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### 1 Round bottom flasks, borosilicate glass 3.3

Resistant to heat and almost all chemicals. According to DIN EN ISO 4797.  
Reinforced rims are used to prevent breaking during washing and transportation.

ISOLAB

Capacity	Flask diam.	Neck diam. approx.	Height	Socket	PK	Cat. No.
ml	mm	mm	mm	NS		
50	51	22	105	14/23	1	6.236 508
50	51	22	105	19/26	1	4.008 379
50	51	30	105	24/29	1	4.008 380
50	51	34	105	29/32	1	6.238 345
100	64	22	115	14/23	1	6.236 346
100	64	22	115	19/26	1	4.008 381
100	64	30	115	24/29	1	4.008 382
100	64	34	115	29/32	1	6.236 774
250	85	22	145	19/26	1	4.008 383
250	85	30	145	24/29	1	4.008 384
250	85	34	145	29/32	1	6.236 303
500	105	30	175	24/29	1	4.008 385
500	105	34	175	29/32	1	6.240 426
1000	131	42	210	24/29	1	6.237 702
1000	131	42	210	29/32	1	6.242 240
2000	165	34	260	29/32	1	6.238 472
4000	207	50	315	29/32	1	7.940 038



### 2 Round bottom flasks with conical ground joint, DURAN®

According to DIN EN ISO 4797 and in addition to DIN standard (\*), with inscription label, material: DURAN®.

Lenz

Capacity	Flask diam.	Socket	PK	Cat. No.
ml	mm	NS		
5	30	14/23*	1	6.201 199
10	35	14/23	1	9.011 801
25	41	14/23	1	9.011 802
25	41	19/26	1	7.021 797
50	51	14/23	1	9.011 805
50	51	19/26	1	6.302 116
50	51	24/29	1	7.019 181
50	51	29/32	1	9.011 835
100	64	14/23	1	9.011 810
100	64	19/26	1	6.200 675
100	64	24/29	1	7.019 182
100	64	29/32	1	9.011 840
250	85	14/23*	1	9.011 815
250	85	19/26	1	6.800 202
250	85	24/29	1	6.800 214
250	85	29/32	1	9.011 845
250	85	45/40*	1	9.011 867
500	105	24/29	1	6.800 215
500	105	29/32	1	9.011 850
500	105	45/40	1	9.011 868
1000	131	24/29	1	6.800 235
1000	131	29/32	1	9.011 855
1000	131	45/40	1	9.011 869
2000	166	29/32	1	9.011 860
2000	166	45/40	1	9.011 870
3000	185	29/32*	1	6.077 738
3000	185	45/40*	1	6.901 617
4000	207	29/32	1	9.011 865
4000	207	45/40	1	9.011 875
5000	223	29/32*	1	9.011 864
5000	223	45/40	1	9.011 877
6000	236	29/32*	1	9.011 866
6000	236	45/40	1	9.011 880
10000	279	45/40	1	9.011 885

#### 1 Round bottom flasks, borosilicate glass 3.3, amber

Resistant to heat and almost all chemicals. According to DIN EN ISO 4797.  
Reinforced rims are used to prevent breaking during washing and transportation.

ISOLAB

Capacity	Flask diam.	Height	Socket	PK	Cat. No.
ml	mm	mm	NS		
50	51	105	29/32	1	9.141 091
100	64	115	29/32	1	7.980 357
250	85	145	29/32	1	7.980 358
500	105	175	29/32	1	9.141 092
1000	131	210	29/32	1	9.141 093



#### 2 Round bottom flasks with conical ground joint, amber, DURAN®

According to DIN EN ISO 4797, with inscription label, material: DURAN®.

Lenz

Capacity	Flask diam.	Socket	PK	Cat. No.
ml	mm	NS		
50	51	29/32	1	6.242 163
100	64	29/32	1	9.011 827
250	85	29/32	1	9.011 828
500	105	29/32	1	9.011 829
2000	166	29/32	1	6.253 256



#### 3 Kjeldahl flasks with ground neck

Manufactured from borosilicate glass 3.3. according to DIN 12360 standard.  
NS necks are in compliance with DIN 12242 standards.

ISOLAB

Capacity	Socket	PK	Cat. No.
ml	NS		
100	19/26	1	9.140 385
250	29/32	1	9.140 386
500	29/32	1	9.140 387
750	29/32	1	9.140 388
1000	29/32	1	9.140 389



#### 4 Kjeldahl flasks, DURAN®

Material: DURAN®. For the determination of nitrogen in organic compounds.  
With centre neck and conical joint.

Lenz

Capacity	Flask diam.	NS	PK	Cat. No.
ml	mm			
50	51	19/26	1	9.141 860
100	60	19/26	1	9.141 861
250	81	29/32	1	6.073 310
500	101	29/32	1	6.057 941
750	115	29/32	1	6.233 275
1000	126	29/32	1	7.608 178



# 6. Distillation, separation, filtration

## Distillation, synthesis/Flasks with NS joint neck



### 1 Pear shape flasks, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. Conformed to DIN 12383 standards. ISOLAB  
 NS neck is in compliance with DIN 12242 standards.

Capacity	Socket	PK	Cat. No.
ml	NS		
10	14/23	1	6.236 347
25	14/23	1	6.237 164
50	14/23	1	6.237 165
100	14/23	1	6.237 166
250	14/23	1	9.140 302
50	29/32	1	9.140 310
100	29/32	1	6.257 941
250	29/32	1	9.140 311



### 2 Pear shape flasks with conical ground joints, DURAN®

According to DIN 12383\* and in addition to DIN standard, with inscription label, material: DURAN® Lenz

Capacity	Socket	Flask diam.	PK	Cat. No.
ml	NS	mm		
10	14/23	33	1	9.012 021
25	14/23	42	1	9.012 022
50	14/23	51	1	9.012 023
100	14/23	64	1	9.012 024
100	19/26 *	64	1	6.224 886



### 3 Round bottom flasks with two necks, angled arm, borosilicate glass 3.3

Conformed to DIN 12394. The side arms are 20 degree angled with each other. ISOLAB  
 NS necks are in compliance with DIN 12242 standards. Two-necked round-bottomed flask available with parallel side arm on request.

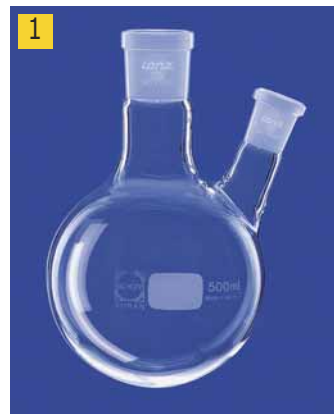
Capacity	Centre neck	Angled side necks	PK	Cat. No.
ml	NS	NS		
50	14/23	14/23	1	9.140 320
100	14/23	14/23	1	9.140 321
250	14/23	14/23	1	9.140 322
100	24/29	14/23	1	9.140 323
250	24/29	14/23	1	9.140 324
500	24/29	14/23	1	9.140 325
1000	24/29	14/23	1	9.140 326
100	24/29	19/26	1	9.140 327
250	24/29	19/26	1	9.140 328
500	24/29	19/26	1	9.140 329
1000	24/29	19/26	1	9.140 330
100	29/32	14/23	1	6.243 616
250	29/32	14/23	1	4.008 386
500	29/32	14/23	1	4.008 387
1000	29/32	14/23	1	4.008 388
2000	29/32	14/23	1	9.140 331
100	29/32	19/26	1	9.140 332
250	29/32	19/26	1	9.140 333
500	29/32	19/26	1	9.140 334
1000	29/32	19/26	1	9.140 335
2000	29/32	19/26	1	9.140 336
100	29/32	29/32	1	9.140 337
250	29/32	29/32	1	6.243 617
500	29/32	29/32	1	6.243 618
1000	29/32	29/32	1	6.243 619
2000	29/32	29/32	1	6.243 620

#### 1 Round bottom flasks with two necks, side neck angled, DURAN®

DIN 12394 and in addition to DIN standard (\*). With one central and one 20° side angled ground joint necks as outlined below. Material: DURAN®

Lenz

Capacity ml	Centre neck NS	Side necks NS	Flask diam. mm	PK	Cat. No.
25	14/23	14/23*	41	1	9.011 901
50	14/23	14/23*	51	1	9.011 902
100	14/23	14/23*	64	1	9.011 903
100	29/32	14/23*	64	1	9.011 904
100	29/32	19/26*	64	1	6.233 114
100	29/32	29/32*	64	1	6.204 819
250	14/23	14/23*	85	1	9.011 905
250	24/29	19/26*	85	1	6.206 139
250	29/32	14/23	85	1	9.011 906
250	29/32	19/26	85	1	6.225 989
250	29/32	29/32*	85	1	9.011 907
500	29/32	14/23	105	1	9.011 908
500	29/32	19/26	105	1	6.233 091
500	29/32	29/32*	105	1	9.011 910
1000	29/32	14/23	131	1	9.011 915
1000	29/32	19/26	131	1	6.231 953
1000	29/32	29/32*	131	1	9.011 920
2000	29/32	14/23	166	1	6.072 288
2000	29/32	29/32*	166	1	6.056 856
4000	29/32	29/32*	207	1	6.201 298



#### ➔ Round bottom flasks with two necks, with parallel side neck available on request

#### 2 Three neck round bottom flasks, side necks parallel, DURAN®

DIN 12392 and in addition to DIN standard (\*). All necks are parallel.

Lenz

Capacity ml	Centre neck NS	Side necks NS	Flask diam. mm	PK	Cat. No.
100	24/29	19/26*	64	1	6.205 694
100	29/32	14/23*	64	1	9.011 933
100	29/32	19/26*	64	1	6.306 275
100	29/32	29/32	64	1	6.235 645
250	24/29	19/26*	85	1	7.021 838
250	29/32	14/23*	85	1	9.011 935
250	29/32	29/32*	85	1	9.011 936
500	24/29	19/26*	105	1	7.021 840
500	29/32	14/23*	105	1	9.011 938
500	29/32	19/26*	105	1	7.019 244
500	29/32	29/32*	105	1	9.011 939
1000	29/32	14/23*	131	1	9.011 941
1000	29/32	19/26*	131	1	6.203 572
1000	29/32	29/32	131	1	9.011 942
1000	45/40	29/32*	131	1	9.011 943
2000	29/32	14/23*	166	1	9.011 945
2000	29/32	19/26*	166	1	6.203 571
2000	29/32	29/32	166	1	9.011 946
2000	45/40	29/32	166	1	9.011 947
3000	29/32	29/32*	185	1	6.203 569
4000	29/32	14/23*	207	1	6.238 532
4000	29/32	29/32*	207	1	7.200 347
4000	45/40	29/32	207	1	9.011 950
5000	29/32	29/32*	223	1	6.306 286
5000	45/40	29/32*	223	1	9.011 949
6000	29/32	14/23*	236	1	6.803 543
6000	29/32	29/32	236	1	6.072 558
6000	45/40	29/32	236	1	9.011 951
10000	45/40	29/32*	279	1	9.011 952



# 6. Distillation, separation, filtration

## Distillation, synthesis/Flasks with NS joint neck



### 1 Round bottom flasks with three necks, NS joints, angled side arms, borosilicate glass 3.3

Conformed to DIN 12394. The side arms are at 20 degree angles with the centre neck. The NS necks are in compliance with DIN 12242 standards.

ISOLAB

Capacity	Flask diam.	Centre neck	Angled side necks	PK	Cat. No.
ml	mm	NS	NS		
250	85	29/32	14/23	1	4.008 390
250	85	29/32	19/26	1	4.008 393
250	85	29/32	29/32	1	6.240 976
500	105	29/32	14/23	1	4.008 391
500	105	29/32	19/26	1	4.008 394
500	105	29/32	29/32	1	6.240 977
1000	131	29/32	14/23	1	4.008 392
1000	131	29/32	19/26	1	4.008 395
1000	131	29/32	29/32	1	6.240 978
2000	166	29/32	29/32	1	4.008 396



### 2 Three-neck round-bottom flasks, side necks angled, DURAN®

DIN 12394 and in addition to DIN standard (\*). Central neck with 2 x 20° angled side necks.

Lenz

Capacity	Centre neck	Side necks	Flask diam.	PK	Cat. No.
ml	NS	NS	mm		
50	19/26	14/23*	51	1	6.202 804
100	24/29	19/26*	64	1	6.204 321
100	29/32	14/23*	64	1	9.011 953
100	29/32	19/26*	64	1	6.204 852
100	29/32	29/32*	64	1	7.019 272
250	24/29	19/26*	85	1	6.204 322
250	29/32	14/23	85	1	9.011 955
250	29/32	19/26	85	1	9.011 957
250	29/32	29/32	85	1	9.011 956
500	29/32	14/23*	105	1	9.011 958
500	29/32	19/26	105	1	9.011 960
500	29/32	29/32	105	1	9.011 959
1000	29/23	14/23	131	1	9.011 961
1000	29/32	19/26	131	1	9.011 964
1000	29/32	29/32*	131	1	9.011 962
1000	45/40	29/32*	131	1	9.011 963
2000	29/32	14/23	166	1	9.011 965
2000	29/32	29/32*	166	1	9.011 966
2000	45/40	29/32*	166	1	9.011 967
3000	29/32	29/32*	185	1	6.203 014
4000	29/32	29/32*	207	1	7.615 379
4000	45/40	29/32*	207	1	9.011 968
5000	45/40	29/32*	223	1	9.011 971
6000	45/40	29/32*	236	1	9.011 969
10000	45/40	29/32*	279	1	9.011 970



### 3 Four-neck round-bottom flask, with parallel side necks, DURAN®

Reaction flasks acc. to DIN 12392 and in addition to DIN standard (\*), with 3 parallel side necks, with conical ground joints, with inscription label, material: DURAN®

Lenz

Capacity	Centre neck	Side necks	Flask diam.	PK	Cat. No.
ml	NS	NS	mm		
500	29/32	29/32*	105	1	7.019 293
1000	29/32	29/32	131	1	6.079 458
2000	29/32	29/32	166	1	6.203 263
3000	29/32	29/32*	185	1	6.902 383
4000	29/32	29/32	207	1	6.202 988
6000	29/32	29/32	236	1	6.280 242
1000	45/40	29/32	131	1	6.229 949
2000	45/40	29/32	166	1	6.307 818
4000	45/40	29/32*	207	1	6.307 819
5000	45/40	29/32	223	1	6.288 715
6000	45/40	29/32	236	1	6.307 817

#### 1 Nitrogen round-bottom flasks (Schlenk-flasks), DURAN®

With an angled side arm with 2.5 mm glass stopcock. Material: DURAN®

Lenz

Capacity	Socket	Bore	PK	Cat. No.
ml	NS	mm		
25	14/23	2.5	1	6.800 337
50	14/23	2.5	1	6.307 820
50	29/32	2.5	1	6.802 978
100	14/23	2.5	1	6.307 327
100	29/32	2.5	1	6.307 821
250	14/23	2.5	1	6.206 524
250	29/32	2.5	1	6.073 481
500	29/32	2.5	1	6.307 822
1000	29/32	2.5	1	6.307 823



#### 2 Nitrogen tubes (Schlenk-tubes), DURAN® tubing

Made of DURAN® tubing. With conical joint and NS glass stopcock.

Lenz

Capacity	Centre neck	Bore	PK	Cat. No.
ml	NS	mm		
10	14/23 Socket	2.5	1	7.610 673
25	14/23 Socket	2.5	1	7.610 674
50	14/23 Socket	2.5	1	6.901 799
100	14/23 Socket	2.5	1	6.401 203
250	14/23 Socket	2.5	1	7.200 160



#### 3 Flat bottom flasks, NS joint neck, borosilicate glass 3.3

Borosilicate glass 3.3. Resistant to heat and almost all chemicals. According to DIN EN ISO 4797.

ISOLAB

Capacity	Socket	Height	PK	Cat. No.
ml	NS	mm		
50	14/23	100	1	6.243 606
50	19/26	100	1	6.243 607
50	24/29	100	1	6.243 608
50	29/32	100	1	4.008 377
100	14/23	110	1	6.243 609
100	19/26	110	1	6.243 610
100	24/29	110	1	6.243 611
100	29/32	110	1	6.236 773
250	19/26	140	1	6.243 612
250	24/29	140	1	6.243 613
250	29/32	140	1	6.238 346
500	24/29	170	1	6.243 614
500	29/32	170	1	6.240 425
1000	24/29	200	1	6.243 615
1000	29/32	200	1	4.008 378
2000	29/32	250	1	6.237 704
4000	29/32	320	1	6.311 691



#### 4 Flat bottom flasks with conical ground joint, DURAN®

According to DIN EN ISO 4797 and in addition to DIN standard (\*), with inscription label.

Lenz

Volume	Socket	Flask external diam.	PK	Cat. No.
ml	NS	mm		
50	29/32	51	1	9.011 982
100	29/32	64	1	9.011 983
250	29/32	85	1	9.011 984
500	19/26*	105	1	6.227 431
500	29/32	105	1	9.011 985
1000	29/32	131	1	9.011 986





# 6. Distillation, separation, filtration

## Distillation, synthesis/Flasks with NS joint neck



### 1 Erlenmeyer flasks, NS neck, borosilicate glass 3.3

Borosilicate glass 3.3. Conformed to DIN EN ISO 4797. NS necks are in compliance with DIN 12242 standards. Inscriptions are in white enamel which is specially designed for glass use.

ISOLAB

Capacity	Height	Socket	PK	Cat. No.
ml	mm	NS		
50	85	14/23	1	9.141 105
50	85	19/26	1	9.141 106
50	85	29/32	1	9.141 107
100	100	14/23	1	9.141 108
100	100	19/26	1	6.238 553
100	100	29/32	1	9.141 109
250	140	29/32	1	9.141 110
300	156	29/32	1	9.141 111
500	175	29/32	1	9.141 112
1000	220	29/32	1	9.141 113



### 2 Erlenmeyer flasks with ground joint, DURAN®

Acc. to DIN EN ISO 4797 and in addition to DIN standard (\*), with scale (approx. volume/ml), with inscription label, material: DURAN®.

Lenz

Capacity	Socket	Flask diam.	PK	Cat. No.
ml	NS	mm		
10	14/23	42	1	6.200 447
25	14/23	42	1	9.012 001
25	19/26	42	1	7.019 150
50	14/23	51	1	9.012 002
50	24/29	51	1	7.019 155
50	29/32	51	1	9.012 012
100	14/23	64	1	9.012 003
100	24/29	64	1	7.019 156
100	29/32	64	1	9.012 013
200	29/32*	79	1	9.012 017
250	24/29	85	1	6.200 677
250	29/32	85	1	9.012 014
250	45/40*	85	1	9.012 006
300	29/32*	87	1	9.012 018
500	29/32	105	1	9.012 015
500	45/40*	105	1	9.012 008
1000	29/32	131	1	9.012 016
1000	45/40*	131	1	9.012 009
2000	29/32	166	1	9.012 019
2000	45/40*	166	1	9.012 010
3000	45/40	185	1	6.900 828
5000	45/40	223	1	7.607 913



### 3 Erlenmeyer flasks, NS neck, borosilicate glass 3.3, amber

Borosilicate glass 3.3, amber. Conformed to DIN EN ISO 4797. NS necks are in compliance with DIN 12242 standards.

ISOLAB

Capacity	Height	Socket	PK	Cat. No.
ml	mm	NS		
100	100	29/32	1	6.258 244
250	140	29/32	1	6.258 150
500	175	29/32	1	6.255 806
1000	220	29/32	1	9.140 401



7.614 642



6.230 826

### Iodine determination flasks, with and without collar, DURAN®

- With overflow collar and NS29/32 iodine stopper.
- Without overflow collar, with NS29/32 hollow hexagonal stopper.

Lenz

Description	Capacity	Flask external diam.	Version	PK	Cat. No.
	ml	mm			
without collar	100	64	hollow	1	6.072 077
without collar	250	85	hollow	1	6.401 428
without collar	300	87	hollow	1	7.614 642 4
without collar	500	105	hollow	1	6.226 757
without collar	1000	131	hollow	1	6.230 605
with collar	100	64	iodine stopper	1	6.258 682
with collar	250	85	iodine stopper	1	6.230 826 5
with collar	500	105	iodine stopper	1	7.980 791



## 6. Distillation, separation, filtration

### Distillation, synthesis/Components for reaction and distillation

#### 1 Distilling Adapters, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. Suitable to be used in distillation assemblies for connecting flasks to condenser. Upper socket designed to accept thermometer either by screw thread adapter or by thermometer socket.  
With side cone at 75° angled to the center socket.

ISOLAB

Cone vertical NS	Cone obliquely NS	Socket NS	PK	Cat. No.
14/23	14/23	14/23	1	9.043 301
19/26	19/26	14/23	1	9.043 302
29/32	29/32	14/23	1	9.043 305

1



#### Distilling heads acc. to Claisen, sloping, DURAN® tubing

Made of DURAN® tubing. Acc. to DIN 12594 and in addition to DIN standard (\*), with two parallel NS 14/23 sockets and two NS cones (descending angle: 75°), for distillation thermometers of 55 mm built-in length.

Lenz

Cone vertical NS	Cone obliquely NS	Socket NS	PK	Cat. No.
29/32	14/23	14/23*	1	9.012 182
29/32	29/32	14/23	1	9.012 183

2



9.012 183

#### 3 Stillheads, ground glass joint, with integral Liebig condenser

Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals. With liebig condenser and socket NS 14/23 for distillation thermometers. Available with or without vacuum receiver adapter.

ISOLAB

Description	Effective length mm	Cone NS	Socket NS	PK	Cat. No.
without vacuum receiver adapter	160	14/23	14/23	1	9.012 291
without vacuum receiver adapter	250	14/23	14/23	1	9.012 292
without vacuum receiver adapter	250	29/32	14/23	1	9.012 293
without vacuum receiver adapter	400	29/32	14/23	1	9.012 294
with vacuum receiver adapter	160	14/23	14/23	1	9.012 295
with vacuum receiver adapter	250	14/23	14/23	1	9.012 296
with vacuum receiver adapter	250	29/32	14/23	1	4.008 375
with vacuum receiver adapter	400	29/32	14/23	1	9.012 297

3



#### Distilling links with Liebig condenser and vacuum receiver adapter, DURAN® tubing

Made of DURAN® tubing. DIN 12596. With Liebig condenser at 75° and vertical outlet with NS cone and vacuum connection with glass olives or thread GL14. With socket NS 14/23 for distillation thermometers of 55mm built-in length.

Lenz

Effective length mm	Cone NS	Socket NS	Connection	PK	Cat. No.
160	14/23	14/23	GL	1	6.203 415
250	29/32	14/23	GL	1	6.203 416
250	14/23	14/23	GL	1	9.012 264
250	29/32	14/23	olive	1	9.012 266
400	29/32	14/23	olive	1	9.012 268

4



9.012 266

#### 5 Distilling links with Liebig condenser and Claisen head

With Liebig condenser and Claisen head and socket NS 14/23 for distillation thermometers. Available with or without vacuum receiver adapter.

ISOLAB

Description	Effective length mm	Cone NS	Socket NS	PK	Cat. No.
distilling link standard	160	14/23	14/23	1	9.012 247
distilling link standard	250	14/23	14/23	1	9.012 248
distilling link standard	250	29/32	14/23	1	9.012 249
distilling link standard	400	29/32	14/23	1	9.012 250
distilling link with vakuu adapter	160	14/23	14/23	1	9.012 216
distilling link with vakuu adapter	250	14/23	14/23	1	9.012 217
distilling link with vakuu adapter	250	29/32	14/23	1	9.012 218
distilling link with vakuu adapter	400	29/32	14/23	1	9.012 219

5



**1**

**1**

### Distilling links acc. to Claisen with vacuum receiver adapter, DURAN® tubing

Made of DURAN® tubing. According to DIN 12594. With Liebig condenser (angled 75°) and vertical Claisen head, water and vacuum connection with olives. With two sockets NS 14/23 for distillation thermometers of 55mm built-in length.

Lenz

Effective length mm	Cone NS	Socket NS	PK	Cat. No.
160	14/23	14/23	1	9.012 271
250	29/32	14/23	1	9.012 276

**2**

**2**

### Distillation adapters

Manufactured from borosilicate glass 3.3. Suitable for feeding distillate from condensers into receiving flasks. Stem length is either 65 mm or 200 mm. Socket inclined 105° with outer tube of 12 mm diameter.

ISOLAB

Length outlet pipe mm	Socket NS	PK	Cat. No.
65	14/23	1	6.244 591
65	29/32	1	6.244 592
200	14/23	1	6.244 593
200	29/32	1	6.244 594

**3**

**3**

### Bends, DURAN® tubing

Made of DURAN® - tubing. Bent 75° or 90°. With two NS cones.

Lenz

NS	Angle	PK	Cat. No.
14/23	75	1	9.012 141
29/32	75	1	9.012 143
14/23	90	1	6.306 285
19/26	90	1	7.018 680
24/29	90	1	7.018 681
29/32	90	1	9.012 153

**4**

**4**

### Adapters bent or straight, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. Bent adapters are available as plain bend or bend with vent with 105° angled body shape.

ISOLAB

Description	Cone		Socket	PK	Cat. No.
	NS	NS			
Adapter, bent	14/23	14/23	14/23	1	6.243 602
Adapter, bent	29/32	29/32	29/32	1	6.243 603
Adapter, bent, with ventilation	14/23	14/23	14/23	1	9.012 657
Adapter, bent, with ventilation	29/32	29/32	29/32	1	9.012 658
Adapter, straight, with vacuum connector	14/23	14/23	14/23	1	9.012 659
Adapter, straight, with vacuum connector	29/32	29/32	29/32	1	9.012 660

**5**

**5**

### Distillation adapters, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3. Suitable for the usage of assembling with vacuum connections. Available in two shapes: straight or angled 105°.

ISOLAB

Description	Cone		Socket	PK	Cat. No.
	NS	NS			
adapters straight	14/23	14/23	14/23	1	6.243 604
adapters straight	29/32	29/32	29/32	1	4.008 370
adapters bend	14/23	14/23	14/23	1	4.008 371
adapters bend	29/32	29/32	29/32	1	4.008 372

## 6. Distillation, separation, filtration

### Distillation, synthesis/Components for reaction and distillation

#### Receiver adapters, with olives, DURAN® tubing

Made of DURAN® tubing. Acc. to DIN 12594, straight or bent (105°), with NS socket and cone, with drain tip, vacuum connection: glass olive.

Lenz

Description	Cone		Socket		PK	Cat. No.
	NS	NS	NS	NS		
straight	14/23	14/23	14/23	14/23	1	9.012 611
bend	14/23	14/23	14/23	14/23	1	9.012 613
straight	29/32	29/32	29/32	29/32	1	9.012 621 <b>1</b>
bend	29/32	29/32	29/32	29/32	1	9.012 623 <b>2</b>

1

2



9.012 621



9.012 623

#### 3 Distributors for distilling receivers to Bredt, DURAN® tubing

Made of DURAN® tubing. With four cones NS 14/23, for round bottom flasks up to 250 ml volume.

Lenz

Description	PK	Cat. No.
Upper core 19/26	1	9.012 695
Upper core 29/32	1	9.012 696

3



#### 4 Distilling receivers acc. to Bernauer, DURAN® tubing

Made of DURAN® tubing. With 3 cones NS 14/23, vacuum connection with glass olive.

Lenz

Type	Cone		Socket		PK	Cat. No.
	NS	NS	NS	NS		
Distilling Receivers, without flask	14/23	14/23	14/23	14/23	1	6.210 168
Distilling Receivers, without flask	14/23	14/23	29/32	29/32	1	6.236 954

4



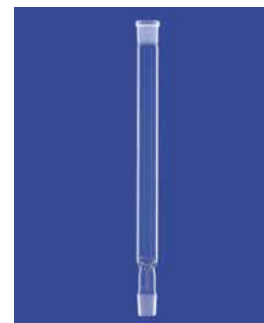
#### 5 Columns acc. to Hempel, DURAN® tubing

Made of DURAN® tubing. With packing material support, ground glass cone and socket

Lenz

Fill height mm	Cone		Socket		PK	Cat. No.
	NS	NS	NS	NS		
300	14/23	14/23	14/23	14/23	1	9.012 321
300	29/32	29/32	29/32	29/32	1	9.012 322
800	29/32	29/32	29/32	29/32	1	9.012 326

5



#### 6 Columns acc. to Hempel with fixed vacuum jacket, DURAN® tubing

Made of DURAN® tubing. For packings like Raschig rings or glass beads, with NS socket and NS cone, with fixed vacuum jacket.

Lenz

Fill height mm	Cone		Socket		PK	Cat. No.
	NS	NS	NS	NS		
200	14/23	14/23	14/23	14/23	1	6.241 715
300	29/32	29/32	29/32	29/32	1	9.012 327
500	29/32	29/32	29/32	29/32	1	9.012 328
800	29/32	29/32	29/32	29/32	1	9.012 329

6




**1**

### 1 Glass beads type M

Type AR soda lime glass. Supplied in packs of approx. 1 kg.

Ø mm	PK	Cat. No.
1,5 - 2	1000	9.012 402
3	1000	9.012 403
4	1000	9.012 404
4,5	1000	6.254 325
5	1000	9.012 405
6	1000	9.012 406
7	1000	6.254 523
8	1000	9.012 407
10	1000	9.012 408
14	1000	9.012 410

**Further products can be found in our online shop.**

**2**

### 2 Raschig rings, glass

Pack of 1 kg.

Type	PK	Cat. No.
3x3	1	9.012 413
4x4	1	9.012 414
5x5	1	9.012 415
6x6	1	9.012 416
8x8	1	9.012 417
10x10	1	6.244 044

Glass wool please see page 1475.



9.012 336



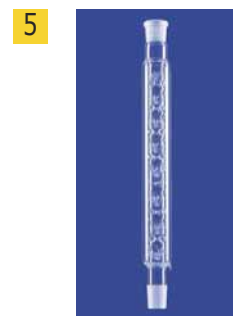
9.012 330

### Columns acc. to Vigreux, with or without removable glass jacket, DURAN® tubing

Made of DURAN® tubing.

Lenz

Fill height mm	NS	Type	PK	Cat. No.
200	14/23	without jacket	1	6.304 939
300	14/23	without jacket	1	6.900 157
300	29/32	without jacket	1	9.012 336 <b>3</b>
600	29/32	without jacket	1	9.012 337
200	14/23	with jacket	1	6.070 046
300	14/23	with jacket	1	6.079 073
300	29/32	with jacket	1	9.012 330 <b>4</b>
600	29/32	with jacket	1	7.628 209


**5**

### 5 Columns acc. to Vigreux with fixed vacuum jacket, DURAN® tubing.

Made of DURAN® tubing. With NS socket and NS cone, with fixed vacuum jacket.

Lenz

Fill height mm	NS	PK	Cat. No.
200	14/23	1	7.613 796
300	14/23	1	9.012 333
300	29/32	1	6.073 183
600	29/32	1	6.226 643


**6**

### 6 Drying tubes, HDPE

Removable stoppers at both tube ends. With tubing nozzles, Ø 8 - 10 mm.

Kartell

External dimensions (Ø x L) mm	Overall length mm	PK	Cat. No.
20 x 100	170	1	9.253 131
20 x 150	220	1	9.253 135
20 x 200	270	1	9.253 140

#### 1 Drying tubes, U-pattern

Made of borosilicate glass 3.3. DIN 12616.  
Drying tubes with NS incl. interchangeable ground joint stopcocks.  
U-shape. Hose connectors 6 mm in diameter.

ISOLAB

Description	Diam. mm	Length mm	NS	PK	Cat. No.
without stopcock	13	100	-	1	9.140 515
without stopcock	13	130	-	1	9.140 516
without stopcock	18	180	-	1	9.140 517
with stopcock	13	100	14/23	1	9.140 518
with stopcock	13	130	14/23	1	9.140 519
with stopcock	18	180	19/26	1	9.140 520



#### 2 Drying tubes, DURAN® tubing

Made of DURAN® tubing. Angled to 75°.

Lenz

Cone	PK	Cat. No.
NS		
14/23	1	9.012 701
29/32	1	9.012 703



#### 3 Multiple adapters, 2-necks, DURAN® tubing

Made of DURAN® tubing. With two sockets and one cone.  
One neck 105° upwards.

