



GERMANY

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2007/2008



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1 Microlitre syringes, 700 series

With fixed needle. Needle length 51 mm. Plungers are individually fitted, therefore cannot be interchanged and are not available as replacement parts. Needles are electro-tapered.

Hamilton

Type	Capacity µl	Gauge	Tip	Cat. No.	PK
75 N	5	26s	2	9.221 001	1
701 N	10	26s	2	9.221 002	1
701 N	10	26s	2	9.221 010	6
702 N	25	22s	2	9.221 003	1
705 N	50	22s	2	9.221 004	1
710 N	100	22s	2	9.221 005	1
725 N	250	22s	2	9.221 006	1
750 N	500	22s	2	9.221 007	1
701 N	10	26s	3	9.221 012	1
702 NR	25	22s	3	9.221 013	1
705 NR	50	22s	3	9.221 014	1
710 NR	100	22s	3	9.221 015	1
725 NR	250	22s	3	9.221 016	1

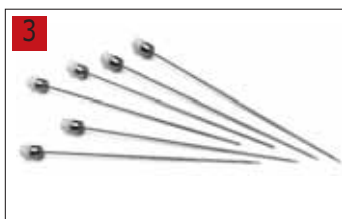


2 Microlitre syringes, 700 series

With removable needle. Needle length 51 mm. Plungers are individually fitted, therefore cannot be interchanged and are not available as replacement parts. Needles are electro-tapered.

Hamilton

Type	Capacity µl	Gauge	Tip	Cat. No.	PK
701 RN	10	10	26s	9.221 081	1
705 RN	50	50	22s	9.221 083	1



3 Needles for RN syringes

Removable. Not for use in HPLC applications.
Length 51 mm
Bevel type 2

Hamilton

Type	Ext. dia. mm	Int. dia. mm	Gauge	Capacity	Cat. No.	PK
7758-02	0.5	0.13	26s	2.5 µl to 100 µl	9.221 692	6
7758-03	0.7	0.15	22s	2.5 µl to 100 µl	9.221 693	6
7779-01	0.7	0.41	22s	250 µl to 10 ml	9.221 694	6
7779-03	0.7	0.15	22s	250 µl to 10 ml	9.221 695	6



4 Microlitre syringes, 800 series

With cemented-in, standard needles. Needle length 51 mm. With metal handle. Plungers are individually fitted, therefore cannot be interchanged and are not available as replacement parts. Needles are electro-tapered.

Hamilton

Gauge 26s
Needle length 51 mm
Tip 2

Type	Capacity µl	Cat. No.	PK
85 N	5	9.221 105	1
801 N	10	9.221 110	1



5 Microlitre syringes, 800 series

Type RN are equipped with metal plunger handles and removable needles. Type RN B/P are syringes only without metal plunger (replacement syringes).

Hamilton

Gauge 26s
Needle length 51 mm
Bevel type 2

Type	Capacity µl	Cat. No.	PK
85 RN	5	9.221 115	1
801 RN	10	9.221 116	1
85 RN B/P	5	9.221 171	1
801 RN B/P	10	9.221 172	1

1 Microlitre syringes, 1700/1000 series

Glass barrel with Teflon-coated plunger and seal, and Luer nozzle.
 Gas tight microlitre syringe without needle.
 MS = Plunger stop fitted to prevent damage to the Teflon seal.
 Prevents the plunger tip from reaching the end of the syringe.

Hamilton



Type	Capacity		Grad.	Cat. No.	PK
	μ l	μ l			
1710 LT	100	1		9.221 210	1
1725 LT	250	5		9.221 225	1
1750 LT	500	10		9.221 250	1
1001 LT	1000	10		9.221 251	1
1002 LT	2500	50		9.221 252	1
1005 LT	5000	100		9.221 255	1

2 Microlitre syringes, 1700/1000 series

Glass barrel with Teflon-coated plunger and seal, and Luer lock outlet.
 Gas tight microlitre syringe without needle.
 MS = Plunger stop fitted to prevent damage to the Teflon seal.
 Prevents the plunger tip from reaching the end of the syringe.

Hamilton



Type	Capacity		Grad.	Cat. No.	PK
	μ l	μ l			
1702 TLLX	25	0.25		9.221 300	1
1705 TLLX	50	0.5		9.221 305	1
1710 TLLX/MS	100	1		9.221 310	1
1725 TLLX/MS	250	5		9.221 315	1
1750 TLLX/MS	500	10		9.221 320	1
1001 TLL	1000	10		9.221 348	1
1001 TLL/MS	1000	20		9.221 325	1
1002 TLL	2500	50		9.221 330	1
1005 TLL	5000	100		9.221 335	1
1010 TLL	10000	200		9.221 340	1
1025 TLL	25000	500		9.221 347	1
1001 TLLX	10000	0.01		9.221 328	1
1025 TLL	25000	0.25		9.221 345	1

3 Needles for LT and TLL syringes

Removable. With Luer tip made of Kel-F. Length 51 mm.
 All hypodermic needles available according to specification
 in 3 mm to max. 1200 mm lengths.

Hamilton



Type	Ext. dia. mm	Int. dia. mm	Gauge	Tip	Cat. No.	PK
KF 726	0.5	0.30	2	26	9.221 626	6
KF 722	0.7	0.40	2	22	9.221 622	6
KF 719	1.1	0.70	2	19	9.221 619	6
KF 710	3.4	0.70	2	10	9.221 610	6
KF 722 S	0.7	0.20	3	22s	9.221 607	6
KF 722 PsT 3	0.7	0.40	3	22	9.221 722	6

4 Microlitre syringes, repeat dispensing device

For syringes 25 μ l to 2.5 ml. Dispenses 2 % of total syringe volume each time the plunger is depressed.

Hamilton



Type	Cat. No.	PK
PB 600-1	9.221 650	1

5 Microlitre syringes, 1700/1000 series

Gas tight microlitre syringes with removable needle.

Hamilton



Needle length 51 mm
 Tip 2

Type	Capacity μ l	Gauge	Cat. No.	PK
1701 RN	10	26s	9.221 487	1
1702 RN	25	22s	9.221 488	1
1705 RN	50	22s	9.221 489	1
1710 RN	100	22s	9.221 490	1
1725 RN	250	22s	9.221 491	1
1750 RN	500	22	9.221 492	1
1001 RN	100	22	9.221 493	1
1002 RN	2500	22	9.221 494	1



1 Microlitre syringes, 1700/1000 series

With Teflon plunger seal.
Gastight microlitre syringes with cemented-in needles.
Needle bevel type 2, length 51 mm.
Needles are electro-tapered.
Tip 2

Hamilton

Type	Capacity µl	Gauge	Cat. No.	PK
1701 N	10	26s	9.221 448	1
1702 N	25	22s	9.221 449	1
1705 N	50	22s	9.221 450	1
1710 N	100	22s	9.221 455	1
1725 N	250	22s	9.221 460	1
1750 LTN	500	22	9.221 465	1
1001 LTN	1000	22	9.221 470	1
1002 LTN	2500	22	9.221 475	1
1005 LTN	5000	22	9.221 480	1
1010 LTN	10000	22	9.221 485	1



2 Microlitre syringes, 7000 series

Operate according to the positive displacement principle, without hold-up volume.
A fine, tungsten plunger extends through the whole length of the syringe to the end of the needle. Individual components are interchangeable.
Needle length 70 mm

Hamilton

Type	Capacity µl	Gauge	Tip	Cat. No.	PK
7000.5 N	0.5	50	3	9.221 126	1
7001 N	1.0	47	2	9.221 121	1
7002 N	2.0	50	3	9.221 122	1
7105 N	5.0	56	2	9.221 125	1
7101 N	10.0	70	3	9.221 131	1



3 Microlitre syringe needles for HPLC

Removable. For use with Rheodyne valves and Valco system VSF 2.
Fit Hamilton syringes 5 to 100 µl.
Gauge 22s
Needle length 51 mm
Tip 3

Hamilton

Type	Capacity µl	Cat. No.	PK
7770-01	2.5 µl - 100 µl	9.221 603	6

Microlitre syringes for GC-autosamplers

For GC-autosamplers:
- Hewlett-Packard 7670 A, 7671 A, 7672 A.
Gauge 26s
Needle length 51 mm
Tip 2

Hamilton

Type	Capacity µl	Cat. No.	PK
701 N	10	9.221 002	1
1701 N	10	9.221 448	1



4 Microlitre syringe for GC-Autosampler

For Autosampler:
- Hewlett-Packard 7673 A.
Gauge: 23s
Needle length: 43 mm
Bevel type: AS

Hamilton

Type	Capacity µl	Cat. No.	PK
701 ASN 23S	10	9.221 196	1

1 | 2 Sampling syringes, Fortuna®

Borosilicate glass. Transparent calibrated barrel.
With chemically-resistant, diffused amber stain graduations.

Poulten & Graf

Capacity	Grad.	Type	Cat. No.	PK
ml	ml			
25	1	Without stopcock	9.143 055	1
50	1	Without stopcock	9.143 056	1
100	1	Without stopcock	9.143 057	1
50	1	With capillary stopcock	9.143 066	1
100	1	With capillary stopcock	9.143 067	1



3 | 4 Syringes, disposable plastic

2-piece construction: PP barrel, with PE piston. Sterile.
Disposable. With Luer nozzle.

Capacity	Cat. No.	PK
ml		
1 : 1/100 (Tuberculin)	9.410 000	100
2 (3)	9.410 002	100
5 (6)	9.410 005	100
10 (12)	9.410 010	100
20 (24)	9.410 020	100
30	9.410 025	50
50 (60)	9.410 050	30



5 Syringe needles, disposable

Sterile. Individually wrapped. Disposable. Luer fitting with plastic sheath.

Type	Dia. mm	Length mm	Colour	Cat. No.	PK
Pravaz 1	0.9	40	yellow	9.410 101	100
Pravaz 2	0.8	40	green	9.410 102	100
Pravaz 12	0.7	30	black	9.410 112	100
Pravaz 14	0.6	30	blue	9.410 114	100
Pravaz 16	0.6	25	blue	9.410 116	100
Pravaz 18	0.5	25	brown	9.410 118	100
Pravaz 20	0.4	20	grey	9.410 120	100



6 Disposable syringes

Polypropylene with two-piece plunger and Luer nozzle. Without needle.
Supplied sterile, individually pouch-sealed in outer boxes as indicated.

