

## VWR<sup>®</sup> CELL CULTURE

Cell culture plastics

Filtration products

Liquid handling

Sera and reagents

Cryopreservation

Handy extras

Useful equipment

**VWR is now part of Avantor**  
Learn more on page 3

# VWR FOR CELL CULTURE

Our VWR range includes a broad selection of products for cell culture designed to help you explore new frontiers. Best of all, we provide access to a reliable supply of exceptional quality plasticware, reagents and Fetal Bovine Serum.

## CONTENTS

<b>Cell culture plastics</b>	Flasks .....	04
	Scrapers and lifters .....	05
	Dishes, plates and inserts .....	06
	Cell chambers and roller bottles .....	09
<b>Filtration</b>	Cell strainers .....	13
	Syringe filters .....	13
	Bottle-top filtration, filtration capsules .....	18
<b>Liquid handling</b>	Serological pipettes and controllers .....	20
	Pipettes and tips .....	22
	Centrifuge and CO <sub>2</sub> resistant tubes .....	26
<b>Reagents</b>	Foetal bovine serum .....	31
	Reagents, buffers and stains .....	33
	Antibiotics, amino acids and supplements .....	36
<b>Cryopreservation</b>	ULT freezers .....	41
	Cryovials, boxes and racks .....	43
	Coolers and cryopreservation media .....	53
	Media and Reagents .....	54
<b>Handy extras</b>	Dewars .....	54
	Electroporation cuvettes .....	59
	Media bottles .....	59
<b>Useful equipment</b>	Bench protection and parafilm dispenser .....	62
	Inverted microscope/camera .....	64
	pH meters .....	67
	Star beater/pellet mixer .....	70
	Shakers and stirrers .....	72
	Timers .....	85
	Temperature measurement and logging .....	87
Balances .....	91	
Autoclaves and bags .....	96	
Water purification .....	102	

## SYMBOLS

 USB connection	 Sterile	 Environment	   Warranty
 RS232 interface	 Autoclavable	 IVD	CE marking conform with IVD MDD 98/79 EC for In-Vitro Diagnostics



# We Set Science in Motion to Create a Better World.

From breakthrough discovery to agile delivery of innovative products and services, Avantor® and VWR are one company.

**Our shared vision:** to be your trusted partner, providing discovery-to-delivery solutions, high-performance materials and expert support for your unique personal protection and facility requirements.

Learn more about our new company at  
[www.SettingScienceinMotion.com](http://www.SettingScienceinMotion.com)

## Cell culture flasks non treated or treated, sterile



Cell and tissue culture flasks are perfect for cell growth.

- Available with five different growth areas
- Flask surface is flat and free from striation to maximise usable growth area
- Two different cap styles can be used in both open and closed systems
- Innovative angled neck design offers good pipette and cell scraper access
- Triangular top with wide base provides stability
- Easy stacking
- Frosted area near the neck for easy marking/writing
- Engraved graduations on multiple sides
- 100% integrity tested
- Sterilised by gamma irradiation
- Free from DNase and RNase and non pyrogenic

**Non treated:** Cell and tissue culture flasks are ideal for applications where cell attachment is not desired.

**Treated:** For optimal cell attachment and growth.

**Increased cell attachment surface:** This highly hydrophilic surface offers a significant advantage over the traditional cell culture surface. The surface treatment can improve cell spreading and attachment, and is suitable for cells that may adhere poorly due to cell phenotype, stressful culture conditions, or those which normally require additional biological coatings for attachment.

ISO 13485:2003 and ISO 9001:2008 certified.



Capacity (ml)	Cap	Description	Recommended working volume (ml)	Packed	Pk	Cat. No.
<b>12,5 cm<sup>2</sup> growth area flasks</b>						
25	Plug-seal screw cap	Non treated	20	10 per bag/200 per case	200	734-2783
25	Vented	Non treated	20	10 per bag/200 per case	200	734-2784
25	Plug-seal screw cap	Increased cell attachment surface	20	10 per bag/200 per case	200	734-2804
25	Vented	TC-treated	20	10 per bag/200 per case	200	734-2309
25	Plug-seal screw cap	TC-treated	20	10 per bag/200 per case	200	734-2310
25	Vented	Increased cell attachment surface	20	10 per bag/200 per case	200	734-2805
<b>25,0 cm<sup>2</sup> growth area flasks</b>						
50	Plug-seal screw cap	Non treated	40	10 per bag/200 per case	200	734-2785
50	Vented	Non treated	40	10 per bag/200 per case	200	734-2786
50	Plug-seal screw cap	TC-treated	40	10 per bag/200 per case	200	734-2312
50	Vented	TC-treated	40	10 per bag/200 per case	200	734-2311
50	Plug-seal screw cap	Increased cell attachment surface	40	10 per bag/200 per case	200	734-2806
50	Vented	Increased cell attachment surface	40	10 per bag/200 per case	200	734-2807
<b>75,0 cm<sup>2</sup> growth area flasks</b>						
250	Plug-seal screw cap	Non treated	175	5 per bag/100 per case	100	734-2787
250	Vented	Non treated	175	5 per bag/100 per case	100	734-2788
250	Plug-seal screw cap	TC-treated	175	5 per bag/100 per case	100	734-2314
250	Vented	TC-treated	175	5 per bag/100 per case	100	734-2313
250	Plug-seal screw cap	Increased cell attachment surface	175	5 per bag/100 per case	100	734-2808
250	Vented	Increased cell attachment surface	175	5 per bag/100 per case	100	734-2809
<b>182,0 cm<sup>2</sup> growth area flasks</b>						
600	Plug-seal screw cap	Non treated	400	5 per bag/40 per case	40	734-2789
600	Vented	Non treated	400	5 per bag/40 per case	40	734-2790
600	Plug-seal screw cap	TC-treated	400	5 per bag/40 per case	40	734-2316
600	Vented	TC-treated	400	5 per bag/40 per case	40	734-2315
600	Plug-seal screw cap	Increased cell attachment surface	400	5 per bag/40 per case	40	734-2810
600	Vented	Increased cell attachment surface	400	5 per bag/40 per case	40	734-2811
<b>300,0 cm<sup>2</sup> growth area flasks</b>						
850	Plug-seal screw cap	Non treated	800	3 per bag/18 per case	18	734-2791
850	Vented	Non treated	800	3 per bag/18 per case	18	734-2792
850	Plug-seal screw cap	TC-treated	800	3 per bag/18 per case	18	734-2601
850	Vented	TC-treated	800	3 per bag/18 per case	18	734-2600
850	Plug-seal screw cap	Increased cell attachment surface	800	3 per bag/18 per case	18	734-2812
850	Vented	Increased cell attachment surface	800	3 per bag/18 per case	18	734-2813

## Cell scrapers and cell lifters



Specifically designed to make collecting of cells easier and more effective. Available with a choice of blade positions - scraper for use in flasks, or lifter for use in harvesting cells (especially stem cells) in dishes.

- Cross-ribbed handle in ABS provides greater rigidity and ensures better control while scraping cells
- Thin, flexible TPE blade prevents damage to cells
- Individually wrapped
- Sterilised by gamma irradiation
- Free from DNase, RNase and non pyrogenic



734-2603



734-2602

Description	Total length (mm)	Pk	Cat. No.
Cell scraper, blade width 20 mm	250	100	734-2602
Cell scraper, blade width 30 mm	390	100	734-2604
Cell lifter, blade width 20 mm	250	100	734-2603
Cell lifter, blade width 30 mm	390	100	734-2605



### Cell lifters



Flat blade cell lifter for manual harvesting of cells, manufactured from high grade PE. Designed for removing cells from multiwell plates or microcentrifuge tubes.

- Bevelled edge blade on one end and narrow blade or J-hook on the other
- Sterilised by gamma irradiation
- Free from DNase, RNase and non pyrogenic

Description	Total length (mm)	Pk	Cat. No.
19 mm bevelled edge blade with narrow blade (length 9,0 mm)	234	100	734-2978
19 mm bevelled edge blade with J-hook (length 2,5 mm)	234	100	734-2979

## Cell culture dishes, VWR®



VWR cell and tissue culture dishes are available with a choice of surface treatments.

- Flat bottom and uniform wall thickness ensures distortion-free
- Optically clear, making them suitable for microscopy
- Dish surface is smooth and free from striation to maximise usable growth area
- Rim on the bottom side of the lid (except 35 or 150 mm dishes) mates with the dish brim for easy and secure stacking
- Sterilised by gamma irradiation (SAL 10<sup>-6</sup>), DNase- and RNase-free and non pyrogenic

**Increased cell attachment surface:** This highly hydrophilic surface offers a significant advantage over the traditional cell culture surface. The surface treatment can improve cell spreading and attachment, and is suitable for cells that may adhere poorly due to cell phenotype, stressful culture conditions, or those which normally require additional biological coatings for attachment.

**TC-treated:** These dishes are vacuum-gas plasma-treated for consistent cell attachment and growth.

**Non treated:** Non treated cell and tissue culture dishes are ideal for applications where cell attachment is not desired.

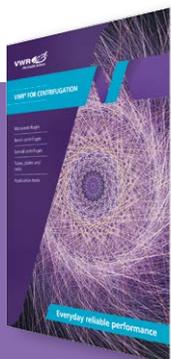
Operating temperature range: -20 to +50 °C. Not autoclavable.

ISO 13485:2003 and ISO 9001:2008 certified.



Description	Ø (mm)	Height (mm)	Growth area (cm <sup>2</sup> )	Packed	Pk	Cat. No.
Cell culture dish, increased cell attachment surface	35	12,3	8,5	10/bag	240	734-2814
Cell culture dish, TC-treated	35	12,3	8,5	10/bag	960	734-2317
Cell culture dish, non treated	35	12,3	8,5	10/bag	960	734-2793
Cell culture dish, increased cell attachment surface, with gripping ring	60	18	21,2	10/bag	240	734-2815
Cell culture dish, TC-treated, with gripping ring	60	18	21,2	10/bag	600	734-2318
Cell culture dish, non treated, with gripping ring	60	18	21,2	10/bag	600	734-2794
Cell culture dish, TC-treated, with gripping ring	70	15	36,3	10/bag	600	734-2319
Cell culture dish, increased cell attachment surface, with gripping ring	90	17	55,0	10/bag	240	734-2816
Cell culture dish, TC-treated, with gripping ring	90	17	55,0	10/bag	500	734-2320
Cell culture dish, non treated, with gripping ring	90	17	55,0	10/bag	500	734-2795
Cell culture dish, increased cell attachment surface, with gripping ring	100	22	60,8	10/bag	240	734-2817
Cell culture dish, TC-treated, with gripping ring	100	22	60,8	10/bag	300	734-2321
Cell culture dish, non treated, with gripping ring	100	22	60,8	10/bag	300	734-2796
Cell culture dish, increased cell attachment surface	150	22	143,0	5/bag	80	734-2818
Cell culture dish, TC-treated	150	22	143,0	1/bag	120	734-2322
Cell culture dish, non treated	150	22	143,0	1/bag	120	734-2797

# Your next cell culture centrifuge



## VWR® for centrifugation

Micro, bench and special application centrifuges plus supporting plastics in one handy solution guide



Visit [vwr.com](http://vwr.com) for your copy

## Multiwell cell culture plates, VWR®



VWR multiwell cell culture plates are available with a choice of surface treatments.

- Uniform well volume ensures an equal growth surface area
- Well surface is smooth and free from striation to maximise usable growth area
- Raised rims on wells with uniform rings on the lid to reduce evaporation
- Single-position lid reduces the risk of cross-contamination and handling mistakes
- Wells are labelled with alphanumeric code for easy identification
- Suitable for use with all common instruments and automation
- Sterilised by gamma irradiation (SAL 10<sup>-6</sup>)
- Free from DNase and RNase, and non pyrogenic



**Increased cell attachment surface treatment:** This highly hydrophilic surface offers a significant advantage over the traditional cell culture surface. The surface treatment can improve cell spreading and attachment, and is suitable for cells that may adhere poorly due to cell phenotype, stressful culture conditions, or those which normally require additional biological coatings for attachment.

**TC-treated:** These plates are vacuum-gas plasma-treated for consistent cell attachment and growth.

**Non treated:** Non treated cell and tissue culture plates are ideal for applications where cell attachment is not desired.

Culture area = cm<sup>2</sup> per well

ISO 13485:2003, ISO 9001:2008

Individually wrapped in peel-to-open paper/plastic blister packs.

Description	Colour	Culture area (cm <sup>2</sup> )	Recommended working volume (ml)	Sterile	Packed	Pk	Cat. No.
4-well plates, flat bottom, TC-treated	Clear	1,96	1,0	+	1/bag	100	732-2905
4-well plates, flat bottom, non treated	Clear	1,96	1,0	+	1/bag	100	732-2904
6-well plates, flat bottom, treated for increased cell attachment	Clear	9,6	1,9 – 2,9	+	1/bag	100	734-2798
6-well plates, flat bottom, TC-treated	Clear	9,6	1,9 – 2,9	+	1/bag	100	734-2323
6-well plates, flat bottom, non treated	Clear	9,6	1,9 – 2,9	+	1/bag	100	734-2777
12-well plates, flat bottom, treated for increased cell attachment	Clear	3,85	0,76 – 1,14	+	1/bag	100	734-2799
12-well plates, flat bottom, TC-treated	Clear	3,85	0,76 – 1,14	+	1/bag	100	734-2324
12-well plates, flat bottom, non treated	Clear	3,85	0,76 – 1,14	+	1/bag	100	734-2778
24-well plates, flat bottom, treated for increased cell attachment	Clear	1,93	0,38 – 0,57	+	1/bag	100	734-2800
24-well plates, flat bottom, TC-treated	Clear	1,93	0,38 – 0,57	+	1/bag	100	734-2325
24-well plates, flat bottom, non treated	Clear	1,93	0,38 – 0,57	+	1/bag	100	734-2779
48-well plates, flat bottom, treated for increased cell attachment	Clear	0,83	0,19 – 0,29	+	1/bag	100	734-2801
48-well plates, flat bottom, TC-treated	Clear	0,83	0,19 – 0,29	+	1/bag	100	734-2326
48-well plates, flat bottom, non treated	Clear	0,83	0,19 – 0,29	+	1/bag	100	734-2780
96-well plates, flat bottom, treated for increased cell attachment	Clear	0,33	0,075 – 0,20	+	1/bag	100	734-2802
96-well plates, flat bottom, TC-treated	Clear	0,33	0,075 – 0,20	+	1/bag	100	734-2327
96-well plates, flat bottom, non treated	Clear	0,33	0,075 – 0,20	+	1/bag	100	734-2781
96-well plates, round bottom, treated for increased cell attachment	Clear	0,32	0,075 – 0,20	+	1/bag	100	734-2803
96-well plates, round bottom, TC-treated	Clear	0,32	0,075 – 0,20	+	1/bag	100	734-2328
96-well plates, round bottom, non treated	Clear	0,32	0,075 – 0,20	+	1/bag	100	734-2782
384-well plates, flat bottom, TC-treated	Clear	0,1135	10 – 100 µl	+	1/bag	100	732-2907
384-well plates, flat bottom, non treated	Clear	0,1135	10 – 100 µl	+	1/bag	100	732-2906

## Cell culture insert plates, PC



PC, sterile, with lid. These insert plates feature a thin, semi-transparent polycarbonate membrane with pore sizes from 0,1 to 12,0 µm.

- Treated for optimal cell attachment
- Assembled with well plates
- Resistant to most fixing and staining agents



Description	Pore size (µm)	Culture area (cm <sup>2</sup> )	Recommended working volume (ml)	Membrane Ø (mm)	Packed	Pk	Cat. No.
6-well insert plate	0,1	4,78	2,6	24	6/box, 24/case	24	734-2715
6-well insert plate	0,4	4,78	2,6	24	6/box, 24/case	24	734-2720
6-well insert plate	1,0	4,78	2,6	24	6/box, 24/case	24	734-2716
6-well insert plate	3,0	4,78	2,6	24	6/box, 24/case	24	734-2721
6-well insert plate	8,0	4,78	2,6	24	6/box, 24/case	24	734-2722
6-well insert plate	12,0	4,78	2,6	24	6/box, 24/case	24	734-2717
12-well insert plate	0,1	1,12	1,5	12	12/box, 48/case	48	734-2726
12-well insert plate	0,4	1,12	1,5	12	12/box, 48/case	48	734-2731
12-well insert plate	1,0	1,12	1,5	12	12/box, 48/case	48	734-2727
12-well insert plate	3,0	1,12	1,5	12	12/box, 48/case	48	734-2732
12-well insert plate	8,0	1,12	1,5	12	12/box, 48/case	48	734-2733
12-well insert plate	12,0	1,12	1,5	12	12/box, 48/case	48	734-2728
24-well insert plate	0,1	0,33	0,6	6,5	12/box, 48/case	48	734-2737
24-well insert plate	0,4	0,33	0,6	6,5	12/box, 48/case	48	734-2742
24-well insert plate	1,0	0,33	0,6	6,5	12/box, 48/case	48	734-2738
24-well insert plate	3,0	0,33	0,6	6,5	12/box, 48/case	48	734-2743
24-well insert plate	8,0	0,33	0,6	6,5	12/box, 48/case	48	734-2744
24-well insert plate	5,0	0,33	0,6	6,5	12/box, 48/case	48	734-2745
24-well insert plate	12,0	0,33	0,6	6,5	12/box, 48/case	48	734-2739



## Cell culture insert plates, PET



Polyester, sterile, with lid. These insert plates feature a thin, microscopically-transparent polyester membrane that is tissue culture-treated for optimal cell attachment and growth.

- Provides excellent cell visibility under phase contrast microscopy
- Allows assessment of cell viability and monolayer formation
- Can be assembled with 6-, 12- and 24-well plates

Description	Pore size (µm)	Culture area (cm <sup>2</sup> )	Recommended working volume (ml)	Membrane Ø (mm)	Packed	Pk	Cat. No.
6-well insert plate	0,1	4,78	2,6	24	6/box, 24/case	24	734-2718
6-well insert plate	0,4	4,78	2,6	24	6/box, 24/case	24	734-2723
6-well insert plate	1,0	4,78	2,6	24	6/box, 24/case	24	734-2719
6-well insert plate	3,0	4,78	2,6	24	6/box, 24/case	24	734-2724
6-well insert plate	8,0	4,78	2,6	24	6/box, 24/case	24	734-2725
12-well insert plate	0,1	1,12	1,5	12	12/box, 48/case	48	734-2729
12-well insert plate	0,4	1,12	1,5	12	12/box, 48/case	48	734-2734
12-well insert plate	1,0	1,12	1,5	12	12/box, 48/case	48	734-2730
12-well insert plate	3,0	1,12	1,5	12	12/box, 48/case	48	734-2735
12-well insert plate	8,0	1,12	1,5	12	12/box, 48/case	48	734-2736
24-well insert plate	0,1	0,33	0,6	6,5	12/box, 48/case	48	734-2740
24-well insert plate	0,4	0,33	0,6	6,5	12/box, 48/case	48	734-2746
24-well insert plate	1,0	0,33	0,6	6,5	12/box, 48/case	48	734-2741
24-well insert plate	3,0	0,33	0,6	6,5	12/box, 48/case	48	734-2747
24-well insert plate	8,0	0,33	0,6	6,5	12/box, 48/case	48	734-2748

## Confocal dishes for microscopy, VWR®



Confocal dishes are suitable for fluorescent microscopy, confocal microscopy and phase-contrast microscopy experiments. These dishes combine the convenience of standard 35 mm, PS cell culture dishes with the optical benefits of glass. Dishes are available with either Ø15 or Ø20 mm glass centre, and with or without a tissue culture-treated surface.

- Made from homogenous borosilicate glass with low bubble and inclusion content
- Transparent, medical grade glue, achromatic
- Dish surface is smooth and free from striation to maximise usable area for growth
- Rim on upper side of the lid mates with the dish brim for easy and secure stacking
- Vented lids for effective gas exchange
- Suitable for all living cell examinations
- Sterilised by gamma irradiation and non pyrogenic

Glass thickness: 0,16 - 0,19 mm

ISO 13485:2003 and ISO 9001:2008 certified.



Description	Pk	Cat. No.
Glass bottom dish, Ø15 mm centre, TC-treated	40	734-2903
Glass bottom dish, Ø20 mm centre, TC-treated	40	734-2904
Glass bottom dish, Ø15 mm centre, non treated	40	734-2905
Glass bottom dish, Ø20 mm centre, non treated	40	734-2906

## Cell culture dishes, 3-D scaffold



VWR® 3-D scaffold cell culture dishes, made of polystyrene (GPPS) with polystyrene polymer scaffold, are able to simulate the three-dimensional structure of cells in animals and the human body to maximum effect, providing an ideal environment for cell interaction, maximising culture area and improving yield.

- Highly consistent scaffold (mean fibre diameter of 500 and 260 µm pore spacing) with 3-D channels providing high connectivity, facilitating nutrient transmission, consistent metabolic activity, and the accuracy of culture results
- Cytokine and growth factor resistant surface assists cell secretion collection, saving time and reducing the need for additional separating steps
- Open pores with high connectivity facilitate nutrient absorption and metabolism
- Larger surface area than regular cell culture dishes for greater yields and maximum material efficiency
- Sterilised by gamma irradiation
- Free from DNase and RNase, non pyrogenic

Applications include studies of the cell-cell interaction mechanism, cell immunotherapy, stem cell therapy, drug screening and the production of cell-based drugs.

ISO13485:2003 and ISO9001:2008 certified.



Description	Ø (mm)	Growth area (cm <sup>2</sup> )	Packed	Pk	Cat. No.
Standard dish, with 1x surface treated scaffold insert (32,0x1,6 mm)	35	43	Individually wrapped	40	734-2967
Standard dish, with 1x surface treated scaffold insert (51,0x1,6 mm)	60	109	Individually wrapped	30	734-2968
Standard dish, with 1x surface treated scaffold insert (67,5x1,6 mm)	70	191	Individually wrapped	30	734-2969

## 3-D cell culture plates with scaffolds

Plates provide a microenvironment for cells that mirrors in vivo conditions for stem cells, tissue engineering, drug research and development, and cell biology.

The scaffold produces a larger surface area than regular cell culture products with 3-D structure facilitating the transmission of nutrients, consistency of metabolic activity and hence improved results. Easy collection of cell secretions saves time and eliminates additional steps.



- Clear polystyrene plates in 6, 12 and 24 well formats
- Sterilised by gamma irradiation
- Strict integrity testing, non pyrogenic and DNase-/RNase-free
- Scaffold - virgin polystyrene (wire diameter of 500 µm / spacing of 260 µm)
- Cytokine and growth factor resistant
- Temperature range: -20 °C to +50 °C



**1** Prepare the required volume of cell suspension



**2** Add the cell suspension to the 3-D scaffold slowly



**3** Ensure that the 3-D scaffold is fully covered with cell suspension, avoiding overflow



**4** Using tweezers, place the scaffold in the dish



**5** Incubate for 3 hours at 37 °C and 5% CO<sub>2</sub>



**6** After three hours, slowly add the cell culture medium through the dish's internal wall, ensuring that it covers the scaffold completely



**7** Return to incubator

Easy to use

## Cell slides in culture dishes

VWR® cell slides are made from medical grade, high transparency PET, which has high strength and is unbreakable. Only the surface of the cell slide has a hydrophilic treatment so adherent cells grow easily, whilst the surrounding culture dish surface is hydrophobic, making it difficult for adherent cells to grow.

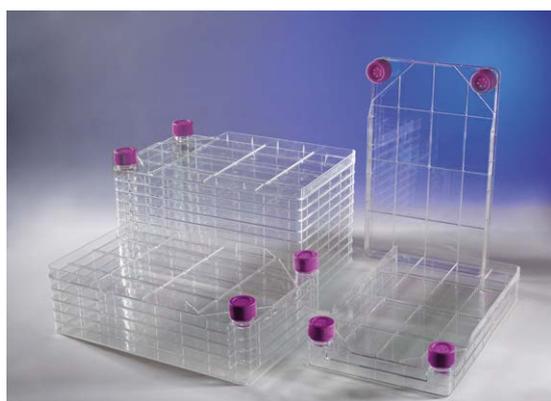
- Cell slide transparency and light transmittance are good so cells can be clearly observed under a light or fluorescence microscope
- The use of multiple cell slides in one dish makes it possible to develop multi-factor, multi-index, multi-level in vitro studies under the same condition
- Choice of Ø 8 mm or Ø 10 mm cell slides, with 12, 18, 32 or 45 cell slides per culture dish
- One cell culture can prepare multiple cell slides for different studies and objectives, increasing work efficiency
- Tab on the cell slide tilts at an angle, which is convenient for operators to directly clamp, and is engraved numerically, facilitating identification
- Free from DNase and RNase, non pyrogenic



The integrated cell slides are fixed in the culture dish. If further test is necessary after cell culture, the cell slides can be taken out one by one and placed in a culture plate or other container with the necessary specifications.

Supplied individually packaged in peel-to-open plastic blister packaging. Each box of product is matched with individually packed sterile metal tweezers. Both cell slides and tweezers are gamma irradiated and should be used immediately after opening.

Description	Ø (mm)	Growth area (cm <sup>2</sup> )	Packed	Pk	Cat. No.
Culture dish, 60 mm, with 18 cell slides, cell growth area 0,50 cm <sup>2</sup> per cell slide	8	9,00	Individually wrapped	48	734-2973
Culture dish, 60 mm, with 12 cell slides, cell growth area 0,79 cm <sup>2</sup> per cell slide	10	9,42	Individually wrapped	48	734-2974
Culture dish, 100 mm, with 45 cell slides, cell growth area 0,50 cm <sup>2</sup> per cell slide	8	22,50	Individually wrapped	24	734-2975
Culture dish, 100 mm, with 32 cell slides, cell growth area 0,79 cm <sup>2</sup> per cell slide	10	25,12	Individually wrapped	24	734-2976



## Cell chambers



VWR® cell chambers, made from medical grade, general purpose polystyrene (GPPS) and with vented cap, are ideal for large scale cell culture.

- Available in 1-, 2-, 5- and 10-tray versions for easy scale-up
- Surface treated for optimal cell attachment and growth
- Hydrophobic membrane (pore size of 0,22 µm) avoids potential contamination during gas exchange
- Does not absorb cytokines and growth factors, and cell harvesting by conventional trypsin digestion method is possible
- Sterilised by gamma irradiation
- Free from DNase and RNase, non pyrogenic

Type	Recommended working volume (ml)	Growth area (cm <sup>2</sup> )	Pk	Cat. No.
1 level	130 – 200	656	8	734-2980
2 levels	260 – 400	1296	6	734-2981
5 levels	650 – 1000	3216	4	734-2982
10 levels	1300 – 2000	6416	2	734-2983

## Roller bottles



Roller bottles are optimal vessels for large scale cell growth and multiplication, and are suitable for both research and manufacturing applications, including the growth of mammalian cells for virus propagation and bioproduction.

- Caps feature large knurls for easy grip
- Two different cap styles can be used in both open and closed systems
- Every bottle features silk-printed graduations
- Non pyrogenic
- Temperature range: -20 to +50 °C
- Every case features a labelled lot number



These vessels suit automation and fit all common roller bottle instrumentation. Vessels are available with a large area surface area for cell growth of 490, 850 and 1900 cm<sup>2</sup> for adhesion cultures and one or two litre volume, for suspension cultures. The bottles are surface treated for optimal cell attachment. Bottles with smooth surface are free from striation, to maximise usable growth area; those with ribbed surface offer a larger surface area for cell growth.

ISO 9001, ISO 13485

Note: Bottles are not autoclavable

Description	Capacity (ml)	Growth area (cm <sup>2</sup> )	Packed	Pk	Cat. No.
Treated surface, plug seal cap	1000	490	2/bag, 40/case	40	734-2749
Treated surface, plug seal cap	2000	850	20/bag, 20/case	20	734-2750
Treated surface, plug seal cap	2000	850	5/bag, 40/case	40	734-2751
Treated surface, vented cap	2000	850	2/bag, 40/case	40	734-2752
Treated surface, ribbed, plug seal cap	2000	1900	5/bag, 40/case	40	734-2753



## Cell strainers

Manufactured from a strong nylon mesh with evenly spaced mesh pores, these cell strainers are sterile, easy to use devices for quickly isolating primary cells to consistently obtain a uniform single-cell suspension from tissues. Designed to protect valuable flow cytometry and cell sorting instrumentation by reliably removing clumps and debris from cell suspensions and clinical samples prior to analysis.



- Available in three mesh sizes with different colours for easy identification
- Extended lip on the strainer enables aseptic handling with forceps
- Ready to use, sterilised by gamma irradiation
- Individually wrapped
- Fit into most 50 ml conical tubes
- Free from DNase and RNase, non pyrogenic

ISO 9001, ISO 13485

Description	Pk	Cat. No.
Cell strainers, 40 µm pore size, blue frame	50	732-2757
Cell strainers, 70 µm pore size, white frame	50	732-2758
Cell strainers, 100 µm pore size, yellow frame	50	732-2759

## Syringe filters

Available with either cellulose acetate or PES membrane. Sterile membranes with 0,2 µm pore size are ideal for sterile filtration applications, whilst those with 0,45 µm pore size can be used for clarifications. These sterile syringe filters are gamma irradiated to prevent cytotoxic residues caused by alternative sterilisation methods.

- Cellulose acetate membrane surfaces are not treated by wetting agents. This is especially useful for cell culture applications
- PES membranes show very low levels of extractables and high flow rates. Ideal for cell culture applications
- Certified non pyrogenic and non cytotoxic
- Delivered with certificate

\*\* Retains  $10^7$  *Brevundimonas diminuta* per cm<sup>2</sup> according to modified ASTM F838



Pore size (µm)	Ø (mm)	Sterile	Pk	Cat. No.
<b>Cellulose acetate membrane</b>				
0,2 **	25	+	50	514-0061
0,2 **	25	-	100	514-0060
0,45	25	+	50	514-0063
0,45	25	-	100	514-0062
<b>PES membrane</b>				
0,2 **	25	+	50	514-0073
0,2 **	25	-	100	514-0072
0,45	25	+	50	514-0075
0,45	25	-	100	514-0074

## Sterile Acrodisc® syringe filters

Superior flow rate and higher throughput than competitive devices

- Low extractables/surfactant-free, inherently hydrophilic membrane for reliable performance
- Low protein binding to minimise sample loss
- Available with built-in pre-filter for increased throughput of difficult to filter liquids (heavy particulate load)
- Easy to use Luer lock fittings
- Available in a variety of sizes to accommodate volumes from 10 - 150 ml
- Sterilised by gamma irradiation to eliminate potential contamination by EtO residuals



### Applications

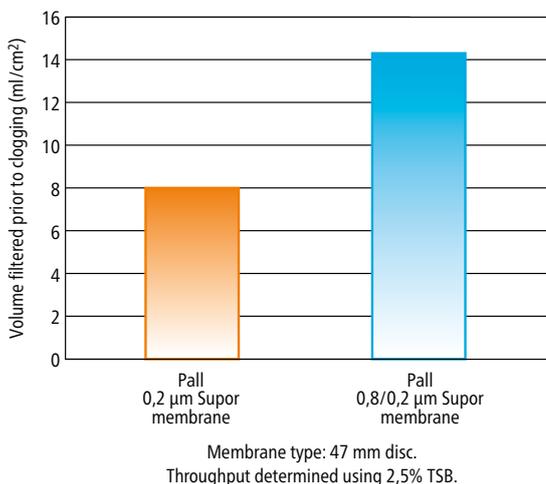
- Filtration of cell and tissue culture media and additives
- Filtration where low protein binding is desired
- For cell cryopreservation use DMSO-safe Acrodisc syringe filters
- Clarification of biological fluid, protein, enzyme, probe and hybridisation buffers and other aqueous samples

Acrodisc syringe filters with Supor® (polyethersulphone) membrane		
Description	Pk	Cat. No.
0,2 µm, 13 mm	75	514-4122
0,45 µm, 13 mm	75	514-4123
0,2 µm, 25 mm	50	514-4126
0,45 µm, 25 mm	50	514-4127
0,8/0,2 µm, 25 mm	50	514-4102
0,2 µm, 32 mm	50	514-4131
0,45 µm, 32 mm	50	514-4133
0,8/0,2 µm, 32 mm	50	514-4136
5 µm, 32 mm	50	514-4129
Serum Acrodisc syringe filter with Supor® membrane		
Glass fibre/0,2 µm, 37 mm	20	514-4119
DMSO-safe Acrodisc syringe filter		
0,2 µm nylon membrane, 25 mm	50	514-4011

## AcroPak™ 20 filters and AcroPak 200 capsules with Supor membrane

Built-in pre-filter for fast and efficient processing

- Low extractables/surfactant-free Supor polyethersulphone membrane has high flow rates, high throughputs and low protein binding
- Built-in pre-filter layering, 0,8/0,2 µm, extends filter life for particulate-laden solutions such as serum-containing media
- Process up to 2 l with Acropak 20 and up to 20 l with Acropak 200
- Tapered hose barb inlet attaches easily to pressurised systems or peristaltic pump
- Upstream vent to prevent vapour lock



### Applications

- Small to medium volume sterile filtration of fluids containing dilute proteins, preservatives, or other critical components
- Filtration of cell and tissue culture media and additives
- Ideal for filtration of aqueous buffers and cell culture media
- 'Point of use' filtration of lab water



Acropak 20 filter with Supor membrane		
Description	Pk	Cat. No.
0,8/0,2 µm, gamma irradiated, with filling bell	3	514-4097
Acropak 200 filter with Supor membrane		
0,8/0,2 µm, gamma irradiated, with filling bell	3	514-4098

## VacuCap® Vacuum filtration devices

Innovative bottle-top filters can fill multiple bottles with one device

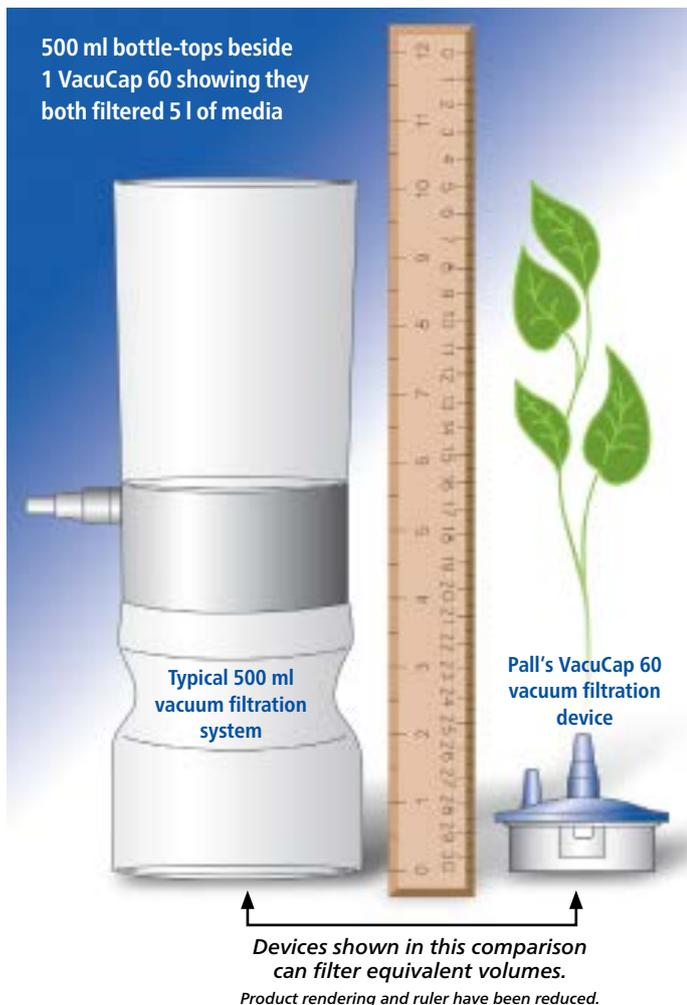
- Process 100 ml to 5 l volumes into multiple aliquots
- Reduces storage space and waste
- Environmentally friendly with minimal plastic waste
- Draws directly from the mixing reservoir
- No contamination as filters directly into sterile container
- Low extractables/surfactant-free Supor membrane provides high flow rates
- Built-in pre-filter prevents clogging and increases throughput of high particulate solutions

### Applications

- Vacuum-driven filtration of cell and tissue culture media
- PF version useful for filtration of hard to filter solutions

### Process more per unit and reduce plastic waste

Reduce storage needs and waste costs compared with typical vacuum filtration systems



VacuCap 60 devices, gamma irradiated (100 ml - 1 l)		
Description	Pk	Cat. No.
0,1 µm, 60 mm	10	515-0016
0,2 µm, 60 mm	10	515-0017
0,45 µm, 60 mm	10	515-0018
0,8/0,2 µm, 60 mm	10	515-0019
0,2 µm, 60 mm (with individually attached tubing)	10	516-9813

### Brief instructions\*



1. Connect the feed tubing to the port marked 'INLET' on the VacuCap and put the opposite end of the tubing in the unfiltered fluid.