Lenz

Cone	Socket	Socket lateral	PK	Cat. No.
NS	NS	NS		
14/23	14/23	14/23	1	9.012 101
19/26	19/26	19/26	1	6.232 027
29/32	29/32	14/23	1	7.610 631
29/32	29/32	29/32	1	9.012 103



#### 4 Multiple adapter, 2-neck, DURAN® tubing

Made of DURAN® tubing. Acc. to DIN 12594 and in addition to DIN standard (\*),  
with two parallel necks, with two NS sockets and one NS cone.

Lenz

Cone	Socket	Socket lateral	PK	Cat. No.
NS	NS	NS		
29/32	14/23	14/23*	1	6.232 074
14/23	14/23	14/23	1	9.012 121
29/32	29/32	29/32	1	9.012 123



#### Splash heads acc. to Stutzer, straight or bent, DURAN® tubing

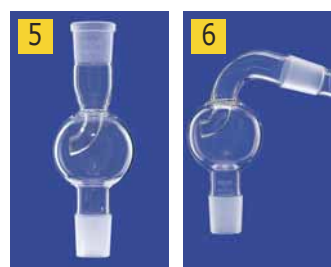
Made of DURAN® tubing.

Lenz

Two versions available:  
- straight, with cone and socket  
- bent with two cones at 75°.

Splash heads are directly placed onto distillation flasks for separation of drops.

Description	Cone	Socket / cone bent	PK	Cat. No.
	NS	NS		
straight	14/23	29/32	1	6.202 459
straight	29/32	29/32	1	9.012 193 5
bent	29/32	29/32	1	9.012 138 6



9.012 193

9.012 138

# 6. Distillation, separation, filtration

## Distillation, synthesis/Flat ground flange reaction vessels



### 1 Reaction flasks, flat flange, DURAN®

Flanged neck with groove for vacuum use. 500 ml and 1000 ml vessels are completely cylindrical. *DWK Life Sciences*  
Capacities indicated are brim-full volumes. Glass Type I/neutral glass as per USP, EP and JP.  
Autoclavable.

Capacity ml	Capacity ml	Flange diam. mm	Body diam. mm	Height mm	Pressure bar	DN	PK	Cat. No.
100	195	100	70	85	2,5*	60	1	9.142 024
250	315	100	70	125	2,5*	60	1	9.142 036
500	740	138	106	120	1,5*	100	1	9.142 044
1000	1395	138	106	205	1,5*	100	1	9.142 054
2000	2620	138	140	270	1,5*	100	1	9.142 063
4000	5765	184	200	290	1,0*	150	1	9.142 071
6000	7320	184	215	320	1,0*	150	1	9.142 076

\* Maximum permissible operating pressure measured at 250 °C.



### 2 Flat ground flange lids, DURAN®

With four ground joint necks as outlined below. Centre neck NS 29/32. 1bar max. *DWK Life Sciences*  
operating pressure at 250 °C. Glass Type I/neutral glass as per USP, EP and JP.  
Autoclavable.

Flange diam. mm	Height mm	Side necks NS	DN	PK	Cat. No.
138	125	3 x 29/32 angled	100	1	9.142 246
138	105	2 x 29/32 angled, 1 x 14/23 parallel	100	1	9.142 476
158	130	2 x 29/32 angled, 1 x 14/23 parallel	120	1	9.142 251
184	130	3 x 29/32 parallel	150	1	9.142 257
184	130	2 x 29/32 angled, 1 x 14/23 parallel	150	1	9.142 259



### 3 Reaction vessels, cylindrical, with thermostatic jacket

- With graduation
- Laboratory flange LF
- Groove
- Flat bottom
- Two connectors with threads GL 14 or GL 18
- Made of DURAN® tubing

*Lenz*

Other sizes on request.

Nominal capacity ml	Flange (LF)	Outer/ inner diam. mm	Height mm	Int. height mm	Connection	PK	Cat. No.
100	60	90/60	135	115	GL 14	1	9.142 726
250	60	90/60	190	170	GL 14	1	9.142 727
500	60	90/60	275	255	GL 14	1	9.142 728
1000	60	90/60	245	220	GL 18	1	6.243 104
250	100	130/93	160	140	GL 18	1	6.243 105
500	100	130/93	180	155	GL 18	1	9.142 741
1000	100	130/93	245	220	GL 18	1	9.142 742
2000	100	130/93	375	350	GL 18	1	9.142 744
3000	100	190/150	325	285	GL 18	1	6.243 106
4000	100	190/150	380	340	GL 18	1	9.142 747
2000	150	190/150	265	225	GL 18	1	9.142 754
3000	150	190/150	320	280	GL 18	1	6.089 893
4000	150	190/150	375	335	GL 18	1	9.142 757
5000	150	190/150	430	390	GL 18	1	6.243 107
6000	150	190/150	485	445	GL 18	1	9.142 759



### 4 Clamps with stand rod

For fixing lids onto reaction vessels and mounting on a stand,  
Material: polyester-glass compound (clamp), steel (rod) *Lenz*

For flange DN	PK	Cat. No.
60	1	9.142 697
100	1	9.142 699
150	1	9.142 698



## 6. Distillation, separation, filtration Distillation, synthesis/Flat ground flange reaction vessels

### 1 Reaction vessels, cylindrical, with thermostatic jacket and withdrawal valve



- With graduation
- Laboratory flange LF
- With groove
- Two connectors with threads GL 14 or GL 18
- Made of DURAN® tubing

Lenz

Other sizes on request.

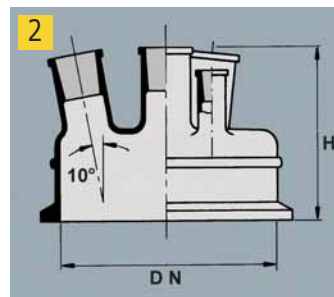


Nominal capacity	Flange (LF)	Outer/inner diam.	Height	Int. height	Connection	Bore	PK	Cat. No.
ml		mm	mm	mm		mm		
100	60	90/60	245	115	GL 14	10	1	9.142 766
250	60	90/60	300	170	GL 14	10	1	9.142 767
500	60	90/60	385	255	GL 14	10	1	9.142 768
1000	60	90/60	360	220	GL 14	10	1	6.233 770
250	100	130/99	275	140	GL 18	10	1	6.230 277
500	100	130/99	295	155	GL 18	10	1	9.142 781
1000	100	130/99	360	220	GL 18	10	1	9.142 782
2000	100	130/99	490	350	GL 18	10	1	9.142 784
3000	100	190/150	440	285	GL 18	10	1	6.243 114
4000	100	190/150	495	340	GL 18	10	1	9.142 787
2000	150	190/150	375	225	GL 18	10	1	6.233 793
3000	150	190/150	430	280	GL 18	10	1	6.243 115
4000	150	190/150	485	335	GL 18	10	1	7.635 340
5000	150	190/150	540	390	GL 18	10	1	6.224 194
6000	150	190/150	595	445	GL 18	10	1	6.243 116
10000	150	315/240	640	480	GL 18	20	1	6.240 516

### 2 Flat flange lids

Flange in accordance with DIN 12214.

Height	Flange DN	Centre neck	Parallel side necks	Angled side necks	PK	Cat. No.
mm	mm	NS	NS	NS		
125	100	29/32	-	2 x 29/32	1	9.142 120
125	100	29/32	2 x 29/32	-	1	9.142 121
125	100	29/32	1 x 14/23	2 x 29/32	1	9.142 122
125	100	29/32	2 x 29/32	2 x 29/32	1	9.142 123
150	100	45/40	-	2 x 29/32	1	9.142 124
150	100	45/40	1 x 14/23	2 x 29/32	1	9.142 126
150	100	45/40	2 x 29/32	2 x 29/32	1	9.142 127
125	120	29/32	-	2 x 29/32	1	9.142 128
125	120	29/32	2 x 29/32	-	1	9.142 129
125	120	29/32	1 x 14/23	2 x 29/32	1	9.142 130
125	120	29/32	2 x 29/32	2 x 29/32	1	9.142 131
150	120	45/40	-	2 x 29/32	1	9.142 132
150	120	45/40	2 x 29/32	-	1	9.142 133
150	120	45/40	1 x 14/23	2 x 29/32	1	9.142 134
150	120	45/40	2 x 29/32	2 x 29/32	1	9.142 135
125	150	29/32	-	2 x 29/32	1	9.142 136
125	150	29/32	2 x 29/32	-	1	9.142 137
125	150	29/32	1 x 14/23	2 x 29/32	1	9.142 138
125	150	29/32	2 x 29/32	2 x 29/32	1	9.142 139
150	150	45/40	-	2 x 29/32	1	9.142 140
150	150	45/40	2 x 29/32	-	1	9.142 141
150	150	45/40	1 x 14/23	2 x 29/32	1	9.142 142
150	150	45/40	2 x 29/32	2 x 29/32	1	9.142 143



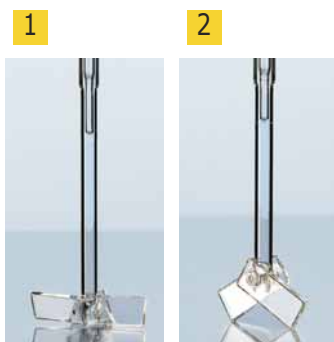
### 3 Quick-acting closures

Stainless steel. With three-part caliper clamps.

For flange DN	PK	Cat. No.
60	1	6.901 260
100	1	9.142 946
120	1	9.142 951
150	1	9.142 957
200	1	9.142 964







### 1 2 KPG stirrer shafts, DURAN®

DURAN®. Interchangeable. Bearing surface ground and polished.

DWK Life Sciences

WG: 4 fixed blades  
 WS: 2 movable blade  
 KPG diameter: 10 mm  
 KPG length: 160 mm.

Type	For neck diam. mm	Length mm	PK	Cat. No.
WG 10	60	320	1	9.197 321
WG 10	60	370	1	9.197 322
WS 10	25	320	1	9.197 311
WS 10	25	370	1	9.197 312
WS 10	25	410	1	9.197 313
WS 10	25	440	1	9.197 314



### 3 KPG stirrer bearings, DURAN®

Interchangeable. Bearing surface ground, polished. With or without standard ground cone NS 29/32.

DWK Life Sciences

Type	Diam. mm	Height mm	Cone NS	PK	Cat. No.
HA 10	10	65	no	1	9.197 251
HB 10	10	75	no	1	9.197 252
HB 16	16	90	no	1	9.197 257
HQ 10	10	75	yes	1	9.197 253
HT 10	10	65	yes	1	9.197 256
HT 16	16	85	yes	1	9.197 258



### 4 Stirrer with stirrer bearings, DURAN® tubing

Made of DURAN® tubing. For round bottom flasks 250 to 2000ml. Stirrer shaft, with PTFE stirrer blade and fixing screw. Seals vacuum stirring apparatus gas-tight to  $10^{-3}$  mbar up to a permanent load of 800 rpm.

Lenz

Type	PK	Cat. No.
Stirrer with stirrer bearing, complete	1	9.198 050 4
Shaft, Dia. 10 x L 400 mm	1	6.802 957
Blade, PTFE, 70x24x3 mm	1	6.204 794
Screw, PTFE	1	6.204 795
Sealing, PTFE	1	7.616 277
Closure, thread GL 25, cone NS 29/32	1	6.258 683
Pressure spring, stainless steel	1	6.258 684
Screw cap GL 25, PP	1	6.258 685

9.198 050



#### 1 Stirrer bearings with GL male thread, DURAN® tubing

Made of DURAN® tubing. Other materials used: PTFE (bearing), silicone (gasket) and stirrer guides, GL male thread. Cone size 29/32. Guide bore 10 mm i.d.

Lenz

Ø agitator shaft mm	Length mm	Neck thread		PK	Cat. No.
		GL	NS		
10	70	25	29/32	1	9.197 355
10	85 ± 3	25	45/40	1	6.223 283
16	85 ± 3	32	45/40	1	9.197 356



#### 2 Glass Stirrer Bearings, PTFE

Combination of a borosilicate glass piece with ground joint, an interior PTFE shaft guide with integrated special gasket and a GL screw cap made of PPS. The special gasket made of PTFE and an FPM o-ring which is compressed by a GL screw cap provide a good sealing of the stirrer shaft. This gasket can be exchanged after wearing. Suitable for vacuum, perfect bearing for stirrer shafts made of stainless steel, glass and for BOLA Stirrer Shafts.

BOLA

Cone	For diam. stirring rod	Overall length	Neck thread	PK	Cat. No.
NS	mm	mm	GL		
29/32	10	90	25	1	6.088 059



#### 3 Stirrer Bearings, PTFE

The sealing rings on these bearings ensure a perfect sealing. The ground joint no longer sticks, the danger of breaking is reduced and the cone can be removed easily from the socket. A special gasket made of PTFE and an FPM o-ring which is compressed by a GL screw cap provide a good sealing of the stirrer shaft. This gasket can be exchanged after wearing. Suitable for vacuum, perfect bearing for stainless steel, glass and BOLA Stirrer Shafts.

BOLA

For diam. stirring rod	Overall length	Neck thread	Cone	PK	Cat. No.
mm	mm	GL	NS		
6	63	18	19/26	1	6.900 411
8	65	25	19/26	1	6.233 200
8	69	25	24/29	1	6.251 738
10	70	25	24/29	1	6.253 704
6	72	18	29/32	1	6.087 538
8	74	25	29/32	1	6.076 532
10	72	25	29/32	1	6.088 058
10	80	25	45/40	1	6.800 985
16	86	32	45/40	1	6.232 941



#### 4 Stirrer bearings with dynamic double seal

Stirrer bearings for applications under vacuum or under slight overpressure. With extended guidance for reduced vibrations and a longer lifetime. Material: borosilicate glass 3.3 (closure), PTFE (sealings)

Lenz

For diam. stirring rod	NS	PK	Cat. No.
mm			
10	29/32	1	7.629 417
10	45/40	1	9.197 359
16	29/32	1	9.197 363
16	45/40	1	9.197 364





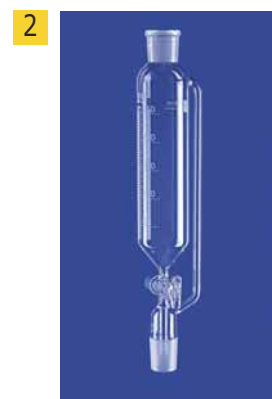
4.008 428

### Dropping funnels, cylindrical, with or without pressure equalizing tube, Borosilicate glass 3.3

Borosilicate glass 3.3. PTFE stopcock, PE stoppers. cylindrical shape, with or without pressure equalising tube. ISO 4800 and DIN 12242.

ISOLAB

Type	Capacity ml	Cone NS	Socket NS	PK	Cat. No.
with relief tube	50	29/32	19/26	1	9.140 415
with relief tube	100	29/32	19/26	1	4.008 428 1
with relief tube	250	29/32	29/32	1	6.240 982
with relief tube	500	29/32	29/32	1	6.240 983
with relief tube	1000	29/32	29/32	1	9.140 416
without relief tube	50	29/32	19/26	1	9.140 410
without relief tube	100	29/32	19/26	1	9.140 411
without relief tube	250	29/32	29/32	1	9.140 412
without relief tube	500	29/32	29/32	1	9.140 413
without relief tube	1000	29/32	29/32	1	9.140 414



9.012 769

### Dropping funnels, cylindrical, with pressure equalizing tube, borosilicate glass 3.3

Borosilicate glass 3.3. Cylindrical shape, with pressure equalizing tube. With NS socket and interchangeable PE stopper, plug with retaining device. With solid glass key or PTFE key.

Lenz

Capacity ml	NS	Bore mm	Grad. ml	Keys	PK	Cat. No.
25	14/23	2.5	0,5	glass	1	6.072 172
50	14/23	2.5	1	glass	1	9.012 755
50	29/32	2.5	1	glass	1	9.012 767
100	14/23	2.5	2	glass	1	9.012 756
100	29/32	2.5	2	glass	1	9.012 768
250	14/23	4.0	5	glass	1	9.012 757
250	29/32	4.0	5	glass	1	9.012 769 2
500	29/32	4.0	10	glass	1	9.012 770
1000	29/32	6.0	20	glass	1	7.601 147
25	14/23	2.5	0,5	PTFE	1	9.012 751
50	14/23	2.5	1	PTFE	1	9.012 752
50	29/32	2.5	1	PTFE	1	6.223 427
100	14/23	2.5	2	PTFE	1	9.012 753
100	29/32	2.5	2	PTFE	1	6.900 312
250	29/32	4.0	5	PTFE	1	9.012 764
500	29/32	4.0	10	PTFE	1	9.012 765
1000	29/32	6.0	20	PTFE	1	9.012 766



9.012 744

### Dropping Funnels, cylindrical, borosilicate glass 3.3

Cylindrical shape. With interchangeable PE stopper and stopcock with key as indicated, incl. retaining device.

Lenz

Graduated for reading the approx. volume.

Two types are available:

- With solid glass key stopcock
- With PTFE key stopcock



9.012 750

Capacity ml	NS	Bore mm	Grad. ml	Keys	PK	Cat. No.
25	14/23	2.5	0,5	glass	1	9.012 731
50	14/23	2.5	1	glass	1	6.252 455
50	29/32	2.5	1	glass	1	9.012 742
100	14/23	2.5	2	glass	1	6.401 645
100	29/32	2.5	2	glass	1	7.604 340
250	29/32	4.0	5	glass	1	9.012 744 3
500	29/32	4.0	10	glass	1	9.012 745
1000	29/32	6.0	20	glass	1	9.012 746
25	14/23	2.5	0,5	PTFE	1	9.012 735
50	14/23	2.5	1	PTFE	1	9.012 732
50	29/32	2.5	1	PTFE	1	9.012 748
100	14/23	2.5	2	PTFE	1	9.012 733
100	29/32	2.5	2	PTFE	1	9.012 743
250	29/32	4.0	5	PTFE	1	9.012 750 4
500	29/32	4.0	10	PTFE	1	9.012 707
1000	29/32	6.0	20	PTFE	1	9.012 708

## 6. Distillation, separation, filtration

### Distillation, synthesis/Reflux condenser

#### 1 Condensers, ground glass joint, Dimroth, borosilicate glass 3.3, PP-olive

Made of borosilicate glass 3.3. Resistant to heat and almost all chemicals. According to DIN 12591. Supplied with polypropylene side arm, which has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubing with 8/9 mm bore size.

ISOLAB

Description	Effective length mm	NS	PK	Cat. No.
with PP side arm	250	29/32	1	9.012 547
with PP side arm	400	29/32	1	9.012 545



#### 2 Condensers, ground glass joint, Dimroth, borosilicate glass 3.3.

Made of borosilicate glass 3.3. Resistant to heat and almost all chemicals. According to DIN 12591. Supplied with glass side arms. The side arms accept tubing with 8/9 mm bore size.

ISOLAB

Effective length mm	Cone		Socket		PK	Cat. No.
	NS	NS	NS	NS		
160	14/23	14/23			1	9.012 525
160	29/32	29/32			1	9.012 526
250	14/23	14/23			1	9.012 527
250	29/32	29/32			1	6.258 228
400	14/23	14/23			1	9.012 528
400	29/32	29/32			1	6.243 670



#### 3 Dimroth condensers, DURAN® tubing

Made of DURAN® tubing. Dimroth condensers acc. to DIN 12591 and in addition to DIN standard, for condensing vapours, with NS socket and cone, water connection: glass olives or GL 14 threads with two threaded plastic olives.

Lenz

Effective length mm	Cone		Socket		DIN	Cooling surface cm²	PK	Cat. No.
	NS	NS	NS	NS				
160	14/23	14/23				140	1	6.222 534
250	14/23	14/23				240	1	6.071 792
250	19/26	19/26				440	1	6.230 126
250	29/32	29/32			12591	440	1	6.236 577
400	29/32	29/32			12591	740	1	6.225 990
400	45/40	45/40				1380	1	6.204 362



#### 4 Condensers acc. to Dimroth, with GL threads, DURAN® tubing

Made of DURAN® tubing. Acc. to DIN 12591 and in addition to DIN standard. With NS cone and socket. Water connection GL14 threads with two threaded plastic olives.

Lenz

Effective length mm	Cone		Socket		DIN	Cooling surface cm²	PK	Cat. No.
	NS	NS	NS	NS				
160	14/23	14/23				140	1	9.012 530
250	29/32	29/32			12591	440	1	9.012 533
400	29/32	29/32			12591	740	1	9.012 534



#### 5 Condensers, ground glass joint, Allihn

Manufactured from borosilicate glass 3.3 according to DIN 12581 standard. Supplied with glass side arm. The side arms accept tubings with 8/9 mm bore size.

ISOLAB

Effective length mm	Cone		Socket		PK	Cat. No.
	NS	NS	NS	NS		
160	14/23	14/23			1	9.012 507
250	14/23	14/23			1	9.012 509
250	29/32	29/32			1	6.253 331
400	14/23	14/23			1	9.012 510
400	29/32	29/32			1	6.243 669



➔ Extraction apparatus - please see page 1267.

## Distillation, synthesis/Reflux condenser

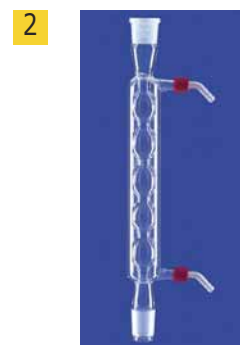


### 1 Condensers, ground glass joint, Allihn, borosilicate glass 3.3

Borosilicate glass 3.3 which is resistant to heat and almost all chemicals. They meet the highest quality standards according to DIN 12581. Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubings with 8/9 mm bore size.

ISOLAB

Description	Effective length mm	NS	PK	Cat. No.
with PP side arm	160	14/23	1	4.008 406
with PP side arm	400	29/32	1	4.008 408



### 2 Condensers acc. to Allihn with GL threads, DURAN® tubing

Made of DURAN® tubing. Acc. to DIN 12581 and in addition to DIN standard. For condensing vapours. With NS cone and socket water connection GL14 threads with two threaded plastic olives.

Lenz

Effective length mm	Cone NS	Socket NS	DIN	Cooling surface cm <sup>2</sup>	PK	Cat. No.
250	14/23	14/23		200	1	6.251 366
250	19/26	19/26		200	1	6.236 022
250	29/32	29/32	12581	200	1	9.012 517

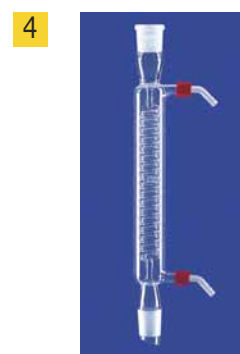


### 3 Spiral condensers, borosilicate glass 3.3

Made of borosilicate glass 3.3 which is resistant to heat and almost all chemicals. They meet the highest quality standards according to DIN 12592. Supplied with either glass side arm or polypropylene side arm. Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubings with 8/9 mm bore size.

ISOLAB

Description	Effective length mm	NS	PK	Cat. No.
with glass side arm	160	14/23	1	9.012 548
with glass side arm	250	29/32	1	6.257 821
with glass side arm	400	29/32	1	4.008 411
with PP side arm	160	14/23	1	4.008 412
with PP side arm	250	29/32	1	6.257 820
with PP side arm	400	29/32	1	4.008 414



### 4 Spiral condensers, with GL threads, DURAN® tubing

Made of DURAN® tubing. For cooling condensates. Water connections with glass olives or GL14 threads with two threaded plastic olives.

Lenz

Effective length mm	Cone NS	Socket NS	Connection	Cooling surface cm <sup>2</sup>	PK	Cat. No.
160	14/23	14/23	GL14	230	1	9.012 522
250	29/32	29/32	GL14	500	1	9.012 523
400	29/32	29/32	GL14	820	1	6.225 557
500	29/32	29/32	GL14	1040	1	9.012 524



### Coil condensers, DURAN® tubing

Made of DURAN® tubing. Acc. to DIN 12593 and in addition to DIN standard. With jacketed cooling coil. Water connection with glass olives or GL 14 thread with two threaded plastic olives.

Lenz

Effective length mm	Cone NS	Socket NS	Connection	DIN	Cooling surface cm <sup>2</sup>	PK	Cat. No.
160	29/32	29/32	olives	12593	240	1	7.635 816
250	29/32	29/32	olives	12593	400	1	6.227 832
400	29/32	29/32	olives	12593	650	1	6.240 342
500	29/32	29/32	olives		840	1	7.970 241
160	14/23	14/23	GL14		240	1	6.900 522
160	29/32	29/32	GL14	12593	240	1	9.012 542
250	29/32	29/32	GL14	12593	400	1	9.012 543
400	29/32	29/32	GL14	12593	650	1	9.012 544

9.012 543

## 6. Distillation, separation, filtration

### Distillation, synthesis/Reflux condenser-Distillation-Accessories

#### 1 Condensers, ground glass joint, Liebig, borosilicate glass 3.3

Made of borosilicate glass 3.3 which is resistant to heat and almost all chemicals. They meet the highest quality standards according to DIN 12576. Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing. The side arms accept tubings with 8/9 mm bore size.

ISOLAB



Description	Effective length mm	NS	PK	Cat. No.
with PP side arm	250	29/32	1	9.012 546
with PP side arm	400	29/32	1	4.008 405
with glass side arm	160	14/23	1	9.012 535
with glass side arm	250	14/23	1	9.012 536
with glass side arm	250	29/32	1	7.970 278
with glass side arm	400	14/23	1	9.012 537
with glass side arm	400	29/32	1	6.236 239

#### 2 Condensers acc. to Liebig, DURAN® tubing

Made of DURAN® tubing, DIN 12576 and in addition to DIN standard. With NS cone and socket. Water connection: glass olives or GL14 threads with two threaded plastic olives.

Lenz



Effective length mm	Cone NS	Socket NS	Connection	Cooling surface cm <sup>2</sup>	PK	Cat. No.
160	14/23	14/23	GL	60	1	9.012 502
160	19/26	19/26	GL	90	1	9.012 501
250	29/32	29/32	GL	130	1	9.012 505
400	29/32	29/32	GL	210	1	9.012 506

#### 3 Air leak rod, DURAN®

With bulb (Diameter: 6 mm, Wall thickness: 1.5 mm).



Diam. mm	Length mm	PK	Cat. No.
4	180	1	9.012 302

#### 4 Gas inlet tubes, straight, ground glass joint, DURAN® tubing

Made of DURAN® tubing. Straight air leak tubes, built-in length: 200 mm, with NS cone and thin capillary (easily to draw by burner).

Lenz



Diam. mm	Length mm	Cone NS	PK	Cat. No.
6	200	14/23	1	9.012 301
8	200	29/32	1	6.239 812

#### 5 Gas inlet tubes, bent, DURAN® tubing

Made of DURAN® tubing. Bent air leak tubes (angle: 90°), built-in length: 250 mm, with NS cone and thin capillary (easily to draw by burner).

Lenz



Diam. mm	Length mm	Cone NS	PK	Cat. No.
6	250	14/23	1	9.012 303
8	250	29/32	1	9.012 305





### 1 Air regulator Type HM-2

For tubes: 8 mm to 15 mm diameter, 6mm to 12.5 mm diameter  
 For air-leak capillary tubes. Acts as a fine regulation valve (needle valve). Plastic body. Brass needle with fine thread.

Type	PK	Cat. No.
HM-2	1	9.194 011



### 2 Boiling stones, Type A

Developed for use in preparatory work. For distillation and reflux in aqueous, neutral and alkaline solvents, even under a vacuum. Effective in even the smallest volumes of liquid and after multiple interruptions. Prevents any bumping. Natural product.

Capacity g	PK	Cat. No.
250	1	9.012 306



### 3 Boiling stones, Type B

Specifically for analytical work. Can be used for distillation in a clean, neutral and basic environment. Not suitable for vacuum distillation. Effective in the smallest amounts of liquid, also after multiple distillations. Prevents "bumping". Ceramic product with relatively high level of purity and abrasion resistance.

Capacity g	PK	Cat. No.
200	1	9.012 307



### 4 Boiling stones behrotest®

behrotest® boiling stones are made from a ceramic material. Compared to conventional boiling stones *behr* made of glass, they provide optimum protection against defervescence due to their porosity and their shape, even with badly blended samples. behrotest® boiling stones are chemically pure and guarantee unadulterated results when determining the COD, the Kjeldahl nitrogen etc.

Capacity g	PK	Cat. No.
100	1	9.920 710



### 5 Boiling chips, type Resistent

Developed for preparatory and analytical purposes. Suitable for biochemistry, biotechnology, microbiology, microanalysis. Can even be used in strong acids and alkalis, and in all solvents and oxidants. Suitable for vacuum and high-vacuum distillation. Reduces distillation times in rotary evaporators. No abrasion, absorption of substances or solvents. Softening (evaporation) occurs at 2500 °C. Can be sterilised by dry heating. Effective in even the smallest volumes of liquid, even after multiple interruptions. Prevents any bumping. Highly resistant.

Capacity g	PK	Cat. No.
50	1	9.012 308



#### 1 Separating funnels, Squibb-pattern, borosilicate glass 3.3

Supplied with PTFE stopcock. With PE conical stopper.

ISOLAB

- ISO 4800
- NS necks according to DIN 12242 standard

Description	Capacity	Bore	NS	PK	Cat. No.
	ml	mm			
graduated	50	2.5	19/26	1	6.236 317
graduated	100	2.5	19/26	1	6.236 318
graduated	250	4.0	29/32	1	6.236 319
graduated	500	4.0	29/32	1	6.236 320
graduated	1000	6.0	29/32	1	6.236 321
graduated	2000	6.0	29/32	1	6.240 412

1



#### Separating funnels acc. to Squibb, borosilicate glass 3.3

With PTFE plug. Available with or without scale to read the approximate volume. With PP-stopper.

Lenz

Description	Capacity	Bore	Socket	PK	Cat. No.
	ml	mm	NS		
without scale	50	2.5	19/26	1	9.203 322
without scale	100	2.5	19/26	1	9.203 323
without scale	250	4.0	29/32	1	9.203 325
without scale	500	4.0	29/32	1	9.203 328
without scale	1000	6.0	29/32	1	9.203 330
without scale	2000	6.0	29/32	1	9.203 332
with scale	50	2.5	19/26	1	9.203 372
with scale	100	2.5	19/26	1	9.203 373
with scale	250	4.0	29/32	1	9.203 375 2
with scale	500	4.0	29/32	1	9.203 376
with scale	1000	6.0	29/32	1	9.203 377
with scale	2000	6.0	29/32	1	9.203 378

2



9.203 375

#### 3 Separating funnels, conical, borosilicate glass 3.3

Supplied with PTFE stopcock. With PE conical stopper.

ISOLAB

- ISO 4800
- NS necks according to DIN 12242 standard

Description	Capacity	Bore	NS	PK	Cat. No.
	ml	mm			
graduated	100	2.5	19/26	1	6.241 980
graduated	250	4.0	29/32	1	6.241 671
graduated	500	4.0	29/32	1	6.241 981
graduated	1000	6.0	29/32	1	6.244 011
graduated	2000	6.0	29/32	1	6.242 394

3



#### Separating funnels, conical, borosilicate glass 3.3

Conical pattern. With PTFE stopcock and retaining device. Available with or without, scale to read the approximate volume. With PP conical stopper.

Lenz

Description	Capacity	Bore	NS	PK	Cat. No.
	ml	mm			
without scale	50	2.5	19/26	1	9.203 462
without scale	100	2.5	19/26	1	9.203 463
without scale	250	4.0	29/32	1	9.203 465
without scale	500	4.0	29/32	1	9.203 466
without scale	1000	6.0	29/32	1	9.203 467
without scale	2000	6.0	29/32	1	9.203 468
scale	50	2.5	19/26	1	9.203 482
scale	100	2.5	19/26	1	9.203 483
scale	250	4.0	29/32	1	9.203 485
scale	500	4.0	29/32	1	9.203 486 4
scale	1000	6.0	29/32	1	9.203 487
scale	2000	6.0	29/32	1	9.203 488

4



9.203 486

**1**


7.654 081

**2**


6.073 260

### Separating Funnels acc. to Gilson, borosilicate glass 3.3

Borosilicate glass 3.3. With NS-socket and interchangeable PE stopper, stopcock and key with retaining device. Ungraduated.

