbents specially designed for the efficient and scaleable purification of biomolecules from a variety of feedstocks. Of particular value in process scale application, these sorbents are designed to maintain high dynamic binding capacity (DBC) under conditions where conventional sorbents display significant capacity or productivity limitations.

Ceramic HyperD® F sorbents are ideally suited for purification of biomolecules in research, scale-up and full-scale pharmaceutical manufacturing.

The Ceramic HyperD® 20 particle size is more adapted for polishing steps or rapid separations when a higher resolution is required.

- Easy cleaning with sodium hydroxide
- High productivity from rigid, composite sorbents
- The "gel in a shell" design provides rapid mass transfer and effective binding

Type	Q Ceramic HyperD® F	Q Ceramic HyperD® 20	DEAE Ceramic HyperD® F	S Ceramic HyperD® F	S Ceramic HyperD® 20	CM Ceramic HyperD® F
Amount of ionic groups (µeq/ml)	250		200	150		250-400
Average particle size (µm)	50	20	50		20	50
Cleaning pH	1-14					
Dynamic binding capacity (mg/ml) 10% breakthrough at 200 cm/h	BSA =85			Lysozyme =75	Lysozyme =85	IgG =60
Pressure resistance (bar)	>70	200	>70		200	>70
Working pH	2-12					

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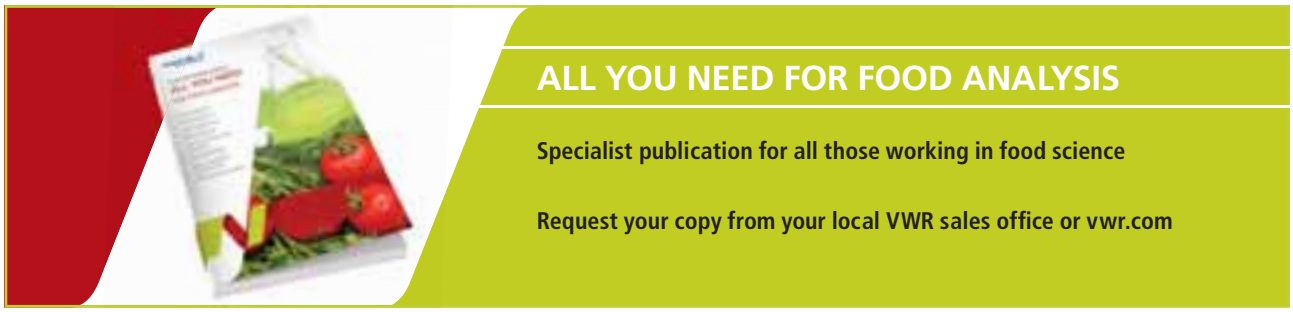
Type	Pk	Cat. No.
Q Ceramic HyperD® F	5 ml	**555-0040**
Q Ceramic HyperD® F	25 ml	**555-0039**
Q Ceramic HyperD® F	100 ml	**555-0038**
Q Ceramic HyperD® F	1 l	**555-0037**
Q Ceramic HyperD® 20	5 ml	**555-0021**
Q Ceramic HyperD® 20	25 ml	**555-0020**
Q Ceramic HyperD® 20	100 ml	**555-0019**
Q Ceramic HyperD® 20	500 ml	**555-0018**
Q Ceramic HyperD® 20	1 l	**555-0017**
DEAE Ceramic HyperD® F	5 ml	**555-0044**
DEAE Ceramic HyperD® F	25 ml	**555-0043**
DEAE Ceramic HyperD® F	100 ml	**555-0042**
DEAE Ceramic HyperD® F	1 l	**555-0041**
S Ceramic HyperD® F	5 ml	**555-0036**
S Ceramic HyperD® F	25 ml	**555-0035**
S Ceramic HyperD® F	100 ml	**555-0034**
S Ceramic HyperD® F	1 l	**555-0033**
S Ceramic HyperD® 20	5 ml	**555-0016**
S Ceramic HyperD® 20	100 ml	**555-0014**
S Ceramic HyperD® 20	500 ml	**555-0013**
S Ceramic HyperD® 20	1 l	**555-0012**
CM Ceramic HyperD® F	5 ml	**555-0025**
CM Ceramic HyperD® F	25 ml	**555-0024**
CM Ceramic HyperD® F	100 ml	**555-0023**
CM Ceramic HyperD® F	1 l	**555-0022**