Capacity	Cat. No.	PK
ml		
1	9.950 296	100
2	9.950 297	100
5	9.950 298	100
10	9.950 299	100
20	9.950 300	120
50	9.950 301	60



7 Disposable syringe needles

Stainless steel. With Luer push-on fitting for use with disposable syringes.
Supplied sterile in boxes of 100.

Gauge	Dia. mm	Length mm	Cat. No.	PK
18G x 1½ inch*	1.2	40	9.950 302	100
19G x 1½ inch	1.1	40	9.950 303	100
20G x 1 inch*	0.9	25	9.950 304	100
21G x 1½ inch*	0.8	40	9.950 305	100
23G x 1 inch	0.6	25	9.950 306	100
25G x ¾ inch	0.5	16	9.950 307	100



* 9.950 302 is a thin wall needle with a short bevel. 9.950 304 and 9.950 305 are intravenous thin wall needles.



1 2 Syringes, glass, Fortuna Optima®

Borosilicate glass. With centre glass or metal luer nozzle. Interchangeable plungers and barrels (between identical capacity syringes). With amber graduations. Autoclavable up to +134°C.

Poulten & Graf

Capacity ml	Material Cone ex	Nozzle type	Cat. No.	PK
1	glass	luer	9.222 021	1
2	glass	luer	9.222 022	1
5	glass	luer	9.222 025	1
10	glass	luer	9.222 030	1
20	glass	luer	9.222 032	1
50	glass	luer	9.222 035	1
1	metal	luer-lock	9.222 061	1
2	metal	luer-lock	9.222 062	1
5	metal	luer-lock	9.222 065	1
10	metal	luer-lock	9.222 070	1
20	metal	luer-lock	9.222 072	1
50	metal	luer-lock	9.222 075	1

3 Chromatography paper/Ion exchange papers

Whatman chromatography papers are the most widely used papers for chromatography worldwide. This acceptance and usage reflects the purity, high quality and consistency of Whatman papers. These qualities are relied upon by chromatographers and essential to successful reproducible chromatography. Whatman chromatography paper media are made from specially selected cotton cellulose. They are rigorously quality controlled for characteristics important to the chromatographer and to ensure uniformity within the grade.

Whatman

3MM Chr

Widely used as a blotting paper, 3MM Chr is used in both electrophoresis and for general chemistry. A medium thickness paper (0.34 mm) used extensively for general chromatography and electrophoresis. Flow rate is 130 mm/30 min.

17 Chr

Thick (0.92 mm) and highly absorbent paper with a very high flow rate of 190 mm/30 min. Suitable for the heaviest loadings and ideal for preparative paper chromatography and electrophoresis.

1 Chr

World standard chromatography paper. A smooth surface, 0.18 mm thick with a linear flow rate (water) of 130 mm/30 min. Good resolution for general analytical separations.

3 Chr

Medium thickness paper (0.36 mm) with a flow rate of 130 mm/30 min. For general applications with medium/heavy solute loadings. Frequently used for separation of inorganic compounds and for electrophoresis.

Ion exchange papers

DE81

A thin (0.20 mm) DEAE cellulose paper—a weakly basic anion exchanger with diethylaminoethyl functional groups. The ion exchange capacity is 1.7 µeq/cm² and flow rate is 95 mm/30 min. For use with reverse transcriptase assays and DNA polymerase.

P81

A thin (0.23 mm) cellulose phosphate paper. Strong cation exchanger of high capacity. Ion exchange capacity is 18.0 µeq/cm² and the flow rate is 125 mm/30 min. For use with protein kinase assay with peptide substrates.

SG81

A unique paper (0.27 mm thick) combining cellulose and large pore silica gel. Suitable for separations in which both partition and adsorption are important, including the separation of phospholipids, steroids, phenols and dyes. Flow rate is 110 mm/30 min.

Grade	Size	Cat. No.	PK
1Chr	100 x 300 mm	9.950 308	100
1Chr	200 x 200 mm	9.950 309	100
1Chr	250 x 250 mm	9.950 310	100
1Chr	460 x 570 mm	9.950 311	100
3MMChr	200 x 200 mm	9.950 312	100
3MMChr	315 x 355 mm	9.950 313	100
3Chr	460 x 570 mm	9.950 314	100
3MMChr	460 x 570 mm	9.950 371	100
3MMChr	580 x 680 mm	9.950 315	100
4Chr	460 x 570 mm	9.950 316	100
17Chr	460 x 570 mm	9.950 317	25
DE81	460 x 570 mm	9.950 318	25
SG81	460 x 570 mm	9.950 319	25
P81	460 x 570 mm	9.950 320	25

Chromatography paper, reels

Chromatography Paper 1 CHR

Whatman

The standard chromatography paper. Good resolution for general analytical separations.

Pure cellulose. Thickness 0.18 mm. Capillary rise (water) 130 mm/30 min.

Chromatography Paper 3MM CHR

Used in electrophoresis, in general chemistry and as blotting paper. Pure cellulose.

Thickness 0.34 mm. Capillary rise (water) 130 mm/30 min.

Grade	Width mm	Length mm	Cat. No.	PK
1Chr	10	1000	9.950 322	1
1Chr	20	1000	9.950 323	1
1Chr	30	1000	9.950 324	1
1Chr	40	1000	9.950 325	1
1Chr	50	1000	9.950 326	1
1Chr	100	1000	9.950 328	1
1Chr	150	1000	9.950 329	1
3MMChr	20	1000	9.950 327	1
3MMChr	100	1000	9.950 330	1
3MMChr	150	1000	9.950 331	1
3MMChr	190	1000	9.950 332	1
3MMChr	230	1000	9.950 333	1
3MMChr	270	1000	9.950 334	1



1 Ion exchange papers

A thin (0.20 mm) DEAE cellulose paper—a weakly basic anion exchanger with diethylaminoethyl functional groups.

The ion exchange capacity is 1.7 µeq/cm² and flow rate is 95 mm/30 min.

For use with reverse transcriptase assays and DNA polymerase.

Whatman

Grade	Dia. mm	Cat. No.	PK
DE81	23	9.950 335	400



2 TLC Plates

Silica gel plates. 250 µm layer. The plates are 20 x 20 cm and can be cut with scissors.

The flexible plates Silica-Gel 60 A, available on aluminium or polyester support material, have a similar separation performance to K6 glass plate and are often used for moderate to strong polar analytes. Ion exchanger plates (DEAE-diethylaminoethyl tertiary amine) are used for anionic species and are available on a polyester support material.

Whatman

Type	Description	Cat. No.	PK
PE Sil G	Polyester backed	9.950 336	25
PE Sil G/UV 254*	Polyester backed	9.950 337	25
AL Sil G	Aluminium backed	9.950 338	25
AL Sil G/UV 254*	Aluminium backed	9.950 339	25

* With fluorescent indicator



Chromatography strips

Divided into 12 bands, each of 15 mm wide, for parallel separation of 12 samples.

Whatman

Grade	Width mm	Length mm	Cat. No.	PK
1Chr CRL	110	213	9.950 321	100



TLC plates

Linear- K: give rapid, precise recognition. The pre-adsorbent layer is thicker than the silica layer and functions like a sponge that pre-concentrates the sample before it reacts with the silica layer. This allows the user to apply sample volumes that would not be possible with standard TLC-plates.

Whatman

The symbol for silica gel is K (from the German Kieselgel), followed by a classification designation:

- K5 10 to 12 μm silica, with pore size 150 \AA
- K6 10 to 12 μm silica, with pore size 60 \AA
- High-performance silica is prefixed with the letters HP: HP-K 4.5 μm silica, pore size 60 \AA
- Reversed-phase plates with a bonded alkyl group are represented by a K, followed by the length of the alkyl chain KC-18 10 to 12 μm Silica 60 \AA , octadecyl bonded phase

Further identification information for a particular plate can be found from the following letter codes:

- L pre-adsorbent layer for the easier application of larger volumes. Compresses each sample into a narrow horizontal band, so also known as Linear-K, prefix L.
- D channelled plates with separate lanes. 2 mm clear glass channels separate the individual sample lanes to prevent the samples becoming mixed, so D for Division.
- F fluorescent indicator: fluorescent plates glow bright green under UV light. Samples that absorb UV at 254 nm are recognized by fluorescence quenching.
- M microscope slide, plate size 25/75 mm.
- P preparative layer. Has a thickness of 500 or 1000 μm for large samples.

These letter codes enable easy, rapid identification of all TLC plates, for example PLK6DF = preparative K6 silica 60 \AA pore diameter, separate lanes, fluorescent indicator and preadsorbent layer.



2 Glass TLC Plates

Reverse phase plates, 200 μm layer.

Whatman

Type	Size	Cat. No.	PK
MKC18F	2.5 x 7.6 cm	9.950 340	100
KC18	20 x 20 cm	9.950 341	25
KC18F	5 x 20 cm	9.950 342	75
KC18F	20 x 20 cm	9.950 343	25
LKC18	20 x 20 cm	9.950 344	25
LKC18F	5 x 20 cm	9.950 345	75
LKC18F	20 x 20 cm	9.950 346	25



3 Adsorption TLC plates Partisil® K6

60 angstrom. 250 μm layer, PK6F with 1000 μm layer.

Whatman

Type	Size	Cat. No.	PK
MK6F	2.5 x 7.6 cm	9.950 347	500
K6	5 x 20 cm	9.950 348	75
K6	10 x 20 cm	9.950 349	50
K6	20 x 20 cm	9.950 350	25
K6F	5 x 10 cm	9.950 351	150
K6F	5 x 20 cm	9.950 352	75
K6F	10 x 20 cm	9.950 353	50
K6F	20 x 20 cm	9.950 354	25
PK6F	20 x 20 cm	9.950 355	20
LK6D	5 x 20 cm	9.950 356	75
LK6D	20 x 20 cm	9.950 357	25
LK6DF	5 x 20 cm	9.950 358	75
LK6DF	20 x 20 cm	9.950 359	25



4 TLC plates

Standard, rigid TLC plates in a choice of media, backing materials, and with dimensions as indicated.