Lenz

Two types available:  
 - With solid glass key  
 - With PTFE key

Type	Capacity ml	NS	Bore mm	PK	Cat. No.
solid glass key	50	19/26	2.5	1	7.654 081 1
solid glass key	100	19/26	2.5	1	6.204 303
solid glass key	250	29/32	4.0	1	6.257 218
solid glass key	500	29/32	4.0	1	6.232 732
solid glass key	1000	29/32	6.0	1	6.253 678
solid glass key	2000	29/32	6.0	1	6.253 679
PTFE key	50	19/26	2.5	1	6.073 260 2
PTFE key	100	19/26	2.5	1	6.073 113
PTFE key	250	29/32	4.0	1	6.072 965
PTFE key	500	29/32	4.0	1	6.072 997
PTFE key	1000	29/32	6.0	1	7.019 722
PTFE key	2000	29/32	6.0	1	6.242 852

**3**


### 3 Separating funnels Nalgene™ with screw cap, FEP

Thermo Scientific



Transparent. Teflon® FEP, Tefzel® ETFE stopcock and ETFE screw cap. Impact resistant. Non-wetting surfaces ensure no liquid residue adhesion. Chemically stable. Length of stem under stopcock 65 mm. Autoclavable.

Capacity ml	Screw cap diam. mm	PK	Cat. No.
125	28	1	9.203 531
250	33	1	9.203 532
500	43	1	9.203 533
1000	53	1	9.203 534
2000	53	1	9.203 535

Teflon® and Tefzel® are registered trademark of DuPont.

**4**


7.615 430

### Water estimators acc. to Dean Stark, DURAN® tubing

Acc. to DIN 12420 (xylol method), capacity: 10:0.1 ml, with round bottom flask 500 ml, measuring tube and condenser made of DURAN® - tubing, flask: DURAN®.

Lenz

Description	PK	Cat. No.
Water estimator, zero point at the stopcock	1	7.615 430 4
Water estimator, zero point at the top	1	6.300 151
Measuring tube with stopcock, zero point at the stopcock	1	6.072 332
Measuring tube with stopcock, zero point above the stopcock	1	6.205 866
Round bottom flask, 500 ml, NS 29/32	1	9.011 850
Liebig condenser, jacket length 400 mm, cone and socket NS 29/32	1	9.012 506
Measuring tube w/o stopcock 10 ml : 1/10 zero-point in tip	1	7.970 184
Water estimator, zero point at the stopcock, measuring tube with stopcock	1	9.303 009

**5**


### 5 Soxhlet extractors, without stopcock

Borosilicate glass 3.3 which is resistant to heat and almost all chemicals. They meet the highest quality standards according to DIN 12602.

ISOLAB

Capacity ml	Cone NS	Socket NS	PK	Cat. No.
30	29/32	29/32	1	4.008 417
70	29/32	34/35	1	4.008 418
100	29/32	45/40	1	4.008 419
150	29/32	45/40	1	4.008 420
250	29/32	45/40	1	4.008 421
500	29/32	45/40	1	6.243 673

➔ Extraction thimbles please see page 1266.

#### 1 Soxhlet extraction stillheads, DURAN® tubing

Soxhlet extraction stillheads, made of DURAN® tubing. Extractor heads acc. to DIN 12602 and in addition to DIN standard (\*).

Lenz

For extractor ml	Cone NS	Socket NS	PK	Cat. No.
30	29/32	29/32	1	9.043 011
70*	29/32	34/35	1	9.043 012
100	29/32	45/40	1	9.043 013
150*	29/32	45/40	1	9.043 014
200*	29/32	45/40	1	9.043 018
250	29/32	45/40	1	9.043 015
300*	29/32	60/46	1	9.043 019
500	29/32	60/46	1	9.043 016
1000	29/32	71/51	1	9.043 017



#### Extractor heads for specific light solvents, DURAN® tubing

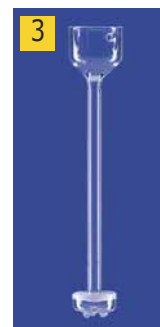
Extractor heads for the extraction of liquids with specific light solvents, with insert filter (porosity: 0), made of DURAN® tubing. Distribution tubes with frit (porosity: 0), for specific light solvents, made of DURAN® tubing.

Lenz

Type	Extractor ml	Condenser NS	PK	Cat. No.
Extractor head	100	45/40	1	6.801 962 <b>2</b>
Extractor head	250	45/40	1	6.258 695
Extractor head	500	60/46	1	6.902 445
Distribution tube	100	-	1	6.258 692
Distribution tube	250	-	1	6.258 693
Distribution tube	500	-	1	6.902 444 <b>3</b>



6.801 962



6.902 444

#### 4 Extractor heads for specific heavy solvents, DURAN® tubing

Made of DURAN® tubing. For the extraction of liquids with specific heavy solvents, with insert filter (porosity: 0).

Lenz

Extractor ml	Condenser NS	PK	Cat. No.
100	45/40	1	6.258 697
250	45/40	1	6.258 698
500	60/46	1	6.258 699



#### 5 Condensers acc. to Dimroth for extractors, with glass olives

Manufactured from borosilicate glass 3.3 with glass side arm. The side arms accept tubings with 8/9 mm bore size.

ISOLAB

For volume ml	Cone NS	PK	Cat. No.
30	29/32	1	9.012 538
70	34/35	1	9.012 539
100/250	45/40	1	6.254 108
500	45/40	1	4.678 590



#### 6 Condensers acc. to Dimroth for extractors, with PP olives, DURAN® tubing

Made of DURAN® tubing. For extractors and for condensing vapours. With cone. Water connection with thread GL14, with two threaded PP olives.

Lenz

Volume ml	Cone NS	Cooling surface cm²	PK	Cat. No.
30	29/32	140	1	9.043 021
70	34/35	160	1	9.043 022
100 - 250	45/40	370	1	9.043 023
300 - 500	60/46	680	1	9.043 026
1000	71/51	930	1	9.043 027



**1**

**1 Dimroth condensers for extractors, with glass olives, DURAN® tubing**

For condensing vapours, with NS cone, water connection: glass olives, made of DURAN® tubing.

Lenz

Volume ml	Cone NS	Cooling surface cm <sup>2</sup>	PK	Cat. No.
30	29/32	140	1	6.204 562
70	34/35	160	1	6.207 176
100 - 250	45/40	370	1	7.085 191
300 - 500	60/46	680	1	7.604 610
1000	71/51	930	1	6.266 984

**2**

**2 Allihn condensers for Soxhlet**

 Manufactured from borosilicate glass 3.3 with glass side arm.  
The side arms accept tubings with 8/9 mm bore size.

ISOLAB

For volume ml	Cone NS	PK	Cat. No.
30	29/32	1	9.012 540
70	34/35	1	9.012 541
100/250	45/40	1	6.254 106

**3**


7.200 489

**4**


6.224 397

**Condensers acc. to Allihn for extractors, DURAN® tubing**

Made of DURAN® tubing. For condensing vapours. With cone, water connection with glass olives or GL 14 thread and two threaded plastic olives.

Lenz

Extractor ml	Effective length mm	Cone NS	Connection	Cooling surface cm <sup>2</sup>	PK	Cat. No.
30	160	29/32	Glass olive	100	1	6.204 890
100-250	250	45/40	Glass olive	200	1	7.200 489 <b>3</b>
30	160	29/32	GL 14	100	1	6.242 774
100-250	250	45/40	GL 14	200	1	6.224 397 <b>4</b>

For all condensers are other sizes available on request.



## 6. Distillation, separation, filtration

### Distillation, synthesis/Gas wash bottles

#### 1 Gas washing bottle, PP

Graduated 250 ml polypropylene cylinder with a stable extended base for use in precipitating elements from gas. *Bel-Art Products*

- Gas is dispersed through a removable fitting that has a coarse grade porosity, polyethylene dispersion disc
- Silicone stopper holds 6.3 mm O.D. tubes for entrance and exit of gas
- 0.5 psi maximum pressure

Description	Capacity ml	Height mm	PK	Cat. No.
Gas washing bottle	250	273	1	9.110 290

1



#### Gas washing bottle reservoirs, Drechsel, Borosilicate glass 3.3

In accordance with Drechsel. Ground joint 29/32. DIN 12463. Flask height 200 mm, working height 250 mm. *Rettberg*

Description	Capacity ml	NS	PK	Cat. No.
Gas washing bottle reservoirs	100	29/32	1	9.110 473 2
Gas washing bottle reservoirs	250	29/32	1	9.110 474
Gas washing bottle reservoirs	500	29/32	1	6.240 962
Gas washing bottle head, without frit disk		29/32	1	6.240 963
Gas washing bottle head, with frit disk		29/32	1	9.110 472 3

2



9.110 473

3



9.110 472

#### Gas washing bottles acc. to Drechsel, complete, DURAN® tubing

Bottle, DURAN®. Head made from DURAN® tubing, with screw connections. Head available with or without porosity 1 filter disc, insert height adjustable, capacity: 500 ml, central screw cap: GL 45, lateral screw caps: GL 14. *Lenz*

Description	Capacity ml	Porosity	PK	Cat. No.
Gas Washbottle without filter disc	500	-	1	6.073 489 4
Gas Washbottle with filter disc	500	1	1	7.635 908 5

4



6.073 489

5



7.635 908

#### Gas washing bottle heads, DURAN® tubing

Acc. to DIN 12596. DURAN® tubing. Cone NS 29/32. With or without filter disc. *Lenz*

Description	NS	Porosity	PK	Cat. No.
With filter disc, thread GL 14	29/32	1	1	6.401 362
Without filter disc, olives	29/32	-	1	9.110 380 6
With filter disc, olives	29/32	0	1	9.110 390 7
With filter disc, olives	29/32	1	1	9.110 391

6



9.110 380

7



9.110 390

#### 8 Bubble counter

DURAN®.

Height mm	PK	Cat. No.
100	1	9.014 100

8





## Distillation, synthesis/Gas wash bottles

**1**

**1**

### Safety/overpressure valves, with spring loaded spherical ground joint seal

When laboratory ground devices are used under vacuum or/and slight overpressure, the use of this combined overpressure safety valve can be recommended. These valves act as immediately closing safety valve under vacuum and they allow under overpressure the visual control of the bubble formation in the blocking liquid. The real sealing is effected by a special designed spherical ground joint (cup and ball) on which an adjustable spring power acts. It is supported by a free to chose blocking liquid which should be higher viscous for vacuum operations. The sealed climbing tube at the spherical ground cup serves as a guide and prevents that the liquid climbs back into the apparatus.

PFAUDLER NORMAG

Height mm	Joint size (NS)	Neck thread GL	PK	Cat. No.
210	14 / 23	18	1	4.672 227
210	29 / 32	18	1	4.672 230
215 *	14 / 23	18	1	4.672 231
215 *	29 / 32	18	1	6.275 026

\* With standard stopcock, bore 3 mm

**2**


### Gas washing bottles acc. to Drechsel with filter disc

Acc. to DIN 12596, complete with head (with filter disc), ground joint connection: NS 29/32, material: DURAN® tubing (head), borosilicate glass 3.3 (bottle).

Lenz

Capacity ml	Porosity	Connections	PK	Cat. No.
100	0	olives	1	6.082 990
250	0	olives	1	6.228 160
500	0	olives	1	7.611 600
100	1	olives	1	9.110 353
250	1	olives	1	9.110 354
500	1	olives	1	9.110 355
1000	1	olives	1	9.110 356
100	2	olives	1	7.622 618
250	2	olives	1	7.622 619
500	2	olives	1	7.622 620
250	1	GL 14	1	6.229 444

**3**


### Gas washing bottles acc. to Drechsel, without Filter, DURAN® tubing

- Acc. to DIN 12596, complete with head,
- ground joint connection: NS 29/32,
- material: DURAN® tubing (head), borosilicate glass 3.3 (bottle)

Lenz

Capacity ml	Description	PK	Cat. No.
100	Without filter disc, olives	1	6.230 396
250	Without filter disc, olives	1	6.223 295
500	Without filter disc, olives	1	7.651 874
1000	Without filter disc, olives	1	6.236 247

**4**


9.110 410

### Gas washing bottles

DURAN®. Head fitted with fritted disc and standard ground joint. Porosity 1.

DWK Life Sciences

Capacity ml	Height mm	Description	PK	Cat. No.
100	250	Gas washing bottle	1	9.110 410 4
250	250	Gas washing bottle	1	9.110 420
500		Gas washing bottle "Drechsel"*	1	7.022 224
500		Gas washing bottle "Drechsel"* with fritted disk	1	7.022 420
500		Essay "Drechsel" for 500 ml	1	7.078 351
500		Essay "Drechsel" with filter disc for 500 ml	1	7.022 432

\* with screw connection system and attachment.

#### 1 Connectors with stopcock, borosilicate glass 3.3

Supplied with PTFE stopcock with different key bore diameters. DIN 12594.

ISOLAB

Cone	Socket	PK	Cat. No.
<b>NS</b>	<b>NS</b>		
14/23	14/23	1	9.140 536
19/26	19/23	1	9.140 537
24/29	24/29	1	9.140 538
29/32	29/32	1	9.140 539



#### 2 3 Expansion and reduction adapters, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals. They meet the highest quality standards according to DIN 12257. They have excellent grinding to prevent airleaks. The bottom part of the ground joints are fire polished.

ISOLAB

Cone	Socket	PK	Cat. No.
<b>NS</b>	<b>NS</b>		
14/23	19/26	1	4.008 341
14/23	29/32	1	6.235 966
19/26	14/23	1	6.243 581
19/26	29/32	1	4.008 344
24/29	14/23	1	6.243 582
24/29	19/26	1	4.008 342
24/29	29/32	1	4.008 345
29/32	14/23	1	9.011 740
29/32	19/26	1	4.008 343
29/32	24/29	1	6.241 533
34/35	19/26	1	6.243 583
34/35	24/29	1	6.243 584
34/35	29/32	1	6.243 586
45/40	24/29	1	6.243 585



#### 4 5 Expansion and reduction adapters, DURAN® tubing

Made of DURAN® tubing. DIN 12257 and in addition to DIN standard (\*). Reduction and expansion adapters with ground joint.

Lenz

Cone	Socket	DIN	PK	Cat. No.
<b>NS</b>	<b>NS</b>			
14/23	19/26	12257	1	9.011 766
14/23	29/32	12257	1	9.011 750
19/26	29/32	12257	1	9.011 767
24/29*	29/32		1	6.073 246
29/32	14/23	12257	1	9.011 755
29/32*	34/35		1	6.079 832
29/32*	45/40		1	9.011 760
45/40	29/32	12257	1	9.011 765
45/40	71/51		1	4.671 378



#### 6 Adapter for thermometer, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3 according to DIN 12257 standard, ideal to use for thermometers with Ø 6 - 8 mm. Screw joint provides easy depth adjustment of thermometer. Seal material: NBR

ISOLAB

Adapter bore diam. mm	Cone	Neck thread	PK	Cat. No.
	<b>NS</b>	<b>GL</b>		
6 - 8	14/23	14	1	4.008 360
6 - 8	29/32	14	1	6.244 589



#### 7 Tubing adapters

Manufactured from borosilicate glass 3.3 with two different shapes: straight or 90° angled. Tubing adapter is suitable for up to 10 mm tubings.

ISOLAB

Description	Diam.	Socket	PK	Cat. No.
		<b>NS</b>		
straight	Olive 8 mm	14/23	1	9.012 184
straight	Olive 10 mm	29/32	1	9.012 185
bend	Olive 8 mm	14/23	1	9.012 186
bend	Olive 10 mm	29/32	1	9.012 187
straight with PTFE stopcock	Olive 8 mm	14/23	1	9.012 188
straight with PTFE stopcock	Olive 10 mm	29/32	1	9.012 189
bend with PTFE stopcock	Olive 8 mm	14/23	1	9.012 190
bend with PTFE stopcock	Olive 10 mm	29/32	1	9.012 191





## Distillation, synthesis/Tubing adapters

**1**


9.012 319

**2**


9.012 313

### Adapters with NS stopcock, DURAN® tubing

Made of DURAN® tubing. Adapter, NS cone to 10 mm bore tubing connector. Straight or angled (90°). Available with or without solid glass plug, bore 2.5 mm.

Lenz

Form	Cone	Stopcock	PK	Cat. No.
<b>NS</b>				
straight	14/23	+	1	<b>9.012 316</b>
straight	14/23	-	1	<b>9.012 312</b>
bent	14/23	+	1	<b>9.012 315</b>
bent	14/23	-	1	<b>9.012 311</b>
straight	19/26	+	1	<b>6.202 380</b>
straight	24/29	+	1	<b>6.080 932</b>
straight	29/32	+	1	<b>9.012 319 1</b>
straight	29/32	-	1	<b>9.012 314</b>
bent	29/32	+	1	<b>9.012 317</b>
bent	29/32	-	1	<b>9.012 313 2</b>

**3**


### 3 Adapter for tubing, borosilicate glass 3.3

Manufactured from borosilicate glass 3.3 in two different forms, straight or 90° angled. Supplied with PTFE stopcock which has of 2.5 mm diameter bore key. Tubing adapter is suitable for up to 10 mm tubings.

ISOLAB

Form	Cone	Stopcock	PK	Cat. No.
<b>NS</b>				
straight	14/23	with	1	<b>4.008 365</b>
straight	14/23	without	1	<b>6.244 590</b>
bent	14/23	with	1	<b>4.008 367</b>
bent	14/23	without	1	<b>4.008 362</b>
straight	29/32	with	1	<b>4.008 366</b>
straight	29/32	without	1	<b>4.008 361</b>
bent	29/32	with	1	<b>4.008 369</b>
bent form	29/32	without	1	<b>4.008 364</b>

**4**


### 4 Screwthread tubes with NS cone, DURAN® tubing, cap and sealing

Screw thread adapters, made of DURAN® tubing, with screw-cap with aperture and silicone sealing ring with PTFE washers.

Lenz

Neck thread	Cone	For diam. mm	PK	Cat. No.
<b>GL</b>	<b>NS</b>			
14	14/23	5,5-6,5	1	<b>6.254 133</b>
14	19/26	5,5-6,5	1	<b>6.242 373</b>
14	24/29	5,5-6,5	1	<b>6.257 399</b>
14	29/32	5,5-6,5	1	<b>6.255 923</b>
18	14/23	7,5-9	1	<b>6.229 590</b>
18	19/26	7,5-9	1	<b>6.286 017</b>
18	29/32	7,5-9	1	<b>7.020 352</b>
25	29/32	9-11	1	<b>7.661 262</b>
32	29/32	13-15	1	<b>6.310 102</b>

**5**


### 5 Screw caps for screwthread tubes

Lenz



With DIN thread (GL), temperature resistant up to 180 °C, with PTFE coated silicone sealing (VMQ), material: PBT, colour: red

Neck thread	PK	Cat. No.
<b>GL</b>		
14	1	<b>7.653 217</b>
18	1	<b>6.232 022</b>
25	1	<b>6.243 031</b>
32	1	<b>7.653 216</b>
45	1	<b>6.207 113</b>

## 6. Distillation, separation, filtration

### Distillation, synthesis/Tubing adapters

#### 1 Threaded tube with NS core, DURAN® tubing

Made of DURAN® tubing. DIN 12257 and in addition to DIN standard (\*). Double ended. With GL thread and NS core.

Lenz

Neck thread	Cone	DIN	PK	Cat. No.
GL	NS			
14	14/23		1	9.209 514
14	29/32	12257	1	9.209 517
18	14/23	12257	1	9.209 518
18	29/32		1	9.209 529
25	14/23	12257	1	6.300 168
25	29/32		1	9.209 559
32	24/29	12257	1	9.209 581
32	29/32		1	9.209 582



#### 2 Screw caps for screwthread tubes, PBT



With DIN thread (GL) and aperture. temperature resistant up to 180 °C. Colour: red. Material: PBT.

Lenz

Neck thread	Bore	PK	Cat. No.
GL	mm		
14	9.5	1	6.307 040
18	11.0	1	6.201 839
25	15.0	1	6.203 948
32	20.0	1	6.243 032
45	34.0	1	6.231 293



#### 3 Screw connector caps, PBT



Red. PBT. With central hole (diameter outlined below). Temperature resistance to max. 180 °C.

DWK Life Sciences

Bore	Neck thread	PK	Cat. No.
mm	GL		
9.5	14	1	9.209 114
11.0	18	1	9.209 118
15.0	25	1	9.209 125
20.0	32	1	9.209 132
34.0	45	1	9.209 135



#### 4 Screwthread couplings, PBT



DIN screwthread. For flexible connection of two glass screwthreads. With integral PTFE-faced silicone (VMQ) seals. Temperature resistant to max. 180 °C.

DWK Life Sciences

Neck thread	PK	Cat. No.
GL		
14	1	9.209 004
18	1	9.209 005



#### 5 Silicone cap wads/septa, VMQ



For GL-screwthread caps. Overall diameter and wad thickness as outlined below. Thermal resistance: 130 °C (steam)/200 °C (heat). Autoclavable.

DWK Life Sciences

For thread size	Diam.	Thickness	PK	Cat. No.
GL	mm	mm		
14	12	2	1	9.209 414
18	16	2	1	9.209 418
25	22	2	1	9.209 425
32	29	2	1	9.209 432
45	42	3	1	9.209 435





### 1 Silicone sealing rings, VMQ



DWK Life Sciences

With vulcanized PTFE sleeve. For screwthread caps.  
Thermal resistance: 130 °C (steam), 200 °C (heat). Autoclavable.

For thread size	For tubes diam.	Ext. diam.	Int. diam.	PK	Cat. No.
GL	mm	mm	mm		
14	5.5 to 6.5	12	6	1	9.209 146
18	5.5 to 6.5	16	6	1	9.209 186
18	7.5 to 9.0	16	8	1	9.209 188
18	9.0 to 11.0	16	10	1	9.209 190
25	7.5 to 9.0	22	8	1	9.209 258
25	9.0 to 11.0	22	10	1	9.209 260
25	11.0 to 13.0	22	12	1	9.209 262
32	9.0 to 11.0	29	10	1	9.209 320
32	11.0 to 13.0	29	12	1	9.209 322
32	13.0 to 15.0	29	14	1	9.209 324
32	15.0 to 17.0	29	16	1	9.209 326
32	17.0 to 19.0	29	18	1	9.209 327
45	25.0 to 27.0	42	26	1	9.209 329
45	31.0 to 33.0	42	32	1	9.209 331



### 2 Plastic ferrule, angled, PP



DWK Life Sciences

PP. For screw connector caps GL 14. With silicone seal (VMQ).  
Temperature resistant up to max. +140 °C. Autoclavable.

Diam.	Neck diam.	PK	Cat. No.
mm	mm		
8.6	4	1	9.051 308



### 3 GL screwthread ferrules



BOLA

Fluoroplastics, for tubing connection. Straight and curved models available, screw connector caps made of PPS reinforced with glass fibre (max. +250 °C), ferrules made of PFA, with flexible PFA sealing rim and FPM O-ring. When in use, the contents only comes into contact with PFA (or PTFE - GL25 and GL32).

Type	Ext. diam. mm	Int. diam. mm	Neck thread GL	PK	Cat. No.
Straight 35 mm	8.7	6	14	1	9.051 320
Straight 39 mm	10.5	7	18	1	9.051 321
Angled 40 mm	8.7	6	14	1	9.051 324
Angled 54 mm	10.5	7	18	1	9.051 325



### 4 Assembly set, KECK® and Replacement seal

DWK Life Sciences

For attaching flexible vacuum tubing to filter flasks. Consists of straight PP tubing connection, PP tubulature made of silicone (VMQ) rubber seal. PP components can withstand temperatures up to 140 °C for short periods without mechanical load.

Type	PK	Cat. No.
Assembly set, Keck®	1	9.051 471
Replacement seal	1	9.051 474

#### 1 Conical ground joint stoppers, PP



BRAND

Hollow, with sealing rings and square grip. Autoclavable (121 °C).



NS	PK	Cat. No.
7 / 16	10	4.678 532
10 / 19	10	4.678 533
12 / 21	10	4.678 534
14 / 23	10	4.678 535
19 / 26	10	4.678 536
24 / 29	10	4.678 537
29 / 32	10	4.678 538
34 / 35*	10	4.678 539
45 / 40*	10	4.678 540

\* LDPE with octagonal grip

#### 2 Stoppers, hollow , HDPE



Fits standard conical joints.



NS	PK	Cat. No.
7/16	10	4.678 541
10/19	10	4.678 542
12/21	10	4.678 543
14/23	10	4.678 544
19/26	10	4.678 548
24/29	10	4.678 545
29/32	10	4.678 546
45/40	10	4.678 547
60/46	10	4.678 549

#### 3 Conical stoppers, NS, PE



Kartell

Polyethylene. Stoppers manufactured to DIN standard 12242 ensuring an effective seal, even on non-standard surfaces.



Colour	Bottom diam. mm	NS	PK	Cat. No.
violet	5.9	7/16	10	4.678 557
blue	8.1	10/19	10	4.678 550
green	10.4	12/21	10	4.678 551
brown	12.2	14/23	10	4.678 552
yellow	16.4	19/26	10	4.678 553
red	21.1	24/29	10	4.678 554
black	25.8	29/32	10	4.678 555
white	30.9	34/35	10	4.678 556

#### 4 NS-Glass stoppers, hollow borosilicate glass 3.3

Manufactured from borosilicate glass 3.3 which is resistant to heat and almost all chemicals. They meet the highest quality standards according to DIN 12252. Lower closed end of stopper features a "drip-tip" to ensure adhered liquid is returned to the flask. Hexagonal flat head prevents the stopper from rolling and allows stopper to be stood on end preventing contamination of the ground surface.

Description	NS	PK	Cat. No.
clear	10/19	10	4.667 524
clear	12/21	10	4.667 525
clear	14/23	10	4.667 526
clear	19/26	10	4.667 527
clear	24/29	10	4.667 528
clear	29/32	10	4.667 529
clear	34/35	10	4.678 564
amber	10/19	10	4.678 565
amber	12/21	10	4.678 566
amber	14/23	10	4.678 567
amber	19/26	10	4.678 568
amber	24/29	10	4.678 569
amber	29/32	10	4.678 570
amber	34/35	10	4.678 571





### 1 Hollow stoppers, hexagonal plate, pointed bottom, borosilicate glass 3.3

Acc. to DIN 12252 form C.

Lenz

NS	PK	Cat. No.
7/16	10	4.678 579
10/19	10	4.678 573
12/21	10	4.678 574
14/23	10	4.678 575
19/26	10	4.678 576
24/29	10	4.678 578
29/32	10	4.678 577
34/35	10	4.678 580
45/40	10	4.678 572



### 2 Conical ground joint stoppers, borosilicate glass 3.3

DIN 12252. Solid or semi-hollow, with octagonal grip.

BRAND

NS	Description	PK	Cat. No.
12/21	solid	10	4.678 581
14/23	solid	10	4.678 582
19/26	solid	10	4.678 583
24/29	solid	10	4.678 584
29/32	semi-hollow	10	4.678 585
34/35	semi-hollow	10	4.678 586



### 3 LIG-Joint clips, POM, for conical ground joints

For an easy and safe fixing of jointed glassware.

NS	Colour	PK	Cat. No.
14	yellow	10	6.291 859
19	blue	10	6.291 860
24	green	10	6.291 861
29	red	10	6.291 862



### 4 Joint clips KECK, POM, for conical ground joints

Melting point 175 °C. Excellent chemical resistance. Rigid. Heat resistant up to 150 °C, sizes colour coded.

For	Colour	PK	Cat. No.
NS 10	green	10	4.678 596
NS 12	violet	10	4.678 597
NS 14	yellow	10	4.678 598
NS 19	blue	10	4.678 599
NS 24	green	10	4.678 600
NS 29	red	10	4.678 601
NS 34	orange	10	4.678 602
NS 40	yellow	10	4.678 603
NS 45	brown	10	4.678 604



### 5 Joint clips KECK, POM, for spherical ground joints

Melting point 175 °C. Excellent chemical resistance. Rigid. Heat resistant up to 150 °C, sizes colour coded.

For	Colour	PK	Cat. No.
S 13	violet	10	4.678 605
S 19	blue	10	4.678 606
S 29	red	10	4.678 607
S 35	orange	10	4.678 608

## 6. Distillation, separation, filtration Distillation, synthesis/NS joints accessories

### 1 Ground joint clips for sleeve connections, wire, Chrome-nickel steel

Chrome-nickel steel.

NS	PK	Cat. No.
10/19	10	4.678 610
12/21	10	4.678 613
14/23	10	4.678 611
19/26	10	4.678 615
24/29	10	4.678 609
29/32	10	4.678 614
45/40	10	4.678 612



### Joint clips for conical joint sleeve connections

Stainless steel. For tapered ground joints as outlined below. With or without set screw.

Lenz

Type	NS	PK	Cat. No.
with locking screw	14/23	1	9.011 675
with locking screw	19/26	1	9.011 676
with locking screw	24/29	1	9.011 677
with locking screw	29/32	1	9.011 678
with locking screw	45/40	1	9.011 680
without locking screw	14/23	1	9.011 685
without locking screw	19/26	1	9.011 686
without locking screw	24/29	1	9.011 687
without locking screw	29/32	1	9.011 688
without locking screw	45/40	1	9.011 690



9.011 685

### 3 KECK™ Clips for conical joints, spring steel

For applications with very high temperatures. Easy to fit, dimensionally stable.

DWK Life Sciences

For	PK	Cat. No.
NS 14	1	9.011 783
NS 19	1	9.011 784
NS 24	1	9.011 785
NS 29	1	9.011 786



### 4 LLG-Fork clamps for spherical joints

Made of stainless steel 304. For spherical ground joint connections. With set screw.

Size	PK	Cat. No.
S13	1	9.011 797
S19	1	9.011 798
S29	1	9.011 799
S35	1	9.011 800



### 5 Fork clamps for spherical joints

Material: stainless steel. For spherical ground joint connections. With set screw.

Lenz

Size	PK	Cat. No.
S 13	1	9.011 693
S 19	1	9.011 694
S 29	1	9.011 695
S 35	1	9.011 698
S 40 / 41	1	9.011 696
S 65	1	9.011 697





**1**

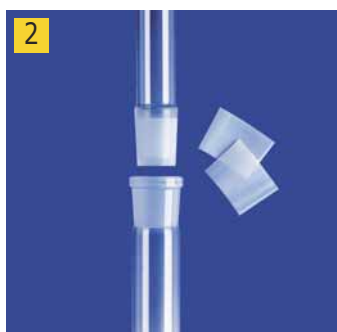

### 1 PTFE sealing rings for jointed glassware

An effective alternative to common PTFE joint sleeves and PTFE stoppers.

*Glindemann*

- Air leakage <math> < 10^{-8}</math> to <math> 10^{-6}</math> mBar l/s (vacuum and pressure).
- Solvent leakage from containers <math> < 0.1</math> to <math> 0.03</math> mg/day.
- Temperature range: -196 to 300 °C

NS	PK	Cat. No.
10	50	9.011 663
12	50	7.622 596
14	50	9.011 664
19	50	9.011 665
24	50	9.011 666
29	50	9.011 667
34	50	7.700 004
45	50	9.011 668

**2**


### 2 Disposable ground joint sleeves, PTFE

Outstanding chemical resistance at operating temperatures from -200 to +260 °C, only 50 µm thickness, the sleeves fit like a second skin without adding bulk, without grip collar, simplifying use of joint clips.

*Lenz*

For	PK	Cat. No.
NS 14/23	1	6.227 451
NS 19/26	1	6.236 032
NS 24/29	1	6.243 030
NS 29/32	1	6.227 452
NS 45/40	1	6.236 031

**3**


### 3 Sleeves with ribs, PTFE

For use with ground glass joints. Suitable for vacuums up to 0.1 mbar. Reusable and long lasting. The sealing ribs grip on the inside wall of the glass socket, sealing without the need for grease and enabling the cone to be freed easily when required.

*BOLA*

NS	PK	Cat. No.
14/23	1	9.011 655
19/26	1	9.011 656
24/29	1	9.011 657
29/32	1	9.011 658
45/40	1	9.011 660
60/46	1	9.011 661
71/51	1	9.011 662

**4**


### 4 Sleeves, cone joint, PTFE

With knurled gripping ring at the top of the cone for easy removal. For gas, liquid and vacuum-tight cone joint connections with sizes as outlined below. Reusable. With reinforced external ribs for a high-vacuum tight seal (leakage rate: <math> < 1 \times 10^{-4}</math> mbar x l x s<sup>-1</sup>). No joint sealant or grease required.