2. Connect the vacuum tubing to the port marked 'VACUUM' NOTE: Refer to product insert for safety precautions.



3. Hold the VacuCap on the filtrate container and start to vacuum, it will seal securely to the container top and fluid will be drawn.



4. When filtration is complete, switch off the vacuum pump, allow the vacuum in the receiver to dissipate.

\* Refer to the product insert for complete instructions.



VacuCap 90 devices, gamma irradiated (1 - 5 l)		
Description	Pk	Cat. No.
0,1 µm, 90 mm	10	515-0012
0,2 µm, 90 mm	10	515-0013
0,45 µm, 90 mm	10	515-0014
0,8/0,2 µm, 90 mm	10	515-0015
0,2 µm, 90 mm (with individually attached tubing)	10	516-9812

\* Always use bottles designed for use with vacuum.

## AcroPrep™ advance filter plates

For high throughput sample prep and detection procedures

- Provides consistency in filtration times, as well as efficient sample and bead recovery
- Available in a variety of membrane configurations, plate colours, well volumes, and outlet tip lengths
- Plates are constructed from chemically-resistant, biologically-inert polypropylene
- Serialised barcoded label allows for use in automated tracking systems

Concentration, buffer exchange, desalting of proteins and peptides plus nucleic acids		
Description	Pk	Cat. No.
350 µl, 96-well, Omega 3K MWCO	10	518-0027
350 µl, 96-well, Omega 10K MWCO	10	518-0032
350 µl, 96-well, Omega 30K MWCO	10	518-0028
350 µl, 96-wWell, Omega 100K MWCO	10	518-0029
1 ml, 96-well, Omega 3K MWCO	5	738-0123
1 ml, 96-well, Omega 10K MWCO	5	738-0124
1 ml, 96-well, Omega 30K MWCO	5	738-0125
1 ml, 96-well, Omega 100K MWCO	5	738-0126
100 µl, 384-well, Omega 10K MWCO, long tips	10	516-0172
100 µl, 384-well, Omega 10K MWCO	10	516-0173
100 µl, 384-well, Omega 30K MWCO, long tips	10	516-0174
100 µl, 384-well, Omega 30K MWCO	10	516-0175
100 µl, 384-well, Omega 100K MWCO, long tips	10	736-4004
100 µl, 384-well, Omega 100K MWCO	10	736-4005

Bead-/resin-based applications		
Description	Pk	Cat. No.
350 µl, 96-well, 30-40 µm PP/PE, non woven media	10	518-0025
350 µl, 96-well, for multiplex assays	10	738-0111



Gross fractionation and general filtration		
Description	Pk	Cat. No.
1 ml, 96-well; 0,2 µm, Supor membrane	5	738-0116
1 ml, 96-well; 0,45 µm, Supor membrane	5	738-0117
1 ml, 96-well; 1,2 µm, Supor membrane	5	738-0118

Lysate clarification		
Description	Pk	Cat. No.
350 µl, 96-well, 3 µm glass, fibre/0,2 µm Supor membrane	10	518-0031
350 µl, 96-well, 3 µm glass, fibre/1,2 µm Supor membrane	10	518-0030
1 ml, 96-well, 3 µm glass, fibre/0,2 µm Supor membrane	5	738-0129
2 ml, 96-well, 3 µm glass, fibre/0,2 µm Supor membrane	5	738-0133

### Applications

- Concentration, purification, and desalting of proteins and peptides
- Bead-/resin-based applications
- Gross fractionation and lysate clarification
- pDNA, gDNA and total RNA purification
- General filtration



Nucleic acid binding		
Description	Pk	Cat. No.
100 µl, 384-well, 1 µm glass fibre media, long tips	10	516-0170
1 ml, 96-well, for nucleic acid binding, long tips	5	738-0209

Solvent Filtration		
Description	Pk	Cat. No.
100 µl, 384-well; 0,45 µm, GHP membrane, long tips	10	736-4000
100 µl, 384-well; 0,45 µm, GHP membrane	10	736-4001
350 µl, 96-well; 0,2 µm, GHP membrane	10	518-0049
350 µl, 96-well; 0,45 µm, GHP membrane	10	518-0050
1 ml, 96-well; 0,2 µm GHP membrane	5	518-0051
1 ml, 96-well; 0,45 µm GHP membrane	5	518-0052
2 ml, 96-well; 0,2 µm GHP membrane	5	518-0053
2 ml, 96-well; 0,45 µm GHP membrane	5	518-0054



## Vent devices

### Protect your cell culture and lab environment

- Designed to protect bioreactors, fermentation tanks, culture vessels and carboy contents from external contamination, and to protect the environment from contaminants within the vessel
- Self-contained, compact filter devices provide high efficiency removal of airborne bacteria and particulate under dry or moist conditions
- Vacushield™ vent devices should be used between pump and receiving vessels to protect the valves and pump components from damage by aqueous solutions, and to prolong the life of the pump
- Always select a filter with a sufficient airflow rate to accommodate the airflow required by each application

### Applications

- Bioreactors
- Fermentation tanks
- Isolation or environmental chambers
- Receiving vessels
- Carboys
- Other small containers

Acro® 37 TF vent device		
Description	Pk	Cat. No.
0,2 µm PTFE membrane, 37 mm	24	514-4117
0,2 µm PTFE membrane, 37 mm	200	514-4118
Bacterial air vents		
1 µm (nominal) glass, 37 mm	24	514-4107
1 µm (nominal) glass, 37 mm, gamma-irradiated	10	514-4114
Acro 50 vent devices with PTFE membrane		
0,2 µm, hose barb	18	514-4109
0,45 µm, hose barb	18	514-4110
1 µm, hose barb	18	514-4111
1 µm, 1/8" MNPT	18	515-0125
Acro 50 vent devices with Emflon® II membrane		
0,2 µm hydrophobic PVDF membrane, 50 mm	3	514-4227
Vacushield vent device		
50 mm, hose barb	3	514-4115
1 ml, 96-well, for nucleic acid binding, long tips	5	738-0209



## Bottle top vacuum filtration systems, PVDF, SFCA, nylon



These vacuum filter units are very useful in large volume samples separation and purification.

- Large knurls on the reservoir bottle cap
- Wide and easy access bottle mouth for efficient and stable pouring
- Engraved graduation
- Ergonomically designed side walls and collar
- Hose connector can fit multiple hose diameters
- Gamma irradiation sterilised
- Non pyrogenic

PVDF membrane: Extremely low protein-binding; for filtration of non-aggressive aqueous and mild organic solutions, or where maximising protein recovery is important.

Nylon membrane: Provides a broad range of chemical compatibility for the filtration of either aqueous or organic solvents; hydrophobic; can be used in a broad pH range.

Each individual unit is lot numbered for easy identification and tracking.

Packed in easy peel-to-open plastic bags. Receiver bottle cap is individually wrapped.

Description	Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
<b>Complete filtration units</b>						
Complete filtration unit	PVDF	150	0,10	50	12	514-1040
Complete filtration unit	PVDF	150	0,22	50	12	514-1041
Complete filtration unit	PVDF	150	0,45	50	12	514-1042
Complete filtration unit	PVDF	250	0,10	50	12	514-1043
Complete filtration unit	PVDF	250	0,22	50	12	514-1044
Complete filtration unit	PVDF	250	0,45	50	12	514-1045
Complete filtration unit	PVDF	500	0,10	75	12	514-1046
Complete filtration unit	PVDF	500	0,22	75	12	514-1047
Complete filtration unit	PVDF	500	0,45	75	12	514-1048
Complete filtration unit	PVDF	1000	0,10	91	12	514-1049
Complete filtration unit	PVDF	1000	0,22	91	12	514-1050
Complete filtration unit	PVDF	1000	0,45	91	12	514-1051
Complete filtration unit	SFCA	150	0,22	50	12	514-1052
Complete filtration unit	SFCA	150	0,45	50	12	514-1053
Complete filtration unit	SFCA	250	0,22	50	12	514-1054
Complete filtration unit	SFCA	250	0,45	50	12	514-1055
Complete filtration unit	SFCA	500	0,22	75	12	514-1056
Complete filtration unit	SFCA	500	0,45	75	12	514-1057
Complete filtration unit	SFCA	1000	0,22	91	12	514-1058
Complete filtration unit	SFCA	1000	0,45	91	12	514-1059
Complete filtration unit	Nylon	150	0,22	50	12	514-1060
Complete filtration unit	Nylon	150	0,45	50	12	514-1061
Complete filtration unit	Nylon	250	0,22	50	12	514-1062
Complete filtration unit	Nylon	250	0,45	50	12	514-1063
Complete filtration unit	Nylon	500	0,22	75	12	514-1064
Complete filtration unit	Nylon	500	0,45	75	12	514-1065
Complete filtration unit	Nylon	1000	0,22	91	12	514-1066
Complete filtration unit	Nylon	1000	0,45	91	12	514-1067
<b>Filtration cups only</b>						
Filtration cup	PVDF	150	0,10	50	24	514-1012
Filtration cup	PVDF	150	0,22	50	24	514-1013
Filtration cup	PVDF	150	0,45	50	24	514-1014
Filtration cup	PVDF	250	0,10	50	24	514-1015
Filtration cup	PVDF	250	0,22	50	24	514-1016
Filtration cup	PVDF	250	0,45	50	24	514-1017
Filtration cup	PVDF	500	0,10	75	24	514-1018
Filtration cup	PVDF	500	0,22	75	24	514-1019
Filtration cup	PVDF	500	0,45	75	24	514-1020
Filtration cup	PVDF	1000	0,10	91	24	514-1021
Filtration cup	PVDF	1000	0,22	91	24	514-1022



Description	Membrane	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
<b>Filtration cups only</b>						
Filtration cup	PVDF	1000	0,45	91	24	514-1023
Filtration cup	SFCA	150	0,22	50	24	514-1032
Filtration cup	SFCA	150	0,45	50	24	514-1033
Filtration cup	SFCA	250	0,22	50	24	514-1034
Filtration cup	SFCA	250	0,45	50	24	514-1035
Filtration cup	SFCA	500	0,22	75	24	514-1036
Filtration cup	SFCA	500	0,45	75	24	514-1037
Filtration cup	SFCA	1000	0,22	91	24	514-1038
Filtration cup	SFCA	1000	0,45	91	24	514-1039
Filtration cup	Nylon	150	0,22	50	24	514-1024
Filtration cup	Nylon	150	0,45	50	24	514-1025
Filtration cup	Nylon	250	0,22	50	24	514-1026
Filtration cup	Nylon	250	0,45	50	24	514-1027
Filtration cup	Nylon	500	0,22	75	24	514-1028
Filtration cup	Nylon	500	0,45	75	24	514-1029
Filtration cup	Nylon	1000	0,22	91	24	514-1030
Filtration cup	Nylon	1000	0,45	91	24	514-1031



## Bottle top vacuum filtration systems, PES



PS funnel and collection reservoir. Systems for vacuum filtration of aqueous solutions including cell culture media, buffers or other biological fluids.

- 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

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

ISO 10993-5:1999

Full unit includes the filtration funnel with either 0,2, or 0,45 µm PES membrane, vacuum port, lid, collection reservoir and cap for storage.

Individually packed in easy to peel-to-open bags, receiver bottle cap is individually wrapped.

Description	Capacity (ml)	Pore size (µm)	Membrane Ø (mm)	Pk	Cat. No.
<b>Complete filtration units</b>					
Complete filtration unit	150	0,2	50	12	514-0328
Complete filtration unit	150	0,45	50	12	514-0329
Complete filtration unit	250	0,2	50	12	514-0330
Complete filtration unit	250	0,45	50	12	514-0331
Complete filtration unit	500	0,2	75	12	514-0332
Complete filtration unit	500	0,45	75	12	514-0333
Complete filtration unit	1000	0,2	91	12	514-0334
Complete filtration unit	1000	0,45	91	12	514-0335
<b>Filtration cups only</b>					
Filtration cup	150	0,2	50	24	514-0336
Filtration cup	150	0,45	50	24	514-0337
Filtration cup	250	0,2	50	24	514-0338
Filtration cup	250	0,45	50	24	514-0339
Filtration cup	500	0,2	75	24	514-0340
Filtration cup	500	0,45	75	24	514-0341
Filtration cup	1000	0,2	91	24	514-0342
Filtration cup	1000	0,45	91	24	514-0343
<b>PS reservoir bottles (caps included)</b>					
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



## Serological pipettes, Standard Line



PS, transparent, graduated, sterile.

- Graduations are calibrated for accurate dispensing to within  $\pm 3\%$
- Colour coded stripes for quick volume identification
- Non pyrogenic
- Filter plug

Individually wrapped in paper-plastic bags or bulk packed in bags.

Capacity (ml)	Division (ml)	Colour code	Packed	Pk	Cat. No.
<b>Individually wrapped</b>					
1	0,01	Yellow	Individual	1.000	612-3707
2	0,01	Green	Individual	800	612-3704
5	0,10	Blue	Individual	300	612-3702
10	0,10	Red	Individual	200	612-3700
25	0,20	Dark red	Individual	200	612-3698
50	1,00	Black	Individual	100	612-3696
<b>Bulk packed</b>					
1	0,01	Yellow	25/bag	1.000	612-3705
2	0,01	Green	25/bag	700	612-3703
5	0,10	Blue	25/bag	500	612-3701
10	0,10	Red	25/bag	350	612-3699
25	0,20	Dark red	25/bag	350	612-3697
50	1,00	Black	25/bag	250	612-3695

## Serological pipettes, Premium Line

PS, transparent, graduated, non sterile or sterile. These disposable pipettes for liquid transfers are made of GPPS (general polystyrene), in compliance with USP Class VI.

- DNase-/RNase-free, non pyrogenic, non cytotoxic, non haemolytic
- Meet the requirement of BST/TSE; latex-free
- Graduations are calibrated for accurate dispensing to within  $\pm 2\%$
- Pipettes are colour coded according to their volume
- Sterile pipettes: Sterilised by gamma irradiation SAL10<sup>-6</sup> (ISO 11137)
- Every product is printed with a batch number for traceability

Manufactured in a Class 100 000 cleanroom environment. Manufactured under EN ISO 13485:2003 and ISO 9001:2008 quality management systems.

Sterile pipettes are available either individually packed in peel-to-open wrap or plastic packed in vacuum PE bag with zip lock (10/25 pipettes/bag). Non sterile pipettes are vacuum bulk packed in PE bags.



Capacity (ml)	Division (ml)	Sterile	Colour code	Packed	Pk	Cat. No.
<b>Sterile, individually packed in peel-to-open wraps</b>						
1	0,01	+	Yellow	Individually	500	612-5504
2	0,01	+	Green	Individually	500	612-5507
5	0,1	+	Blue	Individually	400	612-5523
10	0,1	+	Orange	Individually	400	612-5541
25	0,2	+	Red	Individually	150	612-5544
50	0,5	+	Purple	Individually	100	612-5546
100	1	+	Pink	Individually	50	612-5547
<b>Sterile, packed in PE bag with zip lock</b>						
1	0,01	+	Yellow	25/bag	1.000	612-5505
2	0,01	+	Green	25/bag	1.000	612-5521
5	0,1	+	Blue	25/bag	500	612-5539
10	0,1	+	Orange	25/bag	400	612-5542
25	0,2	+	Red	10/bag	150	612-5545
100	1	+	Pink	10/bag	60	612-5548
<b>Non sterile, bulk packed in PE bags</b>						
1	0,01	-	Yellow	Bulk	2.000	612-5506
2	0,01	-	Green	Bulk	1.000	612-5522
5	0,1	-	Blue	Bulk	500	612-5540
10	0,1	-	Orange	Bulk	400	612-5543



## Pipette filler, Safetypette



Pipette filler for glass and plastic pipettes from 1 to 100 ml.

- Replaceable hydrophobic membrane filter to protect the instrument from liquid penetration
- Separate buttons for aspirating/dispensing and discharging
- Silicone adapter for leakproof positioning of each pipette

The Safetypette pipette filler facilitates the pipetting of a wide range of liquids. The practical arrangement of the controls makes work easier and gives maximum safety during serial pipetting.

Supplied with three separate nose cones in three different colours.

Description	Pk	Cat. No.
Pipette filler Safetypette	1	612-4548

Description	Pk	Cat. No.
<b>Accessories</b>		
Replacement filter set 0,2 µm	5	612-3681
Replacement filter set 0,45 µm	5	612-3678
Replacement silicone pipette holder	1	612-3679

## Pipette controller, Powerpette Pro



Pipette controller for glass and plastic pipettes from 1 to 100 ml.

- Lightweight UV resistant body (180 g) and nose cones
- Fills a 25 ml pipette in under 3 seconds on its fastest setting
- Autoclavable silicone pipette holder
- Replaceable hydrophobic membrane filter protects the unit against liquid influx and protects samples against contamination
- Environmentally friendly rechargeable NiMH battery allows continuous usage for 4 hours; low battery light; rechargeable during use

The Powerpette Pro pipette controller delivers efficient performance with a powerful but quiet motor to speed up large volume pipetting. The mode selection switch enables selection of high or low modes both allowing variable aspirate and dispense speeds (with blow out). In any mode setting the speed of suction and dispensing is controlled through the concave finger triggers, designed to provide a comfortable and positive grip and to require minimum effort. An additional gravity dispense mode is designed for use with 'To Deliver' (TD) pipettes. The Powerpette Pro is now supplied with additional coloured nose cones to allow laboratory, application or user colour coding to minimise the risk of cross-contamination.

Supplied with charger, two spare hydrophobic filters (1x0,45 µm, 1x0,2 µm), bench stand/wall bracket and a coloured nose cone set.



Description	Pk	Cat. No.
Pipette controller Powerpette Pro, universal charger	1	612-4552

Description	Pk	Cat. No.
<b>Accessories</b>		
Replacement filter set 0,2 µm	5	612-3681
Replacement filter set 0,45 µm	5	612-3678
Replacement silicone pipette holder	1	612-3679
Pack of 3 coloured nose cones (red, blue and pink)	1	612-4555

## Single-channel pipettes, mechanical, variable volume, Ultra-High Performance (UHP)



VWR UHP 5 Pack



VWR Ultra-High Performance pipettes offer superior accuracy and precision, with proven ergonomic design which is both lightweight and durable.

- Very low plunger forces
- Universal tip capability
- Automatic locking volume adjustment wheel
- Levered tip ejection and colour coded for volume identification
- Easy in-house calibration and maintenance
- Fully autoclavable

Capacity (µl)	Accuracy (%)	Imprecision (%)	Pk	Cat. No.
0,1 - 2	±12,0 - ±1,5	<6,0 - <0,7	1	613-1488
0,5 - 10	±4,0 - ±0,5	<2,8 - <0,4	1	613-1489
2 - 20	±3,0 - ±0,8	<1,5 - <0,3	1	613-1490
5 - 50	±3,0 - ±0,8	<2,0 - <0,4	1	613-1628
10 - 100	±1,6 - ±0,8	<1,5 - <0,3	1	613-1491
20 - 200	±1,2 - ±0,6	<0,8 - <0,2	1	613-1492
100 - 1000	±0,9 - ±0,6	<0,6 - <0,2	1	613-1493

Description	Pk	Cat. No.
<b>Starter kits</b>		
VWR UHP 3 Pack incl. 3 pipettes (0,5 - 10 / 10 - 100 / 100 - 1000 µl) and 8 pipette multiple stand	1	613-5468
VWR UHP 3 Pack incl. 3 pipettes (2 - 20 / 20 - 200 / 100 - 1000 µl) and 8 pipette multiple stand	1	613-5467
VWR UHP 4 Pack incl. 4 pipettes (0,5 - 10 / 2 - 20 / 20 - 200 / 100 - 1000 µl) and 8 pipette multiple stand	1	613-5463
VWR UHP 5 Pack incl. 5 pipettes (0,1 - 2 / 0,5 - 10 / 2 - 20 / 20 - 200 / 100 - 1000 µl) and 8 pipette multiple stand	1	613-5464
<b>Accessories</b>		
Linear stand for 4 pipettes	1	613-5471
Multiple stand for up to 8 pipettes	1	613-5472
Stand for 1 UHP pipette	1	613-1590
Stand for 4 UHP pipettes	1	613-1589

**VWR CATALYST**  
We Enable Science Through Services

### Need calibration, maintenance or repair in your pipettes?

Please visit us at: [vwr.com/vwrcatalyst](http://vwr.com/vwrcatalyst)



## Pipette tips



These tips are made of high quality 100% pure virgin medical grade PP. Made in the highest quality moulds, these tips can be used whenever the work demands a higher standard.

- A wider seal ensures that tips will seal easily and consistently without leaking
- Guaranteed free of detectable DNase/RNase, endotoxins and heavy metals
- Tested for endotoxin (pyrogen) contamination
- Resins are pre-tested for metal contamination
- Graduated tips only: Graduations allow a visual check of pipetting accuracy
- Certificates are on file by lot number for all test results

Items (pipette tips and boxes) can be autoclaved at 122 °C for a maximum of 20 minutes at 15 psi.\*

**Please note:** A steam cycle should be used. Always air-dry these items. Do not use a dry cycle or glassware cycle as deformation can occur to plastics that are heated for extended periods.

### Tip styles:

**Bevel Point™:** Pipette tips that feature bevelled points are designed to retain less fluid and are a good choice for a multitude of procedures.

**UltraFine™:** Pipette tips with UltraFine™ point feature a thin flexible section at the end that is non bevelled and very flexible. This helps you dispense the last tiny amount of sample from the tip.

**FlexTop™:** These ultimate tips feature a uniquely thin and flexible top that conforms to the pipette barrel unlike any other tips. This design allows them to mount and eject from most pipettes with forces that help eliminate the potential for repetitive strain injuries.

**Wide orifice:** Extra wide opening allows you to pipette macrophages or sticky DNA materials. Bevelled end helps eliminate carry-over from viscous solutions.

### Packaging options:

**Bulk:** Tips are either supplied in resealable PE bags (1000 tips) or in one large bag inside a corrugated container (10 000 tips). These packaging options are not recommended if you plan to store the tips for long periods and if warping is a concern.

**Racks (96 + 192 tips per rack):** These racks, with smooth rounded edges, have heavy hook hinges that are extremely durable and an ergonomic snap latch that won't catch gloves. Strong enough to be autoclaved many times. The separate rack insert includes a bevelled top and extra sturdy surface for multi channel pipetting.

**Stack racks:** These high quality racks need to be assembled by the user. You simply have to insert the fully racked refills into the rack. Since the tips are never touched, you do not have to be concerned about contamination from your hands or latex gloves. These stacks are very stable so you can pipette with a multi-channel pipette directly from the stack.

**Stack rack refills:** These refills are a slimmed down version of the Stack racks. Neatly packed, ready for you to refill the racks you already have.



**Next Generation refills:** Next Generation refill systems refill VWR and other brands of pipette tip racks. Their low carbon footprint makes them an ideal solution to waste reduction goals for the lab. Users don't need gloves to refill tip racks - Next Generation refills racks without users having to touch the new tips. The small footprint extends to the packaging, with a reclosable box that helps maximise storage space in crowded laboratories.

**Individually wrapped:** Tips are individually packaged in thermal sealed PE bags. The tips have been radiation sterilised.

\* Macro tips (1 - 5 and 5 - 10 ml) are supplied in composite racks (fibre carton). These racks are not autoclavable.

Tip style	Volume (µl)	Sterile	Length (mm)	Packed	Pk	Cat. No.
<b>0,1 - 10 µl</b>						
UltraFine™	0,1 - 10	-	31,42	Bulk	1.000	613-0364
UltraFine™	0,1 - 10	-	31,42	12 racks, 96 each	1.152	613-0334
UltraFine™	0,1 - 10	+	31,42	12 racks, 96 each	1.152	613-0335
UltraFine™	0,1 - 10	-	31,42	6 refills, 96 each (Next Generation)	576	613-2104
UltraFine™	0,1 - 10	-	31,42	13 refills, 96 each (Next Generation)	1.248	613-1646
UltraFine™, extra long	0,1 - 10	-	47,60	10 racks, 96 each	960	613-2136
Extended length, with Tubegard™ ring (pipette protection)	0,1 - 10	-	38,10	Bulk	1.000	613-0259
Extended length, with Tubegard™ ring (pipette protection)	0,1 - 10	-	38,10	10 racks, 96 each	960	613-0260
Extended length, with Tubegard™ ring (pipette protection)	0,1 - 10	+	38,10	10 racks, 96 each	960	613-0261
Extended length, with Tubegard™ ring (pipette protection)	0,1 - 10	-	38,10	14 refills, 96 each (Next Generation)	1.344	613-0735
<b>1 - 200 µl</b>						
UltraFine™, FlexTop™	1 - 200	-	49,66	10 refills, 96 each (Next Generation)	960	613-0725
Bevel Point™	1 - 200	-	49,66	10 refills, 96 each (Next Generation)	960	613-0740
Bevel Point™ (yellow)	1 - 200	-	49,66	Bulk	1.000	613-0239
Bevel Point™ (yellow)	1 - 200	-	49,66	10 racks, 96 each	960	613-0241
Bevel Point™ (yellow)	1 - 200	+	49,66	10 racks, 96 each	960	613-0242
Bevel Point™ (yellow)	1 - 200	-	49,66	10 refills, 96 each (Next Generation)	960	613-0732
Bevel Point™, graduated	1 - 200	-	49,66	Bulk	1.000	613-0298
Bevel Point™, graduated	1 - 200	-	49,66	Bulk	10.000	525-0144
Bevel Point™, graduated	1 - 200	-	49,66	10 racks, 96 each	960	613-0299
Bevel Point™, graduated	1 - 200	+	49,66	10 racks, 96 each	960	613-0300
Bevel Point™, graduated	1 - 200	-	49,66	10 refills, 96 each (Next Generation)	960	613-0742
Bevel Point™, wide orifice	1 - 200	-	49,66	10 refills, 96 each (Next Generation)	960	613-0731
UltraFine™, FlexTop™	1 - 200	-	49,66	5 refills, 96 each (Next Generation)	480	613-2108
Bevel Point™ (yellow)	1 - 200	-	49,66	5 refills, 96 each (Next Generation)	480	613-2106
Bevel Point™, graduated	1 - 200	-	49,66	5 refills, 96 each (Next Generation)	480	613-2107
<b>1 - 250 µl</b>						
UltraFine™	1 - 250	-	52,07	10 refills, 96 each (Next Generation)	960	613-0744
<b>1 - 300 µl</b>						
UltraFine™, FlexTop™	1 - 300	-	71,12	Bulk	1.000	613-0331
UltraFine™, FlexTop™	1 - 300	-	71,12	6 racks, 96 each	576	613-0332
UltraFine™, FlexTop™	1 - 300	+	71,12	6 racks, 96 each	576	613-0333
UltraFine™, FlexTop™	1 - 300	-	71,12	6 refills, 96 each (Next Generation)	576	613-0723
<b>100 - 1000 µl</b>						
UltraFine™ (blue)	100 - 1000	-	75,95	Bulk	1.000	613-0340
UltraFine™ (blue)	100 - 1000	-	75,95	6 racks, 96 each	576	613-0341
UltraFine™ (blue)	100 - 1000	+	75,95	6 racks, 96 each	576	613-0342
UltraFine™, graduated	100 - 1000	-	88,90	Bulk	1.000	613-0343
UltraFine™, graduated	100 - 1000	-	88,90	6 racks, 96 each	576	613-0344
<b>100 - 1250 µl</b>						
UltraFine™, FlexTop™, extended	100 - 1250	-	88,90	Bulk	1.000	613-0272
UltraFine™, FlexTop™, extended	100 - 1250	-	88,90	5 refills, 96 each (Next Generation)	480	613-0738
Wide orifice	100 - 1250	-	88,90	5 refills, 96 each (Next Generation)	480	613-0737
<b>1000 - 5000 µl</b>						
Standard	1000 - 5000	-	144,27	49/rack	49	613-2147
Standard	1000 - 5000	+	144,27	49/rack	49	613-2148
Graduated (Eppendorf/Sartorius)	1000 - 5000	-	123,06	Bulk	250	613-0339
Graduated (Eppendorf/Sartorius)	1000 - 5000	-	123,06	49/rack	49	613-2145
Graduated (Eppendorf/Sartorius)	1000 - 5000	+	123,06	49/rack	49	613-2146
Graduated (Gilson® Classic/Rainin® Classic)	1000 - 5000	-	123,06	Bulk	250	613-0338
Graduated (Gilson® Classic/Rainin® Classic)	1000 - 5000	-	123,06	49/rack	49	613-2143
Graduated (Gilson® Classic/Rainin® Classic)	1000 - 5000	+	123,06	49/rack	49	613-2144
<b>5000 - 10000 µl</b>						
Standard	5000 - 10000	-	155,70	Bulk	250	613-0831
Standard	5000 - 10000	-	155,70	36/rack	36	613-2149
Standard	5000 - 10000	+	155,70	36/rack	36	613-2150

## Filter tips



Rack



732-0519

All tips are made of high quality 100% pure virgin medical grade PP. Made in the highest quality moulds, these tips can be used whenever the work demands a higher standard. All products are tested for endotoxin (pyrogen) contamination and certified to USP results. Resins are pre-tested for metal contamination. Certificates are on file by lot number for all test results.

- A wider seal ensures that tips will seal easily and consistently without leaking, on old as well as new pipettes
- Guaranteed free of detectable human DNA, DNase/RNase, endotoxins and heavy metals

Tip style	Volume (µl)	Sterile	Length (mm)	Packed	Pk	Cat. No.
<b>Racked, sterile</b>						
UltraFine™, extended	0,1 - 10	+	38,10	10 racks, 96 each	960	732-0543
UltraFine™, graduated	0,1 - 10	+	31,42	12 racks, 96 each	1.152	732-0516
Bevel Point™	1 - 40	+	49,66	10 racks, 96 each	960	732-0528
Standard	1 - 100	+	49,66	10 racks, 96 each	960	732-1103
Bevel Point™, graduated	1 - 100	+	49,66	10 racks, 96 each	960	732-1102
UltraFine™	1 - 200	+	52,07	10 racks, 96 each	960	732-0541
UltraFine™, extended	1 - 200	+	83,82	6 racks, 96 each	576	732-0610
UltraFine™, extended	1 - 300	+	71,12	6 racks, 96 each	576	732-0611
UltraFine™	100 - 1000	+	88,90	6 racks, 96 each	576	732-0534

## Filter tips, low retention



Low retention tips offering unsurpassed fluid retention performance and proven aerosol blocking with endotoxin-free, 10 µm porous hydrophobic filter. Ideal for PCR and DNA manipulation.

- Transparent PP resins, with PE filter, sterile
- Up to 10 times less fluid retention than standard tips
- Sample can be completely recovered without cutting into tip
- Lot-certified purity (free from protease, RNase/DNase, human DNA and endotoxin, non pyrogenic)
- Tips and racks are autoclavable to 121 °C for maximum 15 minutes (dry cycle is not recommended)



Tip style	Volume (µl)	Sterile	Length (mm)	Packed	Pk	Cat. No.
Low retention, extended	10	+	38,10	10 racks, 96 each	960	732-1487
Low retention	10	+	31,42	12 racks, 96 each	1.152	732-1486
Low retention	20	+	49,66	10 racks, 96 each	960	732-1488
Low retention	100	+	49,66	10 racks, 96 each	960	732-2385
Low retention	200	+	52,07	10 racks, 96 each	960	732-1489
Low retention	300	+	52,07	10 racks, 96 each	960	732-1490
Low retention	1000	+	88,90	6 racks, 96 each	576	732-1491



## Centrifuge tubes, large volume

IVD

PP, conical with purple HDPE flat cap with integral sealing.

- For standard centrifuge rotors
- Free from RNase and DNase, non pyrogenic
- Sterile and non sterile available
- Tubes fit standard storage racks
- For cushions type 734-0988

Perfect for clarifying large volume solutions or concentrating live cells in tissue culture. Resins are pre-tested, and are free of oleamide and phthalates. These tubes come in a unique balanced package of two tubes. The tubes include attached screw caps with integral elastomeric sealing ring that eliminates leaking.

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

## CO<sub>2</sub> resistant shipping tubes

Protects samples shipped on dry ice.

- Air-Tight, leak-proof caps keep pH stable
- Available in sterile or non sterile formats

CO<sub>2</sub> resistant shipping tubes are the only container closure system engineered to be CO<sub>2</sub> resistant and able to stop costly damage to molecular and cellular solutions when using dry ice. Made of durable, high quality materials and fitted with an air-tight cap, CO<sub>2</sub> resistant tubes form a protective barrier impermeable to CO<sub>2</sub>, keeping the sample pH stable when shipping or storing on dry ice.

IATA 95 kPa certified for shipping

Tubes are packaged in sleeves of ten.

Samples in these tubes should be frozen prior to dry ice exposure.



Capacity (ml)	Length (mm)	Sterile	Pk	Cat. No.
15	118	-	50	525-1001
15	118	+	50	525-0999
50	115	-	50	525-1002
50	115	+	50	525-1000



## Centrifuge tubes, Ultra-High Performance

IVD

PP

- Printed labelling area for quick and convenient sample identification
- Smooth inner walls for easy filling and sample preparation
- Plug-style cap with deep sealing area or flat cap with integral sealing
- Available in 15 or 50 ml sizes

Capacity (ml)	Ø×L (mm)	Packed	Version	Type	Pk	Cat. No.
15	17×118	50/rack	Sterile	Flat cap with integral sealing	50	525-0527
50	29×115	25/rack	Sterile	Flat cap with integral sealing	25	525-0526

## Ultra-high performance centrifuge tubes



Resin, medical grade.

- Tear open film package designed for use with gloves
- Validated secure medical grade seal for purity
- Certified free from endotoxin, RNase, DNase and ATP

VWR 15 and 50 ml sterile centrifuge tubes are packed in sleeves of ten, bringing a new level of convenience and purity in your centrifuge labware. Each pack of 50 tubes is neatly wrapped and compact. Comprised of 5 sections of 10 tubes, each of the sub-packs can be separated without scissors and used anywhere in the lab. Because these sleeves are loaded robotically, each tube is perfectly ordered unlike competing brands. Every subpack is labelled with a lot number and sterility expiration date. Each pack has a tear point at the seam, designed specifically for use with gloves. These sleeves of ten feature a validated secure medical grade seal that is so precise, it can withstand immersion without leakage. These subpacks are more convenient for cleanroom wash-down than competing packaging.



Capacity (ml)	Packed	Type	RCF max. (xg)	Pk	Cat. No.
15	10 tubes/sleeve; 5 sleeves/case	Flat cap with integral sealing	20000	50	525-0790
50	10 tubes/sleeve; 5 sleeves/case	Flat cap with integral sealing	17000	50	525-0791

## SuperClear Ultra-High Performance centrifuge tubes



These popular, conical-bottom centrifuge tubes are designed for high speed centrifugation and are made of non cytotoxic, medical grade resin that allows users to easily see sample volume and colour.

- Prevents breakage and leakage during high speed centrifugation
- Easy to read graduations for accurate measurements
- Patented extra large, smear resistant writing panel
- Versatile packaging options
- Free from RNase, DNase, endotoxin and ATP

SuperClear tubes feature highly visible printed graduations for easy filling and sample preparation. The patented, extra large writing panel is the largest on the market, and transparent for easy viewing of samples through the label. This writing panel is also smear resistant for permanent coding that won't wear off when inserting and removing tubes from a centrifuge rotor.

Caps are available in two styles: Flat and plug. Flat caps are leak resistant and feature a moulded-in elastomeric sealing ring that keeps the sealed tubes completely secure. These caps are ideal for vortexing chemicals and long rocker incubations. Plug caps feature a deep sealing area and offer a secure seal for extended storage.

Caps must be loosely attached to tubes when autoclaving.