MACHERY-NAGEL

Material	Gel thickness		Dimensions	Cat. No.	PK
	mm	mm			
glass with silica gel	0.25		200 x 200	9.003 491	25
glass with silica gel*	0.25		100 x 100	9.003 474	25
glass with silica gel*	0.25		200 x 200	9.003 492	25
polyester with silica gel*	0.2		40 x 80	9.003 493	50
polyester with silica gel*	0.2		50 x 200	9.003 476	50
polyester with silica gel*	0.2		200 x 200	9.003 494	25
polyester with aluminium oxide*	0.2		200 x 200	9.003 495	25
aluminium with silica gel*	0.2		40 x 80	9.003 496	50
aluminium with silica gel*	0.2		50 x 100	9.003 477	50
aluminium with silica gel*	0.2		50 x 200	9.003 478	50
aluminium with silica gel*	0.2		200 x 200	9.003 497	25
aluminium with aluminium oxide*	0.2		200 x 200	9.003 498	25

*with 254 nm UV indicator

TLC plates

Silica gel 60 F₂₅₄.

Merck

Material	Gel thickness	Dimensions		Cat. No.	PK
		mm	mm		
Glass backed	0.5	20	20	9.130 061	20
Glass backed	2	20	20	9.130 062	12



1 TLC plates

Silica gel 60 F₂₅₄.

Merck

Material	Gel thickness	Width	Length	Cat. No.	PK
Glass	0.25	20.0	20.0	9.130 050	25
Glass	0.25	10.0	20.0	9.130 051	50
Glass	0.25	5.0	20.0	9.130 052	100
Glass	0.25	5.0	20.0	9.130 053	25
Glass	0.25	5.0	10.0	9.130 054	200
Glass	0.25	5.0	10.0	9.130 055	25
Glass	0.25	2.5	7.5	9.130 056	100
Glass	0.25	2.5	7.5	9.130 057	500
Aluminium	0.20	20.0	20.0	9.130 058	25
Aluminium	0.20	5.0	10.0	9.130 059	50
Aluminium	0.20	5.0	7.5	9.130 060	20
Plastic	0.20	20.0	20.0	9.130 063	25



2 TLC plate cutter

For scoring and cutting glass backed TLC plates. For cost-effectiveness in plate use, or in order to give individual plates different derivatives after separation. Supplied with cutting ring and template.

Type	Cat. No.	PK
TLC plate cutter	9.539 041	1



3 Spray box with fan

For spraying TLC plates with aggressive media. Housing made of acid-resistant PVC for plates up to 200 x 200 mm. Low-noise extraction fan supplies 400 m³/h. The exhaust tube leads upwards and can be connected to NW 100 extraction tubing. Reagent droplets are collected in a separate drip tray. Size (W x D x H) 620 x 610 x 580 mm.

Type	Cat. No.	PK
Spray box with fan	9.020 031	1

4 Chromatography sprayer SG 1

CFC-free spraying with powerful and quiet pump. The finest spray is produced even when the battery power is low. Liquids, up to the viscosity of light oil, can be finely sprayed at the touch of a button. Particle diameter 5 to 10 µm with a throughput of 20 ml/min. based on water. The reservoir bottle for the spray reagent is made of borosilicate glass. The bottle is screwed into the high-grade PTFE nozzle and can be changed in seconds. With quick-charging dock as a storage base. Overload protection enables continuous storage of the sprayer in the charging station. Supplied with battery, battery charger, bottle and nozzle.

Type	Cat. No.	PK
SG 1	9.539 045	1
Reservoir, 50 ml	9.539 046	10



5 Special atomiser

With rubber blowball for nebulising reagents. Can be connected to other compressed air supplies.

Type	Cat. No.	PK
Special atomiser	9.024 000	1




1

1 Test tube atomiser

Glass atomiser for nebulising small amounts of reagents. Atomiser can be inserted in a 12 ml test tube with a ground joint and held in position with a spring clip.

Type	Cat. No.	PK
Test tube atomiser	9.023 990	1


2

2 H separating chamber

The H separating chambers make optimum use of HPTLC gel layer advantages. Small particle size 5 µm, stringently controlled pore size and distribution, and more theoretical bases. Excellent value for money and can be supplied for time and cost saving in 50 x 50 mm plate format or traditional 100 x 100 mm format. Optimum separations are achieved even on the shortest runs.

Sarstedt (Desaga)

Type	Width mm	Length mm	Cat. No.	PK
H separation chamber	50	50	9.023 150	1
H separation chamber	100	100	9.023 160	1
Frit rods	-	50	9.023 955	5
Cover plate	50	50	9.023 956	1
Cover plate	100	100	9.023 957	1


3

3 Standard separating chamber

With absolutely flat, chamber floor, ground flange rim and lid for all TLC plates up to 200 x 200 mm. Other separating chambers available on request.

Type	Cat. No.	PK
Separating chamber with knob lid	9.020 160	1
Separating chamber with ground cover plate	9.020 173	1
Knob lid for 9.020 160	9.020 163	1
Glass cover disc for 9.020 160	9.020 177	1


4

4 Simultaneous batch separating chamber

With absolutely flat, chamber floor, ground flange rim and lid and storage trough for five 200 x 200 mm TLC plates.

Type	Cat. No.	PK
Simultaneous batch separating chamber with knob lid	9.020 167	1
Simultaneous batch separating chamber with ground cover plate	9.020 174	1


5

5 Nano separating chambers

The use of quantitative TLC on nano or HPTLC gel layer plates is increasing. Nano separating chambers have been developed for the more popular 100 x 100 mm and 200 x 100 mm plate formats and have all the advantages of standard separating chambers.

Type	Cat. No.	PK
Nano separating chamber 200 x 100 mm, with stainless steel lid	9.020 112	1
Nano separating chamber 100 x 100 mm, with knob lid	9.020 210	1
Nano separating chamber 100 x 100 mm, with stainless steel lid	9.020 212	1
Nano stainless steel lid, 200 x 100 mm	9.020 117	1
Nano knob lid, 100 x 100 mm	9.020 211	1
Nano stainless steel lid, 100 x 100 mm	9.020 213	1
Nano filter paper for vapour conditioning the chamber, 210 x 110 mm, 25 sheets	9.020 214	25


6

6 Simultaneous developing chamber

For TLC plates up to 20 x 20 cm. Choice of plates as indicated.

MACHERY-NAGEL

Type	Cat. No.	PK
DC simultaneous chamber	9.003 500	1

1 Micro capillary tubes

These disposable capillary tubes fill automatically from end to end. Accuracy is better than 1%. A capillary tube holder is supplied in each pack. Also contains a small bulb with aperture, which can be inserted into capillary tube and used as an effective support for filling and emptying tubes.

Capacity µl	Cat. No.	PK
0.5	9.020 192	100
1.0	9.020 193	100
2.0	9.020 194	100
5.0	9.020 195	100
10.0	9.020 196	100



2 Universal application and evaluation templates

Plexiglass. Simplifies application, marking and evaluation of thin layer chromatograms. Size 200 x 200 mm.

Type	Cat. No.	PK
Universal application and evaluation templates	9.020 131	1



3 Outlining templates

With limit stops for precise positioning of the plate on the template. Provide precise pipette guidance due to triangular apertures in a 5 mm spaced grid, providing 9, 19 or 39 outlining points, depending on the size of the template. A non-slip coating means that the outlining template does not slide on the bench.

Width mm	Length mm	Cat. No.	PK
100	100	9.020 134	1
50	50	9.020 135	1
100	200	9.020 136	1
200	200	9.020 137	1



4 Laboratory dryer, Taifun 1100

3 position power switch, 230V a.c. (0/500/1000W). With 2 heat/blower speed settings, nozzle attachment, cold air button, detachable air filter and a 3 metre mains lead.

Type	Cat. No.	PK
Taifun 1100	9.018 995	1



5 Profi-labdryer PHT 20.10

3 heating levels including cool setting and 2 fan speeds giving 6 heating/ventilation combinations. Overheat protected. Removable inlet grille with filter. Supplied with diffuser. Supply requirement: 230 V a.c., 2000 W.

Colour	Cat. No.	PK
Chrome/Silver	9.106 807	1



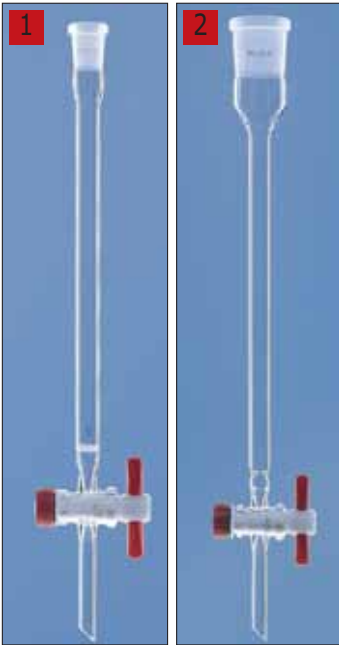
6 Thermoplate S

Electronically controlled, precision laboratory hotplate. For controlled, constant heating of dipped TLC plates for increased reproducibility and evaluation. Rapid evaporation of the solvent is enabled by the direct warming of the plated zone. Provides defined intermediate drying for multiple processing. Also used for reduction or evaporation of small liquid quantities at constant temperatures or warming of reaction mixtures at a preset temperature, e.g. for colorimetric analysis. Visual control of colour build-up. Temperature is preset and displayed digitally.

Hotplate: 240 x 240 mm
 Temperature range: 25 to 199°C
 Accuracy: ±2°C

Type	Cat. No.	PK
Thermoplate S	9.023 840	1





1 Chromatography columns, ground glass joint

With PTFE stopcock. 14/23 ground socket neck. With fused-in frit support. Porosity 0. 2.5 mm bore stopcock key.

Lenz

Length mm	Int. dia. mm	Capacity ml	Cat. No.	PK
200	10	15	9.025 912	1
300	10	23	9.025 913	1
200	15	35	9.025 914	1

2 Chromatography columns, ground glass joint

With PTFE stopcock.

With NS ground socket neck as indicated

Indents are moulded in above the stopcock for holding cotton wool plug supports.

Lenz

Length mm	Int. dia. mm	Capacity ml	Description	Cat. No.	PK
200	10	15	NS 14 / 23	9.025 932	1
400	20	125	NS 29 / 32	9.025 934	1
600	30	430	NS 29 / 32	9.025 936	1

3 Ion exchange media

Anion and cation exchangers for chromatography column separations.