*BOLA*

NS	PK	Cat. No.
14/23	1	9.011 642
19/26	1	9.011 643
24/29	1	9.011 644
29/32	1	9.011 645
45/40	1	9.011 647

**5**


### 5 Bellows, PTFE

Stainless connection of ground joint equipment; for compensating vibrations from vacuum pumps; for length compensation of heated columns; angular misalignment. Made of PTFE, with sharp folds and sealing rings on the outside; maximum deflection: 120°.

*BOLA*

Overall length mm	Cone NS	Socket NS	PK	Cat. No.
90	14/23	14/23	1	9.012 161
120	29/32	29/32	1	9.012 163



#### 1 Sealing tape, PTFE

For covering areas which require protection against chemicals of all types at temperatures of -150 to +260 °C. Non-swelling. Easy loosening of seams even after continuous operation. Supplied in rolls as outlined below.

Width	Length	Wall thickness	PK	Cat. No.
mm	cm	mm		
12.8	670	0.1	1	9.404 952
24.0	670	0.1	1	9.404 955

1



#### 2 BUDDE - joint grease

For all glass joints. Transparent, vacuum tight, water washable and water soluble. Maintains practically the consistency between -30 °C and +200 °C, non-solidifying. Compatible with most elastomers. Tube of 80 g.

Buddeberg

Weight	PK	Cat. No.
g		
80	1	9.116 950

2



#### Silicone high vacuum grease

Temperature stable and can be used up to 10<sup>-6</sup>, from -40 to approx. +150 °C, at temperatures above +200 °C the silicone grease polymerizes and begins to outgas. Tube of 100 g.

Type	PK	Cat. No.
Low viscous	1	9.116 901 3
Medium viscous	1	9.116 911
Highly viscous	1	6.286 771

3



9.116 901

#### 4 Joint grease, K.W.S

Without silicone. Designed as vacuum and high vacuum grease. No silicone derivatives, polymerisation or gumming. Excellent adhesion and viscosity. Acid/alkaline resistant. Locked joints can be loosened by brief, gentle heating. Can be used to make temporary glassware repairs. Biodegradable. Non-toxic in normal use.

Working temperature range: -40 ... 200 °C, to 10<sup>-5</sup> mbar  
 Vapour pressure: 0.00001 mbar.

Capacity	PK	Cat. No.
ml		
30	1	9.116 924

4



#### 5 Rotating joint grease, silicone-free, Alsirol

Silicone-free stopcock grease. No silicone derivatives, polymerisation or gumming. Excellent adhesion and viscosity. Stable grease film enables safe, long term use. Low heat-up occurs during rotation even if operation is continuous. When sealing glassware systems with glass and metal stirrers and shafts Alsirol protects rotating, precision-ground sockets and stirring shafts against glass abrasion. Also suitable for lubricating rotating metal and glass components. Acid and alkali resistant. For use under vacuum and high vacuum. Biodegradable. Non-toxic in normal use.

Working temperature range: -40 to +200 °C  
 Vapour pressure: 0.00001 mbar

Capacity	PK	Cat. No.
ml		
50	1	9.116 925

5



# 6. Distillation, separation, filtration

## Distillation, synthesis/Ground joints, attachable



1

### 1 Screwthread tubes for glassblowers, DURAN®

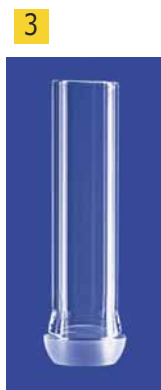
Acc. to DIN 12216 and in addition to standard (\*), with DIN thread (GL), material: DURAN®.

Lenz

Neck thread GL	Length mm	Diam. mm	PK	Cat. No.
14	100	12	1	9.209 714
18	100	16	1	9.209 718
25	100	22	1	9.209 725
32	140	28	1	9.209 732
45	180*	40	1	9.209 735



2



3

9.011 613

9.011 630

### Socket and ball members, DURAN® tubing

Made of DURAN® tubing. DIN 12264 and in addition to DIN standard (\*). With ground glass ball (male) and socket (female) joints.

Lenz

Type	Tube diam. mm	Overall length mm	socket/ball	PK	Cat. No.
Socket	8	100	S 13/5	1	9.011 603
Socket	13	120	S 19	1	9.011 605
Socket	19	120	S 29	1	9.011 609
Socket	28	120	S 35*	1	9.011 613 2
Socket		120	S 41*	1	4.671 386
Socket		150	S 51	1	4.671 387
Ball	8	100	S 13/5	1	9.011 623
Ball	13	120	S 19	1	9.011 625
Ball	19	120	S 29	1	9.011 629
Ball	28	120	S 35*	1	9.011 630 3
Ball		120	S 41*	1	4.671 388
Ball		150	S 51	1	4.671 389



4



5

9.011 508

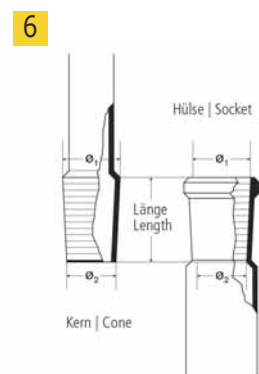
9.011 548

### 6 Sockets/Cones with NS joint, DURAN® tubing

Made of DURAN® tubing. DIN 12249 and in addition to DIN standard (\*).

Lenz

Description	NS	Ext. diam. mm	Length mm	PK	Cat. No.
Socket	5/13	8	120	1	9.011 521
Socket	14/23	17	130	1	9.011 525
Socket	19/26	22	130	1	9.011 526
Socket	19/38*	22	120	1	7.606 907
Socket	29/32*	33	210	1	6.303 190
Socket	29/32	33	130	1	9.011 528
Socket	40/38*	44	130	1	6.202 446
Socket	45/40*	48	280	1	6.303 189
Socket	45/40	50	145	1	9.011 530
Socket	71/51	75	165	1	9.011 532
Socket	85/55	90	185	1	9.011 533
Cone	5/20*	4	115	1	6.070 542
Cone	10/30*	8	115	1	6.222 104
Cone	12/21	11	130	1	9.011 504
Cone with tip	12/21	11	130	1	6.072 920
Cone	14/35*	13	140	1	6.900 898
Cone	14/23	13	130	1	9.011 505
Cone with drip tip	19/26*	17	120	1	6.072 150
Cone	19/38*	17	140	1	7.606 908
Cone	19/26	17	130	1	9.011 506
Cone	29/32	26	130	1	9.011 508 4
Cone	29/42*	26	140	1	6.203 538
Cone	34/45*	30	140	1	6.401 432
Cone with tip	40/38*	36	145	1	6.202 386
Cone	45/40	40	145	1	9.011 510
Cone	50/42*	46	145	1	7.630 287
Cone	55/44*	50	145	1	7.630 288
Cone with tip	60/46*	54	160	1	6.073 068
Cone with outlet	14/23	13	130	1	9.011 545
Cone with outlet	29/32	26	130	1	9.011 548 5



#### Stopcocks, with glass plug, borosilicate glass 3.3

1

Acc to DIN 12541-1 and in addition to DIN standard. With solid glass plug and retaining device. Straight bore. Leakage rate acc. to DIN 12540-1.

Lenz

Description	NS	Bore	DIN	Material	PK	Cat. No.
		mm				
With solid glass key	12.5	1.5	12541-1		1	9.115 611 1
With solid glass key	12.5	2.5			1	9.115 642
With solid glass key	14.5	2.5	12541-1		1	6.079 648
With solid glass key	14.5	4.0			1	9.115 614
With solid glass key	18.8	4.0	12541-1		1	9.115 644
With solid glass key	18.8	6.0			1	9.115 615
With solid glass key	24*	8.0			1	9.115 618
Spare key, solid glass	12.5	1.5		SBW	1	7.018 947
Spare key, solid glass	12.5	2.5		SBW	1	7.018 936
Spare key, solid glass	14.5	2.5		SBW	1	7.018 948
Spare key, solid glass	14.5	4.0		SBW	1	6.093 232
Spare key, solid glass	24	8.0		DURAN®	1	7.657 852
Spare key, solid glass	29.2	10.0		DURAN®	1	6.266 986

\* with rubber retaining device



9.115 611

#### 2 Vacuum stopcocks, glass, Vendura-Nova

2

Vendura-Nova DURAN®. With PP safety device. Adjustable seal. Comprises of glass stopcock body, PTFE needle with sealing ring and FKM O-rings.

DWK Life Sciences

Fine control gives precise flow metering.

Available in straight or 90° angle patterns.

Leak rate: <math> < 1 \times 10^{-6} \text{ mbar} \times \text{l/s}</math>

Temperature resistant to

with safety device: 140 °C

without safety device: 180 °C

Type	Tube diam.	Flow rate	PK	Cat. No.
		ml / min.		
		mm		
straight	9	0 to 2.5	1	9.117 002
straight	10	0 to 4.0	1	9.117 003
straight	10	0 to 6.0	1	9.117 004
90° angle	9	0 to 2.5	1	9.117 012
90° angle	10	0 to 4.0	1	9.117 013
90° angle	10	0 to 6.0	1	9.117 014



#### 3 Stopcocks, with PTFE plug, borosilicate glass 3.3

3

Acc. to DIN 12541-1 and in addition to DIN standard, with PTFE plug and screwthread retaining device, one straight bore, material: borosilicate glass 3.3, leakage rate acc. to DIN 12540-1.

Lenz

Description	NS	Bore	DIN	Material	PK	Cat. No.
		mm				
With PTFE key	12.5	1.5	DIN 12541-1		1	9.115 631
With PTFE key	12.5	2.5			1	6.070 033
With PTFE key	14.5	2.5	DIN 12541-1		1	9.115 648
With PTFE key	14.5	4.0			1	9.115 634
With PTFE key	18.8	4.0	DIN 12541-1		1	9.115 635
With PTFE key	18.8	6.0			1	6.222 868
With PTFE key	21.5	6.0	DIN 12541-1		1	9.115 637
With PTFE key	24	8.0			1	9.115 638
With PTFE key	29.2	10.0	DIN 12541-1		1	9.115 639
With PTFE key	12.5*	1.5	DIN 12541-1		1	9.115 632
With PTFE key	14.5*	2.5	DIN 12541-1		1	9.115 633
Spare key	12.5	1.5		PTFE	1	7.072 146
Spare key	12.5	2.5		PTFE	1	6.306 550
Spare key	14.5	2.5		PTFE	1	6.801 361
Spare key	14.5	4.0		PTFE	1	6.306 551
Spare key	18.8	4.0		PTFE	1	7.018 955
Spare key	18.8	6.0		PTFE	1	7.630 235
Spare key	21.5	6.0		PTFE	1	7.603 864
Spare key	24	8.0		PTFE	1	7.657 006
Spare key	29.2	10.0		PTFE	1	6.266 985

\* with capillary side arms.



### Rotary Evaporator RV 3

The new RV 3 is the ideal entry-level model of the IKA rotary evaporator portfolio. Thanks to specially designed glass guides, the vertical condenser makes extremely efficient use of the 1500 cm<sup>2</sup> cooling surface.

IKA

- 4L water heating bath with digital temperature display and carrying handles
- Mechanical lift end-point safety stop
- Locking mechanism: red indicator shows unlocked position of the vapor tube
- Manual lift for precise positioning of the glassware, single-handed, suitable for left and right-handed operators
- Adjustable immersion angle
- Stepless speed setting with dial control and speed display
- Flask clamping mechanism with integrated push-off function for easy exchange of evaporation flasks

1



### 1 Rotary Evaporator RV 3 V/RV 3 V-C

#### Scope of supply:

IKA

**RV 3 V:** Rotary Evaporator RV 3 eco, Heating bath HB eco, vertical glassware RV 10.1

**RV 3 V-C:** Rotary Evaporator RV 3 eco, Heating bath HB eco, vertical coated glassware RV 10.10

#### Specifications

Speed range:	20 ... 300 rpm
Stroke displacement:	150 mm
Bath volume:	4 L
Temperature range:	ambient ... 90 °C
Heating power:	1400 W
Permissible ambient temperature:	5 ... 40 °C
Permissible relative humidity:	80 %
Dimensions (W x D x H):	440 x 330 x 530 mm
Weight:	13.5 kg
Protection class according to DIN EN 60529:	IP 20
Power supply:	100 ... 240 V/50/60 Hz

Type	PK	Cat. No.
RV 3 V	1	6.273 133
RV 3 V-C	1	4.661 996

2



### 2 Rotary Evaporator RV 8

Digital displays for speed and heating bath temperature allow for optimal control of all distilling processes. Thanks to specially designed glass guides, the condenser makes extremely efficient use of the 1500 cm<sup>2</sup> cooling surface.

IKA

- Clearly visible glass display (black and white)
- Locking mechanism: red display for unlocked state of vapor tube
- Manual lift for precise positioning of glassware
- Water/oil heating bath with integrated ergonomic carrying handles
- Lock function for the heating bath temperature
- Adjustable immersion angle
- Single-hand operation; ambidextrous design
- Easy exchange of evaporation flasks by clamp mechanism with push-out function
- Woulff bottle

#### Scope of supply:

**RV 8 V:** Rotary Evaporator RV 8, Heating bath HB digital, vertical glassware RV 10.1

**RV 8 V-C:** Rotary Evaporator RV 8, Heating bath HB digital, vertical coated glassware RV 10.10

**RV 8 FLEX:** Rotary Evaporator RV 8, Heating bath HB digital, clamps for glassware

#### Drive

Speed:	5 to 300 rpm
Speed display:	digital
Stroke displacement:	120 mm, manual

#### Heating bath

Bath volume:	4 l
Temperature range:	RT to +180 °C
Heating power:	1300W

#### General data

Dimensions (W x D x H):	510 x 345 x 490 mm
Protection class according to DIN EN 60529:	IP 20
Power supply	100-240 V, 50/60 Hz

Type	PK	Cat. No.
RV 8 V	1	9.813 017
RV 8 V-C	1	9.813 018
RV 8 FLEX	1	9.813 019

#### Rotary evaporator RV 10 digital

1

The RV 10 digital is a robust and reliable lab companion. Its optimized bath volume allows for fast heat-up times. The vertical condenser unit has special designed glass tubes that utilize the 1500 cm<sup>2</sup> surface extremely efficient. That's why the RV 10 digital delivers reliable and reproducible process results that are usually reserved for more costly systems. Additional features such as smooth start, left-right interval or timer function capability support the user in their daily lab work. Another important aspect of the RV 10 digital are the sophisticated safety features. The motorized lift has an automated lift-out function in case of power outage to prevent superheating of the solvent. Safety temperature circuits can be set individually. Dry-run protection, adjustable lower end stop and lock function of bath setting, complete the line of safety features. Furthermore, IKA offers a choice of coated glassware for increased safety needs. The RS 232 interface allows for remote control via IKAs "labworldsoft". The Heating bath is controlled via the IR interface from the main unit.

IKA

- Universal water/oil heating bath
- Motorized lift with "safety-stop" function
- RS 232 and IR Interface
- Optimized heating bath volume for fast heat-up
- Highly efficient 1500 cm<sup>2</sup> condenser unit
- Ergonomically placed handles on Heating bath
- Left-right interval
- Timer function
- Dry-run protection
- Safety temperature circuits
- Lower-end stop
- Push-off mechanism to loosen tight fitted glassware
- Easy and safe operation due to ergonomic design of the user interface



6.274 521

#### Scope of supply:

**RV 10 digital V:** Rotary evaporator RV 10 digital, heating bath HB digital, vertical glassware RV 10.1, vapor tube RV 10.70

**RV 10 digital V-C:** Rotary evaporator RV 10 digital, heating bath HB digital, vertical glassware, coated RV 10.10, vapor tube RV 10.70

**RV 10 digital V FLEX:** Rotary evaporator RV 10 digital, heating bath HB digital, Wouff bottle, spherical joint clip RV 05.10, clamp, NS 29 RV 10.88, vapor tube RV 10.70

#### Specifications

##### Drive

Motor rating input:	50 W
Speed range:	20 to 280 rpm
Speed display:	digital
Head angle adjustable:	0 to 45°
Stroke displacement:	140 mm, motorised
Setting of lower end stop:	60 mm, contact-free

##### Heating bath

Temperature range:	Ambient up to 180 °C
Heating power:	1.300 W

##### General data

Dimensions (W x D x H):	500 x 430 x 410 mm
Protection class acc. to DIN EN 60529:	IP 20
Power supply:	220-240 V/50/60 Hz

Type	PK	Cat. No.
RV 10 digital V	1	4.664 596
RV 10 digital V-C	1	6.274 521 1
RV 10 digital V FLEX	1	4.664 590

#### Accessories for Rotary evaporators RV 8/RV 10 digital/RV 10 control

IKA

2

Type	Description	PK	Cat. No.
VACSTAR digital	Vacuum pump, 22 l/min	1	9.813 026 2
MVP 10 basic	Vacuum pump, 28.3 l/min	1	9.813 010
VCV 1	Vacuum control valve	1	9.813 016
RV 10.70	Vapor tube made of borosilicate glass, NS 29/32	1	6.237 535
RV 10.4002	Magnetic valve laboratory vacuum	1	6.237 538
RV 10.5001	Choke water valve	1	6.237 540
RV 10.5002	Filter	1	6.237 541
RV 10.5003	Pressure regulating valve	1	6.237 542
RV 10.8001	Lip-seal, PTFE with a built-in stainless steel spring	1	4.008 136



9.813 026



Suitable Flow coolers please see page 821

### Rotary evaporator RV 10 auto/RV 10 auto pro

The rotary evaporator RV 10 auto has a bright, high-contrast, TFT, color-graphic control panel, an integrated vacuum controller and a cooling water monitoring. Additional safety for users is provided by individually adjustable temperature safety circuits, protection against boiling dry, adjustable end-point recognition to prevent glass breakage, and a locking function. The USB port or the RS-232 interface enable remote control with the IKA "labworldsoft" software package and an update option with the firmware update tool. Thanks to specially designed glass guides, the condenser makes extremely efficient use of the 1500 cm<sup>2</sup> cooling surface.

IKA

The Rotary evaporator RV 10 auto pro rotary evaporator is fitted with the full-automatic vacuum pump VACSTAR digital. This enables better automatic detection of the solvent boiling point. The Vacstar digital is controlled directly from the drive unit of the RV 10 auto via the data cable provided.

- Integrated solvent library with 40 preset solvents and expansion option
- Optimized heating bath volume for rapid achievement of working temperature
- Programming option for up to ten individual procedures
- Smooth start
- Right or left rotation
- Timer function
- Coated flask and condenser as an option
- Automatic vacuum management
- Motorized lift with "safety-stop" function

#### Scope of supply:

**Model RV 10 auto:** Rotary Evaporator RV 10 auto with Heating bath HB 10, Magnetic valve RV 10.4002 and Woulff bottle

**RV 10 auto V:** with vertical glassware RV 10.1

**RV 10 auto V-C:** with vertical coated glassware RV 10.10

**RV 10 auto FLEX:** without glassware

**Model RV 10 auto pro:** Vertical Rotary Evaporator RV 10 auto with Heating bath HB 10, Vacuum pump VACSTAR digital and Woulff bottle

**RV 10 auto pro V:** with vertical glassware RV 10.1

**RV 10 auto pro V-C:** with vertical coated glassware RV 10.10

**RV 10 auto pro FLEX:** without glassware

#### Specifications

##### Drive

Speed range: 5 ... 300 rpm

Speed display: digital

Stroke displacement: 140 mm

##### Heating bath

Bath volume: 4 l

Temperature range: ambient ... +180 °C

Power input: 100 W

Power input standby: 3.3 W

##### General data

Dimensions (W x D x H): 500 x 410 x 430 mm

Weight: 18.6 kg

Protection class according to DIN EN 60529: IP 20

Power supply: 100 ... 240 V/50/60 Hz

Type	PK	Cat. No.
RV 10 auto V	1	4.664 591 1
RV 10 auto V-C	1	4.664 592
RV 10 auto FLEX	1	4.664 597
RV 10 auto pro V	1	4.664 593 2
RV 10 auto pro V-C	1	4.664 594
RV 10 auto pro FLEX	1	4.664 595

1



4.664 591

2



4.664 593



#### 1 Rotary Evaporator RC 600/RC 900

##### RC 600

KNF

##### Fit for purpose

All functions operated centrally via membrane keypad providing exceptional ease of use

##### Comprehensively robust

Device design and details were especially developed for intensive use

##### Safe and compact

Cordless heating bath with pour spout, fixed tube guide, easy flask exchange - typical hazards eliminated thanks to well thought out safety features

##### RC 900

##### Sleek design, minimum footprint

The RC 900 takes up very little space and offers maximum ease of use

##### Whisper quiet for a pleasant working environment

The lift and rotation of the RC 900 are virtually silent

##### Versatile use, simple operation

The system offers central remote control for all functions, and operation via touchscreen and control knob. Stepless adjustable flask inclination.

##### Specifications

Heating bath: heating bath temperature:	20 to 180 °C
Coolant supply (chilled condenser)	
Permissible pressure:	3 bar
Permissible temperature:	15 °C to +20 °C
Cooled surface area:	1230 cm <sup>2</sup>
Parameters of evaporation flask	
Size of evaporation flask:	50 - 3000 ml
Rotational speed:	25 - 250 rpm
Length of stroke:	150 mm
Lifting speed:	approx 38 mm/s
Dimensions (W x D x H)	
Without glassware RC 900/RC 600:	431 x 447 x 464 mm/431 x 453 x 464 mm
With glassware RC 900/RC 600:	487 x 447 x 823 mm/487 x 453 x 823 mm
Weight:	9.1 kg

Type	PK	Cat. No.
RC 600	1	6.269 371
RC 900	1	7.660 052



#### 2 Rotary Evaporator Rotavapor® R-100

The Rotavapor® R-100 is a high-quality rotary evaporator to meet the essential needs in classical laboratory applications. It is capable of manually adjusting the rotation speed from 20 to 280 rpm and is equipped with an action jack lift for manual lifting of the evaporating flask.

##### Heating Bath B-100

Temperature range of 20 °C to 95 °C. Max. evaporating flask size: 4000 mL (3 kg). Digital display of set and actual temperature (alternating).

##### Standard Joint

SJ 29/32

##### Glass Assembly

**Option V: Vertical condenser(V):** Vertical condenser used along with a recirculating chiller or tap water.

**Option C: Cold trap (C):** Cold trap used for low boiling solvents along with e.g. dry ice for cooling.

##### Protective Coating

Option 1: Without coating

Option 2: Transparent PLASTIC+GLAS (P+G) safety coating. Protect against mechanical damage.

In the event of breakage there is no loss of sample.



#### 2 Rotavapor® R-100 with vertical glass assembly

Heating bath B-100, manual lift.

BÜCHI

Type	Capacitor	Coating	PK	Cat. No.
R-100	vertical	no	1	6.268 002
R-100	vertical	yes	1	6.268 003

### Rotary Evaporator Rotavapor® R-300

The rotary evaporator R-300 meets the highest needs in convenience, productivity and versatility. The rotation speed, heating temperature and lift position is shown digitally on the integrated display. Automatic change of the direction of rotation programmable.

#### Lift System

- Option 1: Manual lift
- Option 2: Electronic lift

#### Heating Bath

- Option 1: B-301.** Temperature range of 20 °C to 95 °C (water). Max. evaporating flask size: 1000 mL (3 kg). Cordless connection. Digital display of set and actual temperature, rotation speed, lift position. Lock of heating temperature. Fast heat up time.
- Option 2: B-305.** Temperature range of 20 °C to 220 °C. Max. evaporating flask size: 5000 mL (3 kg). Cordless connection. Digital display of set and actual temperature, rotation speed, lift position. Lock of heating temperature.

#### Standard Joint

SJ 29/32

#### Glass Assembly

- Option V: Vertical condenser (V):** Vertical condenser used along with a recirculating chiller or tap water.
  - Option C: Cold trap (C):** Cold trap used for low boiling solvents along with e.g. dry ice for cooling.
- Other glass assembly configuration on request

#### Protective Coating

- Option: Transparent PLASTIC+GLASS (P+G) safety coating. Protect against mechanical damage. In the event of breakage there is no loss of sample.



1 Rotavapor® R-300 with heating bath B-301

BÜCHI

Type	Lift	Capacitor	Coating	PK	Cat. No.
R-300	manually	vertical	no	1	6.267 887
R-300	electric	vertical	yes	1	6.267 888
R-300	electric	cold trap	yes	1	6.267 889



2 Rotavapor® R-300 with heating bath B-305

BÜCHI

Type	Lift	Capacitor	Coating	PK	Cat. No.
R-300	manually	vertical	no	1	6.267 890
R-300	electric	vertical	yes	1	6.267 891
R-300	electric	cold trap	yes	1	6.267 892

#### Rotary Evaporator Hei-VAP Core

Heidolph

- Available as hand or motor lift
- Clear digital display for monitoring the current values and separate button to display the set values
- Two separate operating knobs for adjusting the rotation speed and heating temperature with LED ring light system for activity indication
- Activated lock feature prevents inadvertent adjustments
- Residual heat indicator when >50 °C
- Standby button stops all functions and lifts the evaporator flask out of the heating bath on motor lift models
- Ergonomically optimized heating bath handles sit securely in your hand
- Easily adjust immersion depth up to 155 mm and the tilt angle of the evaporating flask from 20° to 80°
- Grease-free operation thanks to innovative sealing technology
- Ventilation cap with PTFE inlet and free of ground joints. Optionally available with replenishment valve
- Optional cable extension. The operating panel can be detached for use outside closed fume hoods

**Scope of supply:** Flask clamp Easy-Clip, vapour tube, ventilation cap, heating bath, 1-l receiving flask, 1-l evaporating flask. Supplied condenser as indicated.

#### Specifications

##### Drive

Speed range:	10 ... 280 rpm
Speed display:	Digital
Stroke displacement:	155 mm
Protection class:	IP 20

##### Heating bath

Bath volume:	4.5 L
Temperature range:	Ambient ... 210 °C
Power input:	1300 W
Protection class:	IP 67

##### General data

Max. size evaporating flask:	5 L
Condensing surface:	1400 cm <sup>2</sup>
Condensing surface XL condenser:	2200 cm <sup>2</sup>
Power supply:	230 V

#### Rotary Evaporators Hei-VAP Core, with hand lift

Heidolph

Description	Glassware set	Plug type	PK	Cat. No.
G1 Angled condenser	standard	EU	1	4.666 085
G3 Vertical condenser	standard	EU	1	4.666 086 1
G1B Angled condenser	coated	EU	1	4.666 090
G3B Vertical condenser	coated	EU	1	4.666 091
G1 Angled condenser	standard	UK	1	4.666 107
G3 Vertical condenser	standard	UK	1	4.666 108



#### Rotary Evaporators Hei-VAP Core, with motor lift

Heidolph

Description	Glassware set	Plug type	PK	Cat. No.
G1 Angled condenser	standard	EU	1	4.666 095
G3 Vertical condenser	standard	EU	1	4.666 096 2
G1B Angled condenser	coated	EU	1	4.666 100
G3B Vertical condenser	coated	EU	1	4.666 101
G1 Angled condenser	standard	UK	1	4.666 117
G3 Vertical condenser	standard	UK	1	4.666 118





1

### 1 Rubber Balloon with Hose Connection

- Latex (NR)
  - for Rotary Evaporators
  - suitable for mixture or collection and short-term storage of gases
  - for control of air/gas entry or tread out of gas in instruments
- Other sizes on request.

*Deutsch & Neumann*

Size	Volume	PK	Cat. No.
5	approx. 1.5 - 2 l	1	9.115 515
8	approx. 3.5 - 4 l	1	7.652 667



2

### 2 Evaporator flask pear shape, borosilicate glass 3.3

Pear shaped Evaporator flask with NS 29/32, suitable for all Rotary evaporators.

*ISOLAB*

Capacity ml	NS	PK	Cat. No.
100	29/32	1	6.237 167
250	29/32	1	6.237 711
500	29/32	1	6.243 664
1000	29/32	1	6.236 112



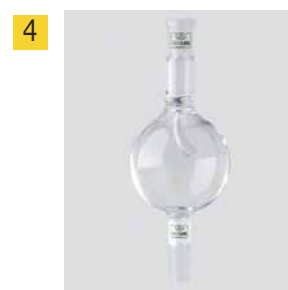
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### 3 Evaporating flasks with conical ground joint, DURAN®

Especially for rotary evaporators, with center neck and conical joint, pear-shaped, material: DURAN®

*Lenz*

Capacity ml	Socket NS	Flask diam. mm	PK	Cat. No.
50	29/32	56	1	9.196 020
100	29/32	60	1	9.196 024
250	29/32	81	1	9.196 036
500	29/32	101	1	9.196 044
1000	29/32	126	1	9.196 054
2000	29/32	158	1	9.196 063



4

### Splash head adapter, ground glass joint, borosilicate glass 3.3

Borosilicate glass 3.3. Suitable to be used in distillation assemblies to prevent raw liquid step over from flask to condenser.

*ISOLAB*

Description	Cone	Socket	PK	Cat. No.
	NS	NS		
straight	14/23	14/23	1	4.008 373 4
straight	29/32	29/32	1	6.255 503
bend	14/23	14/23	1	9.140 508
bend	29/32	29/32	1	9.140 511



5

### 5 Powder flasks with conical ground joint, DURAN®

Specially for rotary evaporators. For the drying of powder-like substances. With center neck and conical joint, with inscription label.

*Lenz*

Capacity ml	Socket NS	Flask diam. mm	PK	Cat. No.
100	29/32	60	1	6.205 965
250	29/32	81	1	6.205 966
500	29/32	101	1	6.205 512
1000	29/32	126	1	6.206 195
2000	29/32	158	1	6.205 692



6

### 6 Receiving flasks, with spherical ground glass joint, borosilicate glass 3.3

Receiving flasks with spherical ground glass joint **KS35** suitable for all Rotary evaporators.

*ISOLAB*

Capacity ml	Flask diam. mm	Socket KS	PK	Cat. No.
100	64	35	1	6.243 665
250	85	35	1	6.243 666
500	105	35	1	6.243 667
1000	131	35	1	6.243 668

#### 1 LLG-Fork clamps for spherical joints

Made of stainless steel 304. For spherical ground joint connections. With set screw.

Size	PK	Cat. No.
S13	1	9.011 797
S19	1	9.011 798
S29	1	9.011 799
S35	1	9.011 800

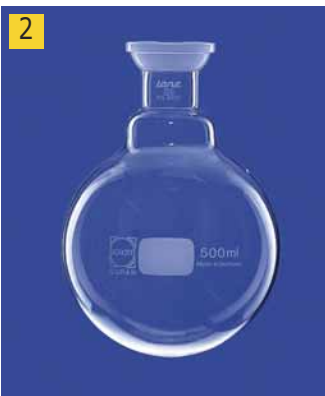


#### 2 Receiving flasks, DURAN®

Especially for rotary evaporators, with spherical joint socket S 35, with and without transparent PUR coating, autoclavable, material: DURAN®.

Lenz

Capacity	socket	Flask diam.	Description	PK	Cat. No.
ml	NS	mm			
100	35	64	uncoated	1	9.196 224
100	35	64	PUR coating	1	4.671 390
250	35	85	uncoated	1	9.196 236
250	35	85	PUR coating	1	6.269 414
500	35	105	uncoated	1	9.196 244
500	35	105	PUR coating	1	7.653 714
1000	35	131	uncoated	1	9.196 254
1000	35	131	PUR coating	1	9.812 217
2000	35	166	uncoated	1	9.196 263
2000	35	166	PUR coating	1	6.200 782



#### 3 Evaporating flasks with conical ground joint, DURAN®, with PUR coating

Lenz



Especially for rotary evaporators, with center neck and conical joint, with highly transparent PUR coating, autoclavable, pear-shaped, material: DURAN®

Capacity	Socket	Flask diam.	PK	Cat. No.
ml	NS	mm		
50	29/32	56	1	6.246 006
100	29/32	60	1	6.246 007
250	29/32	81	1	6.246 008
500	29/32	101	1	6.246 009
1000	29/32	126	1	6.246 010
2000	29/32	158	1	6.242 495
3000	29/32	175	1	6.246 011





Please note that the maximum speed of a centrifuge can be decreased due to the maximum speed value of the rotor. Maximum speed and also the reachable g-value always depends on the rotor's values.