Capacity (ml)	ØxL (mm)	Packed	Type	Pk	Cat. No.
<b>Centrifuge tubes, 50 ml, PP, conical bottom, 20 000 xg, with printed graduations and flat cap with integral sealing</b>					
50	29x115	Individually wrapped	Sterile	100	525-0975
50	29x115	50/bag, 10 bags/case	Non sterile	500	525-0155
50	29x115	50/bag, 10 bags/case	Sterile	500	525-0156
50	29x115	25/rack, 20 racks/case	Non sterile	500	525-0157
50	29x115	25/rack, 20 racks/case	Sterile	500	525-0158
50	29x115	Bulk (tubes and caps in separate bags)	Non sterile	500	525-0159
<b>Centrifuge tubes, 50 ml, PP, conical bottom, 20 000 xg, with printed graduations and plug style cap with deep sealing area</b>					
50	29x115	50/bag, 10 bags/case	Non sterile	500	525-0303
50	29x115	50/bag, 10 bags/case	Sterile	500	525-0304
50	29x115	25/rack, 20 racks/case	Non sterile	500	525-0305
50	29x115	25/rack, 20 racks/case	Sterile	500	525-0306
50	29x115	Bulk (tube and caps in separate bags)	Non sterile	500	525-0307
<b>Centrifuge tubes, 50 ml, PP, 9400 xg, free-standing, with printed graduations and flat cap with integral sealing</b>					
50	29x115	50/bag, 10 bags/case	Sterile	500	525-0224
50	29x115	Bulk (tubes and caps in separate bags)	Non sterile	500	525-0160
<b>Centrifuge tubes, 15 ml, PP, conical bottom, 17 000 xg, with printed graduations and flat cap with integral sealing</b>					
15	17x118	Individually wrapped	Sterile	100	525-0974
15	17x118	50/bag, 10 bags/case	Non sterile	500	525-0149
15	17x118	50/bag, 10 bags/case	Sterile	500	525-0150

Capacity (ml)	Ø×L (mm)	Packed	Type	Pk	Cat. No.
<b>Centrifuge tubes, 15 ml, PP, conical bottom, 17 000 xg, with printed graduations and flat cap with integral sealing</b>					
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 and caps in separate bags)	Non sterile	500	525-0154
<b>Centrifuge tubes, 15 ml, PP, conical bottom, 17 000 xg, with printed graduations and plug style cap with deep sealing area</b>					
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 and caps in separate bags)	Non sterile	500	525-0312
<b>Centrifuge tubes, 15 ml or 50 ml, conical bottom, PP, 20 000 xg, Viewpoint™ writing spot and flat cap with integral sealing</b>					
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
<b>Centrifuge tubes, 15 ml, PS, conical bottom, 3000 xg, with moulded graduations and flat cap with integral sealing</b>					
15	17×118	50/bag, 10 bags/case	Sterile	500	525-0148
15	17×118	25/rack, 2 racks/pack, 10 packs/case	Sterile	500	525-0151
15	17×118	Bulk	Non sterile	1.000	525-0147



## Flat caps or plug caps for VWR® centrifuge tubes

Polyethylene, purple.

Closure for use with VWR 50 ml tubes. Non sterile. Not autoclavable.

Description	Pk	Cat. No.
Flat caps	500	525-0923
Plug caps	500	525-0924

## Centrifuge tubes, High Performance



PP, conical, with purple HDPE flat cap with integral sealing or plug style cap with deep sealing area.

- Certified non cytotoxic, nuclease- and pyrogen-free
- Caps available in two styles: Flat cap with integral sealing with a smooth surface for additional labelling options, or plug style cap with deep sealing area 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 xg

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.

In bulk, in bags, or on plastic, autoclavable racks.



Capacity (ml)	Packed	Version	Type	Pk	Cat. No.
<b>Conical bottom</b>					
15	Bulk, tubes and caps in separate bags	Flat cap with integral sealing	Non sterile	500	525-0524
15	Bulk, tubes and caps in separate bags	Plug style cap with deep sealing area	Non sterile	500	525-0525
15	50/bag, 10 bags/case	Flat cap with integral sealing	Sterile	500	525-0400
15	50/bag, 10 bags/case	Plug style cap with deep sealing area	Sterile	500	525-0449
50	Bulk, tubes and caps in separate bags	Flat cap with integral sealing	Non sterile	500	525-0522
50	Bulk, tubes and caps in separate bags	Plug style cap with deep sealing area	Non sterile	500	525-0523
50	50/bag, 10 bags/case	Flat cap with integral sealing	Sterile	500	525-0402
50	50/bag, 10 bags/case	Plug style cap with deep sealing area	Sterile	500	525-0447
<b>Free-standing</b>					
50	Bulk, tubes and caps in separate bags	Plug style cap with deep sealing area	Non sterile	500	525-0416
50	50/bag, 10 bags/case	Plug style cap with deep sealing area	Non sterile	500	525-0417
50	50/bag, 10 bags/case	Plug style cap with deep sealing area	Sterile	500	525-0418



## Centrifuge tubes, Ultra-High Performance, light-sensitive



PP, conical, amber, with purple HDPE plug style cap with deep sealing area.

- Printed labelling area for quick and convenient sample identification
- Available in 15 or 50 ml sizes and offered in a variety of packaging formats
- Certified non cytotoxic, nuclease- and pyrogen-free

Designed to provide protection for light-sensitive samples.

HDPE caps are included.

Capacity (ml)	Packed	Sterile	Pk	Cat. No.
15	50/bag, 10 bags/case	+	500	525-0441
15	25/rack, 2 racks/pack, 10 packs/case	+	500	525-0442
15	Bulk (tubes and caps in separate bags)	-	500	525-0440
50	50/bag, 10 bags/case	+	500	525-0438
50	25/rack, 20 racks/case	+	500	525-0439
50	Bulk (tubes and caps in separate bags)	-	500	525-0437

## Enabling Your Process with Innovative Choice



### VWR Life Science Seradigm

- Fetal bovine serum
- Supply assurance
- Quality assurance measures at source
- Multiple lot testing
- Fully certified supply chain for traceability by the International Serum Industry Association (ISIA)
- Consistent, reliable performance



### Production chemicals

- Biological buffers
- Carbohydrates
- Inorganic salts
- Media and additives
- Proteins and amino acids
- Excipients
- VWR custom manufacturing services
- Strategic sourcing
- cGMP-compliant warehousing



### VWR single-use solutions

- Standard and custom products
- Buffer and media transfer
- Sterile filtration
- Bioreactor feed and harvest
- Bulk drug substance
- Aseptic sampling and filling
- 2-D/3-D bag assemblies and tank liners
- Application-specific connections
- Sampling methods
- Mixing vessels

### Controlled environment

- Reusable and disposable garments
- Gloves and fingercoats
- Wipes and swabs
- Detergents and disinfectants
- Cleaning systems
- Mats and flooring
- Labelling and documentation
- Environmental monitoring
- Equipment for contamination control (biosafety cabinets, tubing, etc)



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## VWR Life Science Seradigm

VWR provides the cell culture community with access to the most reliable supply of exceptional quality Fetal Bovine Serum; VWR Life Science Seradigm. The entire supply chain, from initial collection to final filtration, is traceability certified by the International Serum Industry Association (ISIA).

Our veteran team of cell culture professionals offers extensive knowledge and years of industry experience. For additional information or to request a sample, please contact your local VWR sales office or visit [vwr.com](http://vwr.com).



**REQUEST INFORMATION/SAMPLES**

## Foetal bovine serum (FBS), US origin

VWR® Seradigm ultimate grade FBS offers the ultimate in product quality and viral safety, undergoing additional BVD virus testing using qPCR technology. VWR® Seradigm premium grade FBS is widely used by cell culturists requiring high quality, high performance FBS for a wide variety of applications.

- 100% US origin
- Triple 0,1 µm sterile filtration
- Preservation of native, growth-promoting factors and minimisation of growth-inhibiting factors
- Independently tested by third party laboratories
- Fully traceable

**Ultimate grade FBS** (endotoxin  $\leq 10$  EU/ml; haemoglobin  $\leq 25$  mg/dl) offers the ultimate in product quality and viral safety, undergoing additional BVD virus testing using qPCR technology. Proprietary collection and production techniques provide additional features that elevate product quality, enhance traceability and improve regulatory compliance. This product is used by cell culturists who work with primary cell lines, in production environments and applications where regulatory or traceability concerns are paramount.

**Premium grade FBS** (endotoxin  $\leq 20$  EU/ml; haemoglobin  $\leq 25$  mg/dl) offers quality features, such as complete testing by independent third party laboratories and raw material traceability that elevates it above comparable products. This product is used by cell culturists who require a high quality, high performance product for a wide variety of applications.

International Serum Industry Association (ISIA) certified supply chain for traceability.

Grade	Ultimate	Premium
Endotoxin	$\leq 10$ EU/ml	$\leq 20$ EU/ml
Haemoglobin		$\leq 25$ mg/dl

Description	Pk	Cat. No.
<b>Ultimate grade</b>		
FBS, ultimate grade, US origin	50 ml	89510-198
FBS, ultimate grade, US origin	500 ml	97068-101
FBS, ultimate grade, heat inactivated, US origin	50 ml	89510-200
FBS, ultimate grade, heat inactivated, US origin	500 ml	97068-107
FBS, ultimate grade, gamma irradiated, US origin	500 ml	97068-102
FBS, ultimate grade, gamma irradiated and heat inactivated, US origin	500 ml	97068-104
<b>Premium grade</b>		
FBS, premium grade, US origin	50 ml	89510-194
FBS, premium grade, US origin	500 ml	97068-085
FBS, premium grade, heat inactivated, US origin	50 ml	89510-196
FBS, premium grade, heat inactivated, US origin	500 ml	97068-091
FBS, premium grade, gamma irradiated, US origin	500 ml	97068-086
FBS, premium grade, gamma irradiated, heat inactivated, US origin	500 ml	97068-088



## Foetal bovine serum (FBS), ultra-low IgG, US origin

Ultra-low IgG foetal bovine serum (FBS) purified of immunoglobulin (IgG) using a chromatographic process that delivers significantly reduced levels of IgG ( $\leq 5 \mu\text{g/ml}$ ).

- 100% US origin
- Triple 0,1  $\mu\text{m}$  sterile filtration
- True pooling for lot-to-lot and bottle-to-bottle consistency
- Independently tested by third party laboratories
- Fully traceable

Ultra-low IgG FBS is ideal for cell culture and protein purification applications where naturally occurring levels of IgG are too high.

International Serum Industry Association (ISIA) certified supply chain for traceability.



Endotoxin	$\leq 20 \text{ EU/ml}$
Haemoglobin	$\leq 25 \text{ mg/dl}$

Description	Serum format	Sterility	Pk	Cat. No.
Ultra-low IgG foetal bovine serum (FBS)	Frozen	Sterile filtered	50 ml	10018-828
Ultra-low IgG foetal bovine serum (FBS)	Frozen	Sterile filtered	500 ml	10018-826
Ultra-low IgG foetal bovine serum (FBS), heat inactivated	Frozen	Sterile filtered	50 ml	10018-832
Ultra-low IgG foetal bovine serum (FBS), heat inactivated	Frozen	Sterile filtered	500 ml	10018-830
Ultra-low IgG foetal bovine serum (FBS), gamma irradiated	Frozen	Sterile filtered	500 ml	10836-696
Ultra-low IgG foetal bovine serum (FBS), gamma irradiated and heat inactivated	Frozen	Sterile filtered	500 ml	10836-698

## Serum alternative, FB Essence, US origin

FB Essence is a US origin foetal bovine serum (FBS) alternative that can be used in place of FBS in many cell culture applications. It contains foetal bovine serum, bovine calf serum and equine serum, plus a proprietary blend of supplements including vitamins, minerals and various growth factors. FB Essence is a readily available, cost effective alternative to FBS.

Endotoxin	$\leq 20 \text{ EU/ml}$
Haemoglobin	$\leq 25 \text{ mg/dl}$

Description	Serum format	Sterility	Pk	Cat. No.
FB Essence	Frozen	Sterile filtered	50 ml	10805-184
FB Essence	Frozen	Sterile filtered	500 ml	10803-034
FB Essence, gamma irradiated	Frozen	Sterile filtered	500 ml	10805-180
FB Essence, heat inactivated	Frozen	Sterile filtered	50 ml	10799-384
FB Essence, heat inactivated	Frozen	Sterile filtered	500 ml	10799-390
FB Essence, gamma irradiated, heat inactivated	Frozen	Sterile filtered	500 ml	10805-182





## Bovine calf serum (BCS), iron-supplemented, US origin

Iron-supplemented bovine calf serum, sourced from US origin animals aged up to six months, and raised on a diet consisting mainly of formula.

- 100% US origin
- Independently tested by third party laboratories
- Fully traceable

These source animals have naturally high levels of transferrin. When the serum is supplemented with iron, the iron binds to the unbound transferrin, resulting in a product with three to four times the amount of available iron compared to FBS or equine serum. This product is an excellent, cost effective alternative to FBS and often performs as well as FBS in many established cell lines. In some applications, it even outperforms FBS and equine serum.

International Serum Industry Association (ISIA) certified supply chain for traceability.

Endotoxin	≤20 EU/ml
Haemoglobin	≤30 mg/dl

Description	Serum format	Pk	Cat. No.
Iron-supplemented bovine calf serum (BCS)	Frozen	50 ml	10158-360
Iron-supplemented bovine calf serum (BCS)	Frozen	500 ml	10158-358
Iron-supplemented bovine calf serum (BCS)	Frozen	1 l	10153-134
Iron-supplemented bovine calf serum (BCS), gamma irradiated	Frozen	1 l	10153-136

## Calcium chloride 1 mol/l in aqueous solution for biotechnology, sterile

Description	Pack type	Pk	Cat. No.
Calcium chloride 1 mol/l in aqueous solution for biotechnology, sterile	Plastic bottle	100 ml	E506-100ML
Calcium chloride 1 mol/l in aqueous solution for biotechnology, sterile	Plastic bottle	500 ml	E506-500ML

## Magnesium chloride 1 mol/l (2 N) in aqueous solution for biotechnology, sterile

A sterile reagent for the preparation of competent cells for transformation.

Description	Pack type	Pk	Cat. No.
Magnesium chloride 1 mol/l (2 N) in aqueous solution for biotechnology, sterile	Plastic bottle	100 ml	E525-100ML
Magnesium chloride 1 mol/l (2 N) in aqueous solution for biotechnology, sterile	Plastic bottle	500 ml	E525-500ML

## Sodium chloride 5 mol/l (5 N) in aqueous solution for biotechnology, sterile

Common source of salts for media propagation of many organisms.

Description	Pack type	Pk	Cat. No.
Sodium chloride 5 mol/l (5 N) in aqueous solution for biotechnology, sterile	Plastic bottle	100 ml	E529-100ML
Sodium chloride 5 mol/l (5 N) in aqueous solution for biotechnology, sterile	Plastic bottle	500 ml	E529-500ML

## Buffer, PBS solution (phosphate buffered saline), ultrapure

Dulbecco's formulation without calcium and magnesium.

- No DNase, RNase or proteases detected

137,7 mM sodium chloride, 2,7 mM potassium chloride, 9,55 mM phosphate buffer

pH @ 25 °C 7,1 - 7,7

Description	Pk	Cat. No.
Phosphate buffered saline (PBS), 1X solution, Dulbecco's formulation, sterile	20 l	K812-20L
Phosphate buffered saline (PBS), 1X solution, Dulbecco's formulation, sterile	500 ml	K812-500ML

## Phosphate buffered saline (PBS) 1X, for biotechnology



137 mM sodium chloride, 2,7 mM potassium chloride, 12 mM phosphate buffer

- Sterile
- pH 7,4

Description	Pk	Cat. No.
<b>Phosphate buffered saline (PBS) 1X, for biotechnology</b>		
Phosphate buffered saline (PBS), 1X solution, sterile, pH 7,4	100 ml	E504-100ML
Phosphate buffered saline (PBS), 1X solution, sterile, pH 7,4	500 ml	E504-500ML
<b>Buffer, PBS solution (phosphate buffered saline), ultrapure</b>		
Phosphate buffered saline (PBS), 1X solution, Dulbecco's formulation, sterile	500 ml	K812-500ML

## PBS and TBS Wash buffers

Wash buffers ideal for use in applications such as Western blotting and ELISA. Prevent high background by effectively removing unbound reagents.

Description	Pk	Cat. No.
PBS powder, sufficient to prepare 10 litres of 1X buffer	10 l	0780-10L
PBS powder, each pack prepares 1 litre of 10X concentrate	2	0780-2PK
PBS powder, sufficient to prepare 50 litres of 1X buffer	50 l	0780-50L
TBS, 20X Ready-Pack™, each pack prepares 1 litre of 20X concentrate	2	0788-2PK
PBS, 20X liquid concentrate, prepares 20 litres of 1X buffer	1 l	E703-1L
PBS buffer solution 20X concentrate (phosphate buffered saline) ultra pure grade	500 ml	E703-500ML
TBS, 20X liquid concentrate, prepares 80 litres of 1X buffer	4 l	J640-4L

## Buffer, HEPES solution pH 7,3 (1 mol/l)

Description	Pk	Cat. No.
HEPES buffer solution pH 7,3 (1 mol/l)	100 ml	J848-100ML
HEPES buffer solution pH 7,3 (1 mol/l)	500 ml	J848-500ML

## HEPES(2-[4-(2-hydroxyethyl)-1-piperazinyl]ethanesulphonic acid) ≥99%, high purity

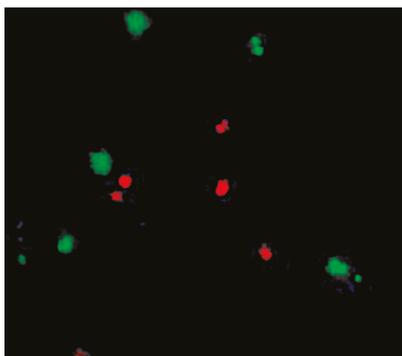
HEPES is a general purpose buffer available for biological research.

Has been used to advantage in tissue culture, oxidative phosphorylation, protein synthesis with cell-free bacterial systems, photophosphorylation and CO<sub>2</sub> fixation. Suitable buffer for TEM studies (Transmission Electron Microscopy) as it does not affect metal substrates. Recommended buffer for glutamate binding assays, preventing binding to non receptor materials.

Description	Pack type	Pk	Cat. No.
HEPES(2-[4-(2-hydroxyethyl)-1-piperazinyl]ethanesulphonic acid) ≥99%, high purity	Plastic bottle for solids	1 kg	0511-1KG
HEPES(2-[4-(2-hydroxyethyl)-1-piperazinyl]ethanesulphonic acid) ≥99%, high purity	Plastic bottle for solids	50 g	0511-50G
HEPES(2-[4-(2-hydroxyethyl)-1-piperazinyl]ethanesulphonic acid) ≥99%, high purity	Plastic bottle for solids	250 g	0511-250G

## MOPS (γ-(N-Morpholino)propanesulphonic acid) ≥99%, ultrapure

Description	Pack type	Pk	Cat. No.
MOPS (γ-(N-Morpholino)propanesulphonic acid) ≥99%, ultrapure	Glass bottle	100 g	0670-100G
MOPS (γ-(N-Morpholino)propanesulphonic acid) ≥99%, ultrapure	Glass bottle	250 g	0670-250G
MOPS (γ-(N-Morpholino)propanesulphonic acid) ≥99%, ultrapure	Glass bottle	500 g	0670-500G



**Quick-View™ staining of hybridoma cells.** Cell concentration was adjusted to  $1 \times 10^6$  cells/ml and diluted 1:1 with Quick-View™. A 20  $\mu$ l aliquot of the cell suspension was loaded onto a hemacytometer and imaged through fluorescence microscopy.

## Fluorescent viability stain, Quick-View

Quick-View fluorescent viability stain is a ready to use staining reagent for easy discrimination between live and dead mammalian cells. Supplied in an easy to use dropper bottle, the single-staining solution is a mixture of Acridine Orange for live cell identification and ethidium bromide for identification of dead cells. The Acridine Orange-stained live cells appear green and the ethidium bromide-stained dead cells appear red when visualised by fluorescence microscopy.

- Pre-mixed, ready to use dye solution
- Dropper bottle format minimises contact with hazardous reagents
- Cells can be visualised immediately upon dye addition
- Stains both suspended and adherent cells

Pk	Cat. No.
5 ml	N600-5ML

## Trypan Blue 4 g/l in aqueous solution Cell Culture Reagent

A dye used in cell culture applications to determine cell viability.

Description	Pack type	Pk	Cat. No.
Trypan Blue 4 g/l in aqueous solution Cell Culture Reagent	Plastic bottle	100 ml	K940-100ML

## 3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide $\geq 98\%$ , ultrapure

MTT, a yellow tetrazole dye, can be reduced to a water-insoluble purple formazan compound by mitochondrial reductase enzymes. Since reduction only occurs in living cells, the quantitation of formazan can be equated to the number of viable cells in the population.

- Sensitive colorimetric substitute for radioisotopes in cell proliferation and cytotoxicity studies
- Applications include cell viability assays, dose response curves and cytotoxicity assays

Description	Pack type	Pk	Cat. No.
3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide $\geq 98\%$ , ultrapure	Glass bottle	1 g	0793-1G
3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide $\geq 98\%$ , ultrapure	Glass bottle	5 g	0793-5G
3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide $\geq 98\%$ , ultrapure	Glass bottle	500 mg	0793-500MG

## Amphotericin B for tissue culture

Alters membrane permeability. Working concentration: 2,5  $\mu$ g/ml

Description	Pack type	Pk	Cat. No.
Amphotericin B for tissue culture	Vial	20 ml	K721-20ML

## Ampicillin sodium salt, ultrapure

Interferes with formation of bacterial cell wall. Working concentration: 50  $\mu$ g/ml.

Description	Pack type	Pk	Cat. No.
Ampicillin sodium salt, ultrapure	Plastic bottle for solids	25 g	0339-EU-25G
Ampicillin sodium salt, ultrapure	Plastic bottle for solids	100 g	0339-EU-100G

## Carbenicillin disodium salt, ultrapure

Synthetic derivative of penicillin.

Description	Pack type	Pk	Cat. No.
Carbenicillin disodium salt, ultrapure	Glass bottle	1 g	J358-1G
Carbenicillin disodium salt, ultrapure	Glass bottle	250 mg	J358-250MG

## Chloramphenicol 97,0-103,0%, ultrapure

Inhibits protein synthesis at peptidyltransferase. Recommended working concentration: 20 µg/ml.

Description	Pack type	Pk	Cat. No.
Chloramphenicol 97,0 - 103,0%, ultrapure	Plastic bottle for solids	100 g	0230-EU-100G

## Cycloheximide, ultrapure

Inhibitor of protein synthesis in eucaryotic organisms. Widely used to determine protein half-life and as a selection agent for yeast and fungi. Working concentration: 100 - 1000 µg/ml.

Description	Pack type	Pk	Cat. No.
Cycloheximide, ultrapure	Glass bottle	1 g	94271-1G
Cycloheximide, ultrapure	Glass bottle	5 g	94271-5G
Cycloheximide, ultrapure	Glass bottle	25 g	94271-25G
Cycloheximide, ultrapure	Glass bottle	100 mg	94271-100MG

## Cycloheximide ≥90,0%

Inhibits DNA and protein synthesis.

Description	Pack type	Pk	Cat. No.
Cycloheximide ≥90,0%	Glass bottle	1 g	441892A
Cycloheximide ≥90,0%	Glass bottle	10 g	441894C

## G418 antibiotic solution (Geneticin)

Used as a selection agent for both prokaryotic- and eukaryotic-transfected cells. An aminoglycoside similar to gentamycin, G418 is toxic to bacterial, yeast, higher plant and mammalian cells in addition to protozoans and helminths.

Transformants survive in G418 supplemented media by expression of an aminoglycoside-modifying enzyme.

Recommended working concentration: 400 µg/ml

Description	Pk	Cat. No.
G418 antibiotic solution	20 ml	J847-20ML

## G418 disulphate, ultrapure

Description	Pack type	Pk	Cat. No.
G418 disulphate, ultrapure	Glass bottle	1 g	E859-1G
G418 disulphate, ultrapure	Glass bottle	5 g	E859-5G
G418 disulphate, ultrapure	Glass bottle	100 mg	E859-100MG

## Gentamycin solution, 50 mg/ml

15 µg/ml working concentration, binds to the 30S subunit of bacterial ribosome.

- pH (25 °C) 3,5 to 5,5
- Specific rotation (degrees) +107 to +121
- Filtered through a 0,22 µm filter

Store between 2 and 8 °C.

Description	Pk	Cat. No.
Gentamycin solution, 50 mg/ml	20 ml	E737-20ML

## Gentamicin sulphate USP for tissue culture

Antibiotic that primarily targets both gram positive and gram negative bacteria by binding to the 30S subunit of bacterial ribosome. Recommended working concentration: 15 µg/ml.

Description	Pack type	Pk	Cat. No.
Gentamicin sulphate USP for tissue culture	Glass bottle	5 g	0304-5G
Gentamicin sulphate USP for tissue culture	Glass bottle	10 g	0304-10G

## Hygromycin B, ultrapure

An aminoglycoside antibiotic that inhibits protein synthesis in bacteria, fungi and higher eucaryotic cells. Widely used as a selection agent for procaryotic and eucaryotic cells carrying the hygromycin resistance gene.

Activity 1000 U/mg

Purity (HPLC) 80%

Recommended working concentration 100 µg/ml

Description	Pk	Cat. No.
Hygromycin B, ultrapure grade	100 mg	J607-100MG

## Hygromycin B solution, 50 mg/ml, ultrapure

An aminoglycoside antibiotic that inhibits protein synthesis in bacteria, fungi and higher eucaryotic cells. Inhibits chain elongation. Widely used as a selection agent for procaryotic and eucaryotic cells carrying the hygromycin resistance gene.

- Purity (by HPLC): 80%
- Recommended working concentration 100 µg/ml.

Store between 2 and 8 °C.

Description	Pk	Cat. No.
Hygromycin B solution, ultrapure	20 ml	K547-20ML

## Kanamycin sulphate solution, 25 mg/ml, ultrapure

Kanamycin is an aminoglycoside antibiotic that inhibits protein synthesis in gram-negative and gram-positive bacteria and in mycoplasma. Recommended working concentration: 30 µg/ml.

Pk	Cat. No.
20 ml	E713-20ML

## Kanamycin sulphate, ultrapure

Binds to the 70S subunit of bacterial ribosome. Recommended working concentration: 30 µg/ml.

Description	Pack type	Pk	Cat. No.
Kanamycin sulphate, ultrapure	Plastic bottle for solids	10 g	0408-EU-10G
Kanamycin sulphate, ultrapure		10 kg	0408-EU-10KG

## Nalidixic acid ≥98%, high purity

A bactericidal agent that inhibits DNA gyrase activity. Recommended working concentration: 15 µg/ml.

Description	Pack type	Pk	Cat. No.
Nalidixic acid ≥98%, high purity	Plastic bottle for solids	50 g	0677-50G
Nalidixic acid ≥98%, high purity	Plastic bottle for solids	250 g	0677-250G

## Neomycin sulphate, ultrapure

Antibiotic. Causes miscoding during protein synthesis. Recommended working concentration: 50 µg/ml.

Description	Pack type	Pk	Cat. No.
Neomycin sulphate, ultrapure	Plastic bottle for solids	25 g	0558-EU-25G

## Penicillin-Streptomycin, $\gamma$ -irradiated, tissue culture grade

Aseptic, gamma-irradiated, tissue culture tested. 10 000 U/ml penicillin. 10 mg/ml streptomycin solution when reconstituted in 20 ml of sterile water.

Description	Pk	Cat. No.
Penicillin-Streptomycin, $\gamma$ -irradiated, tissue culture grade	20 ml	E490-20ML

## Penicillin-Streptomycin 100X, tissue culture grade

Penicillin-Streptomycin 100X sterile solution for tissue culture applications. Inhibits cell wall synthesis and protein synthesis in gram-positive and gram-negative bacteria.

- 10 000 U/ml Penicillin, 10 mg/ml Streptomycin
- Endotoxin-tested, liquid, stable, antibiotic solution
- Targets gram-positive and gram-negative bacteria

Description	Pk	Cat. No.
Penicillin-Streptomycin, 100X solution, working concentration 10 ml/l, tissue culture grade	100 ml	K952-100ML

## Penicillin-Streptomycin-Amphotericin B

Aseptic, gamma-irradiated, tested for tissue culture. 10 000 U/ml penicillin, 10 mg/ml streptomycin and 25  $\mu$ g/ml amphotericin B when reconstituted in 20 ml of sterile water.

Description	Pk	Cat. No.
Penicillin-Streptomycin-Amphotericin B	20 ml	E485-20ML

## Puromycin dihydrochloride $\geq$ 98%, ultrapure

Inhibits protein synthesis. Working concentration: 50  $\mu$ g/ml

Description	Pack type	Pk	Cat. No.
Puromycin dihydrochloride $\geq$ 98%, ultrapure	Glass bottle	25 mg	J593-25MG

## Streptomycin sulphate, ultrapure

30  $\mu$ g/ml, binds to the 30S subunit of bacterial ribosome.

Description	Pack type	Pk	Cat. No.
Streptomycin sulphate, ultrapure	Plastic bottle for solids	50 g	0382-EU-50G
Streptomycin sulphate, ultrapure	Plastic bottle for solids	100 g	0382-EU-100G

## Streptozocin, ultrapure

Selection agent, mutagenic agent, and diabetes inducer.

Description	Pack type	Pk	Cat. No.
Streptozocin, ultrapure	Glass bottle	1 g	N407-1G

## Tetracycline hydrochloride, ultrapure

Blocks the binding of tRNA to the 30S subunit. Recommended working concentration: 15  $\mu$ g/ml.

Description	Pack type	Pk	Cat. No.
Tetracycline hydrochloride, ultrapure	Glass bottle	25 g	0422-EU-25G

## L-Alanine $\geq 99\%$ , high purity

Non animal origin. White crystalline powder.

Non polar. Aliphatic amino acid. Non essential amino acid. Common component of culture media.

Involved in regulation of a variety of metabolic functions.

Description	Pack type	Pk	Cat. No.
L-Alanine $\geq 99\%$ , high purity	Plastic bottle for solids	100 g	0106-100G
L-Alanine $\geq 99\%$ , high purity	Plastic bottle for solids	500 g	0106-500G

## L(+)-Asparagine, anhydrous $\geq 99,0\%$ , high purity

Animal-free amino acid. Polar. Amide.

Description	Pack type	Pk	Cat. No.
L(+)-Asparagine, anhydrous $\geq 99,0\%$ , high purity	Plastic bottle for solids	100 g	94341-100G
L(+)-Asparagine, anhydrous $\geq 99,0\%$ , high purity	Plastic bottle for solids	500 g	94341-500G

## L(+)-Aspartic acid $\geq 98\%$ , high purity

Animal-free amino acid. Polar. Acidic.

Description	Pack type	Pk	Cat. No.
L(+)-Aspartic acid $\geq 98\%$ , high purity	Plastic bottle for solids	1 kg	0192-1KG
L(+)-Aspartic acid $\geq 98\%$ , high purity	Plastic bottle for solids	500 g	0192-500G

## L(+)-Glutamine, TECHNICAL

Description	Pack type	Pk	Cat. No.
L(+)-Glutamine, TECHNICAL	Plastic bottle for solids	100 g	24378.187

## L(+)-Glutamic acid 98,5-100,5% Ph. Eur.

Description	Pack type	Pk	Cat. No.
L(+)-Glutamic acid 98,5-100,5% Ph. Eur.	Plastic bottle for solids	250 g	20350.232

## L(+)-Glutamine $\geq 98,5\%$ , high purity

Description	Pack type	Pk	Cat. No.
L(+)-Glutamine $\geq 98,5\%$ , high purity	Plastic bottle for solids	1 kg	0374-1KG
L(+)-Glutamine $\geq 98,5\%$ , high purity	Plastic bottle for solids	500 g	0374-500G

## L(+)-Glutamic acid 98,5-101,5%, high purity

Animal-free amino acid. Polar. Acidic.

Description	Pack type	Pk	Cat. No.
L(+)-Glutamic acid 98,5-101,5%, high purity	Plastic bottle for solids	1 kg	0421-1KG

## Glycine $\geq 99,5\%$ , Electran for molecular biology

Description	Pack type	Pk	Cat. No.
Glycine $\geq 99,5\%$ , Electran for molecular biology	Plastic bottle	1 kg	444495D
Glycine $\geq 99,5\%$ , Electran for molecular biology	Plastic bottle	100 g	444492A

## Glycine $\geq 99\%$ for biotechnology

Description	Pack type	Pk	Cat. No.
Glycine $\geq 99\%$ for biotechnology	Plastic bottle for solids	1 kg	0167-1KG
Glycine $\geq 99\%$ for biotechnology	Bucket (Plastic)	5 kg	0167-5KG
Glycine $\geq 99\%$ for biotechnology	Bucket (Plastic)	10 kg	0167-10KG
Glycine $\geq 99\%$ for biotechnology	Bucket (Plastic)	12 kg	0167-12KG
Glycine $\geq 99\%$ for biotechnology	Plastic drum	50 kg	0167-50KG

**L(+)-Histidine monohydrochloride monohydrate 98,5-101,5% FCC**

Animal-free amino acid. Polar. Basic.

Description	Pack type	Pk	Cat. No.
L(+)-Histidine monohydrochloride monohydrate 98,5-101,5% FCC	Plastic bottle for solids	25 g	E806-25G
L(+)-Histidine monohydrochloride monohydrate 98,5-101,5% FCC	Plastic bottle for solids	100 g	E806-100G
L(+)-Histidine monohydrochloride monohydrate 98,5-101,5% FCC	Plastic bottle	500 g	E806-500G

**D(-)-Fructose ≥99,0%, AnalaR® NORMAPUR® analytical reagent**

Description	Pack type	Pk	Cat. No.
D(-)-Fructose ≥99,0%, AnalaR® NORMAPUR® analytical reagent	Plastic bottle for solids	500 g	103674Y

**D(-)-Fructose ≥99%, high purity**

Description	Pack type	Pk	Cat. No.
D(-)-Fructose ≥99%, high purity	Plastic bottle	1 kg	0226-1KG
D(-)-Fructose ≥99%, high purity	Plastic bottle	2,5 kg	0226-2.5KG
D(-)-Fructose ≥99%, high purity	Bucket (Plastic)	5 kg	0226-5KG
D(-)-Fructose ≥99%, high purity	Bucket (Plastic)	12 kg	0226-12KG

**D-(+)-Galactose ≥99%, high purity**

Description	Pack type	Pk	Cat. No.
D-(+)-Galactose ≥99%, high purity	Plastic bottle for solids	100 g	0637-100G
D-(+)-Galactose ≥99%, high purity	Plastic bottle for solids	250 g	0637-250G
D-(+)-Galactose ≥99%, high purity	Plastic bottle for solids	500 g	0637-500G

**D-(+)-Galactose, GPR RECTAPUR®**

Description	Pack type	Pk	Cat. No.
D-(+)-Galactose, GPR RECTAPUR®	Plastic bottle for solids	1 kg	24333.296
D-(+)-Galactose, GPR RECTAPUR®	Plastic bottle for solids	100 g	24333.183

**D-(+)-Glucose ≥99,5% for biotechnology**

Sugar used as an energy source in specialised media.

Description	Pack type	Pk	Cat. No.
D-(+)-Glucose ≥99,5% for biotechnology	Plastic bottle for solids	1 kg	0188-1KG
D-(+)-Glucose ≥99,5% for biotechnology	Plastic bottle for solids	2,5 kg	0188-2.5KG
D-(+)-Glucose ≥99,5% for biotechnology	Bucket (plastic)	5 kg	0188-5KG
D-(+)-Glucose ≥99,5% for biotechnology	Bucket (plastic)	12 kg	0188-12KG
D-(+)-Glucose ≥99,5% for biotechnology	Plastic drum	50 kg	0188-50KG
D-(+)-Glucose ≥99,5% for biotechnology	Plastic bottle for solids	500 g	0188-500G

**D-(+)-Glucose, anhydrous, GPR RECTAPUR®**

Description	Pack type	Pk	Cat. No.
D-(+)-Glucose, anhydrous, GPR RECTAPUR®	Plastic bottle for solids	1 kg	24379.294
D-(+)-Glucose, anhydrous, GPR RECTAPUR®	Bucket (plastic)	5 kg	24379.363
D-(+)-Glucose, anhydrous, GPR RECTAPUR®	Bucket (plastic)	25 kg	24379.465

**D-(+)-Glucose 20% in aqueous solution for biotechnology**

Description	Pack type	Pk	Cat. No.
D-(+)-Glucose 20% in aqueous solution for biotechnology	Plastic bottle	100 ml	E545-100ML

**D-(+)-Maltose monohydrate ≥85%, Reagent Grade**

Common media additive, particularly for the cultivation of lambda phage.