Whatman

Description	Cat. No.	PK
DE52 pre-swollen microgranular DEAE-cellulose, 500 g	9.950 365	1
DE52 pre-swollen microgranular DEAE-cellulose, 2 kg	9.950 366	1
CM52 pre-swollen microgranular CM-cellulose, 500 g	9.950 367	1
CF11 fibrous cellulose powder for column work, 500 g	9.950 368	1
P11 dry bi-functional cation exchange cellulose, 100 g	9.950 369	1
P11 dry bi-functional cation exchange cellulose, 500 g	9.950 370	1



4 Chromabond vacuum chamber

Please order SPE-columns separately.

MACHEREY-NAGEL

Type	Description	Cat. No.	PK
Chromabond vacuum chamber	With glass trough, cover, pins, manometer, valve, stopcocks, sample rack	9.003 479	1



5 Accessories for chromabond vacuum chamber

SPE-columns.

MACHEREY-NAGEL

Type	Type	Cat. No.	PK
Chromabond C18ec	3 ml, 200 mg	9.003 485	50
Chromabond C18ec	3 ml, 500 mg	9.003 486	50
Chromabond C18	3 ml, 200 mg	9.003 487	50
Chromabond C18	3 ml, 500 mg	9.003 488	50
Chromabond HR-P	3 ml, 200 mg	9.003 489	30
Chromabond HR-P	3 ml, 500 mg	9.003 490	30



6 Analytical lamps, CabUVIS

With back lighting. Constant lighting, low-pressure mercury tubes and UV-Filter for 254 and 366 nm wavelength output. Incident and back lighting with 8 W daylight fluorescent tube lamps and 200 x 200 mm diffusing screen.

Basic unit is supplied with transparent cover screen.

Optional attachment allows observation or documentation of films without a darkroom.

Type	Cat. No.	PK
CabUVIS	9.539 341	1

1 UV analysis lamps HP-UVIS®

For UV analysis without a darkroom. High-pressure mercury lamp emits very intense radiation at 366 nm for fluoro-chemical analytical evaluation. Specially selected 254 nm filters enable optimal contrast. Minimal footprint in spite of simultaneous observation points for two 200 x 200 mm plates. Inclined plate angle gives comfortable viewing. Dimensions (W x D x H) 325 x 280 x 475 mm. Supply requirements 230 V.

Type	Cat. No.	PK
HP-UVIS	9.539 360	1



2 Analytical lamp, Mini UVIS®

With swivelling lamp housing and 8 W low-pressure mercury tube and UV-Filter for 254 and 366 nm wavelength output. Dimensions (W x D x H) 420 x 254 x 230mm. Supply requirements: 230 V.

Type	Cat. No.	PK
Mini UVIS	9.539 331	1



3 Analytical HPLC columns Nucleodur® 100-3 C₁₈ ec

Grain size 3 µm, Pore dia. 110 Å. Octadecylphase, endcapped, 17.5% C. Eluent in column acetonitrile/water.

MACHEREY-NAGEL

Type	Description	Column Length mm	Cat. No.	PK
2 mm i.d.	ChromCart®column*	125	9.003 785	1
2 mm i.d.	ChromCart®column*	250	9.003 790	1
3 mm i.d.	ChromCart®column*	125	9.003 786	1
3 mm i.d.	ChromCart®column*	250	9.003 791	1
4 mm i.d.	ChromCart®column*	125	9.003 787	1
4 mm i.d.	ChromCart®column*	250	9.003 792	1
4.6 mm i.d.	ChromCart®column*	125	9.003 788	1
4.6 mm i.d.	ChromCart®column*	150	9.003 789	1
4.6 mm i.d.	ChromCart®column*	250	9.003 793	1
2 mm i.d.	EC-column	125	9.003 796	1
2 mm i.d.	EC-column	250	9.003 801	1
3 mm i.d.	EC-column	125	9.003 797	1
3 mm i.d.	EC-column	250	9.003 802	1
4 mm i.d.	EC-column	125	9.003 798	1
4 mm i.d.	EC-column	250	9.003 803	1
4.6 mm i.d.	EC-column	125	9.003 799	1
4.6 mm i.d.	EC-column	150	9.003 800	1
4.6 mm i.d.	EC-column	250	9.003 804	1

* For all ChromCart®columns a CC-connectorkit is required!



4 Analytical HPLC columns Nucleodur® 100-3 C₁₈ ec pre columns

Grain size 3 µm, Pore dia. 110 Å. Octadecyl phase, endcapped, 17.5% C. Eluent in column acetonitrile/water.

MACHEREY-NAGEL

Type	Description	Cat. No.	PK
3 mm i.d.	ChromCart®column*	9.003 794	3
4 mm i.d.	ChromCart®column*	9.003 795	3

* To connect ec-columns with ec pre columns a on-column ec pre column holder is required!



Syringe filters - please see page 490



HPLC



1 Analytical HPLC columns Nucleodur® 100-5 C₁₈ ec

Grain size 5 µm, pore dia. 110 Å. Octadecylphase, endcapped, 17.5% C.
Eluent in column acetonitrile/water.

MACHEREY-NAGEL

Type	Description	Column Length mm	Cat. No.	PK
2 mm i.d.	ChromCart® column*	125	9.003 805	1
2 mm i.d.	ChromCart® column*	250	9.003 810	1
3 mm i.d.	ChromCart® column*	125	9.003 806	1
3 mm i.d.	ChromCart® column*	250	9.003 811	1
4 mm i.d.	ChromCart® column*	125	9.003 807	1
4 mm i.d.	ChromCart® column*	250	9.003 812	1
4.6 mm i.d.	ChromCart® column*	125	9.003 808	1
4.6 mm i.d.	ChromCart® column*	150	9.003 809	1
4.6 mm i.d.	ChromCart® column*	250	9.003 813	1
2 mm i.d.	EC-column	125	9.003 816	1
2 mm i.d.	EC-column	250	9.003 821	1
3 mm i.d.	EC-column	125	9.003 817	1
3 mm i.d.	EC-column	250	9.003 822	1
4 mm i.d.	EC-column	125	9.003 818	1
4 mm i.d.	EC-column	250	9.003 823	1
4.6 mm i.d.	EC-column	125	9.003 819	1
4.6 mm i.d.	EC-column	150	9.003 820	1
4.6 mm i.d.	EC-column	250	9.003 824	1

* For all ChromCart® columns a CC-connectorkit is required!



2 Analytical HPLC columns Nucleodur® 100-5 C₁₈ ec pre columns

Grain size 5 µm, pore dia. 110 Å. Octadecyl phase, endcapped, 17.5% C.
Eluent in column acetonitrile/water.

MACHEREY-NAGEL

Type	Description	Cat. No.	PK
3 mm i.d.	ChromCart® column*	9.003 814	3
4 mm i.d.	ChromCart® column*	9.003 815	3

* To connect ec-columns with ec pre columns a on-column ec pre column holder is required!



3 Analytical HPLC columns Nucleosil® 100-3 C₁₈

Grain size 3 µm, pore dia. 100 Å. Octadecyl phase, endcapped, 15% C.
Eluent in column acetonitrile/water.

MACHEREY-NAGEL

Type	Description	Column Length mm	Cat. No.	PK
2 mm i.d.	ChromCart® column*	125	9.003 825	1
2 mm i.d.	ChromCart® column*	250	9.003 830	1
3 mm i.d.	ChromCart® column*	125	9.003 826	1
3 mm i.d.	ChromCart® column*	250	9.003 831	1
4 mm i.d.	ChromCart® column*	125	9.003 827	1
4 mm i.d.	ChromCart® column*	250	9.003 832	1
4.6 mm i.d.	ChromCart® column*	125	9.003 828	1
4.6 mm i.d.	ChromCart® column*	150	9.003 829	1
4.6 mm i.d.	ChromCart® column*	250	9.003 833	1
2 mm i.d.	EC-column	125	9.003 836	1
2 mm i.d.	EC-column	250	9.003 841	1
3 mm i.d.	EC-column	125	9.003 837	1
3 mm i.d.	EC-column	250	9.003 842	1
4 mm i.d.	EC-column	125	9.003 838	1
4 mm i.d.	EC-column	250	9.003 843	1
4.6 mm i.d.	EC-column	125	9.003 839	1
4.6 mm i.d.	EC-column	150	9.003 840	1
4.6 mm i.d.	EC-column	250	9.003 844	1

* For all ChromCart® columns a CC-connectorkit is required!



4 Analytical HPLC columns Nucleosil® 100-3 C₁₈ pre columns

Grain size 3 µm, pore dia. 100 Å. Octadecyl phase, endcapped, 15% C.
Eluent in column acetonitrile/water.

MACHEREY-NAGEL

Type	Description	Cat. No.	PK
3 mm i.d.	ChromCart® column*	9.003 834	3
4 mm i.d.	ChromCart® column*	9.003 835	3

* To connect ec-columns with ec pre columns a on-column ec pre column holder is required!

1 Preparative HPLC columns Nucleosil® 100-5 C₁₈

Grain size 5 µm, pore dia. 100 Å. Octadecyl phase, endcapped, 15% C.
Eluent in column acetonitrile/water.

MACHEREY-NAGEL

Type	Description	Column Length mm	Cat. No.	PK
2 mm i.d.	ChromCart® column*	125	9.003 855	1
2 mm i.d.	ChromCart® column*	250	9.003 860	1
3 mm i.d.	ChromCart® column*	125	9.003 856	1
3 mm i.d.	ChromCart® column*	250	9.003 861	1
4 mm i.d.	ChromCart® column*	125	9.003 857	1
4 mm i.d.	ChromCart® column*	250	9.003 862	1
4.6 mm i.d.	ChromCart® column*	125	9.003 858	1
4.6 mm i.d.	ChromCart® column*	150	9.003 859	1
4.6 mm i.d.	ChromCart® column*	250	9.003 863	1
2 mm i.d.	EC- column	125	9.003 866	1
2 mm i.d.	EC- column	250	9.003 871	1
3 mm i.d.	EC- column	125	9.003 867	1
3 mm i.d.	EC- column	250	9.003 872	1
4 mm i.d.	EC- column	125	9.003 868	1
4 mm i.d.	EC- column	250	9.003 873	1
4.6 mm i.d.	EC- column	125	9.003 869	1
4.6 mm i.d.	EC- column	150	9.003 870	1
4.6 mm i.d.	EC- column	250	9.003 874	1

* For all ChromCart® columns a CC-connectorkit is required!