**1**


6.263 510

**2**


6.263 515

### Mini centrifuges LLG-uniCFUGE 2 and LLG-uniCFUGE 2/5

Compact and reasonably priced mini centrifuges with two rotor types. Speed can be adjusted to 4000 min<sup>-1</sup> or 6000 min<sup>-1</sup>. Powerful motor for fast starting. Quick stop when the lid is opened.

LLG-uniCFUGE 2 with **Universal rotor** for 6 x 1.5/2.0 ml and 6 x 0.5 ml tubes and 2 times 8 x 0.2 ml PCR-strips.

LLG-uniCFUGE 2/5 with **rotor for 4 x 5 ml tubes**.

**Scope of supply:** centrifuge, mains cable

#### Specifications

Max. RCF:	1200 x g and 2000 x g
Max. speed:	4000 min <sup>-1</sup> and 6000 min <sup>-1</sup>
Motor:	brushless DC motor
Max. load:	6 x 0.5/1.5/2 ml and 2 x 8-tube PCR strips (0.2 ml) or 4 x 5 ml tubes
Dimensions (diam. x H):	140 x 120 mm
Weight:	0.7 kg
Power supply:	100 ... 240 V, 50/60 Hz
Warranty:	3 years

Description	Plug type	PK	Cat. No.
LLG-uniCFUGE 2 with universal rotor	EU	1	<b>6.263 510 1</b>
LLG-uniCFUGE 2 with universal rotor	UK	1	<b>6.263 511</b>
LLG-uniCFUGE 2/5 with rotor for 5 ml tubes	EU	1	<b>6.263 515 2</b>
LLG-uniCFUGE 2/5 with rotor for 5 ml tubes	UK	1	<b>6.263 516</b>

**3**

**3 4 5**

### Mini centrifuge LLG-uniCFUGE 3 with timer and digital display

A compact and reasonably priced mini centrifuge with brushless and non-wearing high-efficiency motor. Stepless speed adjustment from 0 to 6000 min<sup>-1</sup>. Microprocessor controlled regulation for load-independent accuracy and integrated imbalance control. Integrated timer (0 - 25 minutes) and high speed constancy for reproducible results. Quick stop when the lid is opened. 2 flow-optimised rotors for 8 x 1.5/2 ml or 16 x 0.2 ml tubes reduce noise level and heat generation. Supplied with suction feet for a stable operation.

#### The following types of vessel can be used:

- 8 x 1.5 ml micro tubes
- 8 x 2 ml micro tubes
- 16 x 0.2 ml micro tubes

#### By using the fitting adapter:

- 8 x 0.4 ml micro tubes
- 8 x 0.5 ml micro tubes

**Scope of supply:** Centrifuge, rotor for 8 x 1.5/2 ml tubes, rotor for 16 x 0.2 ml tubes, adapter for 8 x 0.2/0.4/0.5 ml tubes

#### Specifications

Max. RCF:	2000 x g
Max. speed:	variable up to 6000 min <sup>-1</sup>
Motor:	brushless DC motor
Max. load:	8 x 1.5/2 ml or 16 x 0.2 ml PCR tubes
Timer:	0 ... 25 min, continuous
Dimensions (diam. x H):	160 x 116 mm
Weight:	1.1 kg
Power supply:	100 ... 240 V, 50/60 Hz
Warranty:	3 years

**4**

**5**


Description	Plug type	PK	Cat. No.
LLG-uniCFUGE 3	EU	1	<b>6.263 520</b>
LLG-uniCFUGE 3	UK	1	<b>6.263 521</b>



#### 1 2 Mini centrifuge LLG-uniCFUGE 5 with timer and digital display

Fixed angle rotor with lid, made of aluminium for 12 x 1.5/2 ml tubes with optimised aerodynamics which minimize heat and noise during operation. Operation in RPM or RCF mode possible by simple switching. Short-Spin mode with selectable RZB and RPM values. **Large LCD (3.9") display** with intuitive interface. **Integrated imbalance-detection** with automatic shutdown. Wide suction feet provide a stable base. The centrifuge can be controlled via computer by using the included software that can store up to 99 user-defined programmes. Operational record output to Excel.

**The following types of vessel can be used:**

- 12 x 0.2 ml PCR tubes
- 12 x 0.4 ml centrifuge tubes
- 12 x 0.5 ml centrifuge tubes
- 12 x 1.5 ml centrifuge tubes
- 12 x 2.0 ml centrifuge tubes

**Scope of supply:** Centrifuge with rotor for 12 x 1.5/2 ml tubes, power supply with USB cable, 12 Adapters for 0.4/0.5 ml tubes, 12 Adapters for 0.2 ml tubes, Allen wrench with T handle, Software CD

**Optional:**

- Rotor for 16 x 0.2 ml tubes or 2 x 8 PCR-strips (Cat. No. 6.263 535)

**Specifications**

Max. RCF:	15.595 x g
Max. speed:	variable from 500 ... 15.000 min <sup>-1</sup>
Motor:	brushless DC motor
Max. load:	12 x 2 ml PCR tubes
Timer:	0 ... 999 min
Dimensions (W x D x H):	262 x 230 x 131 mm
Weight:	4 kg
Power supply:	100 ... 240 V, 50/60 Hz
Warranty:	3 years

1



2



Type	Plug type	PK	Cat. No.
LLG-uniCFUGE 5	EU	1	6.263 530
LLG-uniCFUGE 5	UK	1	6.263 531

#### Accessories for Mini centrifuge LLG-uniCFUGE 5

Description	PK	Cat. No.
Rotor for 16 x 0,2ml tubes or 2 x 8 PCR-strips	1	6.263 535

#### 3 Mini Centrifuge C1601



3

Once sample area is loaded and the lid is closed, the rotor rapidly accelerates to 6000 rpm. Ideal for bringing small droplets to the bottom of tubes for micro-filtrations or basic separations.

- Quick release rotor system, no tools needed to exchange rotors
- Electronic braking, for rapid deceleration
- Dual lid switch
- Compact, rugged design

**Scope of supply:** Mini Centrifuge C1601, Rotor for 8 x 1.5/2.0 ml tubes, Rotor for 4 x 8-strip tubes, individual adapters for 0.2 ml, 0.25 ml and 0.5 ml tubes, fits in rotor 6770-RT, power adapter 24 V

**Specifications**

Max. RCF:	2000 x g
Max. speed:	6000 rpm
Max. capacity:	8 x 1.5/2.0 ml or 4 x 0.2 ml strips
Dimensions (W x D x H):	172 x 147 x 122 mm
Power supply:	100 ... 240 V, 50/60 Hz



Type	PK	Cat. No.
C1601-B, blue lid	1	4.676 121
C1601-P, purple lid	1	6.274 868

**1**

**1 Mini-centrifuge mini G**

Mini-centrifuge for all applications which do not require high speeds, e.g. micro-filtrations and cell separation. Transparent cover allows constant observation of centrifuge. The mini-centrifuge can be used for both PCR-vessels and PCR-strips. As a safety feature, the centrifuge will run only when the lid is closed. Lid opens easily with the press of a button.

IKA

- Fixed speed of 6000 rpm
- Digital timer adjustable from 1 to 99 min
- Integrated quick stop
- Fast start-up of speed
- Compact design and quiet operation
- Rotor exchangeable without tools
- Easy operation with touch keypad

**Specifications**

Max. RCF:	2000 xg
Max. speed:	6000 rpm
Max. capacity:	8 x 2.0 ml
Timer:	1 to 99 min
Power consumption:	12 W
Dimensions (W x D x H):	155 x 175 x 105 mm
Weight:	1.4 kg
Power supply:	24V DC voltage

Type	Plug type	PK	Cat. No.
IKA mini G	UK/CH	1	9.570 480

**2**

**2 3 4 Mini-Centrifuge Sprout®/Sprout® plus**

New SnapSpin™ rotors - a new approach to compact centrifuge use! Introducing the next generation of the Sprout® mini-centrifuge loaded with new features for increased efficiency in the lab. Two new SnapSpin rotors (a six-place standard rotor and an eight-place strip rotor) snap-in and out for fast and easy changes! Plus, two sets of adapters accommodate all major microtube and PCR® tube styles (2.0, 1.5, 0.5, 0.2 mL) for customized use. The Sprout is ideal for microfilter cell separations and HPLC samples. With most spins lasting around 20 seconds, the ergonomically designed lid is specifically designed to fit in the palm of your hand for easy repeat opening and use. Made with UV resistant plastic.

Heathrow Scientific

Operation is now faster and easier: Snap in rotor, load and close. For repeated spins, simply close the lid to reactivate. An internal safety switch ensures the Sprout will not operate without the lid open. Small size offers minimal benchtop space and removable cord for compact storage.

- Low noise and vibration
- Small size
- Quick Spin feature for short spins.
- Numbered tube positions
- Unit will not operate without lid in place
- Power Adapter with power cords for worldwide usage

**3**

**Sprout® plus additionally with:**

- Locking lid for added protection when the unit is in use
- Larger lid to accommodate longer and skirted tubes and taller tube lids

**Scope of delivery:**

- Two easy change, tool-free rotors. 1. Circular, one-size rotor for six 1.5- and 2.0 ml tubes or use with adapters to spin six 0.5 ml tubes. 2. Strip rotor for two 8 x 0.2 ml PCR tube strips or 16 x individual 0.2 ml PCR tubes. Six 0.2 mL and six 0.5 mL adapters for customized use.
- Storage Case, PP - Keeps rotors and adapters contained and dust-free
- Tube Rack, PP - Convenient for handling samples before and after quick spins. For 16 x 2.0/1.5 ml micro centrifuge tubes (diam. 12 mm).
- 4 replacement lid o-rings

**4**

**Specifications**

Max. RCF:	2000 xg
Max. speed:	6000 rpm
Max. capacity:	6 x 1.5/2.0 ml tubes or 2 x 8-strips PCR
Power consumption:	7.3 W
Dimensions (W x D x H):	128 x 153 x 104 mm
Weight:	1.45kg
Power supply:	100-240 VAC, 50/60 Hz, 0.6 A
Warranty:	5 years

Type	Colour	Dimensions (W x D x H) mm	PK	Cat. No.
Sprout®	green	128 x 153 x 104	1	6.254 604
Sprout® plus	green	128 x 153 x 109	1	4.666 426
Sprout® plus	blue	128 x 153 x 109	1	4.666 427

#### 1 2 3 Centrifuge/vortexer, Combispin PCV-2400

Combined centrifuge/vortex mixer for microtubes and 0.2 ml strips. For independent centrifuge and vortex mixing, or mixing of an individual tube concurrently with spinning of multiple tubes. The vortex cup, located at the top of the central shaft, emerges through an opening in the closed lid. In spin-mix-spin applications, the Combispin can be used with very low reagent volumes. Grant

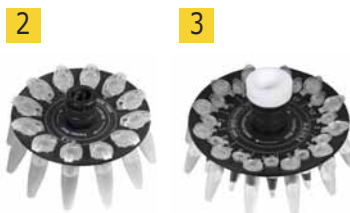
- Continuous operation or short spin
- Further rotors on option: 8 x 1.5/2.0 ml + 8 x 0.5 ml microtubes or 6 x 1.5/2.0 ml + 6 x 0.2 ml microtubes or 2 x 8-well 0.2 ml strips

**Scope of supply:** Centrifuge, rotor for 12 x 1.5 ml tubes, rotor for 12 x 0.5 ml + 12 x 0.2 ml tubes

**Specifications**

Max. RCF:	700 x g
Max. speed:	fixed at 3500 rpm
Max. capacity:	12 x 1.5 ml or 12 x 0.5 ml + 12 x 0.2 ml or 2 x 8-well strips 0.2 ml
Power consumption:	11 W
Dimensions (W x D x H):	190 x 235 x 125 mm
Weight:	2.1 kg
Power supply:	120 ... 230 VAC, 50/60 Hz, 12 VDC

Type	Description	PK	Cat. No.
PCV-2400	incl. 2 rotors	1	9.721 001



#### 4 Centrifuge Multi-spin PCV-6000

Combined centrifuge/vortex mixer for microtubes and 0.2 ml strips. For independent centrifuge and vortex mixing operations, or a programmable sequence of spin and mix phases of multiple tubes. Grant

- Vortex mixing intensity: three stage adjustment (soft, medium and hard)
- Interchangeable rotors for 2.0 ml, 1.5 ml, 0.5 ml, 0.2 ml microtube combinations and 0.2 ml strips
- Timed vortex mixing: 1 sec to 20 sec
- Supplied with 2 rotors: 12 x 1.5/2.0 ml and 12 x 0.5 ml plus 12 x 0.2 ml

**Specifications**

Max. RCF(bottom of tubes)	2350 xg
Max. speed	6000 rpm
Max. capacity:	12 x 1.5/2.0 ml or 12 x 0.5 ml plus 12 x 0.2 ml or 2 x 0.2 ml strips of 8
Spin Timer	1 sec to 30 min
Power consumption	24 W
Dimensions (W x D x H):	190 x 235 x 125 mm
Weight:	2.5 kg
Power supply:	100 - 240 V, 50/60 Hz
Input voltage	24 V

Type	Description	PK	Cat. No.
PCV-6000	Centrifuge Multi-spin	1	9.721 004



#### 5 Centrifuge CVP-2

The CVP-2 enables the simultaneous sample preparation of multiple samples at one time. Versatile through being able to hold non-, semi- and fully-skirted PCR plates with no additional accessories required. Grant

- Centrifuge and vortex mixer combined for significant time saving
- Independent vortex and centrifuge timers with up to 999 cycles
- Adjustable rpm or 4 programmable presets
- Consistent preparation of up to 192 samples continuously

**Specifications**

Max. RCF:	245 xg
Max. speed Centrifuge/Vortexer:	300 to 1500 rpm/300 to 1200 rpm
Max. capacity:	2 PCR plates
Timer Centrifuge/Vortexer:	0 to 30 min/0 to 60 sec
Power consumption:	24 W
Dimensions (W x D x H):	285 x 350 x 190 mm
Weight:	approx. 6 kg
Power supply:	100 - 240 V, 50/60 Hz
Input voltage:	24 V

Type	Description	PK	Cat. No.
CVP-2		1	6.269 768



**1**


### 1 Minicentrifuges MiniSpin® and MiniSpin® plus (General Lab Product)

Eppendorf AG

The powerful and user-friendly MiniSpin® and MiniSpin® plus microcentrifuges are extremely compact and have a small footprint. Depending on your needs, you can choose between two models. MiniSpin® plus provides the speed required for molecular biology separations.

- Especially quiet due to its carefully balanced drive
- Maintenance-free motor
- Clear digital display
- Minimal sample heating (after 20 min. at max. speed only 12 °C max.)
- Separate short-spin button
- Automatic lid opening
- Integral power supply unit
- Capacity: 12 x 1.5/2 ml containers
- Autoclavable rotor (121 °C, 20 min.)
- Start-up/slow-down time less than 13 secs. (to/from max. speed).

#### Additional features of MiniSpin®

- Includes standard anodised aluminium rotor
- Timer can be set for up to 30 minutes

#### Additional features of MiniSpin® plus

- Includes "Black Line" aluminium rotor
- Speed/rcf display switch
- Timer can be set for up to 99 minutes
- Permanent centrifuging option

**This centrifuges are General Lab Products for research purposes.**

#### Specifications

	MiniSpin® // MiniSpin® plus
Max. RCF:	12.100 x g // 14.100 x g
Max. speed:	13.400 rpm // 14.500 rpm
Max. capacity:	12 x 1.5/2 ml tubes
Timer:	15 s to 30 min // 15 s to 90 min, continuous run
Power consumption:	70 W // 85 W
Dimensions (W x D x H):	226 x 239 x 130 mm // 226 x 239 x 120 mm
Weight:	4.3 kg
Power supply:	230 V, 50/60 Hz

Type	Plug type	PK	Cat. No.
MiniSpin®	EU	1	<b>4.660 583</b>
MiniSpin®	UK	1	<b>4.660 584</b>
MiniSpin® plus	EU	1	<b>4.660 585</b>
MiniSpin® plus	UK	1	<b>4.660 586</b>

**Online also available as IVD version.**

**2**


### 2 Mini Plate Spinner MPS 1000

Labnet

Centrifuge designed specifically for quick and easy centrifugation of samples in PCR plates or microplates.

- Capacity for two standard plates
- Accepts skirted, non-skirted and all standard PCR plates
- Use before and after thermal cycling to increase PCR yield
- Top loading design
- Exceptionally small footprint

#### Specifications

Max. RCF:	500 xg
Max. speed:	2500 rpm
Max. capacity:	2 PCR Plates
Power consumption:	75 W
Dimensions (W x D x H):	160 x 160 x 180 mm
Weight:	1.5 kg
Power supply:	230V 50/60 Hz

Type	PK	Cat. No.
MPS 1000	1	<b>9.945 790</b>

#### 1 General purpose centrifuge LMC-3000



1

Low speed benchtop centrifuge for biomedical applications with changeable rotors for accommodating centrifuge tubes (10 to 15 ml or 50 ml) or standard 96-well microtitre plates. Suitable for a wide range of analytical applications including biomedical, bio-organic and immunoenzyme analysis.

- Easy set-up of spin speed and time via 2-line LCD display and push buttons
- Powerful and quiet motor (59.4 dBA) with soft start-up and run-down function
- Timer with automatic switch-off
- Automatic imbalance switch-off
- Lid lock when centrifuge is running
- Sturdy metal housing and lid
- Compact design with small footprint

**Please order rotors separately.**

#### Specifications

Max. RCF tubes/microplates:	1700 x g/560 x g
Max. speed tubes/microplates:	100 ... 3000 rpm/100 ... 2000 rpm
Max. capacity:	12 tubes or 2 microplates
Timer:	1 ... 90 min
Power consumption:	120 W
Dimensions (W x D x H):	495 x 410 x 235 mm
Weight:	11.8 kg
Power supply:	230 V, 50/60 Hz

Type	PK	Cat. No.
LMC-3000	1	4.664 238



#### 2 Centrifuge LMC-4200R



2

Refrigerated Centrifuge for temperature control of biomaterial during cell suspension separation. For use in incubators and closed laboratory rooms. It ensures conditions necessary for reproducibility of sample preparation stage connected with cell destruction and extraction of its heat-labile components (metabolites, enzymes, hormonal factors, cytokines, etc.). With changeable rotors for accommodating centrifuge tubes (10 to 15 ml or 50 ml) or standard 96-well microtitre plates.

- Easy set-up of spin speed and time via 2-line LCD display and push buttons
- Powerful and quiet motor (65 dBA) with soft start-up and run-down function
- Timer with automatic switch-off
- Automatic imbalance switch-off
- Lid lock when centrifuge is running
- Sturdy metal housing and lid
- Compact design with small footprint

**Please order rotors separately.**

#### Specifications

Max. RCF tubes/microplates:	3370 x g/560 x g
Max. speed tubes/microplates:	100 ... 4200 rpm/100 ... 2000 rpm
Temperature range:	-10 ... +25 °C
Max. capacity:	12 tubes or 2 microplates
Timer:	1 ... 90 min
Power consumption:	990 W
Dimensions (W x D x H):	635 x 580 x 335 mm
Weight:	62 kg
Power supply:	230 V, 50/60 Hz

Type	PK	Cat. No.
LMC-4200R	1	4.671 981



#### Rotors for Centrifuges LMC-3000/LMC-4200R



3

Type	Description	PK	Cat. No.
R-2	Rotor for 2 x 96 well microplates	1	6.311 291 3
R-24GC	Rotor for 24 Gel cards	1	4.671 973



6.311 291



1



### 1 Midi centrifuge G-L

Due to the material separation at medium speeds, this midi centrifuge is ideal for all types of separation processes, such as in molecular biology. It can be used with standard 1.5/2 ml tubes as well as with PCR strips. The cover opens automatically at the press of a button.

IKA

- High-performance motor
- With metal cover
- Starts only when the cover is firmly closed
- Direct and easy setting of speed, rotational speed and programmes via membrane keypad

**Scope of delivery:** Midi centrifuge inkl. metal rotor and cover for 12 vessels, with a capacity of 1.5/2 ml

#### Specifications

Max. RCF:	16.500 x g
Max. speed:	15.700 min <sup>-1</sup>
Max. capacity:	12 x 1.5/2.0 ml
Power consumption:	65 W
Dimensions (W x D x H):	200 x 280 x 140 mm
Weight:	3.9 kg
Power supply:	220 ... 230 V, 50 ... 60 Hz
Protection class:	IP 20

Type	PK	Cat. No.
G-L	1	4.664 755

2



9.945 795

### Microcentrifuge Prism™/Prism™ R

Operation can be timed, continuous or momentary, using the "quick" button. Vibration free operation is ensured by an isolation system. In the event of a significant imbalance, operation of the centrifuge is automatically stopped. Deceleration at the end of a run is very quick, but will not disrupt samples. Supplied with a uniquely designed 24 x 1.5 ml/2.0 ml rotor that allows easy access to the tops of the sample tubes. Individual tube slots in the solid aluminum rotor support tubes along their length and contain the sample in the event of tube failure. The rotor is seated on a tapered shaft which facilitates easy removal for cleaning and autoclaving.

Labnet

Adapters for smaller tubes and PCR strips -please order separately.

#### Specifications

Max. RCF	
Prism™:	21.200 xg
Prism™ R:	17.135 xg
Max. speed	
Prism™:	500 ... 15.000 rpm
Prism™ R:	500 ... 13.500 rpm
Max. capacity:	24 x 1.5/2.0 ml
Cooling temperature Prism™ R:	-10 ... 40 °C
Timer:	0.5 to 99 minutes or continuous, "Quick" button for momentary operation
Power consumption	
Prism™:	210 W
Prism™ R:	500 W
Dimensions (W x D x H)	
Prism™:	240 x 350 x 190 mm
Prism™ R:	277 x 450 x 247.5 mm
Weight	
Prism™:	9.6 kg
Prism™ R:	20 kg
Power supply:	230 V, 50 Hz or 120 V, 60 Hz

3



9.945 793

Description	PK	Cat. No.
Prism ambient microcentrifuge with 24 place rotor	1	9.945 795 2
Prism R ambient microcentrifuge with 24 place rotor and cooling	1	9.945 793 3
StripSpin adapter for 0.2 ml tubes and strips	1	9.945 794
Individual adapter for 0.5/0.6 ml tubes	6	9.945 796
Individual adapter for 0.4/0.25 ml tubes	6	9.945 797
Individual adapter for 0.2ml thermal cycling tubes	6	9.945 798



### 1 Microcentrifuge 226R

**NEW**

1

Labnet

This refrigerated universal microcentrifuge is a tabletop unit for general laboratory use. It is suitable for industrial, biochemical, medical, veterinary and other research laboratories.

- Centrifuge with cooling
- Button for faster cooling (to 4 °C within 6 minutes)
- 99 user programs
- 10 acceleration and deceleration settings
- Large graphic LC-display
- Automatic lid opening
- Unbalance sensor
- Emergency lid lock release
- Motor thermal protection
- Maintenance free induction motor



**Please order rotors separately.**

**Specifications**

Max. RCF:	21382 x g
Max. speed:	90 ... 15000 rpm
Max. capacity:	90 ml
Temperature range:	-20 °C ... 40 °C
Timer:	1 sec. ... 99 h 59 min 59 sec.
Dimensions (W x D x H):	299 x 595 x 283 mm
Weight:	31 kg
Power consumption:	500 W
Power supply:	230 V

Type	PK	Cat. No.
226R	1	4.676 139

### Accessories for Microcentrifuge 226R

**NEW**

Labnet

Type	Description	PK	Cat. No.
C0226-125	Fixed angle rotor, 12 x 5 ml	1	4.676 140
C0226-610	Fixed angle rotor, 6 x 10 ml	1	4.676 144
C0226-615	Fixed angle rotor, 6 x 15 ml	1	4.676 145
C0226-4PCR	Fixed angle rotor, 4 x 8 x 0.2 mL PCR strip tubes	1	4.676 143
C0226-242	Fixed angle rotor, 24 x 1.5/2.0 ml, hermetically sealed lid	1	4.676 141
C0226-242SC	Fixed angle rotor, 24 x 2 ml filter tubes/spin columns, hermetically sealed lid	1	4.676 142



### Benchtop centrifuge 336/336R

**NEW**

Labnet

These high performance centrifuges are capable of high speed operation. Suitable for industrial, biochemical, medical, veterinary laboratories and basic research. Available as non-refrigerated (C0336) and refrigerated (C0336R) models.

- 100 user programs
- Password protection
- Programmable density setting for samples > 1.2 g/cm<sup>3</sup> (automatic max. speed correction)
- Large graphical LC-display
- Automatic lid opening, start blocking at opened lid
- Emergency lid lock release
- Unbalance sensor
- Maintenance free induction motor

**Please order rotors separately.**

#### Specifications

Max. RCF:	24270 x g
Max. speed:	90 ... 18000 rpm
Max. capacity:	400 ml
Temperature range:	-20 °C ... 40 °C (C0336R)
Timer:	1 sec. ... 99 h 59 min 59 sec.
Dimensions (W x D x H):	365 x 495 x 320 (C0336)/365 x 660 x 320 (C0336R)
Weight:	28 kg (C0336)/47 kg (C0336R)
Power consumption:	250 W (C0336)/600W (C0336R)
Power supply:	230 V

Type	PK	Cat. No.
C0336	1	4.676 146 1
C0336R	1	4.676 147 2

**1**


4.676 146

**2**


4.676 147

### Accessories for Benchtop centrifuge 336/336R

**NEW**

Labnet

Type	Description	PK	Cat. No.
C0336-3016	Fixed angle rotor with buckets, 30 x 10 ml	1	4.676 153
C0336-3015	Fixed angle rotor with buckets, 30 x 15 ml	1	4.676 152 3
C0336-850F	Fixed angle rotor with buckets, 8 x 50 ml tube	1	4.676 148 4
C0336-850G	Fixed angle rotor with buckets and PC caps, 8 x 50 ml tube	1	4.676 149
C0336-HEM	Fixed angle rotor, hematocrite	1	4.676 156
C0336-125F	Angle rotor, 12 x 5 ml tubes, hermetically sealed lid	1	4.676 150
C0336-362	Angle rotor, 36 x 2/1.5 ml tubes, hermetically sealed lid	1	4.676 154
C0336-2MP	Swinging rotor, for 2 microplates with 2 hangers	1	4.676 151
C0336-4100	Swinging bucket rotor, 4 x 100 ml (buckets not included)	1	4.676 155 5
C0336-100B	100 ml bucket for C0336-4100	1	4.676 157
C0336-100BC	100 ml buckets with cap for C0336-4100	1	4.676 158
C0336-C15	Carrier for standard 15 ml centrifuge tubes for C0336-850F or C0336-850G	1	4.676 159
C0336-C50	Round carriers for 50 ml C0336-100B	1	4.676 160
C0336-133AD	Round carrier 13.3 mm for C0336-3015 or C0336-3016	1	4.676 161
C0336-4VAC	Round carrier 4 x 15/10 ml for Vacutainer® tubes for C0336-4100	4	4.676 162

**3**


4.676 152

**4**


4.676 148

**5**


4.676 155

#### Microcentrifuge Sigma 1-14/1-14K

Available as uncooled (Sigma 1-14) and cooled (Sigma 1-14K) model.

- Clearly organised display
- Large buttons
- Zero-maintenance motor
- Motorised cover lock, automatic lid unlocking
- Speed/RCF indication
- Two acceleration and braking curves, soft or fast
- Window in lid for independent speed measurement
- Overspeed monitoring
- Manufactured in compliance with EN 61010-2-020

*Sigma-Laborzentrifugen*

1



6.263 897

#### Cooled centrifuge Sigma 1-14K

- Stainless steel bowl
- Quick cool program
- 10 programs
- R134a refrigerant (CFC-free)

**Please order rotor separately. Further rotors available on request.**

#### Specifications

Max. RCF Sigma 1-14/1-14K:	16.163 x g/16.602 x g
Max. speed Sigma 1-14/1-14K:	14.800 rpm/15.000 rpm
Max. capacity:	24 x 1.5/2 ml
Cooling temperature 1-14K:	-10 to +40 °C
Timer:	10 s to 99 min
Power consumption Sigma 1-14/1-14K:	95 W/230 W
Dimensions (W x D x H) Sigma 1-14/1-14K:	266 x 212 x 176 mm/515 x 273 x 236 mm
Weight Sigma 1-14/1-14K:	6 kg/19 kg
Power supply:	220-240 V, 50/60 Hz

2



6.234 818

Type	PK	Cat. No.
Microcentrifuge Sigma 1-14	1	6.234 817
Microcentrifuge Sigma 1-14K	1	6.263 897 1
Fixed-angle rotor, aluminium, 12 x 1.5/2.0 ml, incl. lid, PS	1	6.234 818 2
Fixed-angle rotor, PP, 24 x 1.5/2.0 ml, incl. lid, PS	1	6.241 448
Fixed-angle rotor, aluminium, 24 x 1.5/2.0 ml, incl. lid, PS	1	6.259 496

#### 3 Benchtop centrifuge Sigma 2-7

Innovative LED running indicator, with blue light

- Clearly organised display
- Large buttons
- Motorised lid lock for easy, effortless operation
- Low noise level, 55 dB(A) at maximum speed
- Corrosion-resistant, easily cleaned stainless steel drum
- Automatic method for serum tubes
- 10 program memory slots
- Low temperature rise in continuous operation
- Zero-maintenance motor
- Two acceleration and braking curves: soft and fast
- Compact device fits on every lab bench
- Imbalance monitoring and shutdown
- Overspeed monitoring
- Window in lid for independent speed measurement
- Manufactured in compliance with EN 61010-2-020

*Sigma-Laborzentrifugen*

3



**Please order rotor separately. Further adapters for beakers on request.**

#### Specifications

Max. RCF:	2540 x g
Max. speed:	4000 rpm
Max. capacity:	30 x 15 ml/4 x 100 ml
Timer:	10 s bis 99 min
Power consumption:	210 W
Dimensions (W x D x H):	378 x 535 x 293 mm
Weight:	23 kg
Power supply:	100-240 V, 50/60 Hz

Type	PK	Cat. No.
Sigma 2-7	1	6.281 131
Fixed-angle rotor, 20 x 15 ml incl. 10 Sets of beakers	1	6.242 155
Swing-out rotor, 2-place	1	6.287 820
Multicarrier, plastic, for 4 vessels 5-15 ml	2	6.701 260

**1**


6.262 862

### Laboratory centrifuge Sigma 2-16P/2-16KL

Available as uncooled (Sigma 2-16P) and cooled (Sigma 2-16KL) model.