Description	Pack type	Pk	Cat. No.
D-(+)-Maltose monohydrate ≥85%, Reagent Grade	Plastic bottle for solids	1 kg	1B1184-1KG
D-(+)-Maltose monohydrate ≥85%, Reagent Grade	Plastic bottle for solids	100 g	1B1184-100G
D-(+)-Maltose monohydrate ≥85%, Reagent Grade	Plastic bottle for solids	500 g	1B1184-500G

**D-(+)-Maltose monohydrate, GPR RECTAPUR®**

Description	Pack type	Pk	Cat. No.
D-(+)-Maltose monohydrate, GPR RECTAPUR®	Plastic bottle for solids	1 kg	25188.291
D-(+)-Maltose monohydrate, GPR RECTAPUR®	Bucket (plastic)	5 kg	25188.360
D-(+)-Maltose monohydrate, GPR RECTAPUR®	Plastic bottle for solids	100 g	25188.187

## Ultra-low temperature chest freezers, -86 °C

These chest freezers have been designed for sample protection and ease of use.

- Convenient information centre control and monitoring system
- Polystyrene interior sublids reduce cold air loss and improve temperature recovery after door openings
- Insulation: High density HFC-blown PU foam (127 mm)
- 2" locking castors for easy to roll installation
- Refrigerant type: R 404-A
- RS485 interface
- Optional temperature chart recorder (7 day) and optional data logger can be connected



471-1139

**Temperature range:** -50 to -86 °C

Regulatory certifications: UL, cUL, CE

Model	471-1137	471-1138	471-1139
Capacity (l)	85	359	566
Temperature (°C)	-50...-86		
Display	Digital		
Defrost	Manual		
Alarm	Audible and visual		
Shelves/drawers	N/A		
Doors	1		
Door lock	Yes		
Material	Exterior: Cold-rolled steel, powder coated Interior: Stainless steel		
Specifications	Storage capacity for 2" boxes: 63 Storage capacity for 3" boxes: 9 Storage capacity for vials: 45	Storage capacity for 2" boxes: 252 Storage capacity for 3" boxes: 21 Storage capacity for vials: 168	Storage capacity for 2" boxes: 396 Storage capacity for 3" boxes: 33 Storage capacity for vials: 264
Access ports	1		
WxDxH int. (mm)	470x470x419	1077x470x706	1690x470x710
WxDxH ext. (mm)	724x760x1110	1829x829x1028	2438x829x1031
Weight (kg)	159	338	386
Electrical	230 V, 50 Hz, 1 phase, 3450 W		
Noise level	55 dB(A)	57 dB(A)	

Type	Pk	Cat. No.
ULT chest freezer, 85 l	1	471-1137
ULT chest freezer, 359 l	1	471-1138
ULT chest freezer, 566 l	1	471-1139



## Ultra-low temperature freezers, upright models, -86 °C

These freezers are designed and constructed for long-term performance and are ideal for applications where temperature control is critical. Modern design includes an easy to grasp handle for one-handed operation. Dual wheel, locking swivel castors allow mobility as well as secure positioning. Industrial-grade cabinets are constructed of high quality, heavy gauge, cold-rolled steel. The powder-coated finish is rust- and chip-resistant. Upright freezers feature a triple-point silicone door gasket, three stainless steel shelves that are fully adjustable (bottom of unit acts as fourth shelf), lockable castors, and a vacuum-relief port for easy re-entry following door closings.

- Dual compressors
- Microprocessor temperature control system
- Advanced monitor/alarm system
- Automatic voltage compensator
- Cascade refrigeration system
- Non CFC, non HFCF, non flammable refrigerants
- The microprocessor temperature control system maintains constant freezer temperature, along with a sophisticated microprocessor monitor/alarm system to keep the operator informed of over-/under-temperature conditions, power failures, low battery and door ajar scenarios. LED indicates actual chamber temperature
- Air-cooled, hermetically-sealed dual compressors work in unison and cycle on demand of the microprocessor temperature controller
- To reduce cold air loss, units feature four inner compartment doors
- Acoustic mufflers and sound-absorbing foam in the freezer base reduce the noise level in the lab

**Temperature:** -50 to -86 °C



Capacity (l)	651
Temperature (°C)	-50...-86
Alarm	Audible and visual
Shelves/drawers	2
WxDxH ext. (mm)	1040x940x1980
Weight (kg)	390

Type	Pk	Cat. No.
<b>ULT upright freezer rack packages and chart recorder</b>		
Ultra-low temperature upright freezer rack package with 2 shelves of sliding drawer racks and boxes plus chart recorder (651 l)	1	471-1202



## Sliding shelf racks for cryoboxes, Comfort

### Tenak

Stainless steel

- Racks for five different box heights are available
- Can be used with all freezer brands
- Fits all standard cryoboxes

For upright freezers. These racks ensure a more ergonomical operating process. In the sliding shelf rack the cryoboxes are placed in drawers. This increases flexibility. Measure the inside height and depth of your freezer in order to choose the right rack.

Delivered with or without cryoboxes.



Compartments	WxDxH ext. (mm)	Pk	Cat. No.
<b>Racks for cryoboxes height 50 mm</b>			
15 (5x3)	140x421x285	1	479-0760
20 (5x4)	140x558x285	1	479-0763
25 (5x5)	140x640x278	1	479-1839

## Cryogenic vials



Designed for the storage of biological material, human or animal cells, at temperatures as low as  $-196\text{ }^{\circ}\text{C}$  (but should be used only in the gas phase of liquid nitrogen).

- Graduations and white marking area
- Sterilised by gamma radiation
- Compatible with most storage systems

Closures and tubes are made of PP, and both have the same coefficient of expansion, further enhancing the leakproof qualities of these vials at various temperatures. Round bottom vials can be centrifuged up to 17 000 xg.

Please note that 479-1237 has a PE screw cap and there are no cap inserts available for this model.

Certified RNase-, DNase-, pyrogen- and DNA-free.

Packed in unique tamper-proof, resealable, safety-lock bags of 100.

For research use only



Capacity (ml)	Base	Ø ext.xH (mm)	Pk	Cat. No.
<b>With external thread and lip seal</b>				
1,2	Free-standing	12,5x41	1000	479-1219
2,0	Round bottom	12,5x46	1000	479-1235
2,0	Free-standing	12,5x48	1000	479-1220
3,0	Free-standing	12,5x71	1000	479-1775
4,0	Free-standing	12,5x77	1000	479-1776
5,0	Round bottom	12,5x91	1000	479-1777
5,0	Free-standing	12,5x91	1000	479-1236
<b>With internal thread and silicone O-ring</b>				
1,2	Free-standing	12,5x41	1000	479-1261
2,0	Round bottom	12,5x48	1000	479-1263
2,0	Free-standing	12,5x49	1000	479-1262
4,0	Round bottom	12,5x70	1000	479-1265
4,0	Free-standing	12,5x72	1000	479-1264
5,0	Round bottom	12,5x91	1000	479-1266
5,0	Free-standing	12,5x91	1000	479-1773
<b>With external thread, lip and silicone washer seal</b>				
1,2	Free-standing	12,5x43	1000	479-1207
2,0	Round bottom	12,5x48	1000	479-1209
2,0	Free-standing	12,5x49	1000	479-1208
3,0	Free-standing	12,5x72	1000	479-1210
4,0	Free-standing	12,5x76	1000	479-1217
5,0	Round bottom	12,5x91	1000	479-1774
5,0	Free-standing	12,5x91	1000	479-1218
<b>With internal thread and silicone washer seal</b>				
1,2	Free-standing	12,5x41	1000	479-1254
2,0	Round bottom	12,5x48	1000	479-1258
2,0	Free-standing	12,5x49	1000	479-1256
4,0	Round bottom	12,5x70	1000	479-1255
4,0	Free-standing	12,5x72	1000	479-1260
5,0	Round bottom	12,5x90	1000	479-1259
5,0	Free-standing	12,5x92	1000	479-1257
<b>With external thread and silicone washer seal</b>				
1,2	Free-standing	12,5x43	1000	479-1238
2,0	Round bottom	12,5x48	1000	479-1240
2,0	Free-standing	12,5x49	1000	479-1239
3,0	Free-standing	12,5x72	1000	479-1251
4,0	Free-standing	12,5x76	1000	479-1252
5,0	Round bottom	12,5x91	1000	479-1778
5,0	Free-standing	12,5x91	1000	479-1253
10,0	Free-standing	17,0x84	500	479-1237

Colour	Pk	Cat. No.
<b>Coloured cap inserts for cryogenic vials</b>		
Amber	500	479-0809
Blue	500	479-0814
Green	500	479-0812
Grey	500	479-0808
Purple	500	479-0807
Orange	500	479-0806
Pink	500	479-0804
Red	500	479-0813

Colour	Pk	Cat. No.
<b>Coloured cap inserts for cryogenic vials</b>		
Violet	500	479-0805
White	500	479-0815
Yellow	500	479-0811
Assorted	500	479-0810



## Rack for cryogenic vials



PC.

- Numeric hole index
- Moulded tabs in the bottom of each well to secure vials in place for easier opening and closing
- Ribbed grips make handling with gloves easier

Withstands both cryogenic freezing and autoclaving.

For (ml)	No. of holes	WxDxH (mm)	Colour	Pk	Cat. No.
(Ø 12,5 mm) 1 - 5	50 (5x10)	199x104x24,5	Blue	1	211-0139

## Cryovial workstation rack



Constructed from sturdy polypropylene, the VWR® cryovial workstation rack is compact and stackable, with strong handles for safe and easy transport.

- Holds up to 50 cryogenic vials
- Autoclavable
- Anti-skid rubber feet for benchtop stability
- Alphanumeric indexing for easy vial identification



For (ml)	No. of holes	WxDxH (mm)	Colour	Pk	Cat. No.
1 - 5	50 (5x10)	205x103x26	Violet	4	479-1869



479-1392

## Cryoboxes with dividers

Boxes, made of cardboard, white. For storage of cryovials at low temperatures.

- Resistant to temperatures down to -140 °C
- Standard waterproof coating

WxDxH ext. (mm)	Compartments	Pk	Cat. No.
133x133x32	81 (9x9)	1	479-1437
133x133x50	81 (9x9)	1	479-1438
133x133x75	81 (9x9)	1	479-1440
133x133x100	81 (9x9)	1	479-1441
133x133x130	81 (9x9)	1	479-1442
133x133x50	100 (10x10)	1	479-1439

## Cryoboxes, cardboard, 133x133 mm

Cardboard, coated.

- Waterproof coating
- Various combinations possible with different dividers (to be ordered separately)
- Available in different heights and colours

For storage of cryovials at low temperatures.

Freezable to -140 °C





WxDxH ext. (mm)	Compartments	Colour	For tubes	Height (mm)	Pk	Cat. No.
<b>Cryoboxes 32 mm high</b>						
133x133x32	-	White	-	32	1	479-1407
133x133x32	-	Blue	-	32	1	479-1408
133x133x32	-	Red	-	32	1	479-1409
133x133x32	-	Green	-	32	1	479-1410
133x133x32	-	Yellow	-	32	1	479-1411
<b>Cryoboxes 50 mm high</b>						
133x133x50	-	White	-	50	1	479-1417
133x133x50	-	Blue	-	50	1	479-1418
133x133x50	-	Red	-	50	1	479-1419
133x133x50	-	Green	-	50	1	479-1420
133x133x50	-	Yellow	-	50	1	479-1421
<b>Cryoboxes 75 mm high</b>						
133x133x75	-	White	-	75	1	479-1427
133x133x75	-	Blue	-	75	1	479-1428
133x133x75	-	Red	-	75	1	479-1429
133x133x75	-	Green	-	75	1	479-1430
133x133x75	-	Yellow	-	75	1	479-1431
<b>Cryoboxes 100 mm high</b>						
133x133x100	-	White	-	100	1	479-1387
133x133x100	-	Blue	-	100	1	479-1388
133x133x100	-	Red	-	100	1	479-1389
133x133x100	-	Green	-	100	1	479-1390
133x133x100	-	Yellow	-	100	1	479-1391
<b>Cryoboxes 130 mm high</b>						
133x133x130	-	White	-	130	1	479-1397
133x133x130	-	Blue	-	130	1	479-1398
133x133x130	-	Red	-	130	1	479-1399
133x133x130	-	Green	-	130	1	479-1400
133x133x130	-	Yellow	-	130	1	479-1401
<b>Grid dividers for cryoboxes 32 mm height</b>						
-	16x16	—	Up to 7,4 mm Ø	25	1	479-1490
-	14x14	—	Up to 8,5 mm Ø	25	1	479-1489
-	13x13	—	Up to 9,2 mm Ø	25	1	479-1488
-	12x12	—	Up to 10,0 mm Ø	25	1	479-1487
-	10x10	—	Up to 12,0 mm Ø	25	1	479-1486
-	9x9	—	Up to 13,3 mm Ø	25	1	479-1485
-	8x8	—	Up to 15,1 mm Ø	25	1	479-1484
-	7x7	—	Up to 17,3 mm Ø	25	1	479-1483
<b>Grid dividers for cryoboxes 50 mm height</b>						
-	16x16	—	Up to 7,4 mm Ø	30	1	479-1470
-	14x14	—	Up to 8,5 mm Ø	30	1	479-1469
-	13x13	—	Up to 9,2 mm Ø	30	1	479-1468
-	12x12	—	Up to 10,0 mm Ø	30	1	479-1467
-	10x10	—	Up to 13,3 mm Ø	30	1	479-1466
-	9x9	—	Up to 13,3 mm Ø	30	1	479-1465
-	8x8	—	Up to 15,1 mm Ø	30	1	479-1464
-	7x7	—	Up to 17,3 mm Ø	30	1	479-1463
-	6x6	—	Up to 20,3 mm Ø	30	1	479-1462
-	5x5	—	Up to 24,3 mm Ø	30	1	479-1461
-	4x4	—	Up to 30,5 mm Ø	30	1	479-1460
-	3x3	—	Up to 41,0 mm Ø	30	1	479-1459
<b>Grid dividers for cryoboxes 75 mm height</b>						
-	12x12	—	Up to 10,0 mm Ø	40	1	479-1626
-	10x10	—	Up to 12,0 mm Ø	40	1	479-1625
-	9x9	—	Up to 13,3 mm Ø	40	1	479-1624
-	8x8	—	Up to 15,1 mm Ø	40	1	479-1623
-	7x7	—	Up to 17,3 mm Ø	40	1	479-1622
-	6x6	—	Up to 20,3 mm Ø	40	1	479-1621
-	5x5	—	Up to 24,3 mm Ø	40	1	479-1620
-	4x4	—	Up to 30,5 mm Ø	40	1	479-1619
-	3x3	—	Up to 41,0 mm Ø	40	1	479-1499
<b>Grid dividers for cryoboxes 100/130 mm height</b>						
-	10x10	—	Up to 12,0 mm Ø	65	1	479-1450
-	9x9	—	Up to 13,3 mm Ø	65	1	479-1449
-	8x8	—	Up to 15,1 mm Ø	65	1	479-1448
-	7x7	—	Up to 17,3 mm Ø	65	1	479-1447
-	6x6	—	Up to 20,3 mm Ø	65	1	479-1446
-	5x5	—	Up to 24,3 mm Ø	65	1	479-1445
-	4x4	—	Up to 30,5 mm Ø	65	1	479-1444
-	3x3	—	Up to 41,0 mm Ø	65	1	479-1443

## Cryoboxes, cardboard, 136x136 mm

Cardboard.

- Waterproof coating
- Various combinations possible with different dividers (to be ordered separately)
- Available in different heights and 5 colours

For storage of cryovials at low temperatures.

Freezable to -140 °C



WxDxH ext. (mm)	Compartments	Colour	For tubes	Height (mm)	Pk	Cat. No.
<b>Cryoboxes 32 mm high</b>						
136x136x32	-	White	-	32	1	479-1412
136x136x32	-	Blue	-	32	1	479-1413
136x136x32	-	Red	-	32	1	479-1414
136x136x32	-	Green	-	32	1	479-1415
136x136x32	-	Yellow	-	32	1	479-1416
<b>Cryoboxes 50 mm high</b>						
136x136x50	-	White	-	50	1	479-1422
136x136x50	-	Blue	-	50	1	479-1423
136x136x50	-	Red	-	50	1	479-1424
136x136x50	-	Green	-	50	1	479-1425
136x136x50	-	Yellow	-	50	1	479-1426
<b>Cryoboxes 75 mm high</b>						
136x136x75	-	White	-	75	1	479-1432
136x136x75	-	Blue	-	75	1	479-1433
136x136x75	-	Red	-	75	1	479-1434
136x136x75	-	Green	-	75	1	479-1435
136x136x75	-	Yellow	-	75	1	479-1436
<b>Cryoboxes 100 mm high</b>						
136x136x100	-	White	-	100	1	479-1392
136x136x100	-	Blue	-	100	1	479-1393
136x136x100	-	Red	-	100	1	479-1394
136x136x100	-	Green	-	100	1	479-1395
136x136x100	-	Yellow	-	100	1	479-1396
<b>Cryoboxes 130 mm high</b>						
136x136x130	-	White	-	130	1	479-1402
136x136x130	-	Blue	-	130	1	479-1403
136x136x130	-	Red	-	130	1	479-1404
136x136x130	-	Green	-	130	1	479-1405
136x136x130	-	Yellow	-	130	1	479-1406
<b>Grid dividers for cryoboxes 32 mm height</b>						
-	16x16	—	Up to 7,5 mm Ø	25	1	479-1498
-	14x14	—	Up to 8,7 mm Ø	25	1	479-1497
-	13x13	—	Up to 9,4 mm Ø	25	1	479-1496
-	12x12	—	Up to 10,2 mm Ø	25	1	479-1495
-	10x10	—	Up to 12,3 mm Ø	25	1	479-1494
-	9x9	—	Up to 13,7 mm Ø	25	1	479-1493
-	8x8	—	Up to 15,4 mm Ø	25	1	479-1492
-	7x7	—	Up to 17,7 mm Ø	25	1	479-1491
<b>Grid dividers for cryoboxes 50 mm height</b>						
-	16x16	—	Up to 7,5 mm Ø	30	1	479-1482
-	14x14	—	Up to 8,7 mm Ø	30	1	479-1481
-	13x13	—	Up to 9,4 mm Ø	30	1	479-1480
-	12x12	—	Up to 10,2 mm Ø	30	1	479-1479
-	10x10	—	Up to 12,3 mm Ø	30	1	479-1478
-	9x9	—	Up to 13,7 mm Ø	30	1	479-1477
-	8x8	—	Up to 15,4 mm Ø	30	1	479-1476
-	7x7	—	Up to 17,7 mm Ø	30	1	479-1475
-	6x6	—	Up to 20,7 mm Ø	30	1	479-1474
-	5x5	—	Up to 24,9 mm Ø	30	1	479-1473
-	4x4	—	Up to 31,3 mm Ø	30	1	479-1472
-	3x3	—	Up to 41,9 mm Ø	30	1	479-1471



WxDxH ext. (mm)	Compartments	Colour	For tubes	Height (mm)	Pk	Cat. No.
<b>Grid dividers for cryoboxes 75 mm height</b>						
-	12x12	—	Up to 10,2 mm Ø	40	1	479-1635
-	10x10	—	Up to 12,3 mm Ø	40	1	479-1634
-	9x9	—	Up to 13,7 mm Ø	40	1	479-1633
-	8x8	—	Up to 15,4 mm Ø	40	1	479-1632
-	7x7	—	Up to 17,7 mm Ø	40	1	479-1631
-	6x6	—	Up to 20,7 mm Ø	40	1	479-1630
-	5x5	—	Up to 24,9 mm Ø	40	1	479-1629
-	4x4	—	Up to 31,3 mm Ø	40	1	479-1628
-	3x3	—	Up to 41,9 mm Ø	40	1	479-1627
<b>Grid dividers for cryoboxes 100/130 mm height</b>						
-	10x10	—	Up to 12,3 mm Ø	65	1	479-1458
-	9x9	—	Up to 13,7 mm Ø	65	1	479-1457
-	8x8	—	Up to 15,4 mm Ø	65	1	479-1456
-	7x7	—	Up to 17,7 mm Ø	65	1	479-1455
-	6x6	—	Up to 20,7 mm Ø	65	1	479-1454
-	5x5	—	Up to 24,9 mm Ø	65	1	479-1453
-	4x4	—	Up to 31,3 mm Ø	65	1	479-1452
-	3x3	—	Up to 41,9 mm Ø	65	1	479-1451



## Cryoboxes, without or with dividers

Made of white cardboard.

- Inexpensive to buy, inexpensive to ship, space saving in the laboratory
- Available in the most sold size with a height of 51 mm
- Square, size bottom 129x129 mm, size top 134x134 mm
- Fits into all storage rack systems

The cryobox consists of a lid and a base which are delivered flat. Simply by following the instructions on the lid, 1-2-3 and you have a stable, high quality cryobox.

Compartments	Type	Pk	Cat. No.
-	Without divider	100	479-1386
49 (7x7)	With divider	100	479-1385
64 (8x8)	With divider	100	479-1384
81 (9x9)	With divider	100	479-1383
100 (10x10)	With divider	100	479-1382

**VWR Manufacturing**  
We Enable Science Through Custom Services

designed for innovation



## Cryoboxes, half size, 136x66,5 mm

Corrugated cardboard box.

- Waterproof coating
- Freezable to -140 °C
- With or without dividers available
- Available in different heights and 5 colours

For storage of cryovials at low temperatures.

WxDxH ext. (mm)	Compartments	Colour	Pk	Cat. No.
<b>Cryoboxes, half size, with dividers</b>				
136x66,5x50	5 x 10	White	10	479-7000
136x66,5x50	5 x 10	Blue	10	479-7001
136x66,5x50	5 x 10	Red	10	479-7002
136x66,5x50	5 x 10	Green	10	479-7003
136x66,5x50	5 x 10	Yellow	10	479-7004
<b>Dividers for cryoboxes half size</b>				
-	5 x 10	—	10	479-7005

## Cryoboxes, double size, 133x257 mm

Corrugated cardboard box.

- Waterproof coating
- Freezable to -140 °C
- With or without dividers available
- Available in different heights and 5 colours

For storage of cryovials at low temperatures.

WxDxH ext. (mm)	Compartments	Colour	Pk	Cat. No.
<b>Cryoboxes, double size, without dividers</b>				
133x257x50	-	White	1	479-7006
133x257x50	-	Blue	1	479-7007
133x257x50	-	Red	1	479-7008
133x257x50	-	Green	1	479-7009
133x257x50	-	Yellow	1	479-7010
<b>Cryoboxes, double size, with dividers</b>				
133x257x50	10 x 20	White	1	479-7011
133x257x50	10 x 20	Blue	1	479-7012
133x257x50	10 x 20	Red	1	479-7013
133x257x50	10 x 20	Green	1	479-7014
133x257x50	10 x 20	Yellow	1	479-7015
<b>Dividers for cryoboxes double size</b>				
-	8 x 16	—	1	479-7018
-	9 x 18	—	1	479-7017
-	10 x 20	—	1	479-7016



## Cryoboxes, cardboard, 136x136 mm, with full labelling

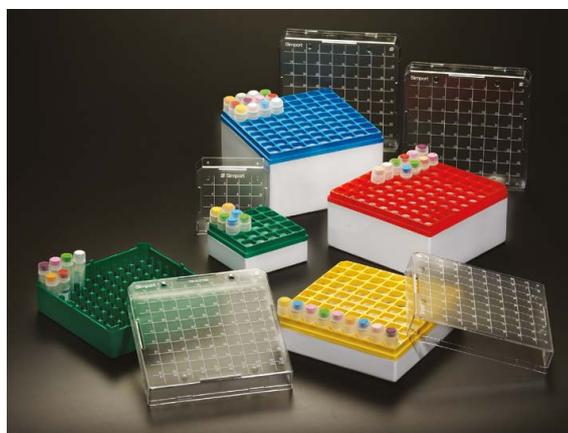
Cardboard, coated.

- Waterproof coating
- Freezable to -140 °C
- With or without dividers available
- Available in different heights and 5 colours

For storage of cryovials at low temperatures.



WxDxH ext. (mm)	Compartments	Description	Colour	Pk	Cat. No.
<b>Boxes, without dividers</b>					
136x136x55	-	-	White	1	479-7019
136x136x55	-	-	Blue	1	479-7020
136x136x55	-	-	Red	1	479-7021
136x136x55	-	-	Green	1	479-7022
136x136x55	-	-	Yellow	1	479-7023
136x136x75	-	-	White	1	479-7024
136x136x95	-	-	White	1	479-7025
<b>Boxes, with dividers</b>					
136x136x55	10 x 10	-	White	1	479-7026
136x136x55	10 x 10	-	Blue	1	479-7027
136x136x55	10 x 10	-	Red	1	479-7028
136x136x55	10 x 10	-	Green	1	479-7029
136x136x55	10 x 10	-	Yellow	1	479-7030
136x136x75	10 x 10	-	White	1	479-7031
136x136x95	10 x 10	-	White	1	479-7032
<b>Dividers for cryoboxes</b>					
-	10 x 10	for cryoboxes 55 mm height		1	479-7033
-	10 x 10	for cryoboxes 75 mm height		1	479-7034
-	10 x 10	for cryoboxes 95 mm height		1	479-7035



## Cryoboxes



PC, autoclavable.

- Transparent cover with numeric grid and key to prevent misalignment
- Coloured grid or base

Can be used from -196 to +121 °C.

WxDxH ext. (mm)	Compartments	Description	Colour	Pk	Cat. No.
76x76x52	5x5	Cryotubes 1 - 2 ml	Blue	8	479-0470
76x76x52	5x5	Cryotubes 1 - 2 ml	Green	8	479-0471
76x76x52	5x5	Cryotubes 1 - 2 ml	Red	8	479-0472
76x76x52	5x5	Cryotubes 1 - 2 ml	Yellow	8	479-0473
133x133x52	9x9	Cryotubes 1 - 2 ml	Blue	4	479-0474
133x133x52	9x9	Cryotubes 1 - 2 ml	Green	4	479-0475
133x133x52	9x9	Cryotubes 1 - 2 ml	Red	4	479-0476
133x133x52	9x9	Cryotubes 1 - 2 ml	Yellow	4	479-0477
133x133x95	9x9	Cryotubes 3 - 5 ml	Blue	5	479-0482
133x133x95	9x9	Cryotubes 3 - 5 ml	Green	5	479-0483
133x133x95	9x9	Cryotubes 3 - 5 ml	Red	5	479-0484
133x133x95	9x9	Cryotubes 3 - 5 ml	Yellow	5	479-0485
133x133x52	10x10	Cryotubes 1 - 2 ml	Blue	4	479-0486
133x133x52	10x10	Cryotubes 1 - 2 ml	Green	4	479-0487
133x133x52	10x10	Cryotubes 1 - 2 ml	Red	4	479-0488
133x133x52	10x10	Cryotubes 1 - 2 ml	Yellow	4	479-0489
133x133x81	9x9	Cryotubes 3 - 4 ml	Blue	3	479-0891
133x133x81	9x9	Cryotubes 3 - 4 ml	Green	3	479-0892
133x133x81	9x9	Cryotubes 3 - 4 ml	Red	3	479-0893
133x133x81	9x9	Cryotubes 3 - 4 ml	Yellow	3	479-0894

## Cryoboxes

Polycarbonate.

- Can be used from -190 to +121 °C.

VWR freezer boxes can be used with most manufacturer's upright and chest freezer racks in general purpose and ultra-low mechanical freezers.



478-0236

Compartments	Height (mm)	Pk	Cat. No.
<b>Cryoboxes, PC, with dividers</b>			
10x10	50	1	478-0236
5x5	50	1	478-0238
<b>Dividers, cardboard</b>			
4x4	-	1	478-0241
5x5	-	1	478-0242

## IgGy - VWR's Antibody Selector



The search for antibodies just got easier. VWR has brought together a multitude of antibody suppliers and manufacturers with hundreds of thousands of antibodies to meet your specific application needs. IgGy Antibody Selector allows you to quickly select the criteria for your antibody. In a matter of seconds and a few clicks, you can identify the products to meet your specific needs. After you have narrowed the product listing, it's easy to review the details ... simply go to [vwr.com](http://vwr.com).

**Browse antibodies using IgGy Antibody**



### SEARCH

- Over 500 000 antibodies
- Brands you know and trust
- Choice of suppliers
- One easy location

### SELECT

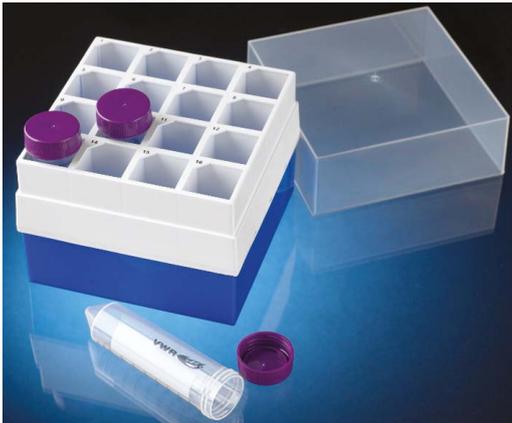
- Antigen symbol or name
- Reactivity
- Host
- Application

### SIMPLE

- Compare specifications
- Review data sheets
- Order with all your lab supplies

[vwr.com/antibody](http://vwr.com/antibody)





## Cryoboxes for centrifuge tubes



PP, autoclavable.

- Labelled zone and numerical grid references
- Clear cover
- Autoclavable (121 °C), temperature resistant to -90 °C

For long-term storage of samples.

WxDxH ext. (mm)	Description	For tubes (ml)	Pk	Cat. No.
138x138x126	For 16 tubes with lid	50	2	479-0079
138x138x126	For 36 tubes with lid	15	2	212-0043

## Cryoboxes, for light-sensitive specimens

PP, black.

- Reinforced seal, triple-hinges and locking clasp keeps samples secure while the box is closed
- Each box features an alphanumeric grid on the exterior and interior and stacking rings
- Matt surface suitable for printing and labelling

Ideal for light-sensitive specimens, this all-black storage box is suitable for use with 0,5/1,5/2,0 ml microcentrifuge tubes, as well as most other brands of cryogenic vials. These boxes stand a few millimetres taller than other available types of storage boxes and can accommodate several sizes of cryogenic vials, or tubes of similar diameters.



WxDxH ext. (mm)	Compartments	For (ml)	Colour	Pk	Cat. No.
140x140x60	100	Microcentrifuge tubes 0,5/1,0 and 2,0	Black	1	211-0255

## Cryoboxes, PP, flat-packed

Made of corrugated or thin film PP.

- Easy self-assemble boxes shipped flat-packed
- More durable than cardboard boxes as they are not susceptible to moisture
- Significantly reduces the chance of mould
- Dividers included with the boxes
- Store down to temperatures of -80 °C

Designed with sustainability in mind, they are made from either specially formulated corrugated or thin film polypropylene. With superior durability, polypropylene outlasts the cardboard box alternative that is susceptible to softening and producing dust, and can be frozen and thawed multiple times without a problem. The cryoboxes are supplied 'flat-packed', which eliminates the hassle of stacking and reduces the amount of space needed for storage.



479-4004

WxDxH ext. (mm)	Compartments	Colour	For tubes (ml)	Pk	Cat. No.
<b>Boxes, thin film PP</b>					
125x125x49	81	White	1,5/2,0	10	479-4006
<b>Boxes, corrugated PP</b>					
133x130x30	144	Natural	0,2	10	479-4001
133x130x42	81	Natural	0,5	10	479-4002
133x130x75	25	Natural	5	10	479-4003
145x147x120	36	Natural	15	10	479-4004
145x147x120	16	Natural	50	10	479-4005



## Microtube storage boxes



PP.

- Highly transparent, but with bold identifying colours and a distinctive wave design
- Uniform wells with location ID; capacity indicated on the outside of the box
- Black light-tight version available for light-sensitive samples
- Frosted labelling patch

Compact footprint for microtube and cryogenic vial storage. Store 1,5/2,0 ml microtubes or cryogenic vials. With an easy open, friction-fit lid. Will fit into most standard freezer racking.

Assorted pack contains one of each colour blue, green, pink, yellow and orange.

WxDxH ext. (mm)	Compartments	Colour	Pk	Cat. No.
<b>50-well boxes, hinged lid with snap clasp</b>				
142x92x56	50	Assorted	5	525-0933
142x92x56	50	Natural	5	525-0932
<b>81-well boxes, friction fit lid</b>				
130x130x47	81	Assorted	5	525-0940
130x130x47	81	Natural	5	525-0934
130x130x47	81	Blue	5	525-0935
130x130x47	81	Green	5	525-0936
130x130x47	81	Pink	5	525-0937
130x130x47	81	Yellow	5	525-0938
130x130x47	81	Orange	5	525-0939
130x130x47	81	Black	5	525-0941
<b>100-well boxes, hinged lid with snap clasp</b>				
141x151x47	100	Assorted	5	525-0925
141x151x47	100	Natural	5	525-0926
141x151x47	100	Blue	5	525-0928
141x151x47	100	Green	5	525-0929
141x151x47	100	Yellow	5	525-0930
141x151x47	100	Orange	5	525-0931
141x151x47	100	Black	5	525-0927

## Racks for 15 or 50 ml tubes



PP, with clear lid.

- 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

Robust, rugged construction for repeated storage. Snap in one of the two included grids, either 15 or 50 ml.

Colour	WxDxH (mm)	Pk	Cat. No.
Purple	132x132x129	5	211-0370

## Centrifuge tube stands



Made of PP (polypropylene), purple.

- Free from DNase and RNase and non pyrogenic
- Autoclavable at 121 °C and freezable to -80 °C
- Very good chemical resistance

Suitable for 1,5/2,0 ml microcentrifuge tubes and 15/50 ml conical centrifuge tubes.

For tubes	No. of holes	Colour	Pk	Cat. No.
1,5/2,0 ml microcentrifuge tubes and 15/50 ml centrifuge tubes	7	Purple	5	525-1003



## Cryo 1 °C freezing container

Container PC, closure and vial holder HDPE, foam insert.

- Floating rigid insert prevents vials from contamination
- Withstands repeated use; labelled with step-by-step instructions
- Holds up to 18 cryogenic vials (1; 1,2; 1,5 and 2 ml)

Non mechanical device that uses isopropyl alcohol and a mechanical freezer to provide cooling rate of  $-1\text{ }^{\circ}\text{C}$  per minute. Ideal for successful cell cryopreservation and recovery.

Description	I-ØxH (mm)	No. of holes	Pk	Cat. No.
Cryo 1 °C freezing container	86x117	18	1	479-0640

## Labtop coolers

### -20 °C mini labtop cooler PC, non toxic gel

The  $-20\text{ }^{\circ}\text{C}$  mini labtop cooler holds 12x 0,5 or 1,5 ml microcentrifuge tubes at below  $-20\text{ }^{\circ}\text{C}$  for over 1 hour. Ideal for bench top use or transport. Wire handle secures top while carrying. Filled with non toxic gel. Prior to use, place in  $-25\text{ }^{\circ}\text{C}$  freezer for at least 24 hours, store at  $-25\text{ }^{\circ}\text{C}$  between use.

### -20 °C maxi labtop cooler PC, non toxic gel

The  $-20\text{ }^{\circ}\text{C}$  maxi labtop cooler, holds 32x 0,5 or 1,5 ml microcentrifuge tubes at below  $-20\text{ }^{\circ}\text{C}$  for over 1 hour. Suitable for bench top use or transport. Wire handle secures top while carrying. Cooler and lid filled with non toxic gel. Store at  $-25\text{ }^{\circ}\text{C}$  between use.