**2 Analytical HPLC columns Nucleosil® 100-5 C₁₈ pre columns**

Grain size 5 µm, pore dia. 100 Å. Octadecyl phase, endcapped, 15% C.
Eluent in column acetonitrile/water.

MACHEREY-NAGEL

Type	Description	Cat. No.	PK
3 mm i.d.	ChromCart® column*	9.003 864	3
4 mm i.d.	ChromCart® column*	9.003 865	3

* To connect ec-columns with ec pre columns a on-column ec pre column holder is required!



Syringe filters - please see page 490

High performance capillary columns Optima®

As a result of our efforts in research and development and the continuous improvements in our manufacturing techniques we present

MACHEREY-NAGEL

Optima® - a series of high performance capillary columns for gas chromatography.

Optima® capillary columns provide:

- High thermal stability
Improved temperature stability is the reason why Optima® capillary columns can be operated at about 40°C higher temperatures compared to standard phases. High-boiling solutes (with very low vapour pressures) "normally" have very long retention times and rather broad peak shapes. Optima® columns with their increased operation temperatures elute high-boiling compounds faster and with better peak shapes.
- Maximum operating temperatures for Optima® phases
The first temperature is valid for isothermal operation, the second for short isotherms in a temperature programme. Temperature limits for 0.53 mm i.d. columns and for columns with film thickness of 3 µm or greater are given with the ordering information on the following pages.
- Reduced column bleed
Improved manufacturing processes offer capillaries with lower bleed levels, which are especially recommended for GC-MS. Less column bleed yields increased sensitivity and accuracy through a better signal to noise ratio for any kind of detector. Reduced column bleed improves detectability of solutes in qualitative and quantitative GC-MS analyses.
- More inert columns due to optimised deactivation
Polar compounds are frequently difficult to analyse, because they often give broad tailing peaks. Advances in deactivation technology for the Optima® capillaries result in an excellent chromatographic performance yielding improved peak shapes of polar compounds combined with improved efficiency and sensitivity. In order to guarantee best industry standard capillaries with highest reproducibility from capillary to capillary Optima® columns have to meet high specifications.

For controlling quality Macherey-Nagel determines the following parameters:

- efficiency by measuring the separation number in a temperature programme.
- polarity by measuring retention indices
- bleeding in a temperature programme with a test mixture including high-boiling hydrocarbons
- inertness by measuring the peak height ratio for decylamine/ C-12 (for non- to medium polar phases)





1 2 High performance GC capillary columns Optima®

MACHEREY-NAGEL

Optima 1

For columns with 0.2 to 0.32 mm i.d. and films < 3 µm the max. temperature for isothermal operation is 340°C, the max. temperature for short isotherms in a temperature programme is 360°C, for 0.53 mm i.d. columns with films < 3 µm the max. temperatures are 320 and 340°C respectively, for thick film columns with films ≥3 µm the max. temperatures are 300 and 320°C, respectively.

Non-polar separation of components according to boiling points.

Thick film columns > 3 µm film are especially recommended for solvent analyses.

Similar phases: OV-1, DB-1, SE-30, HP-1, Ultra-1, SPB-1, CP-SIL 5 CB, Rtx-1, 007-1, BP1

Type	Film thickness µm	Length m	Cat. No.	PK
0.25 mm i.d.	0.10	10	9.003 655	1
0.25 mm i.d.	0.25	10	9.003 660	1
0.25 mm i.d.	0.50	10	9.003 666	1
0.25 mm i.d.	0.10	15	9.003 656	1
0.25 mm i.d.	0.25	15	9.003 661	1
0.25 mm i.d.	0.10	25	9.003 657	1
0.25 mm i.d.	0.25	25	9.003 662	1
0.25 mm i.d.	0.50	25	9.003 667	1
0.25 mm i.d.	1.00	25	9.003 671	1
0.25 mm i.d.	0.10	30	9.003 658	1
0.25 mm i.d.	0.25	30	9.003 663	1
0.25 mm i.d.	0.50	30	9.003 668	1
0.25 mm i.d.	1.00	30	9.003 672	1
0.25 mm i.d.	0.25	50	9.003 664	1
0.25 mm i.d.	0.50	50	9.003 669	1
0.25 mm i.d.	1.00	50	9.003 673	1
0.25 mm i.d.	0.10	60	9.003 659	1
0.25 mm i.d.	0.25	60	9.003 665	1
0.25 mm i.d.	0.50	60	9.003 670	1
0.25 mm i.d.	1.00	60	9.003 674	1
0.32 mm i.d.	0.10	10	9.003 675	1
0.32 mm i.d.	0.25	10	9.003 680	1
0.32 mm i.d.	0.50	10	9.003 690	1
0.32 mm i.d.	1.00	10	9.003 695	1
0.32 mm i.d.	5.00	10	9.003 705	1
0.32 mm i.d.	0.25	15	9.003 681	1
0.32 mm i.d.	1.00	15	9.003 696	1
0.32 mm i.d.	0.10	25	9.003 676	1
0.32 mm i.d.	0.25	25	9.003 682	1
0.32 mm i.d.	0.35	25	9.003 686	1
0.32 mm i.d.	0.50	25	9.003 691	1
0.32 mm i.d.	1.00	25	9.003 697	1
0.32 mm i.d.	3.00	25	9.003 701	1
0.32 mm i.d.	5.00	25	9.003 706	1
0.32 mm i.d.	0.10	30	9.003 677	1
0.32 mm i.d.	0.25	30	9.003 683	1
0.32 mm i.d.	0.35	30	9.003 687	1
0.32 mm i.d.	0.50	30	9.003 692	1
0.32 mm i.d.	1.00	30	9.003 698	1
0.32 mm i.d.	3.00	30	9.003 702	1
0.32 mm i.d.	5.00	30	9.003 707	1
0.32 mm i.d.	0.10	50	9.003 678	1
0.32 mm i.d.	0.25	50	9.003 684	1
0.32 mm i.d.	0.35	50	9.003 688	1
0.32 mm i.d.	0.50	50	9.003 693	1
0.32 mm i.d.	1.00	50	9.003 699	1
0.32 mm i.d.	3.00	50	9.003 703	1
0.32 mm i.d.	5.00	50	9.003 708	1
0.32 mm i.d.	0.10	60	9.003 679	1
0.32 mm i.d.	0.25	60	9.003 685	1
0.32 mm i.d.	0.35	60	9.003 689	1
0.32 mm i.d.	0.50	60	9.003 694	1
0.32 mm i.d.	1.00	60	9.003 700	1
0.32 mm i.d.	3.00	60	9.003 704	1

1 | 2 High performance GC capillary columns Optima® 5

MACHEREY-NAGEL

Optima 5

For columns with 0.2 to 0.32 mm i.d. and films < 3 µm the max. temperature for isothermal separation is 340°C. The max. temperature for short isotherms in a temperature programme is 360°C. For 0.53 mm i.d. columns with films < 3 µm the max. temperatures are 320 and 340°C respectively, for thick film columns with films > 3 µm the max. temperatures are 300 and 320°C, respectively.

- Non-polar
- Standard phase with large range of application
- Suitable for GC/MS (columns with small films)
- Similar phases: SE-54, SE-52, DB-5, HP-5, Ultra-2, SPB-5, CP-SIL 8, Rtx-5, 007-2, BP5
- USP G 27, 36



Type	Film thickness µm	Length m	Cat. No.	PK
0.25 mm i.d.	0.25	10	9.003 713	1
0.25 mm i.d.	0.25	15	9.003 714	1
0.25 mm i.d.	0.10	25	9.003 709	1
0.25 mm i.d.	0.25	25	9.003 715	1
0.25 mm i.d.	0.35	25	9.003 719	1
0.25 mm i.d.	0.50	25	9.003 723	1
0.25 mm i.d.	1.00	25	9.003 727	1
0.25 mm i.d.	0.10	30	9.003 710	1
0.25 mm i.d.	0.25	30	9.003 716	1
0.25 mm i.d.	0.35	30	9.003 720	1
0.25 mm i.d.	0.50	30	9.003 724	1
0.25 mm i.d.	1.00	30	9.003 728	1
0.25 mm i.d.	0.10	50	9.003 711	1
0.25 mm i.d.	0.25	50	9.003 717	1
0.25 mm i.d.	0.35	50	9.003 721	1
0.25 mm i.d.	0.50	50	9.003 725	1
0.25 mm i.d.	1.00	50	9.003 729	1
0.25 mm i.d.	0.10	60	9.003 712	1
0.25 mm i.d.	0.25	60	9.003 718	1
0.25 mm i.d.	0.35	60	9.003 722	1
0.25 mm i.d.	0.50	60	9.003 726	1
0.25 mm i.d.	1.00	60	9.003 730	1
0.32 mm i.d.	0.10	10	9.003 731	1
0.32 mm i.d.	0.10	15	9.003 732	1
0.32 mm i.d.	0.25	15	9.003 737	1
0.32 mm i.d.	1.00	15	9.003 750	1
0.32 mm i.d.	5.00	15	9.003 759	1
0.32 mm i.d.	0.10	25	9.003 733	1
0.32 mm i.d.	0.25	25	9.003 738	1
0.32 mm i.d.	0.35	25	9.003 742	1
0.32 mm i.d.	0.50	25	9.003 746	1
0.32 mm i.d.	1.00	25	9.003 751	1
0.32 mm i.d.	3.00	25	9.003 755	1
0.32 mm i.d.	5.00	25	9.003 760	1
0.32 mm i.d.	0.10	30	9.003 734	1
0.32 mm i.d.	0.25	30	9.003 739	1
0.32 mm i.d.	0.35	30	9.003 743	1
0.32 mm i.d.	0.50	30	9.003 747	1
0.32 mm i.d.	1.00	30	9.003 752	1
0.32 mm i.d.	3.00	30	9.003 756	1
0.32 mm i.d.	5.00	30	9.003 761	1
0.32 mm i.d.	0.10	50	9.003 735	1
0.32 mm i.d.	0.25	50	9.003 740	1
0.32 mm i.d.	0.35	50	9.003 744	1
0.32 mm i.d.	0.50	50	9.003 748	1
0.32 mm i.d.	1.00	50	9.003 753	1
0.32 mm i.d.	3.00	50	9.003 757	1
0.32 mm i.d.	0.10	60	9.003 736	1
0.32 mm i.d.	0.25	60	9.003 741	1
0.32 mm i.d.	0.35	60	9.003 745	1
0.32 mm i.d.	0.50	60	9.003 749	1
0.32 mm i.d.	1.00	60	9.003 754	1
0.32 mm i.d.	3.00	60	9.003 758	1