*Sigma-Laborzentrifugen*

- Universal laboratory centrifuge for swing-out and fixed-angle rotors
- Spincontrol Universal
- Backlit Start, Stop, and Lid Open buttons
- Sedimentation in swing-out vials up to 4 x 100 ml or up to 20.000 x g in fixed-angle rotor
- Zero-maintenance brushless drive
- Selectable speed up to 15.000 rpm
- Low-speed operation down to 100 rpm also possible
- Rotor identification prevents overspeed operation
- Stainless-steel centrifuge bowl
- Imbalance switch
- Easy lid opening with gas spring support
- Window in lid for independent speed checking
- Produced in compliance with the latest national and international standards (e.g. EN 61010-2-020)

#### Cooled centrifuge Sigma 2-16KL

- Spincontrol L
- Universal laboratory centrifuge with speed range up to 15.300 rpm
- Rotor cooling also possible at standstill, CFC-free refrigerant

**Please order rotor separately. Further rotors available on request.**

#### Specifications

Max. RCF Sigma 2-16P/2-16KL:	20.627 x g/21.913 x g
Max. speed Sigma 2-16P/2-16KL:	15.000 rpm/15.300 rpm
Max. capacity:	4 x 100 ml
Cooling temperature 2-16KL:	-10 to +40 °C
Power consumption Sigma 2-16P/2-16KL:	340 W/720 W
Dimensions (W x D x H) Sigma 2-16P/2-16KL:	365 x 452 x 300 mm/550 x 570 x 310 mm
Weight Sigma 2-16P/2-16KL:	32 kg/60 kg
Power supply:	220-240 V, 50/60 Hz

Type	PK	Cat. No.
Laboratory centrifuge Sigma 2-16P	1	<b>6.242 154</b>
Laboratory centrifuge Sigma 2-16KL	1	<b>6.262 862 1</b>
Fixed-angle rotor, 20 x 15 ml incl. 10 Sets of beakers	1	<b>6.242 155</b>
Fixed-angle rotor, 30 x 1,5/2,0 ml, incl. lid, aluminium (only for 2-16P)	1	<b>6.287 702</b>
Fixed-angle rotor, 12 x 5 ml, Eppendorf tubes, incl. lid, aluminium	1	<b>6.287 705</b>
Swing-out rotor for micro plates, incl. 1 Set of carriers	1	<b>6.287 709</b>
Micro-haematocrit rotor, for 24 capillary tubes diam 1.5 x 75 mm, 50 µl	1	<b>6.287 713</b>

**2**


### Benchtop centrifuge Sigma 3-18KS

- Universal refrigerated benchtop centrifuge for various swing-out and fixed-angle rotors

*Sigma-Laborzentrifugen*

- User-friendly Spincontrol S controller
- Backlit Start, Stop, and Open Lid buttons
- Zero-maintenance induction motor
- Suitable for low speeds
- Magnetic rotor identification
- Stainless-steel centrifuge bowl
- Unbalance switch
- Motorised lid lock
- Emergency opening of lid without opening of housing
- Window in lid for external speed monitoring
- Complies with the latest national and international standards (EN 61010-2-020)
- Rotor cooling also possible at standstill; CFC-free R134a refrigerant

**Please order rotor separately. Further rotors, beakers and adapters available on request.**

#### Specifications

Max. RCF:	30.070 x g
Max. speed:	18.000 rpm
Max. capacity:	4 x 400 ml
Cooling temperature:	-20 to +40 °C
Power consumption:	1010 W
Dimensions (W x D x H):	630 x 600 x 355 mm
Weight Sigma:	78 kg
Power supply:	220-240 V, 50/60 Hz

Type	PK	Cat. No.
Sigma 3-18KS	1	<b>6.280 588</b>
Fixed-angle rotor, 24 x 1.5/2.0 ml, incl. lid, aluminium	1	<b>6.900 875</b>
Swing-out rotor for micro plates, incl. 1 Set of carriers	1	<b>6.253 591</b>
Swing-out rotor, 4-place	1	<b>6.203 812 3</b>

**3**


6.203 812

#### 1 Microlitre centrifuge Z 167 M

The Z 167 M is ideally suited for the routine centrifugation of reaction tubes. Equipped with a powerful drive, it accelerates the 18 x 1.5/2.0 ml rotor in a very short time to approx. 16.000 xg.

*Hermle*

Color visual representation of the operating state such as standstill, sleep mode or centrifugation.

- Microprocessor with large LCD display
- Electromagnetic lid lock
- Active imbalance identification and cut-off
- Air Cooling System
- Permanent indication of pre-set and actual values
- Storage of up to 99 runs
- Noise level < 57 dBA, at max. speed
- Splash-proof foil keyboard with touch function
- Manufactured in accordance to International Safety Regulations, i.e. IEC 61010

**Scope of supply:** Microlitre centrifuge Z 167 M incl. angle rotor for 18 x 1.5/2.0 ml

#### Specifications

Max. RCF:	15.994 xg
Max. speed:	14.000 rpm
Max. capacity:	18 x 1.5/2.0 ml
Timer:	59 min 50 s/10 s increments 99 h 59 min/1 min increments
Power consumption:	130 W
Dimensions (W x D x H):	280 x 350 x 240 mm
Weight:	12 kg
Power supply:	230 V, 50/60 Hz

Description	PK	Cat. No.
Microlitre centrifuge Z 167 M incl. angle rotor for 18 x 1.5/2.0 ml	1	4.665 708



1

#### 2 Microlitre centrifuge Z 216 M/Z 216 MK

The Z 216 M and Z 216 MK are setting new standards in this centrifuge class. Capable of centrifuging up to 44 x 1.5/2.0 ml at each run. Due to their compact design and quiet running properties they are fitting perfectly in their working area. The powerful refrigeration system of Z 216 MK keeps samples at temperatures as low as 4 °C during a continuous run at 20000 xg.

*Hermle*

- Maintenance-free induction drive
- Microprocessor with large LCD Display
- Motor driven lid lock
- Active imbalance-identification and cut off
- Standstill cooling
- Audible signal at the end of each run
- Rapid acceleration and deceleration (see rotor data)
- Lowest sample temperature 4 °C at 20000 xg
- Noise level < 60 dBA at 20000 xg
- Extremely compact with a space saving footprint
- Quick access to samples with a snap on lid
- Aerosol tight rotor option
- Manufactured according to international safety regulations, i.e. IEC 61010
- Distinct control panel

#### Specifications

#### Z 216 M/Z 216 MK

Max. RCF:	21379 xg
Max. speed:	15000 rpm
Max. capacity:	44 x 1.5/2.0 ml
Cooling temperature Z 216 MK:	-20 to 40 °C
Timer:	59 min 50 sec/10 sec increments 99 h 59 min/1 min increments
Power consumption:	280 W/560 W
Dimensions (W x D x H):	280 x 390 x 290 mm/280 x 550 x 290 mm
Weight:	17 kg/35 kg
Power supply:	230 V, 50/60 Hz

Description	PK	Cat. No.
Microlitre centrifuge Z 216 M without rotor	1	7.660 217
Refrigerated microlitre centrifuge Z 216 MK without rotor	1	6.231 520
Refrigerated microlitre centrifuge Z 216 MK incl. angle rotor 24 x 1.5/2.0 ml	1	6.230 074
Angle rotor 24 x 1.5/2.0 ml	1	6.268 964
Angle rotor for 4 x 8 PCR Stripes	1	6.287 481
Angle rotor for 12 x 5 ml reaction vessels, closable	1	7.660 218
Angle rotor for 24 x 1.5/2.0 ml reaction vessels, closable	1	6.270 209



7.660 217

2



1



### 1 Microliter Centrifuge Z 207 M

The Microliter Centrifuge, Z 207 M was designed specifically for small, compact spaces, suitable in any laboratory setting. Option for two different rotor types: a Fixed-angle rotor for 24 x 1.5/2.0 ml (also hermetically sealed available) and a rotor for Spin Column Kits. Distinct control panel "Touch" function for easy operation, also with gloves. Optimum air cooling of the samples even at maximum speed.

Hermle

- Maintenance-free induction drive
- Rapid acceleration and deceleration
- Noise level below 60 dBA at 17.317 x g
- Microprocessor with large LCD Display
- Active imbalance-identification and cut off
- Audible signal at the end of each run
- Quick access to samples with a snap on lid
- Manufactured according to international safety regulations, i.e. IEC 61010
- Quick-key for short runs
- Storage of up to 99 runs

**Without rotor. Please order separately.**

#### Specifications

Max. RCF:	17.317 x g
Max. speed:	13.500 rpm
Max. capacity:	24 x 1.5/2.0 ml
Timer:	59 min 50 sec/10 sec increments 99 h 59 min/1 min increments
Power consumption:	170 W
Dimensions (W x D x H):	280 x 350 x 240 mm
Weight:	12.5 kg
Power supply:	230 V, 50/60 Hz

2



6.290 911

3



6.290 912

Description	PK	Cat. No.
Microliter Centrifuge Z 207 M	1	6.290 909
Fixed-angle rotor 24 x 1.5/2.0 ml	1	6.290 910
Fixed-angle rotor 24 x 1.5/2.0 ml, hermetically sealed	1	6.290 911 2
Fixed-angle rotor 18 x for Spin Column Kits	1	6.290 912 3

4



### 4 Compact centrifuge Z 206 A

The Z 206 A accepts up to 12 x 15 ml conical and round bottom tubes. For tubes with smaller dimensions we offer several adapters. For larger volumes we offer an angle rotor for 6 x 50 ml conical and round bottom tubes.

Hermle

- Microprocessor with LCD display
- Electrical lid lock
- Pre-selection of the rotor type
- Active imbalance-identification and cut off
- Manufactured according to international safety regulations, i.e. IEC 61010
- Noise level under 60 dBA at max. speed
- A large variety of rotors and accessoires
- Easy change of rotors
- Distinct control panel

#### Specifications

Max. RCF:	4427 x g
Max. speed:	6000 rpm
Max. capacity:	6 x 50 ml
Timer:	59 min 50 sec/10 sec increments 99 h 59 min/1 min increments
Power consumption:	100 W
Dimensions (W x D x H):	280 x 370 x 260 mm
Weight:	12 kg
Power supply:	230 V, 50/60 Hz

5



9.945 728

Description	PK	Cat. No.
Compact centrifuge Z 206 A without rotor	1	9.945 737
Compact centrifuge Z 206 A incl. angle rotor 12 x 15 ml	1	9.945 738
Angle rotor 12 x 15 ml	1	9.945 728 5
Angle rotor 6 x 50 ml	1	9.945 729
Angle rotor 18 x 1.5 / 2.0 ml	1	9.945 739
Swing out rotor 6 x 5 ml	1	9.945 740



#### 1 Compact centrifuge Z 207 A

The Compact Centrifuge, Z 207 A for 8 x 15 ml tubes is ideal for use with small sample sizes. Distinct control panel "Touch" function for easy operation, also when working with gloves.

Hermle

- Microprocessor with large LCD display
- Electrical lid lock
- Active imbalance-identification and cut off
- Manufactured according to international safety regulations, i.e. IEC 61010
- Noise level < 60 dBA at max. speed
- Adapter for tubes with low volume
- Quick-key for short runs
- Storage of up to 99 runs

**Scope of supply:** Compact centrifuge Z 207 A incl. angle rotor for 8 x 15 ml

1



#### Specifications

Max. RCF:	4445 x g
Max. speed:	6800 rpm
Max. capacity:	8 x 15 ml
Timer:	59 min 50 sec/10 sec increments 99 h 59 min/1 min increments
Power consumption:	50 W
Dimensions (W x D x H):	280 x 350 x 240 mm
Weight:	8 kg
Power supply:	100-230 V, 50/60 Hz

Description	PK	Cat. No.
Compact centrifuge Z 207 A incl. angle rotor for 8 x 15 ml	1	7.971 698

#### 2 Refrigerated high speed centrifuge Z 32 HK

With a wide range of accessories, the Z 32 HK high speed centrifuge is applicable in a wide variety of research settings. In spite of the remarkably small footprint, the Z 32 HK features a powerful refrigeration system capable of maintaining cool sample temperatures even at maximum speed.

Hermle

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection immediately upon rotor installation
- Active imbalance identification and cut off rotor specific
- Imbalance tolerant drive
- CFC-free refrigeration system
- A large variety of rotors and accessories
- Manufactured according to international safety regulations, i.e. IEC 61010
- Audible signal at the end of each run with several melody options
- Quick and easy rotor exchange
- Noise level under 60dBA at max. speed
- Distinct control panel

**Without rotor. Please order separately.**

2



#### Specifications

Max. RCF:	38007 x g
Max. speed:	20000 rpm
Max. capacity:	4 x 100 ml
Cooling temperature:	-20 to +40 °C in 1 °C increments
Timer:	59 min 50 sec/10 sec increments 99 h 59 min/1 min increments
Power consumption:	1200W
Dimensions (W x D x H):	400 x 700 x 360 mm
Weight:	71 kg
Power supply:	230 V, 50/60 Hz

Description	PK	Cat. No.
Refrigerated High Speed Centrifuge Z 32 HK	1	6.240 037



6.241 114

### Universal centrifuges Z 326/Z 326 K

Universal laboratory centrifuge for large volumes (4 x 145 ml) to reaction vessels.

*Hermle*

- Maintenance-free induction drive
- Motor driven lid lock
- Automatic rotor identification system with over speed protection, immediately upon rotor insertion
- Active imbalance-identification and cut off (rotor specific)
- CFC free refrigeration system (Z 326 K)
- A large variety of rotors and accessories
- Manufactured according to international safety regulations, i.e. IEC 61010
- Audible signal at the end of each run
- Noise level under 60 dBA at max. speed
- Optimized airflow system keeps the samples cool (Z 326)

**Without rotor. Please order separately.**



4.665 884

4.665 845

#### Specifications

Max. RCF:  
Max. speed:  
Max. capacity:  
Cooling temperature Z 326 K:  
Timer:

#### Z 326 // Z 326 K

23542 x g  
18000 rpm  
4 x 145 ml  
-20 to +40 °C in 1 °C increments  
59 min 50 sec/10 sec increments  
99 h 59 min/1 min increments  
455 // 660 W  
400 x 480 x 360 // 400 x 700 x 360 mm  
43 // 60 kg  
230 V, 50/60 Hz

Power consumption:

Dimensions (W x D x H):

Weight:

Power supply:



4.665 880

Description	PK	Cat. No.
Universal centrifuges Z 326	1	<b>6.241 114 1</b>
Universal centrifuges Z 326 K	1	<b>6.238 613</b>
Swing out Rotor, 4 place	1	<b>4.665 884 2</b>
Swing out Rotor, 4 place	1	<b>4.665 845 3</b>
Angle rotor for max. 12 x 15 ml	1	<b>9.945 950</b>
Angle rotor for max. 6 x 50 ml	1	<b>9.945 951</b>
Angle rotor for max. 6 x 85 ml	1	<b>4.665 880 4</b>



### 5 Universal Centrifuge Z 306

The small, universal laboratory centrifuge offers a wide range of applications, which covers clinical laboratory requirements, research, as well as industrial laboratory use. The Z 306 offers many accessories, including rotors for microtitreplates and high speed fixed angle rotors for reaction vessels or centrifuge tubes up to 50 ml. Additionally, swing out rotors, which hold a volume of 4 x 100 ml can be used with special adapters for tissue culture tubes and also for all common blood tubes.

*Hermle*

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Lid lock
- Automatic rotor identification system with over speed protection, immediately upon rotor insertion
- Active imbalance-identification and -cut off (rotor specific)
- Imbalance tolerant drive
- Manufactured according to international safety regulations, i.e. IEC 61010
- Audible signal at the end of each run
- Rotor exchange is easy to handle
- Noise level under 63 dBA at max. speed
- Improved ventilation system keeps samples cool
- Stainless steel chamber

**Without rotor. Please order separately.**

#### Specifications

Max. RCF: 18.624 x g  
Max. speed: 14.000 rpm  
Max. capacity: 4 x 100 ml  
Timer: 59 min 50 s/10 s increments  
99 h 59 min 50 s/1 min increments  
Dimensions (W x D x H): 355 x 474 x 330 mm  
Weight: 30 kg  
Power supply: 230 V, 50/60 Hz

Type	PK	Cat. No.
Universal Centrifuge Z 306	1	<b>6.255 833</b>

#### Universal centrifuge Z 366/Z 366 K

These universal table top centrifuges Z 366 and Z 366 K putting new scales regarding the versatility, running features, easy handling and design. Both, the tube capacity of 40 x 15 ml conical tubes and centrifugal forces up to 24325 xg, turning these table top centrifuges Z 366 and Z 366 K into universal high-powered centrifuges.

- Maintenance-free induction drive
- Microprocessor with large LCD Display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection, immediately upon rotor insertion
- Active imbalance-identification and cut off
- CFC-free refrigeration system
- A large variety of rotors and accessories
- Manufactured according to international safety regulations, i.e. IEC 61010
- Audible signal at the end of each run with several melody options
- Rotor exchange is easy to handle
- Noise level < 63 dBA (depends on rotor)
- Optimized airflow system keeps the samples cool

**Without rotor. Please order separately.**

#### Specifications

Max. RCF Z 366/Z 366 K:	21379/24325 x g
Max. speed Z 366/Z 366 K:	15000/16000 rpm
Max. capacity:	6 x 250 ml
Cooling temperature Z 366 K:	-20 °C to 40 °C
Timer:	59 min 50 sec/10 sec increments 99 h 59 min/1 min increments
Power consumption Z 366/Z 366 K:	530 W/800 W
Dimensions (W x D x H) Z 366/Z 366 K:	430 x 510 x 360 mm/720 x 510 x 360 mm
Weight Z 366/Z 366 K:	52 kg/77 kg
Power supply:	230 V, 50/60 Hz

Type	PK	Cat. No.
Universal Centrifuge Z 366	1	7.626 860 1
Universal Centrifuge Z 366 K	1	6.268 605 2

1

Hermle



7.626 860

2



6.268 605

#### Universal centrifuge Z 446/Z 446 K

Cooled and uncooled table centrifuge for a variety of different vessels due to a wide range of various rotors.

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection, immediately upon rotor insertion
- Active imbalance identification and cut off (rotor-specific)
- CFC-free refrigeration system
- A large variety of rotors and accessories
- Audible signal at the end of each run
- Permanent display of target and actual value
- 10 acceleration and 10 braking profiles
- Memory for 99 complete runs, incl. rotor type
- Noise level < 65 dBA (depend on rotor)
- Manufactured according to international safety regulations, i. e. IEC 61010
- Stainless steel chamber

**Without rotor. Please order separately.**

#### Specifications

Max. RCF Z 446/Z 446 K:	24325 xg/26328 xg
Max. speed	200 to 16000 min <sup>-1</sup>
Max. capacity:	4 x 750 ml
Cooling temperature Z 446 K:	-20 to +40 °C
Timer:	59 min 50 sec/10 sec increments 99 h 59 min/1 min increments
Power consumption Z 446/Z 446 K:	640 W/1630 W
Dimensions (W x D x H) Z 446/Z 446 K:	540 x 670 x 390 mm/730 x 670 x 390 mm
Weight Z 446/Z 446 K:	79 kg/111 kg
Power supply:	230 V, 50/60 Hz

Type	PK	Cat. No.
Universal centrifuge Z 446	1	6.282 843
Universal centrifuge Z 446 K	1	6.268 644 3

3

Hermle



6.268 644

**1**


4.670 663

### Floor-standing centrifuges ZK 496

**NEW**

Hermle

Refrigerated centrifuges for processing large volumes of up to 4 x 1.000 ml as well as blood bags with a large variety of rotors. Available as Floor-standing or Underbench device. Both devices are equipped with castors for easy handling.

- Maintenance-free induction drive
- Microprocessor with large LCD display
- Motor driven lid lock
- Automatic rotor identification system with over speed protection
- Active imbalance identification and cut off (rotor-specific)
- CFC-free refrigeration system
- A large variety of rotors and accessories
- Audible signal at the end of each run, adjustable melody and volume
- With timer function for starting the centrifuge at a pre-set time
- Manufactured according to international safety regulations, i. e. IEC 61010
- Stainless steel chamber

**Please order rotors separately.**

#### Specifications

Max. RCF:	16022 xg
Max. speed:	10500 rpm
Max. capacity:	4 x 1000 ml
Cooling temperature:	-20 ... 40 °C
Timer:	59 min 50 s/10 s increments 99 h 59 min/1 min increments
Power consumption:	2300 W
Power supply:	230 V, 50/60 Hz

Type	Description	Dimensions (W x D x H) mm	Net weight kg	PK	Cat. No.
ZK 496	Underbench device	620 x 690 x 700	157	1	<b>4.670 663 1</b>
ZK 496	Floor-standing device	620 x 690 x 980	190	1	<b>4.667 888</b>

**2**


9.945 939

### Accessories for Hermle Centrifuges

Hermle

Type	For	PK	Cat. No.
Angle rotor for 6 x 250 ml	Z 366 / Z 366 K / Z 446 / Z 446 K / ZK 496	1	<b>9.945 942</b>
Angle rotor for max. 30 x 15 ml (round bottom) or 20 x 15 ml (conical)	Z 306 / Z 326 / Z 326 K / Z 366 Z / Z 366 K / Z 32 HK / 36 HK	1	<b>9.945 940</b>
Angle rotor for max. 4 x 85 ml	Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK / 36 HK	1	<b>9.945 941</b>
Angle rotor for max. 6 x 50 ml	Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK / 36 HK	1	<b>4.666 077</b>
Angle rotor for max. 24 x 1.5/2.0 ml	Z 306 / Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK	1	<b>4.665 843</b>
Angle rotor for 4 x 8 PCR Stripes	Z 326 / Z 326 K / Z 446 / Z 446 K / Z 32 HK	1	<b>9.945 948</b>
Angle rotor for max. 24 x 1.5/2.0 ml, aerosol tight	Z 306 / Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK	1	<b>4.665 882</b>
Angle rotor for max. 44 x 1.5/2.0 ml	Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK	1	<b>9.945 954</b>
Angle rotor for max. 10 x 50 ml (conical)	Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK / 36 HK / ZK 496	1	<b>4.666 083</b>
Angle rotor for max. 6 x 85 ml	Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK / 36 HK	1	<b>9.945 939 2</b>
Angle rotor for max. 20 x 10 ml	Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK / 36 HK	1	<b>9.945 944</b>
Angle rotor for 30 x 1,5 ml / 2,0 ml	Z 306 / Z 326 / Z 326 K / Z 446 / Z 446 K / Z 32 HK / 36 HK	1	<b>9.945 938</b>
Angle rotor for 12 x 1,5 ml / 2,0 ml	Z 326 / Z 326 K / 36 HK	1	<b>9.945 943</b>
Angle rotor for 12 x 5 ml, with lid	Z 306 / Z 326 / Z 326 K	1	<b>9.945 945</b>
Angle rotor for 4 x 500 ml	Z 446 / Z 446 K / ZK 496	1	<b>9.945 949</b>
Swing out rotor for max. 4 x 250 ml	Z 366 / Z 366 K / 36 HK	1	<b>4.665 885</b>
Swing out rotor for 16 x 50 ml (conical) or 40 x 15 ml (conical)	Z 366 / Z 366 K	1	<b>9.945 952</b>
Swing out rotor for 2 x 3 MTP	Z 306	1	<b>4.665 879</b>
Swing out rotor for 4 x 250 ml	Z 446 / Z 446 K	1	<b>4.665 881</b>
Swing out rotor for max. 4 x 500 ml	Z 446 / Z 446 K	1	<b>4.665 883</b>
Angle rotor for 4 x 750 ml, hermetically tight	Z 446 / Z 446 K / ZK 496	1	<b>9.945 946</b>
Angle rotor for 4 x 1000 ml, hermetically tight	ZK 496	1	<b>9.945 953</b>
Angle rotor for 4 x 100 ml for oil test tubes	OLEUM	1	<b>9.945 947</b>
Rotor 2 x 3 Microplates	Z 306 / Z 326 / Z 326 K / Z 366 / Z 366 K / Z 446 / Z 446 K / Z 32 HK / 36 HK	1	<b>9.945 937</b>

#### 1 Microcentrifuge 5418 R (General Lab Product), cooled

Microcentrifuge for standard molecular biology applications. The compact centrifuge with low access height is characterized by extremely quiet operation.

Eppendorf AG

- 18 place rotor for 1.5/2.0 ml tubes and Microtainer®
- Lid opens automatically after spinning
- Very small profile, minimal bench space required
- Remarkably silent, even without rotor lid
- Standard, certified aerosol-tight rotor
- Convenient Eppendorf two-dial operation
- Rpm/rcf converter
- Short-spin
- The patented compressor technology reduces vibration to a minimum
- Low access height of 26 cm
- Keeps a constant 4 °C at max. speed
- Fast Temp for rapid pre-cooling of the centrifuge

**This centrifuge is a General Lab Product for research purposes.**

#### Specifications

Max. RCF:	16.873 x g
Max. speed:	14 000 rpm
Max. capacity:	18 x 1.5/2.0 ml
Temperature:	0 ... +40 °C
Timer:	30 s to 9:59 h, continuous run
Power consumption:	320 W
Dimensions (W x D x H):	300 x 460 x 250 mm
Weight:	22 kg
Power supply:	230 V, 50/60 Hz

1



Type	Description	Plug type	PK	Cat. No.
5418 R	incl. Rotor FA-45-18-11	EU	1	4.660 587
5418 R	incl. Rotor FA-45-18-11	UK	1	4.660 588

**Online also available as IVD version.**





**1**


### 1 Microcentrifuge 5424 R (General Lab Product), cooled

Suitable for all modern molecular biology applications using Eppendorf and PCR tubes. The microcentrifuge with efficient cooling performance offers high temperature accuracy for maximum sample protection and optimal separation results.

Eppendorf AG

- 24-place-centrifuge for 1.5/2.0 ml tubes
- Lid opens automatically after spinning
- Aerosol tight rotors
- 4 different rotors (available as accessories)
- Very quiet in operation, even without rotor lid
- Choice of analogue dial or membrane keypad control
- Adjustable soft ramp acceleration
- The patented compressor technology reduces vibration to a minimum
- Small footprint and low access height of 26 cm
- Keeps a constant 4 °C at max. speed
- Fast Temp for rapid pre-cooling of the centrifuge, for example, from about 21 °C to 4 °C in 8 mins.

**This centrifuges are General Lab Products for research purposes.**

Specifications	5424 R
Max. RCF:	21.130 x g
Max. speed:	15000 rpm
Max. capacity:	24 x 1.5/2 ml
Cooling temperature:	-10 ... +40 °C
Timer:	30 s to 9:59 h, continuous run
Power consumption:	350 W
Dimensions (W x D x H):	290 x 480 x 260 mm
Weight:	21 kg
Power supply:	230 V, 50/60 Hz

Type	Description	Plug type	PK	Cat. No.
5424 R	Without rotor, with control knobs	EU	1	4.660 595
5424 R	Without rotor, with foil keypad	EU	1	4.660 591
5424 R	With rotor FA 45-24-11, with control knobs	EU	1	4.660 593
5424 R	With rotor FA 45-24-11, with foil keypad	EU	1	4.660 589
5424 R	Without rotor, with control knobs	UK	1	4.660 596
5424 R	Without rotor, with foil keypad	UK	1	4.660 592
5424 R	With rotor FA 45-24-11, with control knobs	UK	1	4.660 594
5424 R	With rotor FA 45-24-11, with foil keypad	UK	1	4.660 590

Other rotors available on request.

**Online also available as IVD version.**

**2**


4.661 164

### 2 Microcentrifuge 5425 (General Lab Product)

Non-refrigerated microcentrifuge for common standard applications with a high sample throughput, providing ergonomic comfort and great flexibility with its 6 rotor options.

Eppendorf AG

- Fast acceleration and deceleration (10 acceleration and braking ramps)
- Lower noise level (< 51 dB)
- Small footprint
- Low loading height for comfortable inserting rotor and samples
- Soft touch one-finger closure for ergonomic operation
- Automatic lid opening after running
- Rotor chamber made of stainless steel

**This centrifuges are General Lab Products for research purposes.**

Specifications	
Max. RCF:	21.330 x g
Max. speed:	100 ... 2.000 rpm (10-rpm-steps) 2.000 ... 5.000 rpm (50-rpm-steps) 5.000 ... 15.060 rpm (100-rpm-steps)
Max. capacity:	10 x 5.0 ml
Timer:	10 s ... 9:59 h, continuous run
Power consumption:	280 W
Dimensions (W x D x H):	240 x 390 x 240 mm
Weight:	15.6 kg
Power supply:	230 V, 50/60 Hz

Type	Description	PK	Cat. No.
5425	with foil keypad, without rotor	1	4.661 164 <b>2</b>
5425	with foil keypad, with aerosoltight rotor FA-24x2	1	4.661 162
5425	with control knobs, without rotor	1	4.661 168
5425	with control knobs, with aerosoltight rotor FA-24x2	1	4.661 166 <b>3</b>

Other rotors available on request.

**Online also available as IVD version.**

**3**


4.661 166



#### 1 Centrifuges 5702/5702 R/5702 RH (General Lab Product)

These low-speed, universally applicable centrifuges are especially suited for low to medium sample throughput in cell culture applications.

Eppendorf AG

- Compact with small footprint
- Maintenance-free motor
- Dial controls and digital display
- Powered lid locking
- Short braking time
- Automatic lid opening (model 5702 only)
- Rotor bowl made of stainless steel
- Optimized: backwards adjusted air flow for sample cooling

#### Additional features 5702 R:

- Two programme keys for saving the parameters of two standard centrifugation processes
- Adjustable acceleration rate and braking
- Temperature setting from -9 °C to 40 °C
- Stand-by cooling
- Fast-temp-function

#### Additional features 5702 RH:

- Software control for precise temperature control (depends on rotor)
- Active heating
- Stand-by heating
- Temperature derivation in stationary state at 4 °C and at 37 °C ±1 °C

**This centrifuges are General Lab Products for research purposes.**

#### Specifications

	<b>5702/5702 R/5702 RH</b>
Max. RCF:	3000 x g
Max. Speed:	100 to 4400 rpm (100 rpm steps)
Max. Load:	4 x 100 ml
Power consumption:	200 W // 380 W // 380 W
Temperature setting range:	- // -9 ... +40 °C // -9 ... +42 °C
Dimensions (W x D x H):	320 x 400 x 240 mm // 380 x 580 x 260 mm // 380 x 580 x 260 mm
Height (with opened lid):	530 mm // 600 mm // 600 mm
Weight:	20 kg // 36 kg // 36 kg
Power supply:	230 V, 50/60 Hz

Type	Description	PK	Cat. No.
5702	With rotor A-4-38, with adapter for conical tubes, 15/50 ml, with EU-plug	1	4.660 623
5702 R	With rotor A-4-38, with adapter for conical tubes, 15/50 ml, with EU-plug	1	4.660 629
5702 R	With rotor A-4-38, with adapter for blood collection tubes, 13/16-mm, with EU-plug	1	4.660 627
5702 RH	Without rotor, cooled/heated, with EU-plug	1	4.660 631
5702	Without rotor, with UK-plug	1	4.660 622
5702 R	Without rotor, with UK-plug	1	4.660 626

**Online also available as IVD version.**

1



### Benchtop centrifuges, 5804/5804 R/5810/5810 R (General Lab Product)

These centrifuges offer a flexible rotor program with a modular adapter system which can accommodate a high variety of tube lengths.

Eppendorf AG

- Ergonomic access height gives comfortable rotor loading
- Low noise level
- Motorized lid lock
- Reliable cooling at maximum speed\*
- Imbalance detector
- Automatic rotor recognition logs rotor performance parameters and prevents these being exceeded
- Optional user setting by speed, rcf or radius correction values
- Values can be changed during centrifugation
- Temperature setting from -9 °C to +40 °C\*
- Standby cooling\*
- Selectable programme memory for up to 34 individual user programmes
- Short-spin function, speed can be preselected
- Fast-cool function\* for rapid cooling of the centrifuge chamber
- 10 gentle acceleration and braking profiles for sensitive sample material

**This centrifuges are General Lab Products for research purposes.**

\* Cooled models 5804 R and 5810 R only

1



### 1 Benchtop centrifuges 5804/5804 R (General Lab Product)

Eppendorf AG

<b>Specifications</b>	<b>5804 // 5804 R</b>
Max. RCF:	20913 x g
Max. speed:	14000 rpm
Max. Load:	10 x MTP or 2 x DWP
Power consumption:	900 W // 1650 W
Dimensions (W x D x H):	470 x 550 x 340 mm // 640 x 550 x 340 mm
Weight:	55 kg // 80 kg
Power supply:	230 V, 50/60 Hz

Type	Description	Plug type	PK	Cat. No.
5804	Without rotor	EU	1	<b>4.660 633</b>
5804 R	Without rotor	EU	1	<b>4.660 639</b>
5804 R	With rotor A-4-44, with adapter for conical tubes 15 / 50 ml	EU	1	<b>4.660 641</b>
5804 R	With rotor S-4-72, with adapter for conical tubes 15 / 50 ml	EU	1	<b>4.660 643</b>
5804	Without rotor	UK	1	<b>4.660 634</b>
5804 R	Without rotor	UK	1	<b>4.660 640</b>

**Online also available as IVD version.**

2



### 2 Benchtop centrifuges 5810/5810 R (General Lab Product)

Eppendorf AG

<b>Specifications</b>	<b>5810 // 5810 R</b>
Max. RCF:	20913 x g
Max. speed:	14000 rpm
Max. Load:	16 x MTP or 4 x DWP
Power consumption:	900 W // 1650 W
Dimensions (W x D x H):	540 x 610 x 350 mm // 700 x 610 x 350 mm
Weight:	68 kg // 99 kg
Power supply:	230 V, 50/60 Hz

Type	Description	Plug type	PK	Cat. No.
5810	Without rotor	EU	1	<b>4.660 645</b>
5810	With rotor A-4-81, with adapter for conical tubes 15 / 50 ml	EU	1	<b>4.660 649</b>
5810 R	With rotor A-4-62, with adapter for conical tubes 15 / 50 ml	EU	1	<b>4.660 657</b>
5810 R	With rotor A-4-81, with adapter for conical tubes 15 / 50 ml	EU	1	<b>4.660 659</b>
5810 R	With rotor S-4-104, with adapter for conical tubes 15 / 50 ml	EU	1	<b>4.660 661</b>
5810	Without rotor	UK	1	<b>4.660 646</b>
5810 R	Without rotor	UK	1	<b>4.660 656</b>

**Online also available as IVD version.**

#### 1 Roll containers, for centrifuges 5804/5804 R and 5810/5810 R

The roll container provides the flexibility to use the centrifuge where it is needed.