### -20 °C labtop cooler PC, non toxic gel

The  $-20\text{ }^{\circ}\text{C}$  labtop cooler maintains temperatures between  $-20$  and  $-15\text{ }^{\circ}\text{C}$  for up to 4 hours. Holds 20x 1,5 or 2,0 ml microcentrifuge tubes or cryovials. Inserts included hold 0,2 to 0,5 ml microcentrifuge tubes. Printed grid, keyed lid, locking handle and non skid feet. Store at  $-25\text{ }^{\circ}\text{C}$  between use.



Description	No. of holes	Pk	Cat. No.
$-20\text{ }^{\circ}\text{C}$ mini labtop cooler	12	1	479-0642
$-20\text{ }^{\circ}\text{C}$ maxi labtop cooler	32	1	479-0641
$-20\text{ }^{\circ}\text{C}$ labtop cooler	20	1	479-0643



## Ice buckets, square, with lid

Polyurethane foam.

- Resistant to temperatures from  $-76\text{ }^{\circ}\text{C}$  to  $+70\text{ }^{\circ}\text{C}$
- Extremely robust, leakproof, stackable, lightweight
- Available in two sizes and four colours
- Stacking option for space saving on working bench
- Poring lip design, for easy draining of liquid
- With lid to reduce the evaporation level of dry ice, water ice with salt slurry

Ideal for storing samples, these buckets maintain hot or cold temperatures of bottles, test tubes, solutions, and cultures. Suitable for use with dry ice, water ice, salt solution. For freezer storage only.

Capacity (l)	Colour	WxDxH (mm)	Pk	Cat. No.
2,5	Black	285x338x120	1	216-1510
2,5	Blue	285x338x120	1	216-1513
2,5	Green	285x338x120	1	216-1514
2,5	Red	285x338x120	1	216-1515
4,5	Black	285x338x187	1	216-1516
4,5	Blue	285x338x187	1	216-1517
4,5	Green	285x338x187	1	216-1518
4,5	Red	285x338x187	1	216-1519

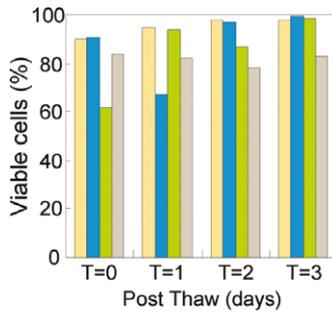
## Dimethyl sulphoxide ≥99,9%, ultrapure

Description	Pack type	Pk	Cat. No.
Dimethyl sulphoxide ≥99,9%, ultrapure	Plastic tube	5	N182-5X10ML

## Glycerine solution 20% for biotechnology, sterile

Used as a cryopreservative in bacterial preservation media.

Description	Pack type	Pk	Cat. No.
Glycerine solution 20% for biotechnology, sterile	Plastic bottle	100 ml	E550-100ML



**Viability of post-thaw cultures of K562 cells.** Cells frozen in AMRESKO SeraFree Cryopreservation Media (□) exhibited higher recovery than cells frozen in traditional RPMI freezing media containing DMSO and serum (■). Viability of cells recovering from cryopreservation in AMRESKO SeraFree Cryopreservation Media was comparable or better than that of cells in Competitors 1 (■) and 2 (■) serum-free freezing media. Viability was determined by standard trypan-blue exclusion assay.

## Cryopreservation media, SeraFree

SeraFree cryopreservation media is ready to use freezing media for cryopreservation of adherent or suspension cultured cells. The animal-free media composition eliminates batch-to-batch variability and is optimised for cell viability and cell growth after thawing. Suitable for use in environments that prohibit the use of animal-derived products.

- Sterile and endotoxin tested
- Ready to use, animal-free, RPMI- or DMEM-based media
- Optimises cell growth and cell viability after thawing
- Reduces potential for transmission of infectious diseases

Description	Pk	Cat. No.
Cryopreservation media, RPMI-based, SeraFree	50 ml	N655-50ML
Cryopreservation media, RPMI-based, SeraFree, 6x5 ml	30 ml	N655-6X5ML
Cryopreservation media, DMEM-based, SeraFree	50 ml	N676-50ML

## Box storage system, BSS series

BSS tanks offer various solutions for storage of vials or straws in liquid or gaseous phase. They provide extremely good temperature uniformity, even with as little as 2 cm of liquid nitrogen remaining above the rack insulator (or 5 cm above the bottom of BSS-5100). The tanks are manufactured from aluminium alloy with fibre glass/epoxy neck and a high vacuum multi-layered super insulation that limits nitrogen evaporation.

- Extremely good temperature uniformity
- Lid can also be padlocked shut, except on model BSS-5100 (padlock not included)

CE - Medical.

**S70 controller:** Temperature read out (1 point), automatic filling procedure (up to desired LN<sub>2</sub> level), visible and audible alarms (high/low temperature and level, and time-out fill error), one potential free contact (with programmable function) for external alarm. The newly developed **S170 controller** offers maximum sample security and many features: Automatic filling procedure, temperature measurement (via two probes), regulation of liquid nitrogen level, providing visual and audible alarms (low level alarm, low level fill, normal level stop fill, high level alarm), position of the cover display (open/closed), management of the 'defog' function (for better visibility inside the vessel), RS485 interface enables complete management and control of the system via a PC (software included), four potential free contacts for connection to an in-house alarm system or to a telephone dialling system (four different alarm functions can be transferred).

Stainless steel racks for standard type boxes (25, 81 or 100 tubes) are included.

For BSS-5100: Pie-shaped drawers (for cryotubes) or canisters (for goblets and straws) must be ordered separately.





Model	BSS-750	BSS-3000	BSS-4800	BSS-5100	BSS-6000
Capacity (l)	48,5	100	148	75	197
Static holding time (days)	180	155	227	30	303
Ø×H (mm)	500×707	680×748	680×920	480×915	680×1076
No. of canisters	30		48	54 drawers	60
No. of test tube racks			6		
Weight, empty (kg)	20,5	45	56	37	62

Description	Neck-Ø (mm)	Pk	Cat. No.
BSS-750	119	1	478-0274
BSS-3000	215	1	478-0279
BSS-4800	215	1	478-0280
BSS-5100	215	1	478-0275
BSS-6000	410	1	478-0367

## Cryogenic storage vessels, CSS and XSS series

CSS series tanks offer storage for small to medium capacity applications. The XSS series offer similar benefits and extended storage capacity. The tanks are manufactured from aluminium alloy with fibre glass/epoxy neck. High vacuum, multi-layered super insulation limits nitrogen evaporation.



- Extremely low liquid nitrogen evaporation
- Lid is lockable with padlock (not included)
- Vessels are equipped with stainless steel canisters with hook for easy retrieval from the vessel

The samples are placed in stainless steel canisters directly in the liquid nitrogen inside the vessel.

Canisters which are 270 mm high can hold two goblets or canes with 6×1,8 ml vials

Canisters which are 110 mm high can hold one goblet or 1/2 height canes with 3×1,8 ml vials

CE - Medical

Model	CSS-4/6	CSS-10/6	CSS-21/6	CSS-36/6	XSS-13/6	XSS-26/10	XSS/36/6	XSS-48/10
Capacity (l)	4,1	10,5	21,7	35,9	13	26	35,9	48,5
Static holding time (days)	42 (without canister)	93 (without canister)	238 (without canister)	365 (without canister)	59 (without canister)	104 (without canister)	211 (without canister)	180 (without canister)
Ø×H (mm)	245×433	368×455	395×673	480×652	380×450	480×482	480×688	500×707
No. of canisters			6			10	6	10
Ø×H canisters (mm)	37×110		37×270		66×110		66×270	73×270
Weight, empty (kg)	4,2	6,4	9,8	16	8,7	11,2	14,7	17,1

Description	Neck-Ø (mm)	Pk	Cat. No.
<b>CSS series; models with very low LN<sub>2</sub> consumption</b>			
CSS-4/6	51	1	478-0281
CSS-10/6	51	1	478-0282
CSS-21/6	51	1	478-0283
CSS-36/6	51	1	478-0284
<b>XSS series; models with low LN<sub>2</sub> consumption and increased storage capacity</b>			
XSS-13/6	89	1	478-0285
XSS-26/10	89	1	478-0286
XSS-36/6	89	1	478-0287
XSS-48/10	119	1	478-0288

Description	Pk	Cat. No.
<b>Accessories</b>		
Roller base with 4 castors, extendable, can accommodate containers with outer Ø 360 to 490 mm, maximum load 60 kg on smooth floor	1	478-0301
Roller base with 5 castors (2 equipped with brakes), can accommodate containers with outer Ø 680 mm, maximum load 250 kg on smooth floor	1	478-0303
Roller base with 5 castors (2 equipped with brakes), extendable, can accommodate containers with outer Ø 460 to 500 mm, maximum load 120 kg on smooth floor	1	478-0302

## Dry shippers, DS series



Dry shippers are used for the safe transport of samples at cryogenic temperatures.

Hydrophobic absorbent material is fixed in the inner capacity of the vessel. After complete saturation of the material with liquid nitrogen, the vessels are ready to transport samples at cryogenic temperatures, without the risk of liquid nitrogen spilling if the container is overturned.

Model DS-24 can be equipped with removable absorbent cartridges to improve the holding time.

\* DS-24 is delivered without canister, rack or cartridge (must be ordered separately). For details of the range contact your local VWR sales office.

CE - Medical.

Shippers do not conform to International Air Transport Regulations (IATA) for transportation of infectious material.

Model	DS-2	DS-5	DS-24
Capacity (l)	2	5,2	24
×H (mm)	190×407	251×497	400×664
No. of canisters		1	7*
No. of test tube racks		-	1×6 boxes*
Static holding time (days)	23	19	11
Weight, empty (kg)	3,3	6,9	15,6

Description	Neck-Ø (mm)	Pk	Cat. No.
Dry shipper, DS-2	35	1	478-0305
Dry shipper, DS-5	70	1	478-0306
Dry shipper, DS-24	215	1	478-0307

Description	For	Pk	Cat. No.
<b>Removable cartridges for DS-24</b>			
60 mm cartridge to enlarge the capacity of absorbed LN <sub>2</sub>	DS-24	1	478-0317
120 mm cartridge to enlarge the capacity of absorbed LN <sub>2</sub>	DS-24	1	478-0318
Extractor for cartridges	DS-24	1	478-0319
<b>Protective flight case for DS, with foam protection inside</b>			
Case with 4 mm foam protection inside	DS-2	1	478-0308
Case with 4 mm foam protection inside	DS-5	1	478-0309
Case with 7 mm foam protection inside	DS-24	1	478-0310
<b>Accessories</b>			
Phase separator, Ø×H: 30×100 mm		1	478-0316
Standard flexible hose; 1,20 m, 2× female ¼" connections		1	478-0315
Standard flexible hose; 2 m, 2× female ¼" connections		1	478-0371

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Standard flexible hose; 3 m, 2× female ¼" connections		1	478-0372
RECWIN software: CD-ROM with cables compatible with Windows and XP. Graphic user interface, multi-language (UK, FR, ES, D, I)		1	478-0361
Complementary triangular storage system, 6 baskets in stainless steel (9 levels)		1	478-0708

## Liquid nitrogen Dewars for storage and transport, LD series



LD series aluminium Dewars are specially designed for storage and transport (not on public roads) of liquid nitrogen and are ideal for most miscellaneous laboratory and industrial applications.

- Lightweight, reliable and robust
- Very easy to handle

The bigger units (LD-25, LD-35 and LD-50) are fitted with an NW50 Pneurop-flange for mounting a pressure head for LN<sub>2</sub> withdrawal.

The small LD-2M unit is fitted with a pouring spout.

Model	LD-2M	LD-5	LD-12	LD-25	LD-35	LD-50
Capacity (l)	2	5,5	12,4	25	35	50
xH (mm)	190x465	245x494	310x600	395x684	480x591	500x675
Weight, empty (kg)	2,7	4,4	8,1	10	13	17

Description	Neck-Ø (mm)	Pk	Cat. No.
Dewar, LD-2M	35	1	478-0289
Dewar, LD-5	50	1	478-0290
Dewar, LD-12	50	1	478-0291
Dewar, LD-25	50	1	478-0292
Dewar, LD-35	50	1	478-0293
Dewar, LD-50	50	1	478-0294

Description	Pk	Cat. No.
<b>Accessories</b>		
Electrical LN <sub>2</sub> pump, model 405; fits on NW50 flange of LD25 and LD35: For pumping of small quantities of LN <sub>2</sub> (max. 5 l LN <sub>2</sub> per cycle)	1	478-0368
Basic withdrawal head can be connected to any model with a Pneurop NW50 flange; small amounts of liquid nitrogen can be withdrawn from the Dewar until the inner pressure of the vessel has dropped to ambient pressure	1	478-0296
Withdrawal head for LN <sub>2</sub> TS model, equipped with a Pneurop NW50 flange, filling/withdrawal valve, pressure build-up valve, relief valve set at 0,5 bar and pressure gauge	1	478-0297
Transfer elbow with phase separator, can be mounted on the withdrawal valve of the TS head	1	478-0298
Withdrawal tube with deflector shield and phase separator (can be mounted on the withdrawal valve of the TS head), flexible not included	1	478-0299
LN <sub>2</sub> level indicator stick, 62 cm long, with grading in cm and inches	1	478-0300
Low level alarm, with voltage-free contact, warns user of any imminent shortage of nitrogen inside the container; fits on all models, probe to be fixed on the canister to desired length	1	478-0304
Phase separator, ØxH: 30x100 mm	1	478-0316
Standard flexible hose; 1,20 m, 2x female 3/4" connections	1	478-0315
Standard flexible hose; 2 m, 2x female 3/4" connections	1	478-0371
Standard flexible hose; 3 m, 2x female 3/4" connections	1	478-0372





## VWR BIOPROCESSING SOLUTIONS

### Enabling your process with innovative choice



### UPSTREAM & CELL CULTURE

Enabling your scale-up with the right products and quality requirements



Whether your expressions system is prokaryotic (bacteria) or eukaryotic (mammalian, yeast), the biochemicals, supplements and equipment we provide to grow organisms meet required quality and performance parameters that allows seamless transfer from R&D to pilot scale and onto manufacturing scale.

- VWR Life Science Seradigm
- Fermentation media and additives
- Biological buffers
- Inorganic salts
- Sugars and carbohydrates
- Proteins and amino acids
- Cell culture vessels
- Workstations and CO<sub>2</sub> incubators

### DOWNSTREAM & FINAL FILL

Recovery and purification throughout the filtration steps, ensuring protein stability, solubility and bioavailability



We understand that quality and stability of your target protein must be maintained during the sequential purification steps of your process. VWR's portfolio of buffers and salts meet the quality and performance required to maintain protein attributes, and are available in powder form to allow preparation of solutions at concentrations defined during development or final buffer formulation.

- Biological buffers
- Inorganic salts
- Sugars and carbohydrates
- Proteins and amino acids
- Chromatography resins, columns and supplies
- Sterile vials, stoppers and seals
- Excipients

### CONTROLLED ENVIRONMENT SOLUTIONS

Leading the way in controlled environment conditions



You can rely on VWR when you need to ensure ultra-clean manufacturing conditions for your production facility. This carefully selected portfolio is specifically designed to help you prevent potential contamination and maintain aseptic conditions in cleanrooms and controlled environments.

- Protective apparel
- Cleanroom gloves
- Cleaning systems
- Detergents and cleaners
- Wipers
- Production supplies
- Mats and flooring
- Labelling and documentation
- Environmental monitoring
- Biosafety cabinets
- Tubing
- Swabs



## Electroporation cuvettes



These electroploration cuvettes are made from clear, medical grade polycarbonate and are compatible with all common commercially available electroplorators.

- Polished aluminium lowers arcing frequency
- Colour coded caps for easy identification of gap sizes
- Round caps for easy, single-handed cap removal

Available in three gap sizes to meet common application requirements: 1 mm for highest field strength, suitable for bacteria; 2 mm gap for intermediate requirements; 4 mm gap for lowest field strength, suitable for mammalian cells and some plant cells.

Sterilised by gamma irradiation and individually packed for assured sterility.

Description	Volume (µl)	Pk	Cat. No.
Cuvettes with 1 mm gap size, grey cap	20 - 90	50	732-1135
Cuvettes with 2 mm gap size, blue cap	40 - 400	50	732-1136
Cuvettes with 4 mm gap size, yellow cap	80 - 800	50	732-1137

## Media bottles with cap



PC, autoclavable, narrow mouth bottles with standard PP caps

- Ideal for steam sterilisation
- Safe and shatter-proof
- Chemically inert

VWR Collection media bottles are an ideal replacement for all borosilicate glass bottles. They are specifically designed for every laboratory application requiring terminal sterilisation (autoclaving), storage, transportation, and production of laboratory biological fluids. These bottles are available in square and round shapes to accommodate various packaging needs.

The closure system is guaranteed leakproof and the seal ring allows for convenient shrink-wrapping of the caps. Each bottle is carefully produced and quality controlled for uniform wall thickness, clarity, graduation and leakproof closure.

Optional septum cap or vented cap with PTFE membrane is also available.



Description	Capacity (ml)	Thread	Pk	Cat. No.
Clear, octagonal	125	38-430	24	215-2203
Clear, octagonal	250	38-430	24	215-2204
Clear, octagonal	500	38-430	12	215-2205
Clear, octagonal	1000	38-430	12	215-2206
Clear, round	300	38-430	96	215-2924
Clear, round	500	38-430	12	215-2210
Clear, round	1000	38-430	12	215-2211

Description	Thread	Pk	Cat. No.
<b>Spare screw caps</b>			
Standard cap, blue	38-430	96	215-2207
Septum cap, blue	38-430	96	215-2212

## Media bottles with cap



391-0314



391-0315



391-0322

PS, PC or PETG, with PP screw cap, sterile.

- Sloped design improves bottle stability when placed on a work surface
- Narrow bottle shoulder, combined with moulded finger grips, improves the ability to securely grip the bottle with gloved hands
- Easy Grasp bottle cap facilitates uncapping, tightening and bottle stacking, as well as providing a convenient gripping surface while transporting

VWR Collection disposable, round, Easy Grasp media bottles have been designed for storage of sterile solutions, such as tissue culture media, serum and buffers. These bottles are available in three low extractable plastics: Polycarbonate which can withstand up to three autoclave cycles and offer good alcohol resistance; Polystyrene for general purpose cell culture aqueous solutions; and PETG for most general laboratory solution storage.

Manufactured with Class VI materials in a ISO 13485 facility.

Capacity (ml)	Pk	Cat. No.
<b>PS bottles with PP cap, sterile</b>		
250	24	391-0283
500	24	391-0284
1000	24	391-0286
<b>PC bottles with PP cap, sterile</b>		
250	24	391-0297
500	24	391-0298
1000	24	391-0299
<b>PETG bottles with PP cap, sterile</b>		
250	24	391-0294
500	24	391-0295
1000	24	391-0296
<b>PS bottles with PP cap, non sterile</b>		
250	24	391-0317
1000	24	391-0319
<b>PC bottles with PP cap, non sterile</b>		
250	24	391-0321
500	24	391-0322
1000	24	391-0323
<b>PETG bottles with PP cap, non sterile</b>		
250	24	391-0314
500	24	391-0315
1000	24	391-0316



## Laboratory bottles, round



Borosilicate 3.3 glass, with PP screw cap and pouring ring.

- Very good chemical resistance
- High temperature resistance
- Minimal thermal expansion, giving relatively high resistance to temperature changes

The economical alternative for a wide range of laboratory applications. Round, with graduations, DIN GL 32 or GL45 thread.

ISO 4796

Capacity (ml)	Thread	Ø ext. (mm)	Height (mm)	Pk	Cat. No.
50	GL 32	46	91	10	215-3261
100	GL 45	56	100	10	215-1592
250	GL 45	70	138	10	215-1593
500	GL 45	86	176	10	215-1594
1000	GL 45	101	225	10	215-1595
2000	GL 45	136	260	1	215-1596
5000	GL 45	181	330	1	215-0057
10000	GL 45	227	410	1	215-0058
20000	GL 45	288	505	1	215-0059

## Laboratory bottles, round, amber



Amber borosilicate 3.3 glass with PP screw cap and pouring ring.

- Very good chemical resistance
- High temperature resistance
- Minimal thermal expansion, giving relatively high resistance to temperature changes

The economical alternative for a wide range of laboratory applications. Round, with graduations, DIN GL 45 thread, pouring ring and blue PP screw cap. Amber coloured to protect light-sensitive materials.

ISO 4796



Capacity (ml)	Thread	Ø ext. (mm)	Height (mm)	Pk	Cat. No.
50	GL 32	46	91	1	215-3275
100	GL 45	56	100	1	215-2325
250	GL 45	70	138	1	215-2326
500	GL 45	86	176	1	215-2327
1000	GL 45	101	225	1	215-2328
2000	GL 45	136	260	1	215-2329
5000	GL 45	182	300	1	215-2330
10000	GL 45	227	410	1	215-2337
20000	GL 45	288	505	1	215-2338

## Laboratory bottles, wide neck



Borosilicate 3.3 glass, clear or amber with screw cap and pouring ring.

- Very good chemical resistance, high temperature resistance
- 80 mm opening allows easy cleaning
- Minimal thermal expansion giving relatively high resistance to temperature changes

The large opening can accommodate even large volume funnels giving easy access to scoops or spatulas. Amber to protect light-sensitive materials.

Capacity (ml)	WxDxH (mm)	Pk	Cat. No.
<b>Clear glass</b>			
500	94x94x139	1	215-3743
1000	105x105x185	1	215-3744
2000	115x115x258	1	215-3745
5000	160x160x357	1	215-3746
<b>Amber glass</b>			
500	94x94x139	1	215-3747
1000	105x105x185	1	215-3748
2000	115x115x258	1	215-3749
5000	160x160x357	1	215-3773

## Lab mats, silicone

The reusable, environmentally friendly Lab Mat is an economical solution to help keep bench tops clean and safe from stains, spills and wear. The lab mat is made from a durable FDA-approved silicone material that creates a stain resistant, washable working surface. It is chemically inert and does not react with most chemicals.

- Protect bench tops from hot items up to 200 °C
- Large anti-skid and noise-dampening working surface
- Lip design around the outer edge of the mat helps contain spillage
- Washable with standard disinfectants in sinks or dishwashers to enable repetitive use
- Mat can be rolled up for compact storage
- Autoclavable at 121° for 15 minutes

The lab mat can be used with items such as centrifuges, vortex mixers, hot plates, stirrers, pipettes and so much more. Ideal for every type of laboratory and more specialised areas such as cold rooms, cleanrooms, sterile suites and areas where high sterility is a requirement.



Thickness (mm)	Colour	LxW (mm)	Pk	Cat. No.
2	Purple	350x600	1	111-9200



## Bench protectors

High quality, smooth, absorbent paper that quickly absorbs liquid spills with a thick, laminated polyethylene layer that prevents seeping onto the work surface.

- Retains leaked reagents in radio-chemical laboratories and prevents radioactive contamination
- Enables recovery of leaked, expensive materials
- Breakage protection for hard surfaces
- Absorption layer for water or solvent moisture chambers
- Impermeable protective material for lining animal cages

Absorbance rate: 115-9220 and 115-9221: 500 ml/m<sup>2</sup>

Absorbance rate: 115-0673: 750 ml/m<sup>2</sup>

Colour	LxW (mm)	Packed	Pk	Cat. No.
White	460x570	Single sheets	50	115-9220
White	460x50 000	Roll	1	115-9221
White	460x570	Single sheets	50	115-0673

## Dispensers for sealing films

ABS dispenser designed to store, dispense and cut Parafilm™, tape, labels and Tough-Tags™.

- Design incorporates a safety razor
- Slides and cuts with no danger to fingers
- Holds one or two 50 mm (2 inch) rolls, or one 100 mm (4 inch) roll

WxDxH (mm)	Colour	Pk	Cat. No.
120x156x171	Blue	1	631-1137
120x156x171	Green	1	631-1138
120x156x171	Red	1	631-1139

Description	Pk	Cat. No.
<b>Accessories</b>		
Replacement blades for ABS dispenser	5	631-1142



631-1137



## Lens cleaning tissues, grade 541

These tissues are suitable for cleaning various optical lenses such as objectives, binoculars, magnifying glasses, spectacles as well as optical fibre filaments.

LxW (mm)	Packed	Pk	Cat. No.
80x100	1x500 sheets	500	111-5003
100x150	25x25 sheets	625	111-5004

## Inverted microscope, VisiScope® IT414E



VisiScope® IT414E is equipped with objectives for in vivo cell culture applications.

- Ergonomic tilting tube with side photo port
- Adjustable working distance from 72 to 150 mm and removable condenser
- Innovative design, with interchangeable holders for specimen slides, Petri dishes and flasks

A cleaning and maintenance set, including lens tissue, cleaning solution and brush is available on request.

Supplied with a dust cover.



630-2728

Head	30° inclined, 360° rotating
Objectives	4x, 10x, 20x, 40x
Contrasting technique	Brightfield and phase contrast
Stage	250x230 mm (movement: 119x70 mm)
Condenser	N.A 0,30
Focusing system	Coaxial coarse and fine knobs
Illumination	LED

Type	Model	Pk	Cat. No.
Trinocular	IT414-E	1	630-2728

Description	Magnification	Pk	Cat. No.
<b>Eyepieces</b>			
Widefield eyepiece	10x/22	1	630-1759
Widefield micrometric eyepiece	10x/22	1	630-1760
<b>Objectives</b>			
IOS plan achromatic objective (WD = 18 mm)	4x/0,10	1	630-1761
Phase contrast IOS plan achromatic objective (WD = 10 mm)	10x/0,25	1	630-1762
Phase contrast IOS plan achromatic objective (WD = 5,1 mm)	20x/0,40	1	630-1763
IOS plan achromatic objective (WD = 2,6 mm)	40x/0,60	1	630-1764
Phase contrast IOS plan achromatic objective (LWD)	40x	1	630-1765

Description	Pk	Cat. No.
<b>Accessories</b>		
Holder for Petri dishes (Ø 38 mm) - 630-2698 needed	1	630-2697
Ergonomic binocular head	1	630-1757
Holder for Terasaki and Petri dishes (Ø 65 mm)	1	630-2698
Trinocular attachment for ergonomic binocular head	1	630-1758
Holder for slide and Petri dish (Ø 54 mm)	1	630-2699
Phase ring 40x	1	630-1766
Mechanical stage for VisiScope® IT414 and IT414E	1	630-2712
Micrometric slide (76x26 mm, 1 mm)	1	630-1650
Load-bearing side extension for VisiScope® IT414 and IT414-E (order 2 pieces for both sides of the stage)	1	630-2713
<b>Spare parts</b>		
Dust cover (L) for VisiScope® IT400 and stereo with overhanging stand (LxH) 700x550 mm	1	630-2824

## Inverted microscope, VisiScope® IT415 PH



The VisiScope® IT415 PH is equipped for in vivo cell culture.

- Adjustable working distance from 72 to 150 mm
- Innovative design, interchangeable holders for specimen slides, Petri dishes and flasks
- Specimen stage for fatigue-free operation
- Light intensity control on left side of the frame
- Interferential IF550 green brightfield filter sets

A cleaning and maintenance set is available on request.

Supplied with dust cover.

Model	IT415 PH
Objectives	IOS ph10x, ph20x, ph40x
Contrasting technique	Brightfield and darkfield
Stage	250x230 mm (movement: 120x80 mm)
Condenser	Removable N.A 0,30
Focusing system	Coaxial coarse and fine knobs
Illumination	White LED

Type	Model	Pk	Cat. No.
Trinocular	IT415 PH	1	630-2729

Description	Magnification	Pk	Cat. No.
<b>IOS objectives</b>			
IOS plan achromatic objective (LWD)	4x/0,10	1	630-2164
IOS plan achromatic objective (LWD)	10x/0,25	1	630-2165
IOS plan achromatic objective (LWD)	20x/0,40	1	630-2166
IOS plan achromatic objective (LWD)	40x/0,60	1	630-2167
IOS plan achromatic objective (LWD)	60x/0,70	1	630-2168

Description	Magnification	Pk	Cat. No.
<b>Eyepieces</b>			
Widefield micrometer eyepiece with 0,01 mm division	10x/22	1	630-1968
<b>Camera adapters</b>			
CCD camera adapter, 0,5x		1	630-1644
Phototube adapter for APS-C sensor		1	630-1645
C-mount adapter for 2/3" sensor, 0,5x		1	630-2606
<b>Phototube adapters, VisiScope®</b>			
Phototube adapter for digital camera		1	630-1747
<b>CCD camera adapters, VisiScope®</b>			
CCD camera adapter, 1/3" sensor		1	630-1891
<b>Phototube adapters, VisiScope®</b>			
Phototube adapter for reflex camera		1	630-2170
<b>Camera adapters</b>			
C-mount adapter for 1/3" sensor		1	630-2720
<b>Accessories</b>			
Mechanical stage for VisiScope® IT415 PH and IT405 FLD		1	630-2173
Holder for Petri dishes (Ø 38 mm) - 630-2698 needed		1	630-2697
Holder for Terasaki and Petri dishes (Ø 65 mm)		1	630-2698
Holder for slide and Petri dish (Ø 54 mm)		1	630-2699
Holder for 2+2 slides		1	630-2700
Holder for Utermöhl chamber - 630-2699 needed		1	630-2701
Load-bearing slide extension for VisiScope® IT405 and IT415 (order 2 pieces for both sides of the stage)		1	630-2702
Micrometric slide (76x26 mm, 1 mm)		1	630-1650
Cut-off infrared filter		1	630-2169
<b>Spare parts</b>			
Dust cover (L) for VisiScope® IT400 and stereo with overhanging stand (LxH) 700x550 mm		1	630-2824

## Inverted fluorescence microscope, VisiScope® IT40FLD



630-2695

The VisiScope® IT405 FLD has been designed for tissue culture research in clinical and biotechnology laboratories.

- GFP/FITC blue and rhodamine/TRITC green excitation
- No warm-up, cool-down times for 60 minute time saving
- Brightfield interferential IF550 green filter set



Double LED-based fluorescence channel (470 nm and 560 nm) for visualisation of various fluorochromes such as Acridine Yellow, Acridine Orange, Auramine, DiO, DTAF, FITC, GFP, YFP (for blue excitation) and DiI, Blu Evans, Feulgen, Rhodamine, Texas Red, TRITC, PI (for green excitation).

Includes blue Ex. 450-490, DM 495, Em. 520LP and green Ex. 540-580, DM 585, Em. 590LP fluorescence filter sets.

Eyepieces	WF 10×/22
Head	45° inclined
Contrasting technique	Brightfield, phase contrast and fluorescence
Objectives	10×ph, 20×ph, 40×ph
Condenser	N.A. 0,30 (WD = 72 mm)
Stage	Glass stage insert with hole for small specimens, 250×160 mm
Illumination	White transmitted source P-LED (8 W) - reflected fluorescence with high efficiency LED (18 W)
Focusing system	Coaxial coarse and fine knobs

Description	Type	Model	Pk	Cat. No.
Inverted fluorescence microscope	Trinocular	IT405 FLD	1	630-2695

Description	Magnification	Pk	Cat. No.
<b>IOS objectives</b>			
LWD plan objective	4×/0,13	1	630-2719
LWD fluorescence plan objective	10×/0,30	1	630-2706
LWD fluorescence plan objective	20×/0,45	1	630-2707
LWD fluorescence plan objective	40×/0,65	1	630-2708
LWD fluorescence plan objective	60×/0,75	1	630-2709

Description	Magnification	Pk	Cat. No.
<b>Eyepieces</b>			
Widfield micrometer eyepiece with 0,01 mm division	10×/22	1	630-1968
Widfield eyepieces	10×/22	2	630-2163
<b>Camera adapters</b>			
C-mount adapter for 2/3" sensor, 0,5x		1	630-2606
C-mount adapter for 1/3" sensor		1	630-2720
<b>Accessories</b>			
Mechanical stage for VisiScope® IT415 PH and IT405 FLD		1	630-2173
Holder for Petri dishes (Ø 38 mm) - 630-2698 needed		1	630-2697
Holder for Terasaki and Petri dishes (Ø 65 mm)		1	630-2698
Holder for slide and Petri dish (Ø 54 mm)		1	630-2699
Holder for 2+2 slides		1	630-2700
Holder for Utermöhl chamber - 630-2699 needed		1	630-2701
Load-bearing slide extension for VisiScope® IT405 and IT415 (order 2 pieces for both sides of the stage)		1	630-2702
<b>Spare parts</b>			
Dust cover (L) for VisiScope® IT400 and stereo with overhanging stand (L×H) 700×550 mm		1	630-2824

## pH/mV/°C meter, bench, pHenomenal® pH 1100L



This user friendly instrument, with articulated electrode stand and IP 43-rated housing, provides high resolution and accuracy for precise measurements. Complete with USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight showing both pH/mV and temperature value simultaneously
- Data logging function selectable between 1 minute and 1 hour; memory capacity of 5000 data sets
- Automatic power shut-off: Adjustable from 10 minutes to 24 hours
- Automatic buffer recognition of DIN and NIST buffers (1,68 / 4,00 / 6,86 / 9,18 / 12,54)



- Three additional technical buffers at 25 °C (4,00 / 7,00 / 10,00) in memory
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when recalibration is required
- Choice of mains supply or 4x AA batteries for over 1000 operating hours

Ready to use pH 1100L set includes instrument, pH glass electrode with built-in temperature sensor 221, 1 m cable and articulated stand, two buffers (4,00 / 7,00), plastic beaker and instruction manual (22 languages) on CD ROM. The life science set pH 1100LB includes the Biotech electrode LS 221 with 1 m cable instead of electrode 221.

Model	pH 1100LB
pH range	-2,000...+20,000
pH resolution	0,1 / 0,01 / 0,001 (selectable)
pH accuracy	±0,1 / ±0,01 / ±0,005
pH calibration	Up to 5 points
Automatic buffer recognition	BDH Prolabo® TITRINORM® buffers at 25 °C: 4,00 / 6,98 / 9,94 NIST/DIN 19266 (1,68 / 4,00 / 6,86 / 9,18 / 12,54) Technical buffers at 25 °C: 4,00 / 7,00 / 10,00
mV range	±1200,0 / ±2500
mV resolution	0,1 / 1 (selectable)
mV accuracy	±0,3 / ±1
Temperature range (°C)	Auto: -5,0...+105,0; manual: -25...+130
Temperature resolution (°C)	0,1 / 1
Temperature accuracy (°C)	±0,2
Temperature compensation	Auto/manual
Data logging capacity	5000 data sets
Data logging - log function	Selectable between 1 min and 1 h (selectable intervals: 1 s, 5 s, 10 s, 30 s, 1 min, 5 min, 10 min, 15 min, 30 min, 60 min)
Display	LCD graphic display with LED backlight
Connections	BNC for pH / banana for temperature
Outputs	USB connection (slave, bidirectional)
Power supply	Mains or 4x AA batteries
Compliance	IP 43 / GLP

Description	Pk	Cat. No.
Bench pH/mV/°C meter pH 1100LB, pHenomenal®, with electrode LS221 for Biotech applications	1 SET	662-1861

Description	Pk	Cat. No.
<b>Accessories</b>		
pHenomenal® electrode stand, holds up to 4 electrodes + 1 temperature sensor	1	662-1169
Potassium chloride 3 mol/l (3 N) in aqueous solution AVS TITRINORM electrolytic solution	100 ml	83605.180
Electrode cleaning solution pepsin/hydrochloric acid for removal of proteins	100 ml	83603.180

## Conductivity/TDS/°C meter, bench, pHenomenal® CO 3100 L



This user friendly instrument, with articulated electrode stand and IP 43-rated housing, provides high resolution and accuracy for precise measurements. Complete with USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight showing both conductivity/TDS and temperature values simultaneously
- Data logging function selectable between 1 minute and 1 hour; memory capacity of 5000 data sets
- Automatic power shut-off: Adjustable from 10 minutes to 24 hours
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when re-calibration is required
- Choice of mains supply or 4x 'AA' batteries for over 1000 operating hours

Ready to use conductivity CO 3100 L set includes instrument, conductivity probe CO 11 with built-in temperature sensor, 1,5 m cable and articulated stand, standard and plastic beaker and instruction manual (22 languages) on CD ROM. Conductivity probes for low conductivities are available upon request. Please contact your local VWR sales office for further information.