1 High performance GC capillary columns, Optima® WAX

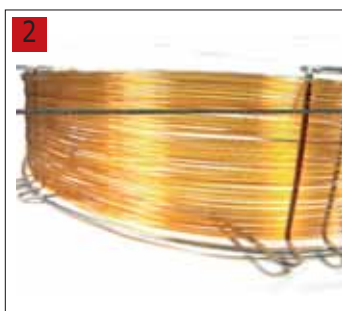
Optima WAX

MACHEREY-NAGEL

For columns with 0.25 to 0.32 mm i.d. the max. temperature for isothermal operation is 250°C, the max. temperature for short isotherms in a temperature programme is 260°C

- polar
- recommended for solvent analysis and alcohols
- suitable for aqueous solutions
- similar phases: DB-Wax, Supelcowax, HP-Wax, HP-INNOWAX, Rtx-Wax, CP-Wax 52 CB, Stabilwax, 007-CW, BP20, AT-Wax, ZB-Wax
- USP G16

Type	Film thickness µm	Length m	Cat. No.	PK
0.25 mm i.d.	0.25	25	9.003 762	1
0.25 mm i.d.	0.25	30	9.003 763	1
0.25 mm i.d.	0.25	50	9.003 764	1
0.25 mm i.d.	0.25	60	9.003 765	1
0.32 mm i.d.	0.25	25	9.003 766	1
0.32 mm i.d.	0.50	25	9.003 770	1
0.32 mm i.d.	0.25	30	9.003 767	1
0.32 mm i.d.	0.50	30	9.003 771	1
0.32 mm i.d.	0.25	50	9.003 768	1
0.32 mm i.d.	0.50	50	9.003 772	1
0.32 mm i.d.	0.25	60	9.003 769	1
0.32 mm i.d.	0.35	60	9.003 773	1



2 High performance GC capillary columns Optima® FFAP

Optima FFAP

MACHEREY-NAGEL

For columns with 0.10 to 0.32 mm i.d. the max. temperature for isothermal operation is 250°C. The max. temperature for short isotherms in a temperature programme is 260°C. For 0.53 mm i.d. columns the max. temperatures are 220 and 240°C, respectively.

- polar
- recommended for FAMES, free carboxylic acids
- similar phases: DB-FFAP, HP-FFAP, CP-SIL 58 CB, 007-FFAP, CP-FFAP CB, Nukol
- close equivalent to USP G35

Type	Film thickness µm	Length m	Cat. No.	PK
0.25 mm i.d.	0.25	25	9.003 774	1
0.25 mm i.d.	0.25	30	9.003 775	1
0.25 mm i.d.	0.25	50	9.003 776	1
0.25 mm i.d.	0.25	60	9.003 777	1
0.32 mm i.d.	0.25	25	9.003 778	1
0.32 mm i.d.	0.50	25	9.003 779	1
0.32 mm i.d.	0.25	30	9.003 782	1
0.32 mm i.d.	0.50	30	9.003 780	1
0.32 mm i.d.	0.25	50	9.003 783	1
0.32 mm i.d.	0.50	50	9.003 784	1
0.32 mm i.d.	0.25	60	9.003 781	1

Sample vials

Materials

MACHEREY-NAGEL

The material used for sample containers is highly important in terms of reproducibility and detection sensitivity, and should be compatible with the strict requirements of chemical analyses. In general, for this purpose, glass vials are used. The hydrolytic resistance of the glass can be taken as a measure of its chemical inertness. Determination of the hydrolytic resistance and the resulting classification of a glass grade are governed by the German industrial standard DIN 12111. Glass grades are classified in hydrolytic classes. We supply vials from the following class:

1st hydrolytic class

Glass grades made from borosilicate, such as Duran®, Pyrex®, Fiolax® and others belong to this group. Glass of this class, which is often called neutral glass, has a very good chemical resistance towards acid and neutral solutions. The relatively low alkali content permits good values for the resistance towards alkaline solutions, too. If nothing else is stated, the vials of our programme are made from glass of the 1st hydrolytic class (manufactured in accordance with Eu.Ph. III Ed., U.S.P. XXIV Ed., DAB-10, Ph. Jap. 13).

Crimp top vials

These are injection bottles which can be closed with crimp caps, PE caps or PU caps.

Threaded vials

Threaded vials N 8-1 and N 13-4 G have the same dimensions as the crimp top vials N 11-1 and N 13-4, respectively. However, they feature a threaded rim for screw caps.

Temperature stability of seals:

- butyl rubber 190°C (-30°C)
- silicone rubber 200°C (-60°C)

Temperature stability of screw caps:

- polypropylene 120 to 130°C



1 Autosampler vials and caps

Vials, N8, screwthreaded.

MACHEREY-NAGEL

Type	Cat. No.	PK
Combipack N 8-1, clear + N 8, with phenolic resin screw caps and red / natural seals	9.003 437	1000
Combipack N 8-1, clear + N 8, with phenolic resin screw caps and red / white seals	9.003 438	1000



2 Autosampler- sample vials and caps N11

Vials, N11, with crimp top.

MACHEREY-NAGEL

Type	Cat. No.	PK
Combipack N 11-1 HP, clear + N 11 N 20 TB/oA coloured aluminium caps and red butyl rubber / natural PTFE seals	9.003 439	1000
Combipack N 11-1 HP, clear + N 11 N 20 TB/oA coloured aluminium caps and red silicone / white PTFE seals	9.003 440	1000



3 Autosampler vials and caps N9

Vials, N9, with screw caps and seals.

MACHEREY-NAGEL

Type	Cat. No.	PK
N9-1, clear	9.003 448	100
N9-1, amber, with label area, wide mouth	9.003 449	100
N 9, blue screwcap with red butyl / natural PTFE seal	9.003 450	100
N 9, blue screwcap with white Butyl / red PTFE seal	9.003 451	100



Ampoules



1 Autosampler-sample vials and caps N20

Headspace vials and caps N20, with seals.

MACHEREY-NAGEL

Type	Cat. No.	PK
N20-20 DANI, tapered rim, round bottom	9.003 452	100
N20-20 HP/CTC, clear tapered rim, long neck, round bottom for PE/CTC and HP Autosampler	9.003 453	100
N20 TB/oA, coloured aluminium cap with red butyl / grey PTFE seal	9.003 454	100
N20 TB / HS, coloured aluminium cap with burst protection and red butyl / grey PTFE seal	9.003 455	100
N20 N 20 TS / HS, coloured aluminium cap with burst protection and beige silicone / grey PTFE seal	9.003 456	100
N20 N20 TB / oA ASM Bimetal, with grey butyl / grey PTFE seal, magnetic for CTC-Autosampler	9.003 457	100
N20 N20 TSB / oA ASM Bimetal, with cream silicone / grey PTFE seal, magnetic for CTC-Autosampler	9.003 458	100



2 Crimp top vials

Type 3 AR soda glass. With rolled rim.

MACHEREY-NAGEL

Type	Colour	Capacity ml	Dia. mm	Height mm	Cat. No.	PK
N 8-08	clear	0.8	8.2	30.0	9.003 427	100
N 11-1	clear	1.0	11.5	32.5	9.003 421	100
N 11-1	amber	1.0	11.5	32.5	9.003 429	100
N 13-2	clear	2.0	13.8	35.0	9.003 422	100
N 20-5	clear	2.0	20.5	38.0	9.003 425	100
N 20-10	clear	10.0	20.5	54.5	9.003 426	100
N 20-20	clear	20.0	23.2	75.5	9.003 428	100



3 Micro inserts for N8 and N11 vials

Standard, transparent.

MACHEREY-NAGEL

Type	Cat. No.	PK
Micro inserts for N8 and N11 vials	9.003 435	100



4 Crimp top vials, accessory caps

For crimp top vials and ampoules.

MACHEREY-NAGEL

Type	For vials	Seal	Cat. No.	PK
N 11 TB/oA	N 11	Butyl rubber/PTFE	9.003 441	100
N 20 TB/oA	N 20	Butyl rubber/PTFE	9.003 430	100
N 20 TB*	N 20	Butyl rubber/PTFE	9.003 445	100
N 8 TB/oA	N 8	Butyl rubber/PTFE	9.003 443	100
N 8 TS/oA	N 8	Silicone/PTFE	9.003 444	100
N 11 TS/oA	N 11	Silicone/PTFE	9.003 446	100
N 20 TS/oA	N 20	Silicone/PTFE	9.003 447	100

* Gold with centre tear-off



5 Autosampler vials

Type 3 AR soda glass. With screw thread. Without screw cap (N 8 type required).

MACHEREY-NAGEL

Dia. x height: 11.5 x 32.5 mm

Type	Capacity ml	Cat. No.	PK
N 8-1, amber	1	9.003 480	100
N 8-1, clear	1	9.003 481	100



6 Screw caps, N 8

Black urea.

MACHEREY-NAGEL

With 5.5 mm hole and seal as indicated.

Description	Cat. No.	PK
Red butyl rubber/clear PTFE	9.003 483	100
White silicone rubber/red PTFE, pre-assembled	9.003 484	100

1 Ampoule sealing crimpers

Manual. For sample, injection and infusion, crimp top bottles with aluminium, or combination caps, flip-top and flip-off seals. Crimpers for 8, 11, 13 and 20 mm caps have crimp height adjustment using an Allen key. Constant crimping pressure applied by means of adjustable screw-stop between the handle grips.

MACHEREY-NAGEL

For dia. mm	Cat. No.	PK
8	9.003 470	1
11	9.003 471	1
13	9.003 473	1
20	9.003 475	1



2 Opening pliers

For sample, injection and infusion, crimp top bottles or vials with aluminium, or combination caps.

MACHEREY-NAGEL

For dia. mm	Cat. No.	PK
8	9.003 511	1
11	9.003 367	1
13	9.003 368	1
20	9.003 369	1



3 Sample vials, crimp top

Transparent borosilicate glass vials. Choice of clear or amber. Supplied with and without labelling area, size 12 x 32 mm. Crimp top vials, standard neck.