Eppendorf AG

- One drawer
- Place for rotors and accessories
- Four castors, two are lockable

Type	Dimensions (W x D x H) mm	PK	Cat. No.
Roll containers	700 x 620 x 450	1	4.656 042



#### 2 Microcentrifuge 5430/5430 R (General Lab Product)

These centrifuges are used with e.g. rotors for Eppendorf Tubes® and PCR strips, rotors for microplates and 15/50 ml conical tubes, as well as a 48-place rotor, a 16-place rotor for Eppendorf Tubes® 5.0 ml and a swing-out rotor (24 x 1.5/2.0 ml).

Eppendorf AG

##### Microcentrifuge 5430

- 48 place centrifuge for 1.5ml/2.0ml micro test tubes, 6 x 50 ml Falcon® tubes or 2 x MTP plates
- Automatic rotor identification
- 12 different rotors (available as accessories)
- Stores up to 50 routine programs
- Menu guided operation in 4 different languages
- LCD display with backlighting
- Automatic lid opening following application sequence (only 5430)

##### Microcentrifuge 5430 R, additional features:

- Temp. range: -11 °C to +40 °C
- +4 °C at max. speed with all rotors
- Continues cooling after the centrifugation process
- Fast Temp for achieving required temperature in shortest possible time
- Fast Temp pro for having the centrifuge refrigerated and ready-for-use at your desired pre-set time

**This centrifuges are General Lab Products for research purposes.**



##### Specifications

##### 5430 // 5430 R

Max. RCF:	30.130 x g
Max. speed:	17.500 rpm
Max. capacity:	48 x 1.5/2.0 ml or 6 x 50 ml or 2 x MTP
Cooling temperature:	- // -11 ... +40 °C
Timer:	30 s to 99:59 h, with continuous run
Power consumption:	475 W // 1050 W
Dimensions (W x D x H):	330 x 420 x 250 mm // 380 x 640 x 290 mm
Weight:	29 kg // 56 kg
Power supply:	230 V, 50/60 Hz

Type	Description	Plug type	PK	Cat. No.
5430	Without rotor, with dial setting	EU	1	4.660 611
5430 R	Without rotor, with membrane keypad	EU	1	4.660 615
5430 R	With rotor FA-45-30-11, with dial setting	EU	1	4.660 617
5430	Without rotor	UK	1	4.660 606
5430	With rotor FA-45-30-11, with dial setting	UK	1	4.660 610
5430 R	Without rotor, with dial setting	UK	1	4.660 620

**Online also available as IVD version.**

### Benchtop centrifuges 5910 R/5920 R (General Lab Product)

These centrifuges combine a high capacity and versatility. Its main swing-bucket rotor holds both conical tubes and plates, no need to change rotor buckets or adapters. The 5910 R centrifuge has a low access height for easy operation. The 5910 R centrifuge holds standard 1 liter Nalgene® bottles.

Eppendorf AG

- Plate rotor options for centrifugation of all types of MTP, PCR or Deepwell Plates
- Fixed-angle rotors for high-speed molecular biology applications in tubes from 0.2 to 50 ml
- Aerosol-tight Eppendorf QuickLock® caps and lids allow fast and ergonomic lid locking
- Quiet operation (<59 db)
- Compact footprint
- Automatic rotor recognition and imbalance detection
- FastTemp function for quick pre-cooling and FastTemp pro® function for automatic precooling based on pre-programmable time and date
- Standby cooling function holds temperature when centrifuge is not in use
- ECO shut-off engages after 8 hours (adjustable)

This centrifuges are General Lab Products for research purposes.

1



### 1 Benchtop centrifuges 5910 R (General Lab Product)

Eppendorf AG

#### Specifications

Max. RCF:	22.132 x g
Speed:	100 ... 14.000 rpm (in 10 rpm increments)
Max. Load:	4 x 750 ml/4 x 5 MTP
Noise level:	<59 db
Number of programs:	99 (5 keys)
Timer:	10 s to 99 h 59 min, continuous, Short-Spin
Power consumption:	1650 W
Temperature setting range:	-11 ... +40 °C
Dimensions (W x D x H):	720 x 660 x 370 mm
Height (with opened lid):	850 mm
Net weight:	109 kg
Power supply:	230 V, 50/60 Hz

Type	Description	PK	Cat. No.
5910 R	without rotor	1	4.660 683
5910 R	with rotor S-4x500, with square buckets and adapters for conical tubes, 15/50 ml	1	6.273 434

Online also available as IVD version.

2



### 2 Benchtop centrifuges 5920 R (General Lab Product)

Eppendorf AG

#### Specifications

Max. RCF:	21.194 x g
Speed:	100 ... 13.700 rpm (in 10 rpm increments)
Max. Load:	4 x 1000 ml/4 x 7 MTP
Noise level:	<60 db
Number of programs:	99 (5 keys)
Timer:	10 s to 99 h 59 min, continuous, Short-Spin
Power consumption:	1650 W
Temperature setting range:	-11 ... +40 °C
Dimensions (W x D x H):	740 x 710 x 400 mm
Height (with opened lid):	940 mm
Net weight:	139 kg
Power supply:	230 V, 50/60 Hz

Type	Description	Plug type	PK	Cat. No.
5920 R	Without rotor	EU	1	4.660 665
5920 R	With rotor S-4xUniversal-Large, with universal buckets and adapters for conical tubes, 15/50 ml	EU	1	4.660 680
5920 R	With rotor S-4xUniversal-Large, with universal buckets and adapters for round bottom tubes, 13/16 mm	EU	1	4.660 678
5920 R	Without rotor	UK	1	4.660 666
5920 R	With rotor S-4x1000, with High Capacity buckets and adapters for conical tubes, 15/50 ml	UK	1	4.660 668
5920 R	With rotor S-4x1000, with Plate/Tube buckets and adapters for conical tubes, 15/50 ml	UK	1	4.660 672

Online also available as IVD version.

### 1 General purpose centrifuge Megafuge ST4 plus



1

Universal centrifuge for routine applications. Motorised lid latch enables one finger downward motion for easiest closing and locking of centrifuge lid.

Thermo Scientific



- Intuitive touchscreen
- Auto-Lock™ Rotor exchange: Secure, ergonomic push-button rotor exchange in as little as 3 seconds
- ClickSeal™ Bucket Sealing System: System has glove-friendly, one-handed open/close capability
- SMARTSpin™ Technology: optimises the acceleration and braking process and compensates imbalances
- Front USB port

#### Specifications

Max. RCF: 5590 x g (swing-out rotor)  
25830 x g (fixed-angle rotor)

Max. speed: 5300 rpm (swing-out rotor)  
15200 rpm (fixed-angle rotor)

Warranty: 5 years

Type	Weight kg	Dimensions (W x D x H) mm	Supply requirements	PK	Cat. No.
ST4 Plus	89	566 x 690 x 362	208 ... 240 V, 50/60 Hz	1	4.672 605
ST4R Plus	120	746 x 690 x 361	220 ... 240 V, 50 Hz / 230 V, 60 Hz	1	4.672 606

### 2 General purpose centrifuge Multifuge X4 Pro



2

General purpose centrifuge for routine applications. Motorised lid latch enables one finger downward motion for easiest closing and locking of centrifuge lid.

Thermo Scientific



- Intuitive full color touch screen
- Up to 100 program storage
- Display of set and actual parameters
- Easily adjust speed, time and temperature, even during the run
- Auto-Lock™ III rotor system: Secure, ergonomic push-button rotor exchange
- ClickSeal™ Bucket Sealing System: System has glove-friendly, one-handed open/close capability
- SMARTSpin™ Technology: optimises the acceleration and braking process and compensates imbalances

#### Specifications

Max. RCF: 7164 x g (swing-out rotor)  
25830 x g (fixed-angle rotor)

Max. speed: 6000 rpm (swing-out rotor)  
15200 rpm (fixed-angle rotor)

Warranty: 5 years

Type	Weight kg	Dimensions (W x D x H) mm	Supply requirements	PK	Cat. No.
X4 pro	89	566 x 690 x 362	208 ... 240 V, 50/60 Hz	1	4.672 607
X4R pro	120	746 x 690 x 361	220 ... 240 V, 50/60 Hz	1	4.672 608






**1**

### 1 Centrifuge tubes, round bottom, DURAN®

To DIN 58970 part 2. Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.  
Maximum loading: 4000 xg rcf.

DWK Life Sciences

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
6	12	100	1	9.315 010
12	16	100	1	9.315 011
25	24	100	1	9.315 014
50	34	100	1	9.315 017
80*	40	115	1	9.315 024
80	44	100	1	9.315 026
250*	56	147	1	9.315 036

\* Not to DIN.


**2**

### 2 Centrifuge tubes, conical, DURAN®

Autoclavable. Rimless, with conical base. Maximum loading: 4000 xg rcf.

DWK Life Sciences

Volume ml	Diam. mm	Height mm	Angle	PK	Cat. No.
12	16	100	30	1	9.315 509
25	24	100	60	1	9.315 514
50	34	100	60	1	9.315 517


**3**
**4**

7.920 120

6.803 325

### High speed centrifuge tube, borosilicate glass

Borosilicate glass. The tubes have been chemically strengthened to achieve a greater mechanical strength than standard borosilicate centrifuge tubes. These tubes can be centrifuged up to 13.100 RCF when used with an accessory rubber adapter sleeve in a 50 ml rotor cavity. They can withstand temperatures up to 300 °C. Autoclavable.

Description	Volume ml	Diam. mm	Height mm	PK	Cat. No.
without rim	15	18	102	6	6.803 323
without rim	30	24	106	6	6.093 022
screw thread	15	18	102	6	7.920 120 <b>3</b>
screw thread	30	24	106	6	6.234 247
Rubber adapter, 15 ml				2	6.803 324
Rubber adapter, 30 ml				2	6.803 325 <b>4</b>


**5**

### 5 Centrifuge tubes, glass, round bottom, graduated, DURAN®, Borosilicate glass 3.3

In white enamel, rimless. Maximum loading: 3500 xg rcf.

Volume ml	Diam. mm	Height mm	PK	Cat. No.
10 - 15	17	98	1	9.315 237
10 - 15	17	107	1	9.315 240
25	25	100	1	9.315 245


**6**

### 6 Centrifuge tubes, round bottom, AR glass®

Round bottom. Graduated or ungraduated. Maximum loading: 3500 xg rcf.

Volume ml	Diam. mm	Height mm	Graduations	PK	Cat. No.
10 - 15	17	98	no	1	9.315 201
10 - 15	17	107	no	1	9.315 203
10 - 15	17	98	yes	1	9.315 217
10 - 15	17	107	yes	1	9.315 220
25	25	100	yes	1	9.315 225
50 - 55	35	98	no	1	9.315 207
70 - 100	40	115	no	1	9.315 210



## 6. Distillation, separation, filtration

### Separating, centrifuging/Centrifuge tubes

#### 1 Centrifuge tubes, AR-GLAS® or borosilicate glass 3.3., graduated

Graduations and inscriptions in high contrast white enamel.

BRAND

- Height: 113 mm
- Subdivision: 0.1 ml
- Wall thickness: 1 mm
- Outer diameter: 17 mm
- Maximum loading: 3500 x g rcf.
- Conical bottom

Nominal capacity ml	Material	Graduations ml	PK	Cat. No.
15	AR-GLAS®	0 - 10	1	9.315 415
15	Borosilicate glass 3.3.	0 - 10	1	9.315 417
15	AR-GLAS®	0 - 15	1	9.315 416
15	Borosilicate glass 3.3.	0 - 15	1	9.315 418

1



#### Centrifuge tubes, AR-GLAS®, ungraduated, rimless

- Wall thickness: 1 mm
- Maximum loading: 3500 x g rcf.

BRAND

Nominal capacity ml	Ext. diam. mm	Height mm	Base	PK	Cat. No.
11	16.5	98	cone-pointed	100	9.315 423
13	16.5	98	round	100	9.315 421 2

2



9.315 421

#### Centrifuge tubes, AR-GLAS® or borosilicate glass 3.3., ungraduated, with beaded rim

- Wall thickness approx.: 1 mm
- Maximum loading: 3500 x g rcf.
- Conical bottom

BRAND

Nominal capacity ml	Ext. diam. mm	Height mm	Material	PK	Cat. No.
15	17	113	AR-GLAS®	100	9.315 412 3
15	17	113	Boro 3.3.	100	9.315 413

3



9.315 412

#### 4 ASTM centrifuge tube, cylindrical, with conical base, borosilicate glass 3.3

Cylindrical, with conical base. Graduations and labelling in high-contrast blue enamel. Maximum loading 700 xg rcf. Internal diam. neck approx. 17 mm.

Graduated, ml:	In subdivisions, ml:
0 to 0.5	0.05
0.5 to 2	0.10
2 to 3	0.20
3 to 5	0.50
5 to 10	1.00
10 to 25	5.00
25 to 100	25.0

Description	Capacity ml	Length mm	PK	Cat. No.
acc. to ASTM D 91	100	203	1	9.315 810
former standard ASTM D 96	100	167	1	9.315 820

4



**1**

**1**

### ASTM centrifuge tube, pear-shaped with cylindrical base, borosilicate glass 3.3

Pear-shaped with cylindrical base. Former standard ASTM D 96. Capacity 100ml. Graduations and labelling in high-contrast blue enamel. Maximum loading 700 xg rcf. Internal diam. neck approx. 17 mm.

Graduated, ml:	In subdivisions, ml:
0 to 1.5	0.10
1.5 to 3	0.50
3 to 5	0.50
5 to 10	1.00
10 to 25	5.00
25 to 100	25.0

Capacity ml	PK	Cat. No.
100	1	9.315 815

**2**


6.256 488

### ASTM Centrifuge Tubes for Oils, with conical base, borosilicate glass 3.3

Conical bottom centrifuge tube is used for testing of petroleum products. Scale and legend are durable white ceramic enamel except California type. Top is tooled to accept snap cap. Conforming to USP Type I and ASTM E438, Type I, Class A requirements.

*DWK Life Sciences*

Type	Capacity ml	Diam. mm	Length mm	Volume ml	Grad. ml	PK	Cat. No.
6" short cone, Oil	100	45	165	0-0,5 / 0,5-2 / 2-3 / 3-5 / 5-10 / 10-25 / 50 / 100	0,05 / 0,1 / 0,2 / 0,5 / 1 / 5 / - / -	1	6.256 488 <b>2</b>
8" Oil and weathering (end point index), ASTM D2158	100	37	203	0-1 / 1-3 / 3-6 / 6-10 / 10-100	0,05 / 0,1 / 0,2 / 0,5 / 1	12	6.289 839
8" Oil, ASTM D1796, MPMS 10.4, D91, D128, D1093	100	37	203	0-0,5 / 0,5-2 / 2-3 / 3-5 / 5-10 / 10-25 / 25-100	0,05 / 0,1 / 0,2 / 0,5 / 1 / 5 / 25	12	6.269 226
California*, ASTM D91, D893, D1796	100	38	200	0-0,5 / 0,5-2 / 2-3 / 3-5 / 5-10 / 10-25 / 50 / 75 / 100	0,05 / 0,1 / 0,2 / 0,5 / 1 / 5 / - / - / -	12	6.268 457

\* with permanent red stripe under the white enamel graduations for easy reading of results.

**3**


### 3 LLG-Microcentrifuge tubes, PP



LLG Microtubes cover standard volumes for a variety of sample tests. They are available in 0.5 ml, 1.5 ml and 2.0 ml volumes. These standard Microtubes withstand high centrifugal forces, are temperature and chemically-resistant and guaranteed leak-free. An innovative and modern new generation of Microtubes with new features. Perfect sealing qualities, excellent chemical stability and optimal construction materials guarantee even better resistance to centrifugal and chemical forces. Easy to open and to close thanks to the improved lid geometry. For visual volume control the 1.5 ml tubes are equipped with graduations at 0.5 ml, 1.0 ml and 1.5 ml. The 2.0 ml tubes have graduations at 0.5 ml, 1.0 ml, 1.5 ml and 2.0 ml. The 0.5 ml tubes have no graduations. Certified DNase-, RNase- and pyrogen-free.

Clear, in bags. Suitable for microbiology. Guaranteed metal-free.

#### Specifications

##### Autoclavability

Temperature:	121 °C
Pressure:	1.05 bar or 15 psi
Time:	20 min or less

##### Centrifugation

Fixed angle rotor:	25000 x g
Swing out rotor:	70000 x g

Form	Volume ml	Max. rcf	PK	Cat. No.
conical	0.5	20000	1000	9.409 023
conical	1.5	25000	1000	9.409 024
round	2.0	25000	1000	9.409 025

#### LLG-Centrifuge tubes, 5 ml, PP



The LLG-Centrifuge tubes, 5 ml, represent the perfect solution for all laboratory applications requiring incubation, centrifugation and sample handling in an intermediate volume range. Available in clear, and amber for use with light sensitive samples, and as an assorted colour pack (green, blue, yellow and red).

- Max. 25.000 x g, suitable for high speed centrifugation
- Graduations every 0.25 ml for easy volume estimation
- A flat, frosted cap and large writing pad for sample labeling and identification
- Autoclavable
- Fits all rotors and racks that hold 15 ml conical tubes, no adapters needed
- Certified free of RNase and DNase

Description	Package contents	PK	Cat. No.
Clear	1 bag of 250 pieces	250	<b>6.281 113</b> 1
Colour assortment green, yellow, red, blue	4 bags of 50 pieces (1 colour per bag)	200	<b>6.281 114</b> 2
Amber	1 bag of 250 pieces	250	<b>6.281 115</b> 3

1



6.281 113

2



6.281 114

3



6.281 115

#### 4 LLG-Centrifuge Tubes economy, PP



- With flat PE caps
- With conical bottom (15 and 50 ml) or with self-standing bottom (50 ml)
- Easy-to-read black volume graduations
- With a large frosted writing area
- Engraved graduation at the conical bottom of each tube
- Max. rotate speed up to 12000 x g for conical bottom tubes and 6000 x g for self-standing tubes
- Autoclavable at 121 °C and freezable to -80 °C
- Leak-proof
- Free of heavy metals, pyrogens and endotoxins
- DNase/RNase-free
- Aseptically or sterile

Capacity ml	Description	Form	Height mm	Diam. mm	PK	Cat. No.
15	Sterile, in bag of 25 pieces	conical	119,6	17	500	<b>4.668 482</b>
50	Sterile, in bag of 25 pieces	conical	113,9	30	500	<b>4.668 483</b>
50	Sterile, in bag of 25 pieces	with rim	116,5	30	500	<b>4.668 486</b>
15	Aseptically, bulk pack	conical	119,6	17	500	<b>6.270 403</b>
50	Aseptically, bulk pack	conical	113,9	30	500	<b>6.270 404</b>
50	Aseptically, bulk pack	with rim	116,5	30	500	<b>6.270 405</b>

4



#### 5 LLG-Centrifuge tubes, PP



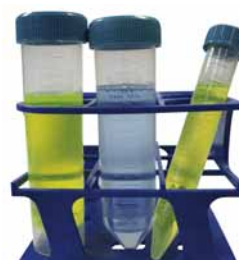
Polypropylene tubes with very good thermal, mechanical and chemical stability. With screw closures. Sterile tubes with screwed-on closure. Packed in boxes or bags. With graduations and labelling area.

Centrifugation capacity (Max. RCF): 6000 x g  
Height: 120 mm

Description	Form	Capacity ml	Diam. mm	PK	Cat. No.
sterile, single packed*	conical	15	17	50	<b>9.316 062</b>
aseptic, bulk pack	conical	15	17	50	<b>6.263 886</b>
big pack	conical	15	17	500	<b>9.316 063</b>
sterile, single packed*	conical	50	30	50	<b>9.316 064</b>
big pack	conical	50	30	500	<b>9.316 065</b>
aseptic, bulk pack	conical	50	30	50	<b>6.263 887</b>
sterile, single packed*	with rim	50	30	50	<b>9.316 067</b>
big pack, bulk pack	with rim	50	30	50	<b>4.008 506</b>
aseptic, bulk pack	with rim	50	30	50	<b>6.263 888</b>

\*Cytotoxicity-free, DNase/RNase- and human DNA-free.

5



### Eppendorf Tubes® 5.0 mL, PP

Eppendorf AG



- Simple, practical and ergonomic single-hand operation. Large labelling area.
- Lid design: Hinged lid for minimized sample evaporation during storage and incubation in a wide range of temperatures from -86 °C to 80 °C
- Certified purity: Available in lot-tested and certified Eppendorf Quality, PCR clean, Sterile and Eppendorf Biopur® purity levels
- Maximum safety and stability for centrifugation up to 25 000 x g.
- Compatible with accessories for conical 15 ml tubes - many existing adapters and racks can be used.
- Available in Eppendorf LoBind® material for maximum recovery of valuable samples

The Starter Pack comprises:

- 400 Eppendorf Tubes® 5.0 mL, PCR clean (Certified purity grade)
- 8 universal adapters for rotors with bores for 15 ml conical tubes
- 2 Tube Racks 5.0 mL (16 spaces; white)
- Free of human DNA, free of DNase and RNase, free of PCR inhibiting agents.
- For PCR preparations or any reactions where DNase or RNase could interfere with the reaction or analysis.

From 80°C on, please use the Tube Clip opener Cat. No. 9.409 294.

Description	Package contents	PK	Cat. No.
Eppendorf Tubes® 5.0 mL, Eppendorf Quality™	2 bags of 100	200	<b>9.409 277</b> 1
Eppendorf Tubes® 5.0 mL, PCR clean	2 bags of 100	200	<b>9.409 278</b>
Eppendorf Tubes® 5.0 mL, Sterile	10 bags of 20	200	<b>9.409 279</b>
Eppendorf Tubes® 5.0 mL, Biopur®	bag of 50, single packed	50	<b>9.409 288</b>
Eppendorf Protein LoBind Tube, PCR clean	2 bags of 50	100	<b>9.409 289</b>
Eppendorf Protein LoBind Tube, PCR clean	2 bags of 100	200	<b>4.665 939</b>
Eppendorf DNA LoBind Tube, PCR clean	4 bags of 50	200	<b>9.409 290</b>
Eppendorf DNA LoBind Tube, PCR clean	2 bags of 100	200	<b>4.665 938</b>
Eppendorf Tubes® 5.0 mL, Eppendorf Quality™, amber (light protection)	2 bags of 100	200	<b>6.265 214</b> 2
Eppendorf Tubes® 5.0 mL, amber (light protection), Sterile	2 bags of 100	200	<b>4.665 937</b>
Tube Clip, Eppendorf Quality™		10	<b>9.409 294</b> 3
5.0 mL Starter Pack, PCR clean	2 Packs with 2 bags of 100 each, 2 Racks (16 spaces each), 8 Universal adapters	1	<b>9.409 291</b> 4
Eppendorf Tubes® 5.0 mL, Forensic DNA Grade	4 bags of 50	200	<b>6.287 838</b>
Eppendorf Tubes® 5.0 mL, Forensic DNA Grade, single packed	4 bags of 50	200	<b>6.287 839</b>

1



9.409 277

2



6.265 214

3



9.409 294

4



9.409 291

5



### 5 Eppendorf Tubes® 5.0 ml, PP

Eppendorf AG



- Ergonomic operation: Simple, practical and ergonomic operation. Large labelling area.
- Lid design: Screw cap for minimized sample evaporation during storage and incubation in a wide range of temperatures from -86 °C to 100 °C
- Material: Exceptionally high-quality, transparent polypropylene, free of plasticizers, biocides or mold release agents, for reliable test results
- Certified purity: Available in lot-tested and certified Eppendorf Quality, PCR clean and sterile purity levels
- Centrifugation safety: Maximum safety and stability for centrifugation up to 25 000 x g and fast and efficient protocols.
- Conical shape: Compatible with accessories for conical 15 mL tubes - many existing adapters and racks can be used.

Description	Package contents	PK	Cat. No.
Eppendorf Tubes® 5.0 mL, Eppendorf Quality	2 bags of 100	200	<b>6.282 530</b>
Eppendorf Tubes® 5.0 mL, PCR clean	2 bags of 100	200	<b>6.282 531</b>
Eppendorf Tubes® 5.0 mL, pyrogen-, DNase-, RNase and DNA-free	2 bags of 100	200	<b>6.282 532</b>

## 6. Distillation, separation, filtration Separating, centrifuging/Centrifuge tubes

### 1 Eppendorf Tubes® 25 ml, PP

**NEW**

Eppendorf AG



Transparent. For cell culture applications, sample preparations, storage and transport of samples. The SnapTec™ cap version allows single-handed opening and closing for quick liquid extraction or addition. Also available with HDPE screw cap.

- Conical
- Single-Handed Operation
- Tightness from -86 °C to 100 °C
- Max. RZB 17000 x g
- Lower height than 15 ml/50 ml conical tubes
- The SnapTec tubes are autoclavable

**Starter pack 1:** 200 Eppendorf Conical Tubes® 25 ml with snap cap SnapTec™, PCR clean, 4 single tube stands, 6 adapters for rotors with bore for 50 ml conical tubes

**Starter pack 2:** 200 Eppendorf Conical Tubes® 25 ml with screw cap, PCR clean, 4 single tube stands, 6 adapters for rotors with bore for 50 ml conical tubes



Description	PK	Cat. No.
Starter pack 1	1	6.311 419
Starter pack 2	1	4.669 460

### 2 Centrifuge tubes, PP

Greiner Bio-One



Polypropylene tubes with very good thermal, mechanical and chemical stability. Fitted with screw-on closure. Packed in boxes or bags. With graduations and labelling area. Tubes are sterile, cytotoxicity-free, DNase/RNase- and human DNA-free.

**Specifications:**

Centrifugation capacity (15 - 50 ml): 3215 x g/4500 rpm in swing out rotors  
8965 x g/9000 rpm in fixed angle rotors

Form	Capacity ml	Diam. mm	Height mm	PK	Cat. No.
conical	15	17	120	50	9.380 423
conical	15	17	120	500	7.380 423
conical	15	17	120	1000	7.053 718
conical	50	30	115	20	9.380 421
conical	50	30	115	500	7.380 421
conical	50	30	115	300	6.049 748
conical, with rim	50	30	115	25	9.380 422
conical, with rim	50	30	115	450	7.380 422
conical, with rim	50	30	115	300	6.054 664



### 3 4 Centrifuge tubes, conical tubes, PP/HDPE

Thermo Scientific



New and improved conical tubes with the largest writing area on the market for increased traceability with additional space for labeling information. Recyclable plastic rack reduces waste in the lab. New conical tubes have higher RCF ratings, which enable more applications from low speed to super speed centrifugation. They meet USP class VI requirements and are non-cytotoxic, pyrogen-free and RNase/DNase free. Graduated, leak proof and sterile (SAL 10<sup>-6</sup>)

Material tubes: PP  
Material caps: HDPE

Description	Capacity ml	Diam. mm	Height mm	Max. rcf	PK	Cat. No.
Bulk	15	17	120	10500 x g*	500	9.401 430
Bulk	50	30	115	17000 x g*	500	9.401 432
Racked	50	30	115	17000 x g*	300	9.401 433

\* When fully supported by conical rotor cavity or conical adaptor. Note the maximum speeds listed are guidelines only. These speeds have been achieved in reliability tests based on sedimentation of 1.2 specific gravity fluid at 18 °C.



# 6. Distillation, separation, filtration

## Separating, centrifuging/Centrifuge tubes

### 1 2 3 LLG-Test and centrifuge tubes rimmed, PS or PP

- Made of ultra clear virgin polypropylene or virgin polystyrene
- Polystyrene tubes are transparent. Polypropylene tubes are opaque, break-resistant
- Tubes with cap are ethylene oxide sterilized
- With label

LLG-Dual-Position Caps for test- and centrifuge tubes, PE

- For culture tubes with an O.D. of 12 mm and 17 mm

2 locking positions possible:

- Closed, but gas exchange is still possible for aerobic growth conditions
- Hermetically sealed for anaerobic growth conditions, for storage or despatch of samples or for centrifugation

Description	Capacity	Diam.	Height	Material	Max.	Max. temp.	PK	Cat. No.
	ml							
with rim	4	12	75	PS	1400	80	500	<b>6.265 657</b>
with rim	4	12	75	PP	3000	120	500	<b>6.265 658</b>
with rim	12	17	100	PS	3000	80	250	<b>6.265 659</b>
with rim	12	17	100	PP	5500	120	250	<b>6.265 660</b>
with dual-position-cap, sterilized	4	12	75	PS	1400	80	500	<b>6.265 661</b>
with dual-position-cap, sterilized	4	12	75	PP	3000	120	500	<b>6.265 662</b>
with dual-position-cap, sterilized	12	17	100	PS	3000	80	500	<b>6.265 663</b>
with dual-position-cap, sterilized	12	17	100	PP	5500	120	500	<b>6.265 664</b>
dual-position-cap		12		PE	-		1000	<b>6.265 665</b>
dual-position-cap		17		PE	-		1000	<b>6.265 666</b>



4



### 4 Centrifuge tubes, PP, with rim, without stoppers

BRAND



- Cylindrical
- Autoclavable (121 °C)

Nominal capacity	Ext. diam.	Height	Material	Max.	PK	Cat. No.
ml	mm	mm		rcf		
10	16	100	PP	4500	1	<b>7.019 383</b>
26	24	90	PP	4500	1	<b>7.019 385</b>
30	20	100	PP	4500	1	<b>7.019 386</b>
48	30	100	PP	4500	1	<b>7.019 387</b>
75	35	100	PP	4500	1	<b>7.019 388</b>
110	40	120	PP	4500	1	<b>7.019 389</b>
160	45	120	PP	4500	1	<b>7.019 390</b>

5



### 5 Stoppers, PE for centrifuge tubes, PP

BRAND



For tubes ml	PK	Cat. No.
10	100	<b>7.019 392</b>
26	100	<b>7.019 394</b>
30	100	<b>7.019 393</b>
48	100	<b>7.019 395</b>
75	100	<b>7.019 396</b>
110	100	<b>7.019 397</b>
160	100	<b>7.019 398</b>



#### 1 Disposable test tubes and centrifuge tubes

Disposable tubes with round or conical bottom, with or without rim, for laboratory use. Made of PS or PP. Can be used in centrifuge.

Kartell

Type	RCF tested x g	Capacity ml	Height mm	Diam. mm	Rim	Material	PK	Cat. No.
Conical	1000	10	105.0	16.0	without	PS	1000	<b>6.239 142</b>
Cylindrical	1000	10	100.0	16.0	without	PS	500	<b>6.230 885</b>
Cylindrical	1300	5	75.0	12.0	without	PS	1000	<b>6.227 892</b>
Cylindrical	1000	15	150.0	16.0	without	PS	850	<b>4.675 450</b>
RIA	1300	5	70.0	11.0	without	PS	1000	<b>6.224 123</b>
Coagulometer	1300	3	55.0	11.5	without	PS	1000	<b>6.241 859</b>
Coagulometer	3500	3	55.0	11.5	without	PP	1000	<b>6.225 923</b>
Cylindrical	1300	5	87.0	12.0	with	PP	4000	<b>6.259 144</b>
Cylindrical	1000	10	99.3	16.0	with	PS	2000	<b>6.226 185</b>
Cylindrical	3000	10	100.0	16.0	with	PP	2000	<b>6.207 280</b>
Conical	1000	10	101.0	16.0	with	PS	2000	<b>6.233 030</b>



#### 2 Test tubes and centrifuge tubes, PP



Round bottom.

Greiner Bio-One

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
4	12	55	3600	<b>9.400 615</b>
5	12	75	2000	<b>9.400 632</b>
12	16	100	1600	<b>9.400 664</b>
14	17	100	1500	<b>9.400 665</b>



#### Graduated centrifuge tubes, conical, PP or PMP



Autoclavable. PP tubes can withstand temperatures up to +120 °C. PMP (TPX®) tubes can withstand temperatures up to +170 °C. Rimmed. High chemical resistance. Good transparency, especially when in contact with liquids. Cannot be used with naked flame. Can be used as conventional test tubes.