Model	CO 3100 L
Conductivity range	0,001 µS/cm - 1000 mS/cm
Conductivity resolution	Min. 0,001 µS/cm (depending on probe)
Conductivity accuracy	±0,5% of measured value
Conductivity cell constant	0,001 - 25 (depending on probe)
Conductivity calibration	1 point
Resistivity range	1,000 Ω/cm - 999,9 MΩ/cm
Resistivity resolution	0,001 Ω/cm - 0,1 MΩ/cm
Resistivity accuracy	±0,5% of measured value
Salinity range	0,00 - 70 ppt
TDS range	0 - 1999 mg/l / 2,00 - 19,99 g/l / 20,0 - 199,9 g/l
TDS resolution	1 mg/l / 0,01 g/l / 0,1 g/l
TDS accuracy	±0,5% of measured value
Temperature range (°C)	-5...+105,0
Temperature resolution (°C)	0,1
Temperature accuracy (°C)	±0,2
Temperature compensation	Automatic and manual: 0,000 - 10,000 %/K (linear or non linear); or no compensation
Display	Graphic LCD display with LED backlight
Data logging capacity	5000 data sets
Data logging - log function	Selectable between 1 min and 1 h
Connections	8-pin connection for conductivity and temperature
Outputs	Watertight (IP 43) USB connection (slave, bidirectional)
Power supply	4x AA batteries or mains supply
Compliance	IP 43 / GLP

Description	Pk	Cat. No.
Bench conductivity/TDS/°C meter CO 3100 L, pHenomenal®	1 SET	663-0233

Description	Conductivity	Cell constant	Connection	Pk	Cat. No.
<b>Conductivity cell, pHenomenal®</b>					
pHenomenal® CO11, 2-pole graphite, integrated NTC 30	10 µS/cm - 20	0,84 cm <sup>-1</sup>	8 pin, 1,5 m cable	1	663-0147
<b>Accessories</b>					
pHenomenal® electrode stand, holds up to 4 electrodes + 1 temperature sensor				1	662-1169
KCl 0,01 mol/l: 1413 µS/cm				100 ml	83607.180
Conductivity standard, KCl 0,1 mol/l; 12 800 µS/cm				500 ml	83608.260

## Multi-parameter meter (pH/conductivity/DO), bench, pHenomenal® MU 6100 L



This user friendly instrument, with articulated electrode stand and IP 43-rated housing, provides high resolution and accuracy for precise multi-parameter measurements. This meter can either measure pH/mV and conductivity or pH/mV and oxygen simultaneously. Complete with USB output for connection to a computer. GLP compliant.

- Large LCD graphic display with continuous LED backlight shows the measured parameter and the temperature value simultaneously
- Data logging function selectable between 1 minute and 1 hour; memory capacity of 5000 data sets
- Automatic power shut-off: Adjustable from 10 minutes to 24 hours
- Automatic buffer recognition of DIN and NIST buffers (1,68 / 4,00 / 6,86 / 9,18 / 12,54)

- Three additional technical buffers at 25 °C (4,00 / 7,00 / 10,00) in memory
- Advanced self-test and diagnostics (electrode efficiency diagnostic, drift control); calibration symbol shows when recalibration is required
- Choice of mains supply or 4x 'AA' batteries for over 1000 operating hours

Ready to use set **MU 6100 L S1** includes bench multi-parameter meter, pH glass electrode 221 with built-in temperature sensor (1 m cable), conductivity probe CO 11 with built-in temperature sensor (1,5 m cable), articulated stand, two pH buffers, one conductivity standard and one plastic beaker, and instruction manual (22 languages) on CD ROM. The set **MU 6100 L S2** additionally includes a galvanic oxygen probe OX 11-3 with built-in temperature sensor (3 m cable).

Conductivity probes for low conductivities are available upon request. Please contact your local VWR sales office for further information.



Model	MU 6100 L
pH range	-2,000...+19,999
pH resolution	0,1 / 0,01 / 0,001 (selectable)
pH accuracy	±0,1 / ±0,01 / ±0,005
pH calibration	Up to 5 points
Automatic buffer recognition	BDH Prolabo® TITRINORM® buffers at 25 °C: 4,00 / 6,98 / 9,94 NIST/DIN 19266 (1,68 / 4,00 / 6,86 / 9,18 / 12,54) Technical buffers at 25 °C: 4,00 / 7,00 / 10,00
mV range	±1200,0 / ±2500
mV resolution	0,1 / 1
mV accuracy	±0,3 / ±1
Conductivity range	0,001 µS/cm - 1000 mS/cm
Conductivity resolution	0,1 µS/cm
Conductivity accuracy	±0,5% of measured value
Conductivity cell constant (cm <sup>-1</sup> )	0,001 - 25 (depending on probe)
Conductivity calibration	1 point
Resistivity range	1 Ω/cm - 999 MΩ/cm
Resistivity accuracy	±0,5% of measured value
Salinity range	0,00 - 70 ppt
TDS range	0 - 1999 mg/l / 2,00 - 19,99 g/l / 20,0 - 199,9 g/l
TDS resolution	1 mg/l / 0,01 g/l / 0,1 g/l
DO concentration (mg/l)	0,00 - 20,00; 0,0 - 90,0
DO concentration resolution (mg/l)	0,1%; 0,01 (depending on sensor)
DO saturation (%)	0,0 - 200,0; 0 - 600 (depending on sensor)
DO accuracy	±0,5% of value (between 5...30 °C)
DO calibration	Saturated air
Temperature range (°C)	Auto: -5,0...+105,0; manual: -25...+130
Temperature resolution (°C)	0,1 / 1
Temperature accuracy (°C)	±0,2
Temperature compensation	Automatic/manual
Data logging capacity	5000 data sets
Data logging - log function	Selectable between 1 s and 1 h (selectable intervals: 1 s, 5 s, 10 s, 30 s, 1 min, 5 min, 10 min, 15 min, 30 min, 60 min)
Display	LCD graphic display with LED backlight
Connections	BNC for pH / banana for temperature / 8-pin for conductivity and DO
Outputs	Waterproof USB connection (slave, bidirectional)
Power supply	Mains supply or 4x AA batteries
Compliance	IP 43 / GLP

Description	Pk	Cat. No.
Bench top pH/mV/conductivity/DO meter pHenomenal® MU 6100 L, Set 1	1 SET	665-0309
Bench top pH/mV/conductivity/DO meter pHenomenal® MU 6100 L, Set 2	1 SET	665-0310

Description	Temp. (°C)	Material	Electrolyte	Ø×L (mm)	Diaphr.	Connection	Pk	Cat. No.
<b>Conductivity cell, pHenomenal®</b>								
pHenomenal® CO11, 2-pole graphite, integrated NTC 30	0...+80	Epoxy		15,3×120		8 pin, 1,5 m cable	1	663-0147
<b>Dissolved oxygen probe, pHenomenal®</b>								
pHenomenal® OXY11-3, galvanic (resolution 0,1 mg/l)		Epoxy				3 m cable, 8-pin	1	664-0042
<b>pH electrode, pHenomenal®</b>								
pHenomenal® 111 pH electrode, 3 in 1, with temperature sensor		Epoxy	Gel	12×120	Ceramic	BNC, 1 m cable	1	662-1157
<b>Accessories</b>								
pHenomenal® electrode stand, holds up to 4 electrodes + 1 temperature sensor							1	662-1169
KCl 0,01 mol/l; 1413 µS/cm							100 ml	83607.180
Conductivity standard, KCl 0,1 mol/l; 12 800 µS/cm							500 ml	83608.260
Potassium chloride 3 mol/l (3 N) in aqueous solution AVS TITRINORM electrolytic solution							100 ml	83605.180
Potassium chloride saturated with silver chloride aqueous solution 3 mol/l (3 N) in aqueous solution AVS TITRINORM for filling electrodes							500 ml	83606.260
Electrode cleaning solution pepsin/hydrochloric acid for removal of proteins							100 ml	83603.180

## Mixer mill, Beater



A ball mill for disintegration of small sample volumes that can also be used to shake/mix microtubes and microplates. Wide range of applications in different scientific fields from geology to biotechnology.

- Easy to use - simple knob and keypad to control frequency and timer
- Easy to maintain - brushless DC motor
- Large range of grinding jars and tube holders to suit the sample requirements

Model	Beater
Max. sample volume (ml)	2x50
Vibrational frequency (Hz)	3 - 30
Speed display	LED
Grinding time setting (min)	5 s to 60 min
Power consumption (W)	200 VA
WxDxH (mm)	365x405x225
Weight (kg)	42

Description	Pk	Cat. No.
Beater	1	412-0167

Description	Material	Ø (mm)	Nominal volume (ml)	Sample volume (ml)	Max. feed size (mm)	Pk	Cat. No.
<b>Grinding jars</b>							
	Stainless steel	1,5	0,5	0,5	1	2	412-0168
	Stainless steel	5	2	2	2	2	412-0169
	Stainless steel	10	4	4	4	2	412-0170
	Stainless steel	25	10	6	6	2	412-0171
	Stainless steel	25	10	6	6	2	412-0264
	Stainless steel	35	15	6	6	2	412-0172
	Stainless steel	50	20	8	8	2	412-0173
	Steel, hardened	1,5	0,5	0,5	1	2	412-0174
	Steel, hardened	5	2	2	2	2	412-0175
	Steel, hardened	10	4	4	4	2	412-0176
	Steel, hardened	25	10	6	6	2	412-0177
	Steel, hardened	35	15	6	6	2	412-0178
	Steel, hardened	50	20	8	8	2	412-0179
	Tungsten carbide	25	10	6	6	2	412-0261
	PTFE	50	20	8	8	2	412-0260

Description	Material	Ø (mm)	Nominal volume (ml)	Sample volume (ml)	Max. feed size (mm)	Pk	Cat. No.
<b>Grinding balls</b>							
	Stainless steel	3				20	412-0201
	Stainless steel	5				20	412-0190
	Stainless steel	7				20	412-0202
	Stainless steel	10				10	412-0277
	Stainless steel	12				10	412-0278
	Stainless steel	20				5	412-0265
	Stainless steel	25				5	412-0193
	Steel, hardened	3				20	412-0266
	Steel, hardened	5				20	412-0273
	Steel, hardened	7				20	412-0267
	Steel, hardened	10				10	412-0274
	Steel, hardened	12				10	412-0275
	Steel, hardened	25				5	412-0276
	Tungsten carbide	3				20	412-0268
	Tungsten carbide	5				20	412-0269
	Tungsten carbide	7				20	412-0270
	Tungsten carbide	20				5	412-0271



Description	Material	Ø (mm)	Nominal volume (ml)	Sample volume (ml)	Max. feed size (mm)	Pk	Cat. No.
<b>Accessories</b>							
Tube holder, PTFE for reaction vials, 12x0,2 ml tubes on each arm						1	412-0181
Tube holder, PTFE for reaction vials, 12x2 ml tubes on each arm						2	412-0182
Tube holder, PTFE for reaction vials, 6x2 ml tubes on each arm						2	412-0183
Tube holder, PTFE for reaction vials, 6x2 ml tubes (screw cap) on each arm						2	412-0184
Holder, PTFE, for up to 3 microplates or 1 deep well plates on each arm						2	412-0185
Rack, PTFE, for 24x1,5/2,0 ml tubes (with or without screw cap)						2	412-0199
Dummy plate, PTFE, for replacing 1 microtitre plate in the rack						2	412-0200
Rack, PTFE, 50 ml with 5 places for conical tubes						2	412-0212
Set of spanners						1 SET	412-0180
Holder for 15 ml falcon tubes						2	412-0263
Holder for up to 3 microplates or 1 deep-well plate on each arm						2	412-0272

## Disposable pestles, microtubes and cordless motor for pellet mixing



Pestles and microtubes manufactured from polybutylene terephthalate (PBTP) in a Class 10 000, ISO Class 7, M5.5 cleanroom. Designed for homogenising cells and plant tissue or for re-suspending protein and DNA pellets. An optional battery-powered motor can be used with the pestles and microtubes. Pestles are 75 mm in length.

- Free from DNase, RNase and non pyrogenic
- Grooved grip makes pestle handle easy to turn without slipping, even when wearing gloves
- Lightweight motor reduces hand fatigue
- High speed vortexing action of the motor completely homogenises cell tissue or pellets within seconds

Pestles and microtubes are individually wrapped. Optional motor is supplied with a pestle adapter and two AA batteries.

Description	Capacity (ml)	Pk	Cat. No.
Pestle	0,5	100	431-0095
Pestle	1,5	100	431-0094
Microtube	0,5	100	431-0097
Microtube	1,5	100	431-0096
Pestle and microtube	0,5	100	431-0099
Pestle and microtube	1,5	100	431-0098

Description	Pk	Cat. No.
<b>Accessories</b>		
Pestle motor	1	431-0100
Replacement pestle adapter	1	431-0101

## Mini Vortex mixers



EU/CH: 444-0994 / UK: 444-0995



EU/CH: 444-0998 / UK: 444-0999



EU/CH: 444-1041 / UK: 444-1042

Ergonomic mini vortex mixers with features to suit different applications, these compact units provide optimum comfort and minimal stress.

- Continuous or touch mode operation (except fixed speed unit which has touch mode only)
- Can be used at 4 to 40 °C (maximum 85% relative humidity, non condensing), in an incubator, CO<sub>2</sub> incubator or cold room
- Pulsing model has unique action which reduces heat generation and ensures efficient mixing and disruption
- Digital and pulsing units have timer, 1 s to 160 h

The analogue unit features low speed start up for gentle shaking or high speed vigorous mixing.

The fixed speed unit starts mixing when the cup head is pressed down, it provides vigorous vortexing at full speed.

The digital model is ideal for applications that need reproducible results as the microprocessor control maintains the set speed. The timer displays elapsed time or can be programmed to a user-defined time limit and will switch off when elapsed time reaches zero.

The pulsing model provides powerful pulsing, ensuring complete cell disruption within minutes for glass bead procedures.

Supplied with 1830 mm power cord with EU and UK plug or CH adapter, cup head, 7,6 cm head and 7,6 cm rubber head cover, the pulsing vortex mixer is also supplied with a 1,5 to 2 ml microtube holder with built-in cup head.

Maximum speed will vary depending on which accessory is used.

\* Can only be used with insert retainer 444-7048

\*\* Can only be used with tube holder 444-0217

Model	Fixed speed	Analogue	Digital	Pulsing
Motor input (W)			150	
Orbit (mm)		4,9		2,5
Shaking motion			Orbital	
Speed range (min <sup>-1</sup> )	2500	300 - 2500		500 - 2500
Weight (kg)			4,1	
WxDxH (mm)			112x178x135	

Description	Pk	Cat. No.
Fixed speed mini vortex mixer with EU plug (and CH adapter)	1	444-0994
Fixed speed mini vortex mixer with UK plug	1	444-0995
Analogue mini vortex mixer with EU plug (and CH adapter)	1	444-0996
Analogue mini vortex mixer with UK plug	1	444-0997
Digital mini vortex mixer with EU plug (and CH adapter)	1	444-0998
Digital mini vortex mixer with UK plug	1	444-0999
Pulsing mini vortex mixer with EU plug (and CH adapter)	1	444-1041
Pulsing mini vortex mixer with UK plug	1	444-1042

Description	Pk	Cat. No.
<b>Accessories</b>		
Cup head and cup head cover complete, 76 mm Ø	1	444-0208
Ampoule tube adapters 15 - 17 mm Ø (detailed above)	1	444-0212
Ampoule tube adapters 10 - 17 mm Ø (detailed above)	1	444-0213
Tube holder kit with retainer (detailed above)	1	444-7047



Description	Pk	Cat. No.
<b>Accessories</b>		
Insert retainer that holds the accessories (tubes, microplates, microtubes, etc) and the vessel harnesses	1	444-7048
Vessel harness for use with e.g. Erlenmeyer flasks*	2	444-7050
Foam insert for 9 – 13 mm Ø tubes (e.g. 5 ml culture tubes)*	2	444-7051
Foam insert for 14 – 19 mm Ø tubes (e.g. 15 ml centrifuge tubes)*	2	444-7052
Foam insert for 20 – 25 mm Ø tubes (e.g. 50 ml centrifuge tubes)*	2	444-7053
Cup head only, 76 mm Ø	1	444-7058
Head cover only for 444-7058, 76 mm Ø	1	444-7059
Foam insert, blank without holes*	2	444-0211
Holder for 12x1,5/2,0 microcentrifuge tubes (included with pulsating vortex mixer 444-0206)	1	444-0214
Tube holder for 0,5 ml microtubes for continuous operation, holds 24 tubes**	1	444-0215
Tube holder for 1,5/2,0 ml microtubes for continuous operation, holds 18 tubes**	1	444-0216
Single tube holder for 15 and 50 ml tubes, hands-free shaking, accommodates tube up to 15 cm long or adapter (444-0215 or 444-0216) for microtubes	1	444-0217
Foam insert for 48x0,25 - 2,0 ml microcentrifuge tubes, included in 444-0209*	2	444-0218
Foam insert microplate holder for 96-well plate or a deep-well block, included in 444-0210*	2	444-0219
Set of inserts to be used with insert retainer (444-7048) consists of: 1x foam insert without holes (444-0211); 1x foam insert to hold 9 - 13 mm tubes (444-7051); 1x foam insert to hold 14 - 19 mm tubes (444-7052); 1x foam insert to hold 20 - 29 mm tubes (444-7053)	1 SET	444-7049
Small cup head	1	444-7060

## Incubating 3-D rotator waver



The incubating three-dimensional rotator waver combines vertical and horizontal wave motion with incubation in one compact bench top unit. The spill resistant design channels fluids away from internal components. The microprocessor control provides electronic tilt angle adjustment which allows the user to easily adjust rocking angle from 0 to 20° while unit is operating. The PID temperature controller maintains precise temperature control from ambient +5 to 65 °C.

- Electronic tilt adjustment from 0 to 20° while unit is operating
- LED displays shows temperature, speed, tilt angle and time simultaneously
- Timer from 1 s to 160 h, with audible alarm when the time reaches zero
- Can be used at 5 to 40 °C (max. 80% relative humidity, non condensing) in cold rooms, incubators and CO<sub>2</sub> environments



Easy to use controls allow users to adjust temperature in 1 °C increments. Precise speed control provides smooth, low speed wave motion down to 1 min<sup>-1</sup>. Touch pad controls with easy to read LED displays for temperature, speed, tilt angle and time allowing the operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. A 'hot' warning light illuminates when the air temperature in the chamber reaches 40 °C and remains on until the temperature cools to below 40 °C.

Polycarbonate lid allows viewing of samples without disturbing the internal temperature. Timer displays elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off. Overload protection via audible and visual signals activated when system detects an obstruction or tray overload. Speed ramping feature slowly increases speed to desired set point to avoid splashing. Unit is ideal for cell cultures, hybridisation procedures and blotting techniques.

Supplied without accessories. Mat must be ordered separately.

\* Note: Maximum speed/tilt angle may vary with heavy or unbalanced loads

\*\* Centred on tray

Model	Incubating 3-D waver
Int. WxDxH (mm)	197x273x86
Max. load (kg)	2,3**
Platform WxD (mm)	184x235
Shaking motion	3-dimensional
Speed accuracy	±1 min <sup>-1</sup>
Speed range (min <sup>-1</sup> )	1 - 30*
Temperature range (°C)	Ambient +5...65
Uniformity at 37 (°C)	±0,5
Weight (kg)	9,5
WxDxH (mm)	279x432x267

Description	Pk	Cat. No.
Incubating 3-D waver, EU-plug	1	444-0765
Incubating 3-D waver, UK-plug	1	444-0766
Incubating 3-D waver, CH-plug	1	444-0767

Description	For	Pk	Cat. No.
<b>Mat for incubating 3-D rotator waver</b>			
Dimpled mat, 235x184 mm	Incubating 3-D waver	1	444-0771

## Rocking platform shaker



Rocking platform shaker with low profile design, can be used in most fume hoods and incubators. The cast aluminium base offers durability and stability, the spill resistant design channels fluids away from internal components. Precise speed control provides smooth, low speed rocking motion down to 1 min<sup>-1</sup>.

- Microprocessor control provides electronic tilt angle adjustment from 0 to 15° while unit is operating
- LED display shows speed, tilt angle and time simultaneously
- Timer from 1 s to 160 h, with audible alarm when the time reaches zero
- Can be used at -10 to +60 °C (max. 80% relative humidity, non condensing) in cold rooms, incubators and CO<sub>2</sub> environments

Touch pad controls with easy to read LED display. Provides repeatable and accurate results every time and is easily visible across lab benches. Timer displays elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off.

Overload protection via audible and visual signals activated when system detects an obstruction or tray overload. Speed ramping feature slowly increases speed to desired set point to avoid splashing. Unit is ideal for cell culture work, staining and destaining gels, hybridisation procedures, haematology and blotting techniques.



Supplied with a 324x254 mm non-slip rubber mat. Stacking tray must be ordered separately.

Model	Rocking platform shaker
Angle (°)	0 - 15*
Max. load (kg)	4,5**
Platform WxD (mm)	254x324
Shaking motion	Rocking
Speed range (min <sup>-1</sup> )	1 - 50*
Weight (kg)	6,5
WxDxH (mm)	279x432x127

\* Note: Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centred on tray.

Description	Pk	Cat. No.
Rocking platform shaker, EU-plug	1	444-0756
Rocking platform shaker, UK-plug	1	444-0757
Rocking platform shaker, CH-plug	1	444-0758

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Spare dimpled mat to prevent tubes from rolling around	Rocking platform shaker	1	444-0768
Stacking tray	Rocking platform shaker	1	444-0772

## Incubating rocking platform shaker



The incubating rocking platform shaker combines smooth rocking motion and incubation in one compact bench top unit. The spill resistant design channels fluids away from internal components. The microprocessor control provides electronic tilt angle adjustment which allows the user to easily adjust the rocking angle from 0 to 15° while unit is operating. The PID temperature controller maintains precise temperature control from ambient +5 to 65 °C.

- Electronic tilt adjustment from 0 to 15° while unit is operating
- LED display shows temperature, speed, tilt angle and time simultaneously
- Timer from 1 s to 160 h, with audible alarm when the time reaches zero
- Can be used at 5 to 40 °C (max. 80% relative humidity, non condensing) in cold rooms, incubators and CO<sub>2</sub> environments

Easy to use controls allow users to adjust temperature in 1 °C increments. Precise speed control provides smooth, low speed rocking motion down to 1 min<sup>-1</sup>. Touch pad controls with easy to read LED displays for temperature, speed, tilt angle and time allowing operator to view all settings at once. Provides repeatable and accurate results every time and is easily visible across lab benches. A hot warning illuminates when the air temperature in the chamber reaches 40 °C and remains on until the temperature cools to below 40 °C.

Polycarbonate lid allows viewing of samples without disturbing the internal temperature. Timer displays elapsed time or, when programmed to user-defined limit, will shut off unit when time reaches zero. Display will show last used settings, even after power has been turned off. Overload protection via audible and visual signals activated when system detects an obstruction or overload of the tray. Speed ramping feature slowly increases speed to desired set point to avoid splashing. Unit is ideal for cell cultures, staining and destaining gels, hybridisation procedures, haematology and blotting techniques.

Supplied without accessories. Mat must be ordered separately.



Model	Incubating rocking platform shaker
Int. WxDxH (mm)	197×273×97
Max. load (kg)	4,5**
Platform WxD (mm)	191×254
Shaking motion	Rocking
Speed accuracy	±1 min <sup>-1</sup>
Speed range (min <sup>-1</sup> )	1 - 50*
Temperature range (°C)	Ambient +5...65
Uniformity at 37 (°C)	±0,5
Weight (kg)	9,5
WxDxH (mm)	279×432×267

\* Note: Maximum speed/tilt angle may vary with heavy or unbalanced loads.

\*\* Centred on tray

Description	Pk	Cat. No.
Incubating rocking platform shaker, EU-plug	1	444-0762
Incubating rocking platform shaker, UK-plug	1	444-0763
Incubating rocking platform shaker, CH-plug	1	444-0764

Description	For	Pk	Cat. No.
<b>Mat for incubating rocking platform shaker</b>			
Dimpled mat, 254×191 mm	Incubating rocking platform shaker	1	444-0769

## Orbital mini shaker



General purpose shaker with microprocessor control which is ideal for a range of mixing applications. Variable speed control provides consistent, uniform shaking action. The speed is adjustable in 10 min<sup>-1</sup> increments up to 500 min<sup>-1</sup>, and increments of 25 min<sup>-1</sup> up to 1200 min<sup>-1</sup>. The ramping feature slowly increases speed to the set point for added safety.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down and enables automatic switch off and audible alarm when program is complete
- Range of interchangeable attachments
- Can be used at -10 to +60 °C (max. 80% relative humidity), in an incubator, dry CO<sub>2</sub> incubator or cold room

Supplied with perforated tray, non-slip rubber mat but without attachments. Accessories must be ordered separately.

Shaker accommodates a maximum of two of the racks detailed and 35×10, 20×25, 15×50, 12×125, 6×250 or 4×500 ml flasks and 3×500 ml media bottles.



Model	Orbital mini shaker
Max. load (kg)	3,6
Orbit (mm)	3
Platform WxD (mm)	222x298
Power (W)	25
Shaking motion	Orbital
Speed (min <sup>-1</sup> )	100 - 1200
Speed accuracy (%)	±2
Weight (kg)	10
WxDxH (mm)	280x430x100

Description	Pk	Cat. No.
Orbital mini shaker, EU-plug	1	444-0268
Orbital mini shaker, CH-plug	1	444-0269
Orbital mini shaker, UK-plug	1	444-7093

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Stainless steel dilution cap tray, WxD 175x254 mm	24x28 mm dilution vials	1	444-0514
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	444-0283
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	444-0284
Clamps for media bottles, stainless steel	500 ml	1	444-7035
Clamps for media bottles, stainless steel	1000 ml	1	444-7036
Feet (suction cup), clear lid	Incubating microplate shaker (1000 MP) and orbital shaker(1000 <sup>3</sup> )	1	444-7081
Flask clamps, stainless steel	10 ml	1	444-7040
Flask clamps, stainless steel	25 ml	1	444-7041
Flask clamps, stainless steel	50 ml	1	444-7042
Flask clamps, stainless steel	125 ml	1	444-7043
Flask clamps, stainless steel	250 ml	1	444-7044
Flask clamps, stainless steel	500 ml	1	444-7045
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	444-0276
Roller bar platform, which has 2 adjustable cushioned rollers to hold glassware securely, 297x218 mm, bar size 218 mm	-	1	444-0282
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	444-0278
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	444-0279
Universal harness, attaches to tray to secure low profile plates	-	1	444-0277
Test tube rack, PVC coated steel	18 - 20 mm Ø tubes, holds 35 tubes	1	444-0280
Test tube rack, PVC coated steel	22 - 25 mm Ø tubes, holds 24 tubes	1	444-0281
Spare single roller bar, 220 mm	Mounting on roller bar platform 444-0282	1	444-0565

## Orbital shaker, Advanced Mini Shaker 15



A compact, powerful mini shaker with microprocessor control which is ideal for a wide variety of shaking applications. The unit has optimal speed range and orbit for larger samples. Variable speed control provides consistent, uniform shaking action. The speed is adjustable in 1 min<sup>-1</sup> increments throughout the speed range. Ramping feature slowly increases speed to desired set point to avoid splashing.



- 15 mm orbit gives optimal speed for mixing larger sized samples, unit provides powerful shaking with a small footprint
- Independent LED displays for speed, time, and integral timer, 1 s to 160 h, shows elapsed time or counts down and enables automatic switch off and audible alarm when program is complete
- Low profile design easily fits into most hoods and incubators
- The maintenance-free, triple eccentric drive provides reliable service and continuous operation
- Uses a range of interchangeable accessories from the VWR Mini Shaker line, simply remove mat to mount a variety of optional flask clamps or test tube racks
- Can be used at -10 to +40 °C (max. 80% relative humidity), in an incubator, dry CO<sub>2</sub> incubator or cold room

The unit features overload protection and audible and visual signals will activate when the system detects an obstruction or tray overload. Suitable for use in biotech, pharmaceutical, healthcare, as well as university and government areas, for applications including cell culture, bacterial suspensions, ELISA and solubility studies.

Supplied with perforated tray and non-slip rubber mat but without attachments. Accessories must be ordered separately.

Model	Advanced Mini Shaker 15
Max. load (kg)	3,6
Orbit (mm)	15
Platform WxD (mm)	222x298
Power (W)	25
Shaking motion	Orbital
Speed (min <sup>-1</sup> )	40 - 300
Speed accuracy (%)	±2%
Weight (kg)	10,7
WxDxH (mm)	279x432x102

Description	Pk	Cat. No.
Advanced Mini Shaker 15, EU-plug	1	444-7106
Advanced Mini Shaker 15, UK-plug	1	444-7107
Advanced Mini Shaker 15, CH-plug	1	444-7108

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	444-0283
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	444-0284
Clamps for media bottles, stainless steel	500 ml	1	444-7035
Flask clamps, stainless steel	10 ml	1	444-7040
Flask clamps, stainless steel	25 ml	1	444-7041
Flask clamps, stainless steel	50 ml	1	444-7042
Flask clamps, stainless steel	125 ml	1	444-7043
Flask clamps, stainless steel	250 ml	1	444-7044
Flask clamps, stainless steel	500 ml	1	444-7045
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	444-0276
Roller bar platform, which has 2 adjustable cushioned rollers to hold glassware securely, 297x218 mm, bar size 218 mm	-	1	444-0282
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	444-0278
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	444-0279
Test tube rack, PVC coated steel	18 - 20 mm Ø tubes, holds 35 tubes	1	444-0280
Test tube rack, PVC coated steel	22 - 25 mm Ø tubes, holds 24 tubes	1	444-0281

## Orbital shaker, Advanced 3500



Digital shaker with microprocessor control which is ideal for a range mixing applications, e.g. cell cultures, solubility studies and extraction procedures. Variable speed control provides consistent, uniform shaking action. The Accu-drive shaking system delivers exceptional speed control, accuracy, safety and durability; the shaking system continuously monitors shaking speed and will maintain the set point even under changing loads.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch off and audible alarm when program is complete
- Can be used at -10 to +60 °C (max. 80% relative humidity, non condensing), in an incubator, CO<sub>2</sub> incubator or cold room

Displayed speed is accurate to 1% of set speed (when speed is above 100 min<sup>-1</sup>). The ramping feature slowly increases speed to the set point for added safety. Built-in load sensor can detect an unbalanced condition and will automatically reduce the min<sup>-1</sup> to a safe speed to prevent spills and protect samples. Speed calibration mode allows the user to recalibrate the speed display and RS232 serial port provides two-way communication for data logging and unit control.

Supplied with non-slip rubber mat but without attachments. Accessories must be ordered separately. Please see entry 'Accessories for VWR® Standard and Advanced series orbital shakers' for details on other platforms and accessories.



Model	Advanced 3500
Max. load (kg)	15,9
Orbit (mm)	19
Platform WxD (mm)	330x279
Power (W)	75
Shaking motion	Orbital
Speed (min <sup>-1</sup> )	15 - 500
Speed accuracy (min <sup>-1</sup> )	±1 below 100
Weight (kg)	20
WxDxH (mm)	356x413x146

Description	Pk	Cat. No.
Advanced 3500 orbital shaker, EU-plug	1	444-2906
Advanced 3500 orbital shaker, UK-plug	1	444-2907
Advanced 3500 orbital shaker, CH-plug	1	444-2908

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	444-0283
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	444-0284
Clamps for media bottles, stainless steel	500 ml	1	444-7035
Clamps for media bottles, stainless steel	1000 ml	1	444-7036
Flask clamps, stainless steel	10 ml	1	444-7040
Flask clamps, stainless steel	25 ml	1	444-7041
Flask clamps, stainless steel	50 ml	1	444-7042
Flask clamps, stainless steel	125 ml	1	444-7043
Flask clamps, stainless steel	250 ml	1	444-7044
Flask clamps, stainless steel	500 ml	1	444-7045
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	444-0276
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	444-0278
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	444-0279
Test tube rack, PVC coated steel	18 - 20 mm Ø tubes, holds 35 tubes	1	444-0280
Test tube rack, PVC coated steel	22 - 25 mm Ø tubes, holds 24 tubes	1	444-0281
<b>Universal platforms</b>			
Universal platform, 330x330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	444-2930
Universal platform, 457x457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	444-2931
Universal platform 330x279 mm	Standard/Advanced 3500, Incubating 3500, Advanced 3750, Professional 3500 shakers, mounting Erlenmeyer flask clamps and test tube racks	1	444-7087
Universal platform, 610x457 mm*	Standard/Advanced 3500, Advanced 3750**, Standard/Advanced 5000** shakers	1	444-2932
<b>Culture platforms</b>			
Culture platform, 457x457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	444-2936
Culture platform, 610x457 mm*	Standard/Advanced 3500, Advanced 3750**, Standard/Advanced 5000 shakers	1	444-2937
<b>Tier braces</b>			
Set of 4 tier braces for stacking 2 platforms, clearance is 254 mm	Standard/Advanced 3500, Standard/Advanced 5000 shakers	1	444-2965

Description	For	Pk	Cat. No.
<b>Dedicated platforms</b>			
Dedicated platform with 16x125 ml flask clamps, 330x330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	444-2945
Dedicated platform with 12x250 ml flask clamps, 330x330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	444-2946
Dedicated platform with 8x500 ml flask clamps, 330x330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	444-2947
Dedicated platform with 4x1 litre flask clamps, 330x330 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	444-2948
Dedicated platform with 27x125 ml flask clamps, 457x457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	444-2949
Dedicated platform with 20x250 ml flask clamps, 457x457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	444-2950
Dedicated platform with 13x500 ml flask clamps, 457x457 mm*	Standard/Advanced 3500, Advanced 3750** shakers	1	444-2951
Dedicated platform with 9x1 litre flask clamps, 457x457 mm	Standard/Advanced 3500, Advanced 3750** shakers	1	444-2952
<b>Replacement rubber mats</b>			
Rubber mat, 330x279 mm	Standard/Advanced 3500, Incubating 3500, Advanced 3750 shakers	1	444-2966
<b>Platforms for separating funnels</b>			
Platform for separating funnels, 457x457 mm	Standard/Advanced 3500, Advanced 3750 shakers	1	444-2953
Clamp for separating funnels	Use with platforms 444-2931/444-2953	1	444-2970
<b>Microplate clamp</b>			
Microplate clamp, holds 1 standard microplate or 1 deep-well plate, 89x129 mm	Standard/Advanced 3500, 5000, 10000, 15000 shakers	1	444-2954
<b>Autoclavable PVC Erlenmeyer flask clamps</b>			
Autoclavable PVC flask clamp, 125 ml	125 ml Erlenmeyer flasks	1	444-2960
Autoclavable PVC flask clamp, 250 ml	250 ml Erlenmeyer flasks	1	444-2961
Autoclavable PVC flask clamp, 500 ml	500 ml Erlenmeyer flasks	1	444-2962
Autoclavable PVC flask clamp, 1000 ml	1000 ml Erlenmeyer flasks	1	444-2963
Autoclavable PVC flask clamp, 2000 ml	2000 ml Erlenmeyer flasks	1	444-2964
<b>Flask clamps, stainless steel</b>			
Flask clamps, stainless steel	1000 ml	1	444-7030
Flask clamps, stainless steel	2000 ml	1	444-7031
Flask clamps, stainless steel (for Fernbach flasks)	2800 ml	1	444-7032
Flask clamps, stainless steel	4000 ml	1	444-7033
Flask clamps, stainless steel	6000 ml	1	444-7034
<b>Test tube racks, PVC coated steel</b>			
PVC coated test tube rack, 10 - 14 mm	48 tubes, 10 - 14 mm	1	444-7037
PVC coated test tube rack, 16 - 20 mm	33 tubes, 16 - 20 mm	1	444-7038
PVC coated test tube rack, 21 - 25 mm	21 tubes, 21 - 25 mm	1	444-7039
<b>Test tube racks, pivoting stainless steel</b>			
Pivoting stainless steel test tube rack, 13 mm	90 tubes, 13 mm	1	444-2955
Pivoting stainless steel test tube rack, 16 mm	60 tubes, 16 mm	1	444-2956
Pivoting stainless steel test tube rack, 20 mm	40 tubes, 20 mm (accommodates 15 ml centrifuge tubes)	1	444-2957
Pivoting stainless steel test tube rack, 25 mm	24 tubes, 25 mm	1	444-2958
Pivoting stainless steel test tube rack, 30 mm	21 tubes, 30 mm	1	444-2959

## Orbital shaker, Advanced 5000



Digital shaker with microprocessor control which is ideal for mixing applications with heavy loads, e.g. cell cultures, solubility studies and extraction procedures. Variable speed control provides consistent, uniform shaking action. The Accu-drive shaking system delivers exceptional speed control, accuracy, safety and durability, the system continuously monitors shaking speed and will maintain set point even under changing loads.