Type	Cat. No.	PK
2.0 ml, transparent	9.003 600	100
2.0 ml, transparent with labelling area	9.003 601	100
2.0 ml, amber with labelling area	9.003 602	100



4 5 6 Insert vials

Insert vials, 5 mm diameter, KG-33 borosilicate glass.

Type	Cat. No.	PK
0.10 ml conical, glass	9.003 603	100
0.15 ml conical, glass with POLYSPRING	9.003 604	100
0.25 ml flat bottom, glass	9.003 605	500



7 8 Sample vials, crimp top

Transparent borosilicate glass vials. Choice of clear or amber. Supplied with and without labelling area, size 12 x 32 mm. Crimp top vials, wide mouth.

Type	Cat. No.	PK
2.0 ml, transparent	9.003 606	100
2.0 ml, transparent with labelling area	9.003 607	100
2.0 ml, amber with labelling area	9.003 608	100



4 5 6 Insert vials

Insert vials, 6 mm diameter, KG-33 borosilicate glass.

Type	Cat. No.	PK
0.25 ml conical, glass	9.003 609	100
0.25 ml conical, glass, Polyspring	9.003 610	100
0.35 ml flat bottom, glass	9.003 611	500



9 Alu-caps

Aluminium caps for crimp top bottles, standard and wide mouth. Diameter 11 mm.

Type	Cat. No.	PK
PTFE sealing rim	9.003 612	1000
PTFE / natural rubber seal	9.003 613	1000
PTFE / Silicone seal	9.003 614	100
PTFE red / Silicone seal	9.003 615	100



Ampoules



1 Seals 2000

Coloured aluminium caps with PTFE/rubber seal. 11 mm dia. Other colours available on request.

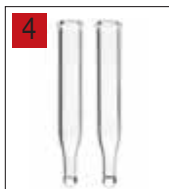
Colour	Cat. No.	PK
Silver	9.003 616	100



2 3 Sample vials, screwthread top

With wide mouth. Supplied with and without labelling area, size 12 x 32 mm.

Type	Cat. No.	PK
2.0 ml transparent	9.003 617	100
2.0 ml transparent, with labelling area	9.003 618	100
2.0 ml amber, with labelling area	9.003 619	100



4 5 6 Insert vials

Insert vials, 6 mm diameter.

Type	Cat. No.	PK
0.25 ml conical, glass	9.003 609	100
0.25 ml conical, glass, Polyspring	9.003 610	100
0.35 ml flat bottom, glass	9.003 611	500



7 Screwthread caps

Diameter 10 mm. Screw cap, open, coloured, PP.

Colour	Cat. No.	PK
Black	9.003 620	100
Red	9.003 621	100
Blue	9.003 622	100
Green	9.003 623	100



8 Septa

Septa. 10 mm. For 10 mm dia. screwthread caps.

Type	Cat. No.	PK
PTFE	9.003 624	1000
PTFE red/Silicone white	9.003 627	100



9 10 Sample vials, screwthread top

With standard screw neck. Supplied with and without labelling area, size 12 x 32 mm.

Type	Cat. No.	PK
2.0 ml transparent	9.003 629	100
2.0 ml transparent, with labelling area	9.003 630	100
2.0 ml amber	9.003 631	100
2.0 ml amber, with labelling area	9.003 632	100



4 5 6 Insert vials

Insert vials, 5 mm diameter.

Type	Cat. No.	PK
0.10 ml conical, glass	9.003 603	100
0.15 ml conical, glass with Polyspring	9.003 604	100
0.25 ml flat bottom, glass	9.003 605	500

1 2 Screwthread caps

Diameter 8 mm.
Open screwthread cap.

Type	Cat. No.	PK
Phenolic, black	9.003 633	1000
PP, black	9.003 634	100



3 Septa

Septa. 8 mm. For 8 mm dia. screwthread caps.

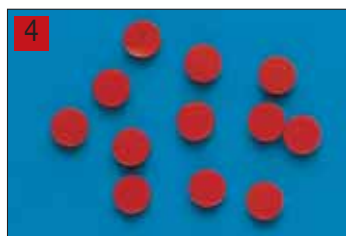
Type	Cat. No.	PK
PTFE	9.003 635	1000
PTFE/Rubber	9.003 636	100
PTFE red/Silicone white	9.003 638	100



4 Three-layer septa

Low density silicone wad sandwiched between two high density silicone layers. Hamilton
Working temperature max. 200°C.

Dia. mm	Cat. No.	PK
9.5	9.221 803	12
10.0	9.221 805	12
13.0	9.221 809	12



5 6 Gel XL Ultra V2

Complete, compact and convenient mini-gel system.

Included in the Gel XL Ultra V2 system is the direct-connect, intelligent power supply, UV transparent gel tank with safety lid, one large gel tray (13 x 12 cm), two small gel trays (13 x 6 cm), 4 dual format combs (13/26 teeth) and a standard casting stand. The self-sealing casting stand holds one large or two small gel trays and offers the most convenient method of gel casting available.

Safety:	Power linked photosensor detects presence of properly installed lid
Timer:	0 to 99 minutes or continuous
Output voltage	18V, 25V, 35V, 50V, 100V or 135V selectable
Input voltage	100-240V 50/60 Hz
Dimensions (W x D x H):	183 x 164 x 56 mm
Gel tank:	64 x 164 x 35 mm



Description	Cat. No.	PK
Gel XL Ultra V2 (230V), includes gel tank with safety lid, direct-connect power supply and standard casting set	9.595 303	1
Standard casting set, includes 1 large, 2 small gel trays, 4 dual format combs and casting stand	9.595 304	1
Micro casting set, includes 4 micro gel trays, 4 dual format combs and casting stand	9.595 305	1

Additional accessories are available.





1 Horizontal gel box systems Sub System 70™ and Sub System 150™

- two sizes - mini system for quick runs and standard system for higher resolution.
- unique end gates provide tape free gel casting.
- UV transparent gel trays and tank
- unidirectional safety lid protects users and ensures proper power supply connection
- moulded components with no seams to split or leak
- economically priced

Sub System 70™:

Complete with gel box, 10 x 7 cm tray, levelling bubble, 1 pair of casting gates two combs:
10 x 1.0 mm teeth and 15 x 1.0 mm teeth.
Tank dimensions: 20 x 9.5 x 8.5 cm
Tray dimensions: 10 x 7 cm

Sub System 150™

Complete with 15 x 15 cm tray, levelling bubble, 1 pair of casting gates and two combs:
15 x 1.0 mm teeth and 20 x 1.0 mm teeth.
Tank dimensions: 27 x 17.5 x 10 cm
Tray dimensions: 15 x 15 cm

Description	Cat. No.	PK
SubSystem 70™	9.595 300	1
SubSystem 150™	9.595 301	1

Additional gel trays and combs are available.



2 MultiSUB Mini

Gel size: 7 x 10 cm (W x L). The multiSubmini is the smallest unit in the range and designed for fast separation of low number samples in agarose gel. *Cleaver Scientific*
The small gel size maximises run economy but does not compromise versatility as two tray options are available: 7 x 10 cm or 7 x 7 cm.
Casting dams allow gels to be rapidly cast externally while the multiSub unit is in use for gel running.

Specifications:

- colour coded combs 0.75 to 1.0 mm and/or 1.5 to 2.0 mm
- 2/4 comb positions for Mini 32 or 64 samples
- low buffervolume: 225 ml
- injection moulded construction: durable, leakproof environment for complete safety and long life
- simple gel casting by using dams

Type	Cat. No.	PK
MultiSUB Mini	9.584 650	1

* Incl.: MultiSUBmini-unit with platin electrodes, UV-Tray 7x10 cm, two combs 8 teeth - 1 mm), dam

**Combs in other dimensions and multichannel pipette compatible combs available on demand.



3 MultiSUB Choice

Gel size: 15 x 15 cm (W x L). This unit is ideal for restriction fragment analysis, sample prep or checking of high number of samples. *Cleaver Scientific*
The multiSUB choice offers a high degree of versatility.
Two additional tray options are available, 15 x 7 cm and 15 x 10 cm.
Gel casting is easy by using casting dams.

Specifications:

- colour coded combs 0.75 to 1.0 and/or 1.5 to 2.0 mm
- 3, 4 or 6 comb positions for maximum 210 samples
- low buffer volume: 500 ml
- injection moulded construction: durable, leakproof environment for complete safety and long life
- simple gel casting by using dams

Type	Cat. No.	PK
MultiSUB Choice	9.584 651	1

* Incl.: MultiSUB choice15 with platin electrodes, UV-tray, two combs (20 teeth - 1 mm), dams, loading guides and rubber feet.

**Combs in other dimensions and multichannel pipette compatible combs available on demand.

1 OmniPAGE Mini

For 1 to 4 Gels, Gel size 7.5 x 8 cm. OmniPage Mini is the preferred unit for mini SDS Page-, gradient and second dimension electrophoresis. OmniPAGE Mini is constructed using the latest injection moulding manufacturing techniques. The unit incorporates a sealing system which is compatible with most 8 x 10 cm and 10 x 10 cm precast gels. Electroblotting and tube gel modules are available which use the same outer tank and lid.

Cleaver Scientific



- 2-D and electroblotting-module optional
- compatible with 8 x 10 cm and 10 x 10 cm precast gels
- colour coded combs 0.75 to 1.0 and/or 1.5 to 2.0 mm
- low buffer volume, 250 ml up to maximum 1200 ml
- easy gel casting with casting base
- up to four gels for maximum 80 samples (20 samples/gel)

Type	Cat. No.	PK
OmniPAGE Mini	9.584 652	1

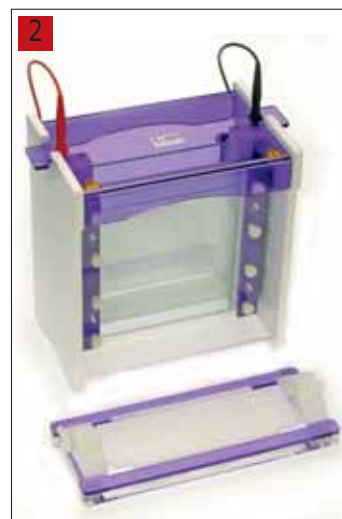
* Incl.: omniPage Mini chamber with platinum electrodes, two sets of glass plates with bonded 1 mm spacer, two combs 12 teeth - 1mm, dummy plate, cooling pack.