Kartell

Capacity ml	Diam. mm	Height mm	Grad. ml	Material	PK	Cat. No.
10	16	108		PP	500	<b>9.315 832</b>
15	18	120		PP	500	<b>9.315 833</b>
10	16	107	0.2	PP	100	<b>6.233 811</b>
15	18	118	0.2	PP	100	<b>9.315 834</b>
10	16	107	0.2	PMP (TPX®)	50	<b>6.075 746</b>
15	18	118	0.2	PMP (TPX®)	50	<b>6.231 946</b>



6.075 746

#### 4 Centrifuge tubes, cylindrical, PP



Translucent. PP. Autoclavable. Can withstand temperatures up to +120 °C. Rimmed. High chemical resistance. Cannot be used with naked flame. Can also be used as conventional test tubes.

Kartell

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
7	12	100.0	100	<b>9.315 830</b>
16	17	101.0	500	<b>6.204 878</b>
31	24	93.0	50	<b>6.205 839</b>
48	30	104.0	25	<b>6.205 674</b>
70	35	99.5	20	<b>9.315 831</b>
110	40	119.0	25	<b>6.205 169</b>



➔ Stoppers - please see page 29.



### 1 Centrifuge tubes, plastic, round bottom, PC, graduated

BRAND



Transparent. PC. Rimless, with moulded graduations. Slightly yellowish in colour. Round bottom. For use with loads up to 20000xg rcf.

Note: the strength of Polycarbonate is reduced when it is autoclaved or cleaned using alkaline detergents.

Volume ml	Diam. mm	Height mm	Graduations ml	PK	Cat. No.
50	35	99	1	1	9.315 329
100	41	115	-	1	9.315 339
100	45	98	2	1	9.315 340



### 2 Centrifuge tubes, round bottom, PS

BRAND

Transparent.

Type	Rotation speed rpm	Ext. diam. mm	Height mm	PK	Cat. No.
Universal	2000	16	100	2000	9.400 792
Universal	4000	12	75	1000	9.400 782
Coagulation	2000	12	55	1000	9.400 780



### 3 Grip stoppers for centrifuge tubes, round bottom, LDPE

BRAND

Neutral.

For tubes diam. mm	PK	Cat. No.
12	1000	9.400 788
16	1000	9.400 787



### 4 Centrifuge tubes Nalgene™ Oak Ridge, FEP

Thermo Scientific



Teflon® FEP with Tefzel® ETFE screw cap. Resistant to all acids, bases and solvents. Autoclavable. Operating temperature range -100 to +150 °C. Can be used brim-full in refrigerated centrifuges at up to 50000xg rcf. Leak-proof. Accessory sealing cap assemblies are available for all sizes.

Volume ml	Diam. mm	Height mm	PK	Cat. No.
10	16.0	81.5	1	9.315 701
30	25.5	93.7	1	9.315 702
50*	28.8	107.7	1	9.315 703

\* Capacity: 46 ml to the brim.

Teflon® and Tefzel® are a registered trademark of DuPont.



### 5 Centrifuge tubes Nalgene™ Oak Ridge, PSU

Thermo Scientific



Transparent. Polysulphone (PSU) with PP screw cap. As stable and robust as PC test-tubes, but considerably more resistant to acids and alkalis. Autoclavable. Can be used in refrigerated or ambient centrifuges at up to 50000 xg rcf. Accessory sealing cap assemblies are available for all sizes. Notes: If autoclaving, the tubes must be filled to 80 % of their total capacity. Polysulphone must not be used with Tween, as this causes hairline cracks to form.

Volume ml	Diam. mm	Height mm	PK	Cat. No.
30	25.7	94.5	1	9.315 708
50*	29.0	107.7	1	9.315 709

\* Capacity: 43ml to the brim.

#### 1 Nalgene™ Oak-Ridge centrifuge tubes, PC



Thermo Scientific

Transparent. PC with PP screw cap. Can be used in suitable refrigerated or ambient centrifuges at up to 50.000 xg rcf. Autoclavable. Accessory sealing cap assemblies are available for 10 ml, 30 ml and 50 ml sizes.

Capacity ml	Diam. mm	Height mm	PK	Cat. No.
10	16.1	81.7	1	9.315 691
28	25.4	101.8	1	9.315 692
30	25.7	94.5	1	9.315 693
50*	28.8	107.0	1	9.315 694
85**	38.2	105.7	1	9.315 695

\* Capacity: 43ml to the brim.

\*\*Capacity: 81ml to the brim.



#### 2 Nalgene™ Oak-Ridge centrifuge tubes, PP-copolymer



Thermo Scientific

PP-copolymer with PP screw cap. PPCO is more resistant to chemicals than PC. Autoclavable. When wet, the translucent test-tube enables observation of the contents. Can be used in refrigerated and unrefrigerated centrifuges at up to 50.000 xg rcf. Accessory sealing cap assemblies are available for all sizes.

Volume ml	Diam. mm	Height mm	PK	Cat. No.
10	16.0	81.4	1	9.315 711
28	25.4	101.9	1	9.315 712
30	25.5	94.3	1	9.315 713
50*	28.8	106.7	1	9.315 714

\* Capacity: 42 ml to the brim.



#### 3 Centrifuge tubes Nalgene™, PC



Thermo Scientific

PC, without closures. Friction-fit closures Type DS3111 for high-speed centrifugation please order separately. Transparent. Autoclavable. Can be used in refrigerated or ambient centrifuges at up to 50000xg rcf. Temperature resistant from -135 to +135 °C. Lip (on Cat. No. 9.315 660 and 9.315 661) allows easier retrieval from rotor cavities.

Volume ml	Diam. mm	Height mm	PK	Cat. No.
12	15.9	103.1	1	9.315 654
15	16.0	114.0	1	9.315 655
16	17.9	99.8	1	9.315 656
38	25.3	88.6	1	9.315 658
50	28.8	103.1	1	9.315 659
50*	28.5	106.2	1	9.315 660
100*	31.5	164.3	1	9.315 661

\* with lip





### 1 Centrifuge bottles Nalgene™, PP-copolymer

Thermo Scientific



PP-copolymer with PP screw cap. Autoclavable.

Volume ml	Diam. mm	Height mm	Max. rcf	PK	Cat. No.
250	61.8	127.7	13,200*	1	9.315 716
500	69.5	170.2	13,700	1	9.315 717
500	73.8	169.8	4,800	1	9.315 720
1000	97.5	184.5	7,100	1	9.315 718
1000	97.7	179.0	7,100	1	9.315 719

\* Up to 27500 xg if using the sealing screw cap 9.315 734.



### 2 Centrifuge bottles Nalgene™, PC

Thermo Scientific



PC with PP screw cap. Crystal clear. Good mechanical strength. Autoclavable. Leak-proof even at low speeds.

In order to ensure that the system is leak-proof even at high speeds and when centrifuging dangerous substances, the 250 ml and 1000 ml sizes must be used in conjunction with sealing screw cap sets.

Volume ml	Diam. mm	Height mm	Max. rcf	PK	Cat. No.
250	61.8	127.6	27,500	1	9.315 721
500	69.5	169.6	13,700	1	9.315 723
1000	97.6	188.4	7,100	1	9.315 724
1000	98.1	180.2	7,100	1	9.315 725



### 3 Sealing cap assemblies Nalgene™, PP

Thermo Scientific



PP screw cap with Tefzel® ETFE plug liner and viton O-ring. Leak-proof at recommended maximum speed and rcf for tubes. Suitable for working with aggressive chemicals. The 38 mm assembly has a PP shoulder reinforcement ring to prevent collapsing of the 250 ml bottles.

For tubes ml	Screw cap diam. mm	PK	Cat. No.
30	20	1	9.315 732
50	24	1	9.315 733
250	38	1	9.315 734

Tefzel® is registered trademark of DuPont.



### 4 Sealing cap assemblies with silicone seal Nalgene™, PP

Thermo Scientific



For Oak Ridge centrifuge test tubes made of PP, PC and polysulphone.

For tubes ml	Screw cap diam. mm	PK	Cat. No.
28 / 30	20	2	9.315 738
50	24	2	9.315 739
250	58	2	9.315 740
500 / 1000	63	2	9.315 741



### 5 Wide-mouth centrifuge bottles Nalgene™, PP-copolymer

Thermo Scientific



PP-copolymer with sealing screw cap. Autoclavable.

Volume ml	Diam. mm	Height mm	Max. rcf x g	PK	Cat. No.
250	60.7	133.4	27500	1	9.315 763
450	69.5	160.0	13700	1	9.315 764

#### LLG-Filter paper, qualitative grades

Made from 100 % cellulose.  
Ash content 0.06 %.  
Filtration speed according to DIN 53137.  
Capacity of separation according to DIN 53135.

#### 1 LLG-Qualitative filter paper, circles

**Very fast, pore size 12 to 15 µm.**  
- For coarse and voluminous precipitates like hydroxides and sulphides

Diam. mm	Filtration time secs.	PK	Cat. No.
90	10	100	9.045 830
110	10	100	9.045 831
125	10	100	9.045 832
150	10	100	9.045 833
185	10	100	9.045 834



#### 2 LLG-Qualitative filter paper, circles

**Medium fast, pore size 5 to 8 µm or 5 to 13 µm**  
- for fast filtration with fine particles

Diam. mm	Filtration time secs.	Pore size µm	PK	Cat. No.
42.5	50	5 - 8	100	9.045 820
90.0	50	5 - 8	100	9.045 821
110.0	50	5 - 8	100	9.045 822
125.0	50	5 - 8	100	7.970 266
150.0	50	5 - 8	100	7.970 269
185.0	50	5 - 8	100	6.242 668
240.0	50	5 - 8	100	6.242 631
42.5	88	5 - 13	100	9.045 800
47.0	88	5 - 13	100	9.045 801
55.0	88	5 - 13	100	9.045 802
70.0	88	5 - 13	100	9.045 803
90.0	88	5 - 13	100	9.045 804
110.0	88	5 - 13	100	9.045 805
125.0	88	5 - 13	100	9.045 806
150.0	88	5 - 13	100	9.045 807
185.0	88	5 - 13	100	9.045 808
240.0	88	5 - 13	100	9.045 809



#### 3 LLG-Qualitative filter paper, folded filters

**Medium fast, pore size 5 to 8 µm.**  
- For fast filtration with fine particles

Diam. mm	Filtration time secs.	PK	Cat. No.
70	50	100	7.659 027
125	50	100	9.045 825
150	50	100	9.045 826
185	50	100	9.045 827
240	50	100	6.242 632



#### 4 LLG-Qualitative filter paper, circles

**Slow, pore size 2 to 3 µm.**  
- for BaSO<sub>4</sub>, SnO<sub>2</sub>, CuO, Cu<sub>2</sub>O

Diam. mm	Filtration time secs.	PK	Cat. No.
70	180	100	7.970 267
90	180	100	7.970 268
110	180	100	6.242 672
125	180	100	7.970 134
150	180	100	7.970 139
185	180	100	6.242 671
240	200	100	7.971 615



#### 5 LLG-Qualitative filter paper, sheets

**Medium fast, pore size 5 to 13 µm.**  
- for analytical works in laboratories

Dimensions mm	Filtration time secs.	PK	Cat. No.
460 x 570	88	100	9.045 810





## Filtration/Filter paper, qualitative

**1**


### 1 Qualitative filter papers MN 614, round filters

**Medium-fast.**

MACHERY-NAGEL

- Embossed
- For determination of sugar content, colour, essential oils and emulsions
- Weight: 75 g/m<sup>2</sup>
- Thickness: 0.25 mm

Diam. mm	Filtration time secs.	PK	Cat. No.
55	20	100	9.047 400
70	20	100	9.047 401
90	20	100	9.047 402
110	20	100	9.047 403
125	20	100	9.047 404
150	20	100	9.047 405
185	20	100	9.047 406
240	20	100	9.047 407
270	20	100	9.047 408
320	20	100	9.047 409
385	20	100	9.047 410
500	20	100	9.047 411

**2**


### 2 Filter paper, qualitative, type MN 615, circles

Medium speed, smooth.

MACHERY-NAGEL

Diam. mm	Filtration time secs.	PK	Cat. No.
55	22	100	9.047 500
70	22	100	9.047 501
90	22	100	9.047 502
110	22	100	9.047 503
125	22	100	9.047 504
150	22	100	9.047 505
185	22	100	9.047 506
240	22	100	9.047 507

**3**


### 3 Filter paper, qualitative, type MN 615 1/4, filter circles

Medium fast filtration, smooth.

MACHERY-NAGEL

For fat determinations, free from fats and resins.  
Ether soluble residue <0.1 mg for diam. 270 mm filters.

Diam. mm	Filtration time secs.	Thickness mm	PK	Cat. No.
55	22	0.16	100	9.048 500
70	22	0.16	100	9.048 501
90	22	0.16	100	9.048 502
110	22	0.16	100	9.048 503
125	22	0.16	100	9.048 504
150	22	0.16	100	9.048 505
185	22	0.16	100	9.048 506
240	22	0.16	100	9.048 507
270	22	0.16	100	9.048 508
320	22	0.16	100	9.048 509
385	22	0.16	100	9.048 510
400	22	0.16	100	4.001 029
500	22	0.16	100	9.048 511

**4**


### 4 Filter paper MN 617 1/4, qualitative, folded filters

Fast filtration, smooth.

MACHERY-NAGEL

Diam. mm	Filtration time secs.	PK	Cat. No.
90	9	100	9.048 702
110	9	100	9.048 703
125	9	100	9.048 704
150	9	100	9.048 705
185	9	100	9.048 706
240	9	100	9.048 707



## 6. Distillation, separation, filtration

### Filtration/Filter paper, qualitative

#### 1 Qualitative Filter Paper, Grade 2555 1/2, qualitative

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

Whatman

1



Diam. mm	PK	Cat. No.
185	100	7.009 656
240	100	7.009 657
320	100	7.060 298

#### 2 Filter paper, Grade 1

Circles and sheets. Qualitative. The most widely used grade of filter paper.

Whatman

2

Flowrate: Medium  
Retention: Medium  
Wet strength: Low  
Thickness: 0.18 mm



Diam. mm	PK	Cat. No.
10	500	6.228 829
20	400	9.048 942
25	400	9.048 943
30	400	9.048 944
32	100	9.048 937
42,5	100	9.056 199
47	100	9.048 945
55	100	9.056 200
70	100	9.056 201
85	100	9.048 946
90	100	9.056 202
110	100	9.056 203
125	100	9.056 204
150	100	9.056 205
185	100	9.056 206
240	100	9.056 207
270	100	9.056 208
320	100	9.056 209
400	100	9.056 278
500	100	9.056 279
460 x 570	100	9.056 331
26 x 31	1000	9.056 337
75 x 100	500	9.056 338
460 x 570	500	9.056 340
580 x 680	100	9.056 341

#### 3 Filter paper, Grade 2

Circles and sheets. Qualitative. Slightly thicker and more retentive than number 1.

Whatman

3

Flowrate: Medium  
Retention: Medium  
Wet strength: Low  
Thickness: 0.19 mm  
Ash: 0.06 %



Diam. mm	PK	Cat. No.
42,5	100	9.056 198
47	100	6.242 786
55	100	9.056 210
70	100	9.056 211
90	100	9.056 212
110	100	9.056 213
125	100	9.056 214
150	100	9.056 215
185	100	9.056 216
240	100	9.056 217
320	100	9.056 219
460 x 570	100	9.056 332
580 x 680	100	6.236 821



### 1 Filter paper, Grade 3

Circles and sheets. Qualitative. Very thick. Double the thickness of number 1.

Whatman

Flowrate: Medium  
 Retention: High  
 Wet strength: High  
 Thickness: 0.39 mm  
 Ash: 0.06 %

Diam. mm	PK	Cat. No.
55	100	9.056 220
70	100	9.056 221
90	100	9.056 222
110	100	9.056 223
125	100	9.056 224
150	100	9.056 225
185	100	9.056 226
240	100	9.056 227
460 x 570	100	9.056 333



### 2 Filter paper, Grade 4

Circles. Qualitative. Fast flowrate. Excellent retention of coarse and gelatinous precipitants. Smooth. Supplied in packs of circles as outlined below.

Whatman

Flowrate: Fast  
 Retention: High  
 Wet strength: Low  
 Thickness: 0.21 mm  
 Ash: 0.06 %

Diam. mm	PK	Cat. No.
41	100	6.286 923
42,5	100	9.056 231
55	100	9.056 233
70	100	9.056 235
90	100	9.056 196
110	100	9.056 230
125	100	9.056 232
150	100	9.056 234
185	100	9.056 236
240	100	9.056 237
270	100	9.056 238
320	100	9.056 239
460 x 570	100	9.056 334



### 3 Filter paper, Grade number 5

Circles. Qualitative. Slow flowrate. Retains fine precipitates, grained surface. Supplied in packs of circles as outlined below.

Whatman

Flowrate: Slow  
 Retention: High  
 Wet strength: High  
 Thickness: 0.20 mm  
 Ash: 0.06 %

Diam. mm	PK	Cat. No.
55	100	9.056 240
70	100	9.056 241
90	100	9.056 242
110	100	9.056 243
125	100	9.056 244
150	100	9.056 245
185	100	9.056 246
240	100	9.056 247

## 6. Distillation, separation, filtration Filtration/Filter paper, qualitative

### 1 Filter paper, Grade number 6

Circles. Qualitative. Slow, faster as Grade 5. Supplied in packs of circles as outlined below.

Whatman

Flowrate: Slow  
Retention: High  
Wet strength: Low  
Thickness: 0.18 mm  
Ash: 0.20 %

Diam. mm	PK	Cat. No.
70	100	9.056 251
90	100	9.056 252
110	100	9.056 253
125	100	9.056 254
150	100	9.056 255
185	100	9.056 256
240	100	9.056 257

1



### 2 Filter Papers, Grade 50, qualitative, circles and sheets

Compatible with Hirsch or Büchner funnels, average thickness 115 µm.  
Acid-treated for high wet-strength and chemical resistance.

Whatman

- Nominal particle retention of 2.7 µm
- Slow flow rates (Herzberg filtration speed 2685 s)
- High purity and low ash content (0.015 % ash maximum)

Diam. mm	PK	Cat. No.
42.5	100	6.233 382
55	100	9.056 450
70	100	9.056 451
90	100	9.056 452
110	100	9.056 453
125	100	9.056 454
150	100	9.056 455
185	100	9.056 456
240	100	9.056 457
320	100	9.056 459
500	100	9.056 525
460 x 570	100	9.056 550

2



### 3 Filter paper, Grade 91

Circles. Qualitative. General purpose schools grade, creped.

Whatman

Flowrate: Medium  
Retention: Medium  
Wet strength: High  
Thickness: 0.205mm

Diam. mm	PK	Cat. No.
110	100	9.048 938
125	100	9.048 933
150	100	9.048 939
185	100	9.048 934
240	100	9.048 940

3



### 4 Filter paper, Grade 113

Circles. Qualitative. Fast flow. Excellent retention of coarse and gelatinous precipitates, creped.

Whatman

Flow rate: Fast  
Retention: Medium  
Wet strength: High  
Thickness: 0.42mm  
Ash: 0.06%

Diam. mm	PK	Cat. No.
90	100	9.049 015
125	100	9.049 016
150	100	9.049 017
185	100	9.049 018
240	100	9.049 019

4



## Filtration/Filter paper, qualitative

1



### 1 Qualitative filter paper, Grade 595, circles

**Medium fast 4 to 7 µm**

- thin filter paper
- for medium to fine precipitates and general laboratory work
- Weight: 68 g/m<sup>2</sup>
- Thickness: 0.150 mm

Whatman

Diam. mm	PK	Cat. No.
110	100	9.062 303
125	100	9.062 304
150	100	9.062 305

2



### 2 Qualitative filter paper, Grade 597, circles and sheets

**Medium fast, 4 - 7 µm**

- thicker and faster than 595
- for medium to fine precipitates
- Weight 81 g/m<sup>2</sup>
- Thickness 0.180 mm

Whatman

Diam. mm	PK	Cat. No.
45	100	7.009 631
55	100	9.062 400
70	100	9.062 401
90	100	9.062 402
110	100	9.062 403
125	100	9.062 404
150	100	9.062 405
185	100	9.062 406
240	100	9.062 407
580 x 580	100	9.066 597

3



### 3 Filter Papers, circles, quadrant folded, cellulose

Filter papers in a flat, quadrant folded format to fit conical filter funnels. Easy and time-saving handling for analyses with high sample throughput.

Whatman

Type	Diam. mm	Thickness mm	Weight g / m <sup>2</sup>	Ash content %	PK	Cat. No.
Grade 1 FF	110	0.180	87	0.060	500	4.668 159
Grade 1 FF	125	0.180	87	0.060	500	4.668 160
Grade 1 FF	150	0.180	87	0.060	500	4.668 161
Grade 40 FF	110	0.210	95	0.007	500	4.668 153
Grade 40 FF	125	0.210	95	0.007	500	4.668 154
Grade 40 FF	150	0.210	95	0.007	500	4.668 155
Grade 44 FF	110	0.215	85	0.007	500	4.668 156
Grade 44 FF	125	0.215	85	0.007	500	4.668 157
Grade 44 FF	150	0.215	85	0.007	500	4.668 158

4



### 4 Filter Papers, circles, pyramid version

Filter papers in a flat, pyramidal folded format. Easy and time-saving handling.

Whatman

Type	Diam. mm	Thickness mm	Weight g / m <sup>2</sup>	Ash content %	PK	Cat. No.
Grade 6	125	0.18	100	0.150	1000	4.668 162
Grade 40	125	0.21	95	0.007	1000	4.668 163

We can **supply** this  
**manufacturer's whole**  
**product range !**



**Whatman®**

#### 1 Filter paper, Grade number 2 V

Qualitative. Folded (pre-pleated) version of Number 2.  
 Flowrate: Medium  
 Retention: Medium  
 Wet strength: Low  
 Thickness: 0.19 mm  
 Ash: 0.06 %

Whatman

Diam. mm	PK	Cat. No.
125	100	9.056 304
150	100	9.056 305
185	100	9.056 306
240	100	9.056 307
270	100	9.056 308
320	100	9.056 309

1



#### 2 Filter paper, grade 113 V

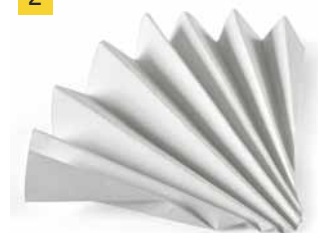
Circles. Prepleated. Qualitative. Excellent retention of coarse and gelatinous precipitates, creped.

Whatman

Flow rate: Fast  
 Retention: Medium  
 Wet strength: High  
 Thickness: 0.42 mm

Diam. mm	PK	Cat. No.
125	100	9.056 294
150	100	9.056 295
185	100	9.056 296
240	100	9.056 297
270	100	9.056 298
320	100	9.056 299
500	100	9.056 301

2



#### 3 Qualitative filter paper, Grade 593 1/2, folded filters

**Medium to slow 2 to 5 µm**

Whatman

- time saving, because folded filters have a larger surface area than comparable circular filters
- for medium to fine precipitates and general laboratory work
- Weight: 85 g/m<sup>2</sup>
- Thickness: 0.17 mm

Diam. mm	PK	Cat. No.
185	100	9.063 106
240	100	9.063 107

3



#### 4 Qualitative filter paper, Grade 595 1/2, folded filters

**Medium fast, 4 - 7 µm.**

Whatman

- time saving, because folded filters have a larger surface area
- filter faster than comparable circular filters
- for medium to fine precipitates and general laboratory work
- Weight: 68 g/m<sup>2</sup>
- Thickness: 0.15 mm

Diam. mm	PK	Cat. No.
70	100	9.063 301
90	100	9.063 302
110	100	9.063 303
125	100	9.063 304
150	100	9.063 305
185	100	9.063 306
210	100	7.009 626
240	100	9.063 307
270	100	9.063 308
320	100	9.063 309
385	100	9.063 310

4



## Filtration/Filter paper, qualitative

**1**


### 1 Qualitative filter paper, Grade 597 1/2, folded filters

**Medium fast, 4 - 7 µm**
*Whatman*

- time saving, because folded filters have a larger surface area
- for medium to fine precipitates
- Weight: 81 g/m<sup>2</sup>
- Thickness: 0.18 mm

Diam. mm	PK	Cat. No.
70	100	9.063 401
90	100	9.063 402
110	100	9.063 403
125	100	9.063 404
150	100	9.063 405
185	100	9.063 406
240	100	9.063 407
270	100	9.063 408
320	100	9.063 409
385	100	9.063 410
500	100	9.063 411

**2**


### 2 Qualitative filter paper, Grade 602h½, folded filters

**Slow < 2 µm**
*Whatman*

- thick filter paper
- for fine precipitates
- Weight: 85 g/m<sup>2</sup>
- Thickness: 0.15 mm

Diam. mm	PK	Cat. No.
90	100	9.063 702
125	100	9.063 704
150	100	9.063 705
185	100	9.063 706
240	100	9.063 707

**3**


### 3 Qualitative filter paper, Grade 604½, folded filters

**Fast, 12 to 25 µm**
*Whatman*

- time saving, because folded filters have a larger surface area
- filter faster than comparable circular filters
- for coarse precipitates (e.g. hydroxide and sulphide)
- Weight: 80 g/m<sup>2</sup>
- Thickness: 0.19 mm

Diam. mm	PK	Cat. No.
125	100	9.063 904
150	100	9.063 905
185	100	9.063 906
240	100	9.063 907
320	100	9.063 909

**4**


### 4 Qualitative filter paper, Grade 1573½, folded filters

**Fast, 12 to 25 µm**
*Whatman*

- wet-strength
- time saving, because folded filters have a larger surface area than circular filters of the same diameter
- Weight: 88 g/m<sup>2</sup>
- Thickness: 0.17 mm

Diam. mm	PK	Cat. No.
125	100	9.065 104
150	100	9.065 105
185	100	9.065 106
240	100	9.065 107
270	100	9.065 108
320	100	9.065 109



#### Filter Paper, qualitative, folded filters

Highly pure filter paper (approx. 0.08 % ash) recommended for precise identification of materials and for sample preparation prior to sensitive detection methods. These filter papers are perfectly qualified for food control according to LFGB paragraph 64 para. 1 and 2, beverage analysis and environmental monitoring.

Hahnemühle

- Made of the same raw materials (super-refined cotton linters and cellulose) like quantitative filter papers
- High stability and durability due to alpha-Cellulose content above 95 %

#### 1 Filter paper 595, qualitative, folded filters

Hahnemühle

Diam.	Weight	Filtration time acc. to Herzberg	Thickness	PK	Cat. No.
mm	g / m <sup>2</sup>	s	mm		
90	68	160	0.15	100	4.006 260
110	68	160	0.15	100	4.006 261
125	68	160	0.15	100	4.006 262
150	68	160	0.15	100	4.006 263
185	68	160	0.15	100	4.006 264
240	68	160	0.15	100	4.006 266
270	68	160	0.15	100	4.006 267
320	68	160	0.15	100	4.006 268
385	68	160	0.15	100	4.006 269
500	68	160	0.15	100	4.664 858

#### 2 Filter paper 597, qualitative, folded filters

Hahnemühle

Diam.	Weight	Filtration time acc. to Herzberg	Thickness	PK	Cat. No.
mm	g / m <sup>2</sup>	s	mm		
90	85	155	0.18	100	4.006 271
110	85	155	0.18	100	4.006 272
125	85	155	0.18	100	4.006 273
150	85	155	0.18	100	4.006 274
185	85	155	0.18	100	4.006 275
240	85	155	0.18	100	4.006 277
270	85	155	0.18	100	4.006 278
320	85	155	0.18	100	4.006 279
385	85	155	0.18	100	4.006 280

#### 3 Filter Paper, for clarification, folded filters

Recommended for identification of substances, clarification of liquids and for the preparation of samples in a broad range of chemical analysis.

Hahnemühle

- Creped filter papers have a particularly large surface area and correspondingly shorter filtration times
- For quick separation of large particles
- For reliable clarification of viscous liquids

Type	Diam.	Weight	Filtration time acc. to Herzberg	Thickness	PK	Cat. No.
	mm	g / m <sup>2</sup>	s	mm		
0858	150	75	110	0.17	100	4.006 179
0858	240	75	110	0.17	100	4.006 181
0858	320	75	110	0.17	100	4.006 182
0860	150	74	120	0.17	100	4.006 184
0860	185	74	120	0.17	100	4.006 185
0860	320	74	120	0.17	100	4.006 187
0905	320	74	40	0.27	100	4.006 188
400	70	65	200	0.17	100	4.006 214
400	90	65	200	0.17	100	4.006 215
400	110	65	200	0.17	100	4.006 216
400	125	65	200	0.17	100	4.006 217
400	130	65	200	0.17	100	4.006 218
400	150	65	200	0.17	100	4.006 219
400	185	65	200	0.17	100	4.006 220
400	200	65	200	0.17	100	4.006 221
400	250	65	200	0.17	100	4.006 223
400	300	65	200	0.17	100	4.006 224
400	320	65	200	0.17	100	4.006 225
400	350	65	200	0.17	100	4.006 226
400	400	65	200	0.17	100	4.006 227
400	500	65	200	0.17	100	4.006 228
400	650	65	200	0.17	100	4.006 229



## Filtration/Filter paper, qualitative


**1**

### 1 Qualitative Filters for beer analysis

Suitable for analytical methods in breweries to filter and analyse, based upon recommended procedures of the EBC (European Brewery Convention).

*Hahnemühle*

- Medium fast
- Grained surface

**Further sizes on request.**

Type	Diam. mm	Weight g / m <sup>2</sup>	Filtration time acc. to Herzberg s	Thickness mm	PK	Cat. No.
Folded filter	185	75	110	0.17	100	<b>4.006 207</b>
Folded filter	240	75	110	0.17	100	<b>4.006 208</b>
Folded filter	320	75	110	0.17	100	<b>4.006 209</b>
Filter circles	185	75	110	0.17	100	<b>4.006 395</b>
Filter circles	240	75	110	0.17	100	<b>4.006 396</b>


**2**

### 2 Germ Testing Papers

For carrying out germ resistance tests. All papers are made from high-purity cellulose and are free of spores, bacteria and toxic substances that could influence the germination of the seeds. The highly absorbent papers store water for the entire duration of the tests. All germ test papers meet the requirements of ISTA and AOSA.

*Hahnemühle*

- Reliable seed testing
- Conductivity 40 mS/m
- pH value between 6.0 and 7.5
- High absorbance
- Roots do not grow through the paper
- Papers conform to ISTA recommendations of 2017

Type	Description	Weight g / m <sup>2</sup>	Thickness mm	Dimensions (D x W) mm	Colour	PK	Cat. No.
3014	pleated strips for germ testing, 50 double pleats	110	0.22	110 x 2000	white	306	<b>6.254 182</b>
3014	pleated strips for germ testing, 50 double pleats	110	0.22	110 x 2000	white	1008	<b>4.006 111</b>
3236	pleated strips for germ testing, 50 double pleats	110	0.22	110 x 2000	grey	1008	<b>4.006 112</b>
0858	wrapping strips for pleated strips, sheets	75	0.17	110 x 580		500	<b>4.006 047</b>
520b	filter sheet	155	0.65	580 x 580	white	100	<b>6.241 855</b>
5703	absorbent filter paper, technical, sheets	240	0.55	580 x 580	white	100	<b>4.006 062</b>


**3**

### 3 Germ testing papers

The testing papers do not contain any substances which could influence the growth of seeding. The colors used are non-toxic to germinating seed. The moisture level is maintained throughout the germination test period.

*Ahlstrom-Munksjö*

The filter papers comply with ISTA and AOSA requirements.

Description	Weight g / m <sup>2</sup>	Thickness mm	Dimensions (D x W) mm	Colour	PK	Cat. No.
Grade 1765, pleated strips, 50 double pleats	110	0.22	2000 x 110	white	1000	<b>7.971 775</b>
Grade 1700, with slot for wicks	135	0.31	∅ 85	white	500	<b>7.970 731</b>
Grade 1750	90	0.20	220 x 400	white	500	<b>6.237 070</b>
Grade 1755, PE coated paper	53	0.19	190 x 400	-	500	<b>6.237 071</b>


**4**

### 4 Qualitative Filters 551