- Two independent LED displays show speed and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch off and audible alarm when program is complete
- Can be used at -10 to +60 °C (max. 80% relative humidity, non condensing), in an incubator, CO<sub>2</sub> incubator or cold room
- Five year warranty on motor and drive mechanism

Displayed speed is accurate to 1% of set speed (when speed is above 100 min<sup>-1</sup>). The ramping feature slowly increases speed to the set point for added safety. Built-in load sensor can detect an unbalanced condition and will automatically reduce the min<sup>-1</sup> to a safe speed to prevent spills and protect samples. Speed calibration mode allows the user to recalibrate the speed display and RS232 serial port provides two-way communication for data logging and unit control.



Supplied with non-slip rubber mat but without attachments. Accessories must be ordered separately. Please see entry 'Accessories for VWR® Standard and Advanced series orbital shakers' for details on other platforms and accessories.

## Shakers and stirrers

Model	Advanced 5000
Max. load (kg)	22,7
Orbit (mm)	25
Platform WxD (mm)	610x457
Power (W)	75
Shaking motion	Orbital
Speed (min <sup>-1</sup> )	20 - 500
Speed accuracy (min <sup>-1</sup> )	±1 below 100
Weight (kg)	45
WxDxH (mm)	676x597x155

Description	Pk	Cat. No.
Advanced 5000 orbital shaker, EU-plug	1	444-2915
Advanced 5000 orbital shaker, UK-plug	1	444-2916
Advanced 5000 orbital shaker, CH-plug	1	444-2917

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	444-0283
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	444-0284
Clamps for media bottles, stainless steel	500 ml	1	444-7035
Clamps for media bottles, stainless steel	1000 ml	1	444-7036
Flask clamps, stainless steel	10 ml	1	444-7040
Flask clamps, stainless steel	25 ml	1	444-7041
Flask clamps, stainless steel	50 ml	1	444-7042
Flask clamps, stainless steel	125 ml	1	444-7043
Flask clamps, stainless steel	250 ml	1	444-7044
Flask clamps, stainless steel	500 ml	1	444-7045
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	444-0276
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	444-0278
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	444-0279
Test tube rack, PVC coated steel	18 - 20 mm Ø tubes, holds 35 tubes	1	444-0280
Test tube rack, PVC coated steel	22 - 25 mm Ø tubes, holds 24 tubes	1	444-0281

<b>Universal platforms</b>			
Universal platform, 610x457 mm*	Standard/Advanced 3500, Advanced 3750**, Standard/Advanced 5000** shakers	1	444-2932
Universal platform, 762x457 mm*	Standard/Advanced 5000 shakers	1	444-2934

<b>Culture platforms</b>			
Culture platform, 610x457 mm*	Standard/Advanced 3500, Advanced 3750**, Standard/Advanced 5000 shakers	1	444-2937

<b>Tier braces</b>			
Set of 4 tier braces for stacking 2 platforms, clearance is 254 mm	Standard/Advanced 3500, Standard/Advanced 5000 shakers	1	444-2965

<b>Replacement rubber mats</b>			
Replacement rubber mat, 610x457 mm	Standard/Advanced 5000 shakers	1	444-2967

<b>Large vessel carrier platforms</b>			
Large vessel carrier platform, has 4 adjustable cushioned rollers to hold glassware securely, 764x459x353 mm, bar size 457 mm	Standard/Advanced 5000 shakers	1	444-2940
Replacement 457 mm roller bar with mounting hardware	Use with carrier 444-2940 or platforms 444-2938 / 444-2939	1	444-2943

<b>Microplate clamp</b>			
Microplate clamp, holds 1 standard microplate or 1 deep-well plate, 89x129 mm	Standard/Advanced 3500, 5000, 10000, 15000 shakers	1	444-2954

<b>Autoclavable PVC Erlenmeyer flask clamps</b>			
Autoclavable PVC flask clamp, 125 ml	125 ml Erlenmeyer flasks	1	444-2960
Autoclavable PVC flask clamp, 250 ml	250 ml Erlenmeyer flasks	1	444-2961
Autoclavable PVC flask clamp, 500 ml	500 ml Erlenmeyer flasks	1	444-2962
Autoclavable PVC flask clamp, 1000 ml	1000 ml Erlenmeyer flasks	1	444-2963
Autoclavable PVC flask clamp, 2000 ml	2000 ml Erlenmeyer flasks	1	444-2964

<b>Flask clamps, stainless steel</b>			
Flask clamps, stainless steel	1000 ml	1	444-7030
Flask clamps, stainless steel	2000 ml	1	444-7031
Flask clamps, stainless steel (for Fernbach flasks)	2800 ml	1	444-7032
Flask clamps, stainless steel	4000 ml	1	444-7033
Flask clamps, stainless steel	6000 ml	1	444-7034

<b>Test tube racks, PVC coated steel</b>			
PVC coated test tube rack, 10 - 14 mm	48 tubes, 10 - 14 mm	1	444-7037
PVC coated test tube rack, 16 - 20 mm	33 tubes, 16 - 20 mm	1	444-7038
PVC coated test tube rack, 21 - 25 mm	21 tubes, 21 - 25 mm	1	444-7039

<b>Test tube racks, pivoting stainless steel</b>			
Pivoting stainless steel test tube rack, 13 mm	90 tubes, 13 mm	1	444-2955
Pivoting stainless steel test tube rack, 16 mm	60 tubes, 16 mm	1	444-2956
Pivoting stainless steel test tube rack, 20 mm	40 tubes, 20 mm (accommodates 15 ml centrifuge tubes)	1	444-2957
Pivoting stainless steel test tube rack, 25 mm	24 tubes, 25 mm	1	444-2958
Pivoting stainless steel test tube rack, 30 mm	21 tubes, 30 mm	1	444-2959

## Incubating shakers, 5000I and 5000IR



VWR incubating/refrigerating 5000IR orbital shakers are designed for a variety of shaking and incubating applications such as cell cultures, solubility studies, bacterial suspensions and extraction procedures. Large capacity platform holds up to 22,7 kg. Variable speed, microprocessor control provides consistent, uniform mixing action. Microprocessor will display last set point and will restart if power is interrupted. Ramping feature slowly increases speed to set point for added safety. The Accu-drive shaking system delivers exceptional speed control, accuracy, safety and durability. System continuously monitors shaking speed and will maintain set point even under changing loads. Displayed speed is accurate to 1% of set speed (when speed is above 100 min<sup>-1</sup>), below 100 rpm, ±1 rpm.

- Three independent LED displays show speed, temperature and time
- Integral timer, 1 s to 160 h, shows elapsed time or counts down, automatic switch-off and audible alarm when program is complete
- Microprocessor PID temperature controller maintains precise temperature from ambient +5 to 65 °C (5000I) or from 15 below ambient (5000IR), adjustable in 1 °C increments and recalls last set point, even when unit has been shut off. Will also restart if power is interrupted
- Opti-Flow forced ventilation system delivers exceptional uniformity
- Overload protection – audible and visual signals will activate when system detects an obstruction or a tray overload
- Polycarbonate lid enables samples to be viewed, without altering internal temperature. When lid is opened, automatic shut-off circuit will stop shaker platform to protect operator
- Uses the same accessories as the VWR® shaker line



5000I



5000IR

Built-in load sensor can detect an unbalanced condition and will automatically reduce min<sup>-1</sup> to a safe speed to prevent spills and protect samples. Powerful triple-eccentric drive and brushless motor is designed for continuous use and is able to handle heavy loads. Spill resistant design protects internal components from accidental spills and leaks. Removable tray design allows chamber to be cleaned easily. Opti-Flow forced ventilation system uses twin induction fans (5000I) or one large, fan (5000IR) and air deflectors to deliver exceptional temperature uniformity and stability. Over-temperature sensor will shut down unit and activate audible and visual alarms if temperature deviates ±1 °C from set point. Speed calibration mode enables user to automatically recalibrate speed display. Temperature calibration mode allows user to calibrate unit to an external temperature device and RS232 serial port provides two-way communication for data logging and unit control.

Supplied with a non slip mat which fits optional universal tray (444-0967) and 2340 mm detachable power cord. Required accessories must be ordered separately.

Model	5000I	5000IR
Int. WxDxH (mm)	629x523x432	
Max. load (kg)	22,7	
Orbit (mm)	25	
Platform WxD (mm)	457x457	
Shaking motion	Orbital	
Speed accuracy	±1 min <sup>-1</sup> below 100 min <sup>-1</sup> ±1% of set speed above 100 min <sup>-1</sup>	
Speed range (min <sup>-1</sup> )	15 - 500	
Temperature range (°C)	Ambient +5...65	15 below ambient...65
Uniformity at 37 (°C)	±0,5	
Weight (kg)	78,9	107
WxDxH (mm)	675x815x596	675x1044x596

Description	Pk	Cat. No.
5000I incubating shaker, EU/UK/CH-plug	1	444-7109
5000IR refrigerated incubating shaker, EU/UK/CH-plug	1	444-7112

Description	For	Pk	Cat. No.
Universal tray, aluminium 457x457 mm	5000I/IR	1	444-0967
<b>Accessories</b>			
Centrifuge tube rack, PVC coated steel	15 ml tubes, holds 35 tubes	1	444-0283
Centrifuge tube rack, PVC coated steel	50 ml tubes, holds 12 tubes	1	444-0284
Clamps for media bottles, stainless steel	500 ml	1	444-7035

## Shakers and stirrers

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Clamps for media bottles, stainless steel	1000 ml	1	444-7036
Flask clamps, stainless steel	10 ml	1	444-7040
Flask clamps, stainless steel	25 ml	1	444-7041
Flask clamps, stainless steel	50 ml	1	444-7042
Flask clamps, stainless steel	125 ml	1	444-7043
Flask clamps, stainless steel	250 ml	1	444-7044
Flask clamps, stainless steel	500 ml	1	444-7045
Microtube rack, PVC coated steel	1,5/2,0 ml tubes, holds 70 tubes	1	444-0276
Test tube rack, PVC coated steel	10 - 13 mm Ø tubes, holds 63 tubes	1	444-0278
Test tube rack, PVC coated steel	14 - 16 mm Ø tubes, holds 48 tubes	1	444-0279
Test tube rack, PVC coated steel	18 - 20 mm Ø tubes, holds 35 tubes	1	444-0280
Test tube rack, PVC coated steel	22 - 25 mm Ø tubes, holds 24 tubes	1	444-0281
<b>Universal platforms</b>			
Universal platform 330x279 mm	Standard/Advanced 3500, Incubating 3500, Advanced 3750, Professional 3500 shakers, mounting Erlenmeyer flask clamps and test tube racks	1	444-7087
<b>Autoclavable PVC Erlenmeyer flask clamps</b>			
Autoclavable PVC flask clamp, 125 ml	125 ml Erlenmeyer flasks	1	444-2960
Autoclavable PVC flask clamp, 250 ml	250 ml Erlenmeyer flasks	1	444-2961
Autoclavable PVC flask clamp, 500 ml	500 ml Erlenmeyer flasks	1	444-2962
Autoclavable PVC flask clamp, 1000 ml	1000 ml Erlenmeyer flasks	1	444-2963
Autoclavable PVC flask clamp, 2000 ml	2000 ml Erlenmeyer flasks	1	444-2964
<b>Flask clamps, stainless steel</b>			
Flask clamps, stainless steel	1000 ml	1	444-7030
Flask clamps, stainless steel	2000 ml	1	444-7031
Flask clamps, stainless steel (for Fernbach flasks)	2800 ml	1	444-7032
Flask clamps, stainless steel	4000 ml	1	444-7033
Flask clamps, stainless steel	6000 ml	1	444-7034
<b>Test tube racks, PVC coated steel</b>			
PVC coated test tube rack, 10 - 14 mm	48 tubes, 10 - 14 mm	1	444-7037
PVC coated test tube rack, 16 - 20 mm	33 tubes, 16 - 20 mm	1	444-7038
PVC coated test tube rack, 21 - 25 mm	21 tubes, 21 - 25 mm	1	444-7039
<b>Test tube racks, pivoting stainless steel</b>			
Pivoting stainless steel test tube rack, 13 mm	90 tubes, 13 mm	1	444-2955
Pivoting stainless steel test tube rack, 16 mm	60 tubes, 16 mm	1	444-2956
Pivoting stainless steel test tube rack, 20 mm	40 tubes, 20 mm (accommodates 15 ml centrifuge tubes)	1	444-2957
Pivoting stainless steel test tube rack, 25 mm	24 tubes, 25 mm	1	444-2958
Pivoting stainless steel test tube rack, 30 mm	21 tubes, 30 mm	1	444-2959

VWR  
COLLECTION

designed for reliability





## VWR Single-Use Solutions

VWR Single-Use Solutions enables biopharmaceutical manufacturers to implement single-use technologies that reduce contamination risk, improve resource efficiency, and lowers labour and energy costs. Our solution provides product choice, services, and the expertise to help navigate through the various fluid-handling challenges, component options plus quality and regulatory compliance constraints of the single-use world. At VWR, our goal is to help accelerate your scientific innovation by providing solutions that allow you to focus on your work and keep your production line running.

Through our Single-Use Solutions, we can help solve unique problems in all areas of a biopharmaceutical manufacturing operation. Our capabilities in the customer Single-Use Solutions, include:

- Tanks and tank liners
- Ported pillow bags and bag mixing systems
- Bottle assemblies
- Hose and tubing manifolds
- Specialty connectors
- Standard and custom products
- Product development and prototyping

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Fluid connectivity knowledge delivered through local single-use experts with direct application knowledge.

Proven single-use expertise in:

- Complete single-use manufacturing facilities
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### CHOICE

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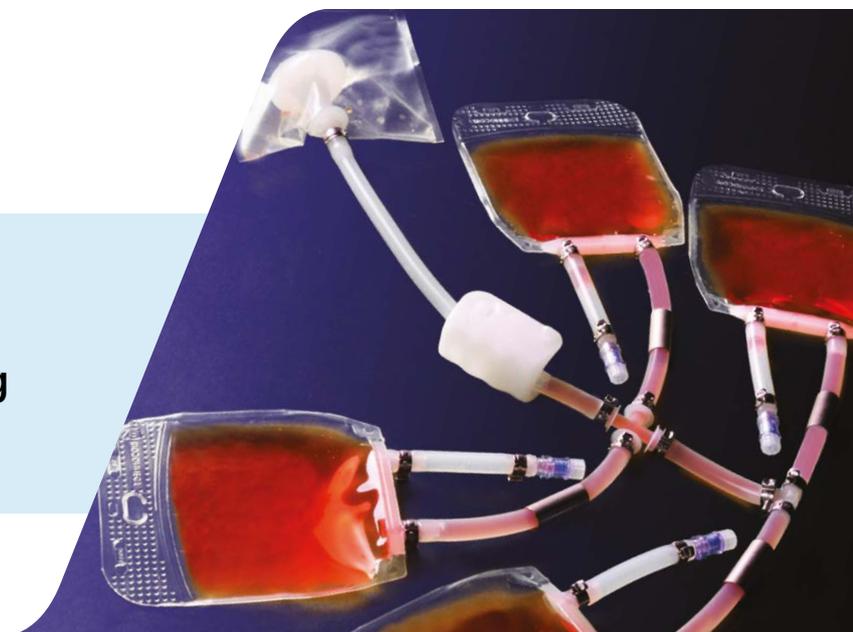
- Open architecture with components sourced from multiple suppliers
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- 100+ standard products available to solve many typical bioprocess operations

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- Unmatched global logistics and planning

To view our entire single-use range, please visit [vwr.com/bioprocessing](http://vwr.com/bioprocessing)



## Magnetic stirrers, Slow Speed series



Standard and Advanced Slow Speed stirrers are designed for growth of suspension and microcarrier cell cultures. Slow Speed stirrers work with cell culture flasks and other vessels designed for slow magnetic stirring. Ideal for use in cold rooms, incubators, or CO<sub>2</sub> incubators (–10 to +40 °C, max. 80% relative humidity, non condensing environment).

- Microprocessor control: Precisely regulates speed through the entire range; stirring function, with continuous use motor and magnet, maintains set speed even under changing load or viscosity
- Adjustment knob: Basic speed control knob with dial markings from 1 to 10 (Standard series)
- LED display: Touch pad controls with easy to read, independent LED displays for speed and time; speed is adjustable in 1 rpm increments (Advanced series)



- Timer (Advanced series) will display elapsed time (1 s to 160 h) or, when programmed to user-defined limit, will shut off unit and an audible alarm sounded when time reaches zero
- Speed ramping feature: Slowly increases speed for improved safety and enhanced coupling; avoids splashing, improves spin bar control and provides excellent low speed control; efficient drive motor eliminates heat transfer to sample

The low profile design means that it takes up minimal space and easily fits into fume hoods and most incubators. The spill resistant housing channels fluids away from internal components and the cast iron base offers durability and added stability. 10 litre model features a glass-filled nylon top plate, which has an easy to clean, reflective white surface. Two litre models have a durable aluminium top plate that will not crack or chip. Maximum vessel diameter is 150 mm (2 litre model) or 250 mm (10 litre model).

Supplied with a 234 cm detachable, 3-wire cord and plug.

Model	Standard Slow Speed 1	Advanced Slow Speed 1	Advanced Slow Speed
Max. stirring capacity H <sub>2</sub> O (l)	2		10
Speed range (min <sup>-1</sup> )		1 - 150	
Power input (W)		14	
Plate material	Aluminium		Nylon, glass filled
Plate dimensions (mm)	178×178		279×318
W×D×H (mm)	216×307×102		279×432×102
Weight (kg)	4,0		6,6

Description	Pk	Cat. No.
Standard Slow Speed stirrer 1, 2 l, EU plug	1	444-7121
Standard Slow Speed stirrer 1, 2 l, UK plug	1	444-7122
Standard Slow Speed stirrer 1, 2 l, CH plug	1	444-7123
Advanced Slow Speed stirrer 1, 2 l, EU plug	1	444-7124
Advanced Slow Speed stirrer 1, 2 l, UK plug	1	444-7125
Advanced Slow Speed stirrer 1, 2 l, CH plug	1	444-7126
Advanced Slow Speed stirrer, 10 l, EU plug	1	444-7127
Advanced Slow Speed stirrer, 10 l, UK plug	1	444-7128
Advanced Slow Speed stirrer, 10 l, CH plug	1	444-7129



### Digital timer, one channel, Traceable®

- Counts down and up for 99 minutes, 59 seconds
- Stopwatch mode
- Waterproof and steamproof design
- For wash down areas, wet labs, manufacturing plants or field work
- Memory function

Complies with ISO/IEC 17025, ANSI/NCSL Z540-1 and 9001, accredited by A2LA indicates traceability to standards provided by NIST.

Supplied with battery, stand, removable suction cup and Traceable® certificate of calibration.

Description	Colour	Accuracy (%)	WxDxH (mm)	Pk	Cat. No.
Digital timer, single channel, Traceable®	White/blue	±0,01	84x13x76	1	609-0197

### Digital timer, two channels, Jumbo, Traceable®

- Simultaneous programming of two different activities from 24 hours to 1 second
- Features: count up/down, time in/out, memory, alarm, 12/24 hour clock, stopwatch
- Jumbo display (25 mm high LCD digits) easy to read with indicator when 0 is reached
- Display is adjustable from 90° to 180°: Can be used flat, in the sit up position, or wall-mount with the bracket supplied
- Electronic alarm that may be turned off or silenced automatically after 1 minute
- A second display mode shows time of day and a stopwatch (for count up)

Supplied with bracket for wall mounting, AAA battery and Traceable® certificate of calibration.



Description	Colour	Accuracy (%)	WxDxH (mm)	Pk	Cat. No.
Digital timer, two channels, Jumbo, Traceable®	Black	±0,01	95x140x13	1	609-0090



### Digital timer, three channels, Traceable® Original™

This three-channel lab timer is ideal for quality control and experimental requirements. It signals drying and incubating times, helps catch all test results, and even alarms for appointments.

- Timing capacity: 9 hours, 59 minutes, 59 seconds (resolution: 1 second)
- Features countdown, distinct alarm and display indicator per channel
- Alarms sound for 60 seconds; can be manually silenced or automatically silences after 1 minute
- Extremely simple operation
- Large 6,3 mm high LCD digits are easy to read
- Portable thanks to small size and light weight

Weight: 113 g

A serial numbered certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA to indicate instrument traceability to standards provided by the National Institute of Standards and Technology.

Supplied with two AA batteries and Traceable® certificate.

Description	Colour	Accuracy (%)	WxDxH (mm)	Pk	Cat. No.
Digital timer, three channels	White/blue	±0,001	76x35x76	1	609-0220

## Digital timer, three channels, Traceable®

This user-friendly bench timer displays three different times simultaneously, counts down and alarms. It also functions as a stopwatch and a 'time of day' clock displaying time to the second.



- Timing capacity: 99 hours, 59 minutes, and 59 seconds
- Quartz-crystal accuracy is 0,001%
- Four rubber feet keep the timer off a wet bench
- Three channels may be started individually or simultaneously
- Triple display allows simultaneous up and down timing on different channels
- When zero is reached, an alarm sounds, a TIME'S UP message flashes on the display, and timer begins counting up
- Adjustable alarm volume and duration: Alarm may be set to silence automatically after 1 minute or to sound continuously until turned off
- Memories return the display to the previously programmed time at the touch of a key

Weight: 85 g

A serial numbered certificate is provided from an ISO 17025 calibration laboratory accredited by A2LA to indicate instrument traceability to standards provided by the National Institute of Standards and Technology.

Supplied with AAA alkaline battery and Traceable® certificate.

Description	Colour	Accuracy (%)	WxDxH (mm)	Pk	Cat. No.
Digital timer, three channels, Traceable®	White/grey	0,001	82,5x25,4x76	1	609-0218

## Digital timer, four channels, with white board

This timer is built in a white board with marker and eraser, which helps to keep track of time and other critical information. It provides different mounting options: Flat on bench, vertical view and metal surface attachment.



609-0208

- Switchable count up and down with elapsed time displayed after countdown
- Switchable capacity of 23 hours, 59 minutes to 59 minutes, 59 seconds
- Audible alarm for each channel
- Last time set memory
- Audible confirmation for a data entry key press

Individually tested and inspected using NIST in A2LA accredited laboratory (certification #2448.01), assuring conformance to ISO 17025:2005. RoHS compliant.

Supplied with batteries and certificate of calibration. Requires two AAA batteries.

Description	Colour	Accuracy	WxDxH (mm)	Pk	Cat. No.
Digital timer, four channels, with white board	White	±5 s/day	114,3x25,4x88,9	1	609-0208

## Data logging thermometers, Traceable® excursion trac



620-2205



620-2207

These highly accurate logging thermometers are designed to monitor temperatures in refrigerators, freezers, water baths, heating blocks and incubators.

- High/low alarms and time stamps
- User-defined time intervals from 1 minute to 24 hours
- Stores up to 10 unique alarm events
- Meets current CDC requirements for vaccine storage and monitoring
- Rolling memory structure, maintains most recent 525 600 temperature observations
- Memory can be cleared on unit after downloading data to USB stick
- Hassle-free retrieval of data: Unit remains in use while downloading and analysing data
- Status indicators: Low battery, full memory, USB data transfer and active alarm state

Traceable to NIST. Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1 and 9001.

Supplied with individually numbered Traceable® certificate of calibration.

Range (°C)	Accuracy (°C)	Resolution (°C)	WxDxH (mm)	Weight (g)	Probe	Pk	Cat. No.
-50...+70	±0,25	0,01	70x20x107	140	1 bottle	1	620-2204
-50...+70	±0,25	0,01	70x20x107	140	2 bottles	1	620-2205
-50...+70	±0,25	0,01	70x20x107	140	1 bullet	1	620-2206
-50...+70	±0,25	0,01	70x20x107	140	2 bullets	1	620-2207
-50...+70	±0,25	0,01	70x20x107	140	1 bottle/1 bullet	1	620-2208
-50...+70	±0,25	0,01	70x20x107	140	1 stainless steel	1	620-2209
-50...+70	±0,25	0,01	70x20x107	140	2 stainless steel	1	620-2210



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## VWR® for temperature measurement and recording

Glass thermometers - Temperature indicating strips - Infra red thermometers - Digital thermometers - Hygrometers - Chart recorders - Data loggers - Weather stations

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## Data logging ULT freezer thermometers, Traceable®, excursion trac



Data logging thermometers with user-defined timing intervals. Ideal for monitoring ultra-low temperature freezers.

- Simultaneously display minimum, maximum and current temperatures, °F/°C switchable
- Rolling memory structure, maintains the most recent 525 600 temperature observations and 10 unique alarm events
- Recorded data (CSV file) may be transferred from thermometer to PC or Mac using a USB flash drive - no additional software is needed
- Memory can be cleared on unit after downloading data to USB stick
- Smart alarm features a visual/audible alarm that continues to alarm even if the unit returns to non alarm conditions
- Status indicators - low battery, memory full, USB data transfer and active alarm state
- Includes 24,5 cm PTFE cable
- Hassle-free retrieval of data - unit can remain in use while downloading and analysing data



620-2440

Thermometer is calibrated at multiple points (-80; -40; 0 and +100 °C) and comes standard with an individually serialised and certified Traceable® calibration certificate from an ISO/IEC 17025 calibration laboratory accredited by A2LA.

Supplied with stand, batteries, VELCRO®, magnetic strips, wall mount and Traceable® certificate.

Description	Range (°C)	Accuracy (°C)	Resolution (°C)	Probe	WxDxH (mm)	Weight (g)	Pk	Cat. No.
Excursion trac data logging ULT freezer thermometer, 1 channel	-90...+105	±0,2	0,01	Platinum RTD sensor, stainless steel 316 probe (included)	70x20x107	140	1	620-2440
Excursion trac data logging ULT freezer thermometer, 2 channels	-90...+105	±0,2	0,01	Platinum RTD sensor, stainless steel 316 probe (included)	70x20x107	140	1	620-2441
Excursion trac USB data logging refrigerator/freezer thermometer	-50...+70	±0,2	0,01	1 plastic bottle designed for refrigerator/freezer	70x20x107	140	1	620-2444
Excursion trac USB data logging refrigerator/freezer thermometer	-50...+70	±0,2	0,01	2 plastic bottles designed for refrigerator/freezer	70x20x107	140	1	620-2445

## Liquid nitrogen USB data logging thermometers, Traceable® excursion trac



These USB Traceable® excursion trac LN<sub>2</sub> data logging thermometers monitor the temperature in the liquid nitrogen Dewars, covering cryogenic needs for sensitive, irreplaceable biological samples.

- Memory capacity of 525 500 temperature observations
- Four calibration points: -196; -80; 0 and +100 °C
- Monitor readings overnight, at the weekend, or for any time period with rolling data log
- User-defined data logging interval of 1 observation/minute to 1 observation/24 hours
- Memory capacity maintains a year of recorded data when using 1 minute intervals and longer when using larger intervals
- Status indicators: Low battery, memory full, USB data transfer and active alarm state

**Hi/Lo alarms and time/date stamps:** Alarm tracking feature stores in memory each alarm event detailing when the alarm state occurred, as well as when the unit returned back to within range. Alarm state indicators include visual LEDs, audio alerts and flashing LCD segments. Data for up to 10 different alarm events can be retrieved with the most current event viewable on the display.

**Smart alarm signals 'out of range' conditions:** When an 'out of range' condition is sensed, the smart alarm triggers. Smart alarm features visual and audible indicators which continuously signals until acknowledged, even if the parameter returns to the non alarm range.



**USB data transfer:** This liquid nitrogen temperature monitor allows recorded data, in a CSV format, to be transferred from the thermometer to PC/Mac with a USB flash drive (not included). Specific software is not needed for this thermometer. Each device has a unique ID that allows multiple units to be used in the same location.

Multi-point calibration on an individually numbered Traceable® certificate which ensures accuracy from our ISO/IEC 17025:2005 (1750.01) calibration laboratory accredited by A2LA. It indicates traceability of measurements to the SI units through NIST or other recognised national measurement institutes (NMI) that are signatories to the CIPM Mutual Recognition Agreement.

Supplied with stainless steel probe(s), stand, VELCRO®, magnetic strips, wall mount, Traceable® certificate and batteries.

Description	Range (°C)	Accuracy (°C)	Resolution (°C)	Probe	Weight (g)	Pk	Cat. No.
USB data logging liquid nitrogen Traceable® excursion trac thermometer, with 1 probe	-200...105	±0,25	0,01	1 stainless steel	141,74	1	620-2633
USB data logging liquid nitrogen Traceable® excursion trac thermometer, with 2 probes	-200...105	±0,25	0,01	2 stainless steel	141,74	1	620-2634

## Temperature logger, Traceable® logger trac



This temperature logger can display, record and report data during storage, handling and transportation of products.

- Reusable device with active LCD for cumulative duration of temperature excursion from user-selected minimum/maximum values to be viewed immediately and downloaded if needed
- LCD display shows the running alarm tally based on the acceptable temperature range and recording interval: Alarm tally is incremented when reading goes outside acceptable parameters during recording interval
- Once an alarm condition has occurred, an 'ALARM' notification appears on the display: If too many alarm events occur within pre-set parameters 'QUARANTINE' will appear
- Pre-programmed with alarm values of 2 and 8 °C and a recording interval to allow for 30 days of recording
- For complete flexibility, temperature alarm can be modified between -35 and +50 °C and time intervals from every 2 seconds to every 24 hours
- Internal flash memory stores 7680 readings
- To ensure that no data is lost, once the memory is full the thermometer will stop logging data (data will not be overwritten)



620-2322

Calibration complies with ISO/IEC 17025, ANSI/NCSL Z540-1 and 9001, accredited by A2LA indicates traceability to standards provided by NIST.

Starter kit includes logger, cradle/cable, MaxiThermal software package, battery and Traceable® certificate of calibration.

Description	Range (°C)	Accuracy (°C)	Resolution (°C)	Memory	Pk	Cat. No.
Starter kit	-35...+50	±0,2 (0...10); 1,0	0,1	7680 values	1	620-2322
Logger (only) with Traceable® certificate of calibration	-35...+50	±0,2 (0...10); 1,0	0,1	7680 values	1	620-2324
Logger (only) with Traceable® certificate of calibration	-35...+50	±0,2 (0...10); 1,0	0,1	7680 values	1	620-2667

Description	Pk	Cat. No.
<b>Accessories</b>		
Paper sleeves	100	620-2323
Sleeves	100	620-2668
Cradle and cable	1	620-2669
MaxiThermal software	1	620-2672

## Temperature and humidity logger, Traceable®, logger trac



These loggers travel with shipments to track relative humidity and temperature. For complete flexibility, the user-defined recording interval may be set based on the number of desired days to log (from 4 hours to 365 days) or the desired time interval (from every 2 seconds to every 24 hours). To insure that no data is lost, once memory is full the thermometer/hygrometer will stop logging data (data will not be overwritten).

- User-selectable humidity/temperature parameters (high and low values) in 1,0% or 1,0 °C increments
- Displays cumulative alarm duration
- Current RH and temperature, minimum/maximum temperature achieved, cumulative running time

ISO/IEC 17025 calibration laboratory accredited by A2LA indicating traceability to NIST.

Starter kit includes Traceable® logger trac logger, data capture cable, MaxiThermal software package, battery and Traceable® certificate of calibration.



Model	Logger trac
Range	-30...+72 °C 0 – 100% rF
Accuracy	±0,2 (0...10); ±0,5 °C; ±3,0 (25 - 75)% RH
Resolution	0,1 °C; 0,1% rF
WxDxH (mm)	88,9x50,8x27,9
Weight (g)	69,5

Description	Memory	Pk	Cat. No.
Starter kit, logger trac	30720 values	1	620-2325
Logger, logger trac	30720 values	1	620-2326
Logger, logger trac	30720 values	1	620-2670

Description	Pk	Cat. No.
<b>Accessories for temperature and humidity logger, Traceable®, Logger-Trac™</b>		
USB cable	1	620-2671
<b>Accessories</b>		
MaxiThermal software	1	620-2672

## Precision balances with touch screen, TP series



Laboratory precision balances with 5" colour touch screen display with advanced applications and large databases for professional weighing. The user has easy and intuitive access to balance functions, via interactive, icon-driven menus ensuring efficient and productive weighing. Balances can be used by up to 10 different users, each with their own customisable settings and password protection. Ideal for laboratories requiring GLP compliance.

- Internal and external calibration (optional factory calibration certificate)
- Multilanguage (English, German, French, Italian, Spanish or Portuguese)



611-3689

- Check-weighing, statistics, dynamic-weighing, formulation and advanced piece-counting function with statistics report
- Advanced density function, with density index calculation for quality assessment of metals
- Special textile function to measure fibres/filaments (cotton, linen, wool, nylon, polyester) with statistics report
- Serial output for connection to printer, USB port for database import or export and test results

EN 61326-1:2013, EN 61010-1:2010, EN 61010-2-010:2014, EN 50581:2012

Models with a W in the model name have a three-door windshield, D indicates dual range and i shows internal calibration. -C models are supplied with a factory calibration certificate.



611-3704



611-3696

Model	Readability (g)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
<b>Models without factory calibration certificate</b>						
TPW 213i	0,001	±3	210	Ø 110	1	611-3687
TPW 313i	0,001	±3	310	Ø 110	1	611-3688
TPW 523i	0,001	±2	520	Ø 110	1	611-3689
TPW 723i	0,001	±2	720	Ø 110	1	611-3690
TP 2102	0,01	±30	2100	Ø 160	1	611-3695
TP 4202	0,01	±30	4200	Ø 160	1	611-3696
TP 6202i	0,01	±30	6200	Ø 160	1	611-3697
TP 6501	0,1	±100	6500	195×175	1	611-3701
TP 12001	0,1	±100	12	195×175	1	611-3702
TP 20001	0,1	±400	20	195×175	1	611-3703
<b>Models with factory calibration certificate</b>						
TPW 213i-C	0,001	±3	210	Ø 110	1	611-3691
TPW 313i-C	0,001	±3	310	Ø 110	1	611-3692
TPW 523i-C	0,001	±2	520	Ø 110	1	611-3693
TPW 723i-C	0,001	±2	720	Ø 110	1	611-3694
TP 2102-C	0,01	±30	2100	Ø 160	1	611-3698
TP 4202-C	0,01	±30	4200	Ø 160	1	611-3699
TP 6202i-C	0,01	±30	6200	Ø 160	1	611-3700
TP 6501-C	0,1	±100	6500	195×175	1	611-3704
TP 12001-C	0,1	±100	12	195×175	1	611-3705
TP 20001-C	0,1	±400	20	195×175	1	611-3706

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Roll of 54×24 mm labels (500)	TLP-50 printer (630-1485)	1 Roll	611-3662
Density kit DT004 (solids and liquids) for VWR precision balances with readability 0,01 g		1 KIT	611-2551

## Analytical balances with touch screen, TA series



Laboratory analytical balances that have 5" colour touch screen display with advanced applications and large databases for professional weighing. The user has easy and intuitive access to balance functions, via interactive, icon-driven menus ensuring efficient and productive weighing. Balances can be used by up to 10 different users, each with their own customisable settings and password protection. Ideal for laboratories requiring GLP compliance.



- Internal and external calibration (optional factory calibration certificate)
- Multilanguage (English, German, French, Italian, Spanish or Portuguese)
- Check-weighing, statistics, dynamic weighing, formulation and advanced piece-counting function with statistics report
- Advanced density function, with density index calculation for quality assessment of metals
- Special textile function to measure fibres/filaments (cotton, linen, wool, nylon, polyester) with statistics report
- Serial output for connection to printer, USB port for database import or export and test results

Models with built-in ioniser, denoted by -ION, ensure accurate sample preparation. Static charges accumulate in different samples that are routinely weighed in the laboratory. These static charges can build up and alter the weighing value. By blowing ions, the built-in ioniser neutralises static electricity and within seconds the sample is ready to be weighed. The balance calibration system automatically calibrates the balance when there is a temperature change or at a set period of time (factory settings), this ensures accurate measurements even if the user has not manually calibrated the balance.

EN 61326-1:2013, EN 61010-1:2010, EN 61010-2-010:2014, EN 50581:2012

Model	Readability (mg)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
<b>Models without factory calibration certificate</b>						
TA 164i	0,1	±0,3	160	Ø 80	1	611-3673
TA 224i	0,1	±0,3	220	Ø 80	1	611-3674
TA 254i	0,1	±0,3	250	Ø 80	1	611-3675
TA 314i	0,1	±0,4	310	Ø 80	1	611-3676
TA 414i	0,1	±0,5	410	Ø 80	1	611-3677
TA 514i	0,1	±0,5	510	Ø 80	1	611-3678
TA 614i	0,1	±0,6	610	Ø 80	1	611-3679
<b>Models with factory calibration certificate</b>						
TA 164i-C	0,1	±0,3	160	Ø 80	1	611-3680
TA 224i-C	0,1	±0,3	220	Ø 80	1	611-3681
TA 254i-C	0,1	±0,3	250	Ø 80	1	611-3682
TA 314i-C	0,1	±0,4	310	Ø 80	1	611-3683
TA 414i-C	0,1	±0,5	410	Ø 80	1	611-3684
TA 514i-C	0,1	±0,5	510	Ø 80	1	611-3685
TA 614i-C	0,1	±0,6	610	Ø 80	1	611-3686
<b>Description</b>						
<b>Accessories</b>					<b>Pk</b>	<b>Cat. No.</b>
Roll of 54x24 mm labels (500)			TLP-50 printer (630-1485)		1 Roll	611-3662

## Semi-micro balances with touch screen, TS series



Semi-micro balances that have 5" colour touch screen display with advanced applications and large databases for professional weighing. The user has easy and intuitive access to balance functions, via interactive, icon-driven menus ensuring efficient and productive weighing. Balances can be used by up to 10 different users, each with their own customisable settings and password protection. Ideal for laboratories requiring GLP compliance.

- Internal and external calibration (optional factory calibration certificate)
- Multi-language (English, German, French, Italian, Spanish or Portuguese)
- Check-weighing, statistics, dynamic-weighing, formulation and advanced piece-counting function with statistics report
- Advanced density function, with density index calculation for quality assessment of metals
- Special textile function to measure fibres/filaments (cotton, linen, wool, nylon and polyester) with statistics report
- Serial output for connection to printer, USB port for database import or export and test results

EN 61326-1:2013, EN 61010-1:2010, EN 61010-2-010:2014, EN 50581:2012



Model	Readability (mg)	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
<b>Models without factory calibration certificate</b>						
TS 425i	0,01	±0,05	42	Ø 80	1	611-3663
TS 1265Di	0,01 / 0,1	±0,08/±0,2	62 / 120	Ø 80	1	611-3664
TS 2265Di	0,01 / 0,1	±0,1/±0,2	62 / 220	Ø 80	1	611-3665
TS 2285Di	0,01 / 0,1	±0,1/±0,2	82 / 220	Ø 80	1	611-3666
TS 2215Di	0,01 / 0,1	±0,1/±0,2	102 / 220	Ø 80	1	611-3667
<b>Models with factory calibration certificate</b>						
TS 425i-C	0,01	±0,05	42	Ø 80	1	611-3668
TS 1265Di-C	0,01 / 0,1	±0,08/±0,2	62 / 120	Ø 80	1	611-3669
TS 2265Di-C	0,01 / 0,1	±0,1/±0,2	62 / 220	Ø 80	1	611-3670
TS 2285Di-C	0,01 / 0,1	±0,1/±0,2	82 / 220	Ø 80	1	611-3671
TS 2215Di-C	0,01 / 0,1	±0,1/±0,2	102 / 220	Ø 80	1	611-3672

Description	For	Pk	Cat. No.
<b>Accessories</b>			
Thermal printer with statistics function, print speed 0,75 lines/s, 40/80 characters/line		1	611-3623
Roll of 54x24 mm labels (500)	TLP-50 printer (630-1485)	1 Roll	611-3662
Paper roll for thermal printer	Printer (611-3623)	1 Roll	611-3714

## Semi-micro balances with ioniser, SM &amp; SMG series



Semi-micro balances with resolution of 0,01 mg and a built-in ioniser which ensures accurate sample preparation. Static charges accumulate in different samples that are routinely weighed in the laboratory. These static charges can build up and alter the weighing value. By blowing ions, the built-in ioniser neutralises static electricity and within seconds the sample is ready to be weighed. The balance calibration system automatically calibrates the balance when there is a temperature change or at a set period of time (factory settings), this ensures accurate measurements even if the user has not manually calibrated the balance.



- Integrated weighing sensor for enhanced stability and quick response time
- Selectable filter levels and measuring units
- Check-weighing (alarm function), weight-totalising, piece-counting functions and density determination
- Automatic internal calibration and RS232 connection as standard (optional factory calibration certificate)
- Large graphic display available, includes GLP procedures, time/date, formulation with database capability and multi-language options

Balances are equipped with a new highly integrated electromagnetic cell. All models feature automatic internal calibration and are characterised by a high level of precision and repeatability. These VWR semi-micro balances provide an excellent price/performance ratio, thanks to continuous intensive research and study of how weighing works.

EN 61326-1:2013, EN 61010-1:2010, EN 61010-2-010:2014, EN 50581:2012

Optional Tablet System (611-8683) is suitable for use with models denoted with \*.

Supplied with mains adapter and universal plug suitable for use in EU and UK. Optional accessories include density determination kit and serial printer.

Models with suffix D have dual range, i denotes internal calibration and C denotes calibration certificate.

Model	Readability	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
<b>Models without a factory calibration certificate</b>						
SM 425i-ION *	0,01 mg	±0,05	42	Ø 80	1	611-3799
SM 1265Di-ION *	0,01 / 0,1 mg	±0,08/±0,2	62 / 120	Ø 80	1	611-3800
SM 2285Di-ION*	0,01 / 0,1 mg	±0,1/±0,2	82 / 220	Ø 80	1	611-3801
SMG 425i-ION*	0,01 mg	±0,05	42	Ø 80	1	611-3805
SMG 1265Di-ION *	0,01 / 0,1 mg	±0,08/±0,2	62 / 120	Ø 80	1	611-3806
SMG 2285Di-ION *	0,01 / 0,1 mg	±0,1/±0,2	82 / 220 g	Ø 80	1	611-3807
<b>Models with a factory calibration certificate</b>						
SM 425i-ION-C *	0,01 mg	±0,05	42	Ø 80	1	611-3802
SM 1265Di-ION-C *	0,01 / 0,1 mg	±0,08/±0,2	62 / 120	Ø 80	1	611-3803
SM 2285Di-ION-C *	0,01 / 0,1 mg	±0,1/±0,2	82 / 220	Ø 80	1	611-3804
SMG 425i-ION-C*	0,01 mg	±0,05	42	Ø 80	1	611-3808
SMG 1265Di-ION-C*	0,01 / 0,1 mg	±0,08/±0,2	62 / 120	Ø 80	1	611-3809
SMG 2285Di-ION-C *	0,01 / 0,1 mg	±0,1/±0,2	82 / 220	Ø 80	1	611-3810
Description	For				Pk	Cat. No.
<b>Accessories</b>						
Thermal printer with statistics function, print speed 0,75 lines/s, 40/80 characters/line					1	611-3623
Paper roll for thermal printer	Printer (611-3623)				1 Roll	611-3714

## Semi-micro balances with touch screen and ioniser, TS series



These semi-micro balances with 5" colour touch screen display and built-in ioniser ensure accurate sample preparation. Static charges accumulate in different samples that are routinely weighed in the laboratory. These static charges can build up and alter the weighing value. By blowing ions, the built-in ioniser neutralises static electricity and within seconds the sample is ready to be weighed. The balance calibration system automatically calibrates the balance when there is a temperature change or at a set period of time (factory settings), this ensures accurate measurements even if the user has not manually calibrated the balance.

- Internal calibration and RS232 connection as standard (optional factory calibration certificate)
- Multi-language (English, German, French, Italian, Spanish or Portuguese)
- Check-weighing, statistics, dynamic-weighing, formulation and advanced piece-counting function with statistics report
- Advanced density function, with density index calculation for quality assessment of metals
- Special textile function to measure fibres/filaments with statistics report
- Serial output for connection to printer, USB port for database import or export and test results

Balances feature advanced applications and large databases for professional weighing. The user has easy and intuitive access to balance functions, via interactive, icon-driven menus ensuring efficient and productive weighing. Balances can be used by up to 10 different users, each with their own customisable settings and password protection. Ideal for laboratories requiring GLP compliance.

EN 61326-1:2013, EN 61010-1:2010, EN 61010-2-010:2014, EN 50581:2012

Supplied with mains adapter and universal plug suitable for use in EU and UK. Optional accessories include density determination kit and serial printer.

Models with suffix D have dual range, i denotes internal calibration and C denotes calibration certificate.



Model	Readability	Linearity (mg)	Weighing cap. (g)	Pan (mm)	Pk	Cat. No.
<b>Models with a factory calibration certificate</b>						
TS 2285Di-ION-C	0,01 / 0,1 mg	±0,1/±0,2	82 / 220	Ø 80	1	611-3814



## Top loading VWR® VAPOUR-Line<sup>eco</sup> autoclaves

Easy to use, automatic, flexible, reliable and convenient autoclave for all standard laboratory procedures with special features, such as F<sub>0</sub> calculation and liquid sterilisation with flexible thermoprobe (for 50 litre model).

- User friendly programmer, instructions printed on the front panel
- Easy to install, easy to use and maintain
- Fully automatic with GLP special functions
- Reliable: 10-year warranty against perforating corrosion
- Customisable programs
- Safety: ABS insulating lid with vertical position lock – temperature-dependent lid lock
- Flexible PT100 thermoprobe for eco 50 (fixed for eco 25), can be positioned in liquid load (max. 50 ml recommended)

Inside pressure vessel and outside structure made from stainless steel (eco 25 AISI 304 S/S, eco 50 AISI 316L S/S)

Conforms to European PED regulations, CE mark. IQ, OQ, PQ documentation available on request.

Please contact your local VWR office to clarify the correct model/features that suit your application.



Model	VAPOUR-Line <sup>eco</sup> 25	VAPOUR-Line <sup>eco</sup> 50
Capacity (l)	25	50
Material	AISI 304 S/S	AISI 316L S/S
Temperature (°C)		134
Max. pressure (bar)		2,1
Voltage (V)	230	380 (3 phase)
Int.Ø×H (mm)	250×450	320×600
W×D×H ext. (mm)	550×540×1005	550×570×1005
Weight (kg)	45	60

Description	Pk	Cat. No.
Autoclave, vertical, VAPOUR-Line <sup>eco</sup> 25, with 5 personal programs, can hold 1× Ecobox-25 or 2× Ecobox-25-Mini	1	481-0671
Autoclave, vertical, VAPOUR-Line <sup>eco</sup> 25, with printer, with 5 personal programs, can hold 1× Ecobox-25 or 2× Ecobox-25-Mini	1	481-0708
Autoclave, vertical, VAPOUR-Line <sup>eco</sup> 50, with 7 personal programs, can hold 2× Ecobox-50 or 3× Ecobox-50-Mini	1	481-0665

Description	Pk	Cat. No.
<b>Accessories</b>		
Data printer	1	481-0673
Ecobox-25 basket: (Ø×H): 240×420 mm, in stainless steel AISI 304 (max. load: 1 basket)	1	710-0887
Ecobox-25-mini basket: (Ø×H): 240×210 mm, in stainless steel AISI 304 (max. load: 2 baskets)	1	481-0669
Ecobox-50 basket: (Ø×H): 310×285 mm, in stainless steel AISI 304 (max. load: 2 baskets)	1	481-0672
Ecobox-50-mini basket: (Ø×H): 310×190 mm in stainless steel AISI 304 (max. load: 3 baskets)	1	481-0668
IQ-OQ-PQ instruction manual for Beta 25 Easy Lock autoclave	1	481-0724
Betabox basket: Ext. Ø 310×380 mm, in stainless steel AISI 304 (max. load: 1 basket)	1	481-0677



## Autoclaves, VAPOUR- Line Lite

Field-Koch autoclave for occasional use. AISI 304 stainless steel housing, easy to maintain and disinfect, aluminium inner chamber and ABS insulating lid with locking system.

- Microprocessor-controlled automatic thermal regulation
- Digital temperature and sterilisation time display
- Automatic ventilation valve and electronic temperature cut-off safety protection system
- Reinforced heating element and PT100 probe
- Automatic sterilisation programs
- Available with or without integrated printer

Basket is not supplied with the autoclave. Please order separately.



Model	VAPOUR- Line Lite	VAPOUR- Line Lite P
Capacity (l)	23	
Material	Exterior: Stainless steel AISI 304 Interior: Aluminium	
Temperature (°C)	Max. 121	
Int. ØxH (mm)	310x290	
Ext. ØxH (mm)	470x580	
Weight (kg)	13,25	

Description	Pk	Cat. No.
Bench top vertical autoclave, VAPOUR- Line Lite	1	481-0667
Bench top vertical autoclave, with integrated printer, VAPOUR- Line Lite P	1	481-0666

Description	Pk	Cat. No.
<b>Accessory</b> LITEbox basket: (ØxH): 280x260, with transporting handle, in stainless steel	1	481-0670

## Vertical autoclaves, VAPOUR-Line



VAPOUR-Line autoclaves are designed for applications such as liquids in open or slightly closed vessels, instruments and solids, unwrapped and waste sterilisation.

- Equipped as standard with sterile filter for chamber venting
- Microprocessor controller with 10 pre-programmed protocols (5 pre-recorded freely modifiable and 5 protected by code)
- TÜV-approved safety locking mechanism and thermal lock according to EN DIN 61010-2-43 with flexible sensor reference probe
- Air removal by gravity (except M models)
- Integrated exhaust steam condensation, water cooled and temperature controlled
- Integrated memory chip for storing up to 150 cycles (later printout possible)

All VAPOUR-Line 80 and 135 models generate steam directly in the chamber. Heating elements are situated under the base of the chamber so there is no contact between them and feed water, ensuring long element lifetime and preventing contamination by spilt waste, broken bottles or similar. The elements are protected from overheating by a temperature limiter.

VAPOUR-Line 80M and 135M models are equipped with an effective air cooling system for liquid sterilisation. This speeds cooling time by up to 40% compared to standard models.

RS485 interface

Please contact your local VWR sales office to clarify the correct model/features that suit your application.



Model	Capacity (l)	Temperature (°C)	Heating power (W)	Voltage (V)	Int. ØxH (mm)	WxDxH ext. (mm)	Weight (kg)
VAPOUR-Line 80/80M	80	98...138	3000	230	410x600	740x915x600	155/165
VAPOUR-Line 135/135M	135		6000	Phase 380 V+ N	500x660	840x965x700	195/205

Description	Pk	Cat. No.
Vertical autoclave, VAPOUR-Line 80, EU-plug	1	481-0689
Vertical autoclave, VAPOUR-Line 80, UK-plug	1	481-0690
Vertical autoclave, VAPOUR-Line 80, CH-plug	1	481-0727
Vertical autoclave, VAPOUR-Line 80M, EU-plug, with integrated cooling system	1	481-0693
Vertical autoclave, VAPOUR-Line 80M, UK-plug, with integrated cooling system	1	481-0694
Vertical autoclave, VAPOUR-Line 80M, CH-plug, with integrated cooling system	1	481-0728
Vertical autoclave, VAPOUR-Line 135, EU-plug	1	481-0691
Vertical autoclave, VAPOUR-Line 135, UK-plug	1	481-0692
Vertical autoclave, VAPOUR-Line 135M, EU-plug, with integrated cooling system	1	481-0695
Vertical autoclave, VAPOUR-Line 135M, UK-plug, with integrated cooling system	1	481-0696

Description	Pk	Cat. No.
<b>Accessories</b>		
Stacking basket 400x300 mm (ØxH) for 80 models (max. 2)	1	481-0698
Stacking basket 485x300 mm (ØxH) for 135 models (max. 2)	1	481-0700
Wire mesh basket with closed bottom: 400x245 mm (ØxH) for 80 models (only in the lower part)	1	481-0702
Wire mesh basket with closed bottom: 495x245 mm (ØxH) for 135 models (only in the lower part)	1	481-0703
Waste bucket: 400x300 mm (ØxH) for 80 models (max.1)	1	481-0699
Waste bucket: 485x300 mm (ØxH) for 135 models (max. 1)	1	481-0701
Exhaust steam collecting tank (requires installation), for all models	1	481-0704
Lid seal for VAPOUR-Line 80 model	1	481-0705
Lid seal for VAPOUR-Line 135 model	1	481-0706
Magnetic valve	1	481-0707
Printer	1	481-0697



### Bags, biohazard



Sturdy bags, ideal for disposing of biologically hazardous waste that must first be autoclaved. Supplied complete with the necessary sealing wires. HDPE, 100 µm thick, red, with 'Biohazard' label.

- Autoclavable up to 121 °C
- Highly resistant to tears and impact
- Luminous red for easy recognition and highly visible 'Biohazard' label with corresponding warning sign

Capacity (l)	Material	LxW (mm)	Pk	Cat. No.
12	HDPE	610x305	50	129-0039
75	HDPE	914x610	50	129-0040
260	HDPE	1220x965	50	129-0041

### Bags, biohazard



These sturdy bags are ideal for disposing of biologically hazardous waste that must first be autoclaved. PP, 50 µm thick, red.

- Autoclavable up to 135 °C
- Available with or without temperature indicator
- Useful temperature indicator text is white before autoclaving, then black
- Text 'Contents Have Been Autoclaved' indicate successful autoclaving
- Luminous red for easy recognition and highly visible 'Biohazard' label with corresponding warning sign

Bags meet the requirements of the 480 g tensile strength test as described in ASTM D 299-94A.



Description	Capacity (l)	Material	LxW (mm)	Pk	Cat. No.
Red, with printed sign and temperature indicator	12	PP	610x305	200	129-0033
Plain red, without printed sign	12	PP	610x305	200	129-0037
Red, with printed sign and temperature indicator	75	PP	914x610	200	129-0035
Red, with printed sign and temperature indicator	80	PP	890x635	200	129-0034
Red, with printed sign and temperature indicator	260	PP	1219x965	100	129-0036



### Bags, biohazard



Sturdy bags, ideal for disposing of biologically-hazardous waste that must first be autoclaved. PP, 75 µm thick, red, with 'Biohazard' label.

- Autoclavable up to 135 °C
- The useful temperature indicator text is white before autoclaving, then black
- 'Contents Have Been Autoclaved' indicates successful autoclaving
- Luminous red for easy recognition and highly visible 'Biohazard' label with the corresponding warning sign

Capacity (l)	Material	LxW (mm)	Thickness (µm)	Pk	Cat. No.
12	PP	610x305	75	250	129-0030
75	PP	914x610	75	250	129-0031
260	PP	1220x965	75	50	129-0032



## Bags, biohazard



Sturdy bags, ideal for disposing of biologically hazardous waste that must first be autoclaved. Complete with wire closures that allow expansion of the bag and ventilation when cooling. Highly resistant to tears and puncture. Available as transparent bags without temperature indicator, or orange with temperature indicator. PP, 50 µm thick, with 'Biohazard' label.

- Autoclavable up to 135 °C
- The useful temperature indicator text is white before autoclaving, then black
- 'Contents Have Been Autoclaved' indicates successful autoclaving
- Highly visible 'Biohazard' label with the corresponding warning sign

Bags meet the requirements of the 165 g puncture-inspection standard as described in ASTM D 709-98.

Capacity (l)	Material	LxW (mm)	Pk	Cat. No.
<b>Orange</b>				
11	PP	483x356	200	129-0024
27	PP	610x483	200	129-0025
80	PP	889x635	200	129-0026

Capacity (l)	Material	LxW (mm)	Pk	Cat. No.
<b>Orange</b>				
210	PP	1143x914	100	129-0027
<b>Clear</b>				
12	PP	610x305	200	129-0028
75	PP	915x610	200	129-0029

## Autoclavable bags

Sturdy, temperature resistant bags, ideal for disposing of hazardous waste that must first be autoclaved. Can also be used for autoclaving other products. Supplied complete with sealing wires. PP, 37,5 µm or 50 µm thick, transparent.

- Autoclavable up to 135 °C
- Highly resistant to tears and impact

Material	LxW (mm)	Thickness (µm)	Pk	Cat. No.
PP	200x305	50	100	129-1153
PP	305x 610	50	100	129-1154
PP	610x305	37,5	1.000	129-0018
PP	610x760	50	100	129-1155
PP	610x 910	50	100	129-1156
PP	914x610	37,5	500	129-0019
PP	965x1220	50	100	129-1157



## Autoclavable bags, yellow, biohazard



Ideal for processing biohazardous materials that require autoclaving prior to disposal. Available with or without temperature indicator. High integrity polypropylene bags withstand 135 °C (275 °F) maximum autoclave temperature. Double-thick bags are ideal for sterilising animal cages and other objects with sharp corners. PP, 50 µm thick, yellow.

- Twist-tie closure allows bag to expand and vent steam during cooling
- Bags resist punctures, tears and leaks they also meet the 165 g dart-drop standard performed as required by ASTM D1709-98
- Each bag is imprinted with the universal biohazard symbol

All biohazard bags have a temperature indicator patch with the words « CONTENTS HAVE BEEN AUTOCLAVED » printed in a chemically active ink. Before autoclaving the ink is clear on a white background, after autoclaving is complete, it darkens and words appear in a dark brown colour, providing proof that bag has been exposed to high temperatures for sterilisation.

LxW (mm)	Packed	Pk	Cat. No.
356x483	Case of 200	200	129-1149
483x610	Case of 200	200	129-1150
610x914	Case of 200	200	129-1151
940x1220	Case of 100	100	129-1152
203x305	Case of 400	400	129-1148



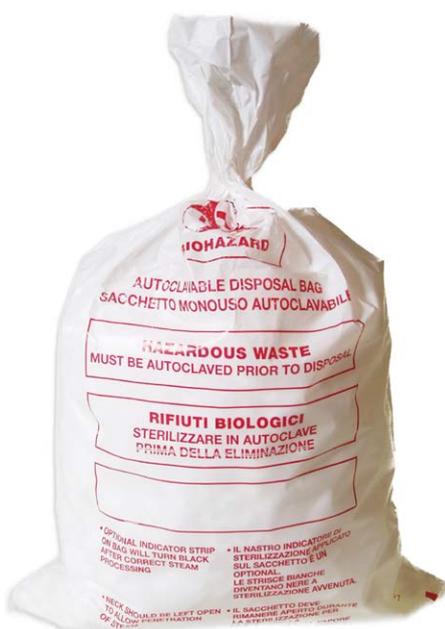
## Autoclavable bags, 'Sterilbag' and 'Sterilbag indicator'



These bags are ideal for autoclaving polystyrene containers and other items contaminated by pathogenic agents (Petri dishes, microtitre plates, pipettes, bottles, tubes, etc). They can be used for realising and preserving sterile conditions. Made of special plastic, red coloured.

- Resistant to 134 °C in autoclave
- Available with or without sterilisation indicator stripe
- Red coloured
- Instructions printed on the bag

Description	Material	LxW (mm)	Pk	Cat. No.
<b>'Sterilbag' autoclavable bags</b>				
Autoclavable bags, resistant to 134 °C, 'Sterilbag' type 30	Plastic	300x500	500	129-0716
Autoclavable bags, resistant to 134 °C, 'Sterilbag' type 60	Plastic	600x700	500	129-0717
<b>'Sterilbag indicator' autoclavable bags</b>				
Autoclavable bags, resistant to 134 °C, including test stripe, 'Sterilbag indicator' type 30	Plastic	300x500	500	119-0057
Autoclavable bags, resistant to 134 °C, including test stripe, 'Sterilbag indicator' type 60	Plastic	600x700	500	119-0048



## Biohazard bags with or without sterilisation indicator strip



These bags are ideal for autoclaving polystyrene containers and other items contaminated by pathogenic agents (Petri dishes, microtitre plates, pipettes, bottles, tubes, etc). They can be used for realising and preserving sterile conditions. Made of plastic, white coloured.

- Resistant to 121 °C in autoclave
- Available with or without sterilisation indicator stripe
- White coloured
- Instructions printed on the bag

Description	Material	LxW (mm)	Pk	Cat. No.
<b>Autoclavable bags</b>				
Autoclavable bags, resistant to 121 °C, 'Biobag' type 30	Plastic	300x500	500	129-0714
Autoclavable bags, resistant to 121 °C, 'Biobag' type 60	Plastic	600x780	500	129-0715
<b>Autoclavable bags with sterilisation indicator strip</b>				
Autoclavable bags, resistant to 121 °C, 'Biobag indicator' type 30	Plastic	300x500	500	129-0712
Autoclavable bags, resistant to 121 °C, 'Biobag indicator' type 60	Plastic	600x780	500	129-0713



## Bags, non hazardous waste



Sturdy bags, ideal for disposing of non hazardous waste that must first be autoclaved.

In PP, 50 µm thick, transparent, with labelling area.

- Autoclavable up to 121 °C
- Highly resistant to tears and impact
- Specially welded seams reduce the risk of leakage

Bags meet the requirements of the 165 g puncture inspection standard as described in ASTM D1709-98.

Capacity (l)	Material	LxW (mm)	Pk	Cat. No.
11	PP	483x356	200	129-0020
27	PP	610x483	200	129-0021
80	PP	889x635	200	129-0022
210	PP	1143x914	100	129-0023



## Disposal bags



For safe disposal of laboratory waste such as pipette tips, disposable Petri dishes, sample tubes, etc.

PP, 40 µm thick, clear, with or without 'Biohazard' printing.

- Heat resistant up to 145 °C
- Autoclavable

With 'Biohazard' printing

Description	Capacity (l)	LxW (mm)	Pk	Cat. No.
<b>Without 'Biohazard' printing</b>				
Autoclavable bags, clear	2	300x200	500	129-0578
Autoclavable bags, clear	3	400x250	500	129-0579
Autoclavable bags, clear	12	660x305	500	129-0580
Autoclavable bags, clear	14	610x420	500	129-0582
Autoclavable bags, clear	16	780x400	500	129-0581
Autoclavable bags, clear	25	770x550	500	129-0583
Autoclavable bags, clear	32	780x600	500	129-0584
Autoclavable bags, clear	40	1100x700	350	129-0585
Autoclavable bags, clear	60	1100x900	100	129-0586
<b>With 'Biohazard' printing</b>				
Autoclavable bags, clear, with 'Biohazard' printing	12	660x305	200	129-0587
Autoclavable bags, clear, with 'Biohazard' printing	14	610x420	200	129-0588
Autoclavable bags, clear, with 'Biohazard' printing	32	780x600	200	129-0589

## Water purification systems, TU+



VWR water purification systems TU 3+, 6+ and 12+ ultrapure systems produce up to 100 litres/day of Type 1 ultrapure water from tap water, as well as Type 2 water available from the tank. The TU 3+ and 6+ feature a built-in 6 litre sterile vented reservoir to store Type 2 water. The TU 12+ offers the choice of a 30 or 60 litre external reservoir for customisable storage capacity. Each system is available in three different models: Basic, with UV lamp (UV) or UV lamp and ultrafilter (UV/UF) to fulfill the specific demand of each application. Typical applications include: molecular biology and microbiology (cell and tissue culture, PCR, DNA sequencing, electrophoresis) and analytical chemistry (HPLC, GC, GC-MS, ICP-MS, AA, TOC measurements, routine laboratory work...).



- Easy to install and maintain
- Elegant simplicity, performance and value
- Dispensing is easy and features variable speed to control flow
- The display can be tilted for optimal reading
- Placement options: Can be placed on a laboratory bench or mounted on the wall
- Conical bottom outlet allows for complete draining and efficient cleaning plus disinfection
- PE reservoir is opaque to light; CO<sub>2</sub> adsorber prevents TOC value increase from drawn-in CO<sub>2</sub>
- Optional UV lamp and ultrafilter to customise ultrapure water quality
- Sterile venting filter/reservoir overflow protects against contamination by microorganisms
- Recirculation pump protects the high purity water from bacterial growth during standstills and maintains low conductivity value
- Exchanging pre-treatment cartridges is easy without any system depressurisation



Water purification progresses through independent cartridges with Aquastop quick-connect for fast replacement.

- Module 1 - Combination of pre-treatment and reverse osmosis membrane
- Module 2 - Polishing cartridge contains high quality ultrapure resin for consistent purity and long cartridge life

A pre-treatment filter may be required if the feed water has high levels of free chlorine or hardness as this can damage the cartridge. High levels of particles and colloids may also block the reverse osmosis membrane. Please contact VWR for the right solution.

Each model uses an internal recirculation mode to ensure availability of high purity water at any time.

TU 3+, 6+ and 12+ systems include an RO/pre-treatment cartridge, polisher cartridge pack, 0,2 µM final filter, optional UV lamp and ultrafilter.

Model	TU 3+	TU 6+	TU 12+
Flow rate (l/min)		>1	
Conductivity (µS/cm)		Type 1: 0,055 Type 2: 0,0067 – 0,1	
TOC content		5 - 10 ppb 1 - 5 ppb (with UV lamp)	
Resistivity at +25 °C		Type1: 18,2 MΩ.cm Type 2: 15 – 10 MΩ.cm	
Bacteria		<1 (CFU/ml)	
Particles		0,22 µm/ml	
Endotoxins		n/a <0,001 EU/ml	
RNases		n/a <0,003 ng/ml (with UV/UF+)	
DNases		n/a <0,4 pg/µl (with UV/UF+)	
Power consumption (kW)		0,06	
WxDxH (incl. tank)	400x305x545		305x300x545
Weight (kg)	~33		~28

Description	Pk	Cat. No.
<b>TU 3+</b>		
TU 3+ Basic, with 6 l reservoir built-in for Type 2 water, water production rate (RO): 3 l/h	1	171-1231
TU 3+ UV with UV lamp, with 6 l reservoir built-in for Type 2 water, water production rate (RO): 3 l/h	1	171-1232
TU 3+ UV/UF with UV lamp and ultrafilter, with 6 l reservoir built-in for Type 2 water, water production rate (RO): 3 l/h	1	171-1233
<b>TU 6+</b>		
TU 6+ Basic, with 6 l reservoir built-in for Type 2 water, water production rate (RO): 6 l/h	1	171-1234
TU 6+ UV with UV lamp, with 6 l reservoir built-in for Type 2 water, water production rate (RO): 6 l/h	1	171-1235
TU 6+ UV/UF with UV lamp and ultrafilter, with 6 l reservoir built-in for Type 2 water, water production rate (RO): 6 l/h	1	171-1236
<b>TU 12+</b>		
TU 12+ Basic, external tank required for Type 2 water, water production rate (RO): 12 l/h	1	171-1237
TU 12+ UV with UV lamp, external tank required for Type 2 water, water production rate (RO): 12 l/h	1	171-1238
TU 12+ UV/UF with UV lamp and ultrafilter, external tank required for Type 2 water, water production rate (RO): 12 l/h	1	171-1239

Description	Pk	Cat. No.
<b>Cartridges</b>		
Polisher cartridge for TU systems	1	171-1141
Pre-treatment + RO cartridges for TU 3	1	171-1142
Pre-treatment + RO cartridges for TU 6	1	171-1143
Pre-treatment + RO cartridges for TU 12	1	171-1165
<b>Accessories</b>		
Replacement UV lamp for external storage tanks, for ultrapure water system, TU 12	1	171-1168
Replacement UV lamp for PU 15 UV and UV/UF models	1	171-1108
Sterile filter 0,2 µm	1	171-1105
Sterile vent filter external storage tank 30 – 100 l	1	171-1166
Storage tank 30 l for TU 12 models	1	171-1170
Storage tank 60 liter for TU 12 models	1	171-1171
System wall mount bracket for PU and TU models	1	171-1125
Venting filter 0,2 µm for internal tank	1	171-1144
UV lamp assembly (optional) for TU12+ only	1	171-1187
Sterile overflow valve for tanks 30/60 l - recommended accessory for TU 12+ only	1	171-1157



### Austria

VWR International GmbH  
Graumannsgasse 7  
1150 Wien  
Tel.: +43 1 97 002 0  
Email: info.at@vwr.com

### Belgium

VWR International bvba  
Researchpark Haasrode 2020  
Geldenaaksebaan 464  
3001 Leuven  
Tel.: +32 (0) 16 385 011  
Email: vwr.be@vwr.com

### Czech Republic

VWR International s. r. o.  
Veetee Business Park  
Pražská 442  
CZ - 281 67 Strážná Skalice  
Tel.: +420 321 570 321  
Email: info.cz@vwr.com

### Denmark

VWR International A/S  
Tobaksvejen 21  
2860 Søborg  
Tel.: +45 43 86 87 88  
Email: info.dk@vwr.com

### Finland

VWR International Oy  
Valimotie 9  
00380 Helsinki  
Tel.: +358 (0) 9 80 45 51  
Email: info.fi@vwr.com

### France

VWR International S.A.S.  
Le Périgares – Bâtiment B  
201, rue Carnot  
94126 Fontenay-sous-Bois cedex  
Tel.: 0 825 02 30 30\* (national)  
Tel.: +33 (0) 1 45 14 85 00 (international)  
Email: info.fr@vwr.com  
\* 0,18 € TTC/min

### Germany

VWR International GmbH  
Hilpertstraße 20a  
D - 64295 Darmstadt  
Tel.: 0800 702 00 07\* (national)  
Tel.: +49 (0) 6151 3972 0 (international)  
Email: info.de@vwr.com  
\*Freecall

### Hungary

VWR International Kft.  
Simon László u. 4.  
4034 Debrecen  
Tel.: +36 52 521130  
Email: info.hu@vwr.com

### Ireland / Northern Ireland

VWR International Ltd /  
VWR International (Northern Ireland) Ltd  
Orion Business Campus  
Northwest Business Park  
Ballycoolin  
Dublin 15  
Tel.: +353 (0) 1 88 22 222  
Email: sales.ie@vwr.com

### Italy

VWR International S.r.l.  
Via San Giusto 85  
20153 Milano (MI)  
Tel.: +39 02 3320311  
Email: info.it@vwr.com

### The Netherlands

VWR International B.V.  
Postbus 8198  
1005 AD Amsterdam  
Tel.: +31 (0) 20 4808 400  
Email: info.nl@vwr.com

### Norway

VWR International AS  
Haavard Martinsens vei 30  
0978 Oslo  
Tel.: +47 22 90 00 00  
Email: info.no@vwr.com

### Poland

VWR International Sp. z o.o.  
Limbowa 5  
80-175 Gdansk  
Tel.: +48 58 32 38 200  
Email: info.pl@vwr.com

### Portugal

VWR International - Material de  
Laboratório, Lda  
Centro Empresarial de Alfragide  
Rua da Indústria, nº 6  
2610-088 Alfragide  
Tel.: +351 21 3600 770  
Email: info.pt@vwr.com

### Spain

VWR International Eurolab S.L.  
C/ Tecnología 5-17  
A-7 Llinars Park  
08450 - Llinars del Vallès  
Barcelona  
Tel.: +34 902 222 897  
Email: info.es@vwr.com

### Sweden

VWR International AB  
Fagerstagatan 18a  
163 94 Stockholm  
Tel.: +46 (0) 8 621 34 00  
Email: kundservice.se@vwr.com

### Switzerland

VWR International GmbH  
Lerzenstrasse 16/18  
8953 Dietikon  
Tel.: +41 (0) 44 745 13 13  
Email: info.ch@vwr.com

### UK

VWR International Ltd  
Customer Service Centre  
Hunter Boulevard - Magna Park  
Lutterworth  
Leicestershire  
LE17 4XN  
Tel.: +44 (0) 800 22 33 44  
Email: uksales@vwr.com

### China

VWR International China Co., Ltd.  
Shanghai Branch  
Room 256, No. 3058 Pusan Road  
Pudong New District  
Shanghai 200123  
Tel.: +86 21 5898 6888  
Email: info\_china@vwr.com

### India

VWR Lab Products Private Limited  
No.139. BDA Industrial Suburb,  
6th Main, Tumkur Road, Peenya Post,  
Bangalore, India – 560058  
Tel.: +91 80 28078400  
Email: vwr\_india@vwr.com

### Singapore

VWR Singapore Pte Ltd  
18 Gul Drive  
Singapore 629468  
Tel.: +65 6505 0760  
Email: sales.sg@vwr.com