**Combs in other dimensions and multichannel pipette compatible combs are available on request.

2 OmniPAGE Maxi

For 1 to 4 Gels, Gel size 16 x 17.5 cm. OmniPage Maxi is the preferred unit for maxi protein electrophoresis. Gel casting and running utilise the same insert, no transfer of glass plates during the gel casting is necessary. 4 mm thick glass plates prevent breakage and have bonded spacers for convenience. Electroblotting and tube gel modules are available which use the same outer tank and lid.

Cleaver Scientific



- colour coded combs 0.75 to 1.0 and/or 1.5 to 2.0 mm
- low buffer volume, 1200 ml up to maximum 5600 ml
- easy gel casting with casting base
- up to four gels for maximum 192 samples (48 samples/gel)

Type	Cat. No.	PK
OmniPAGE Maxi	9.584 653	1

* Incl.: omniPage Maxi chamber with platinum electrodes, two sets of glass plates with bonded 1 mm spacer, two combs 12 teeth - 1mm, dummy plate, cooling pack.

3 Power Station™ power supplies

Dependable performance, intelligent control, for the connecting of different chamber systems.

- Three models
- Select constant voltage or constant current mode
- Automatic crossover between modes protects gels.
- Compact, lightweight and stackable
- Designed for safety
- Extremely quiet operation

Output type: Constant voltage or constant current with automatic crossover

Timer: 0 to 999 minutes
 Display: 3 digit LED
 Output terminals: four, parallel
 Dimensions: 33 x 22 x 7.4 cm
 Weight Power Station 200: 2.2 kg
 Power Station 300: 1.9 kg



Type	Voltage 50/60 Hz	Current mAh	Cat. No.	PK
Power station 200™	5 to 200 V d.c., 1 V	0.01 to 2 A, 0.01 A	9.595 307	1
Power station 300™	10 to 300 V d.c., 1 V	4 to 400 mA, 1 mA	9.595 308	1
Power station 300 Plus™	10 to 300 V d.c., 1 V	4 to 500 mA, 1 mA	9.595 309	1

Additional accessories are available.



1 Saran® Sealing Film

PVC-based. Good barrier properties protect the user against contact with dangerous substances (e.g. ethidium bromide or contaminated isotopes) from the sealed material and is therefore suitable for covering sequencing gels in Electrophoresis applications.

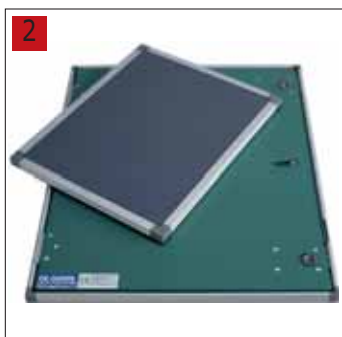
Ideal characteristics for use:

- does not stick, easy to unravel
- non-flammable
- self-extinguishing
- can be microwaved

Technical data

Film thickness:	11.5 µm
Permeability in the visible area:	90 %
UV-filtering:	3000 Å
IR-permeability:	88 %
Width:	300 mm
Length:	300 m

Type	Cat. No.	PK
Saran® film	9.106 460	1



2 X-Ray cassettes

Standard design with lead lining and snap fit lid.

- easy to open, easy to close with gentle pressure.
- firm, consistent support for films through special shaping: base pre-formed with convex profile.
- flexible, pure aluminium base (Absorption 1.2 mm Al\leq value)film processed in frames:
- Aluminium base coated in impact-resistant paint
- Anodised aluminium frame
- Elastic foam for film protection
- Specifically designed for audioradiography at 70°C

Use our reinforcement films in the blue sensitivity range with these X-Ray cassettes.

Format mm	Cat. No.	PK
180 x 240	9.106 580	1
240 x 300	9.106 581	1
200 x 400	9.106 582	1
356 x 432	9.106 583	1

Accessories for X-Ray cassettes

Reinforcement films Universal B 1
CaWo₂, blue.

Format mm	Cat. No.	PK
180 x 240	9.106 570	2
240 x 300	9.106 571	2
200 x 400	9.106 572	2
356 x 432	9.106 574	2



3 Gel documentation system DP-1000

- Fast, convenient and easy gel documentation
- Particularly suited for every-day-use
- No PC required
- Metal housing with compact design, manufactured in highest quality
- All models include the following standard components:
 - Darkroom with white light source, filter wheel and UV safety interruption
 - Integrated UV transilluminator (filter size 20 x 20 cm, 312 nm) with intensity selector, in a pull-out drawer for preparative work
 - Sensitive scientific grade CCD camera, zoom, UV filter
 - Control unit with large 5.6" TFT display and Compact Flash (CF) Media Card for data storage
 - USB card-reader for easy data transfer to a PC
 - Free analysis software

Optionally available with built-in thermal printer for fast, high quality printouts

Description	Cat. No.	PK
with standard components	9.971 900	1
with standard components and thermal printer	9.971 901	1

1 Gel documentation system DOC-PRINT

- Combines simplicity and economy
 - No PC required
 - Modular, flexible and space-saving
 - Ideal for laboratories with budget in mind
 - For beginners in the world of digital gel documentation as well as for experienced users
 - Compatible with almost every UV viewing table
 - Optionally equipped with thermal printtableter for fast printouts in high quality
- All models include the following standard components:
- Sensitive CCD camera, zoom, hood, UV filter
 - Control unit with integral TFT display and Compact Flash (CF) Media Card for data storage and transfer to the PC
 - Free analysis software



Description	Description	Cat. No.	PK
DP-C	with standard components	9.971 902	1
DP-C-P	with standard components and thermal printer	9.971 903	1
DP-C-20.M	with standard components and UV table	9.971 904	1
DP-C-P-20.M	with standard components, thermal printer and UV table	9.971 905	1

2 UV transilluminators - Professional Line

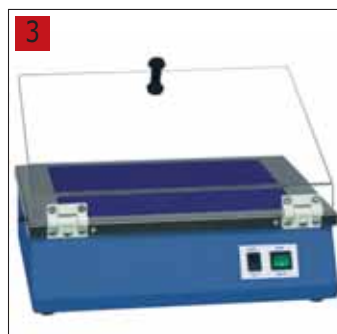
- High Intensity Output for high UV intensities
- Metal housing, with stainless steel filter frame and "long life" filter
- Modern technology, highest quality manufacture
- Microprocessor control, intensity selector (Hi/Lo)
- Low heat generation, safety shutdown
- Integral UV safety screen
- Top dimensions: 47 x 33 cm



Type	Description	Filter size	Tubing	Wave-length nm	Cat. No.	PK
BETX-20.M	Hi/Lo Intensity	20 x 20 cm	6 x 15 W	312	9.971 906	1
BETX-26.M	Hi/Lo Intensity	21 x 26 cm	6 x 15 W	312	9.971 907	1
BETX-35.M	Hi/Lo Intensity	20 x 35 cm	6 x 15 W	312	9.971 908	1
BETX-36.M	Hi/Lo Intensity	25 x 25 cm	6 x 15 W	312	9.971 909	1

3 Compact UV transilluminators

- Compact design (34 x 26 cm)
- Metal housing, with stainless steel filter frame and "long life" filter
- Modern technology, highest quality manufacture
- BECX models have intensity selector (Hi/Lo)
- Single or dual wavelength models available



Type	Description	Filter size	Tubing	Wave-length nm	Cat. No.	PK
BECC-20.M	Hi / Lo Intensity	20 x 20 cm	6 x 8 W	312	9.971 910	1
BECC-26.M	Hi / Lo Intensity	21 x 26 cm	6 x 8 W	312	9.971 911	1
BTCP-20.LM	Multi-band	20 x 20 cm	6 x 8 W / 5 x 8 W	365 / 312	9.971 912	1
BTCP-20.MC	Multi-band	20 x 20 cm	6 x 8 W / 5 x 8 W	312 / 254	9.971 913	1
BTCP-26.LM	Multi-band	21 x 26 cm	6 x 8 W / 5 x 8 W	365 / 312	9.971 914	1

4 UV lamps

- Filtered and unfiltered*UV lamps with different wave lengths and power levels for a broad range of applications
- Models with wave length selector suited for multiple applications



Type	Description	Filter size	Tubing	Wave-length nm	Cat. No.	PK
BVL-215.G	UV sterilization lamp*	495 x 120 cm	2 x 15 W	254	9.971 915	1
BVL-215.M	Single wavelength	295 x 76 cm	2 x 15 W	312	9.971 916	1
BVL-4.LC	wave length selector	70 x 48 cm	2 x 1 x 4 W	365 / 254	9.971 917	1
BVL-6.LC	wave length selector	145 x 48 cm	2 x 1 x 6 W	365 / 254	9.971 918	1
BVL-6.LM	wave length selector	145 x 48 cm	2 x 1 x 6 W	365 / 312	9.971 919	1
BVL-6.MC	wave length selector	145 x 48 cm	2 x 1 x 6 W	312 / 254	9.971 920	1



1 MultiGene™ II Personal Thermal Cycler

The MultiGene™ II combines a versatile and precise cycling unit with easy to use software to make it an outstanding personal thermal cycler. Not limited to the amplification of nucleic acids, the unit is also useful for applications such as enzymatic digestion, ligation and other procedures that require incubation of small samples in a temperature controlled environment.

Specifications:

Max. number of programmes:	99
Increments/decrements:	Yes, time and temperature
Block capacities:	25 x 0.2 ml tubes or 16 x 0.5 ml tubes
Temperature control:	Sample algorithm
Temp range/ uniformity:	4°C to 99°C/ ±0.4°C to 55°C
Dimensions (W x D x H):	218 x 285 x 178 mm
Weight:	3.2 kg
Electrical:	120/230 V, 50 to 60 Hz

Description	Cat. No.	PK
Multi Gene II, 25 x 0.2 ml block, 230 V	9.595 310	1
Multi Gene II, 16 x 0.5 ml block, 230 V	9.595 311	1
0.2 ml domed cap tubes, clear	9.595 312	1000
0.2 ml domed cap tubes, assorted colours	9.595 313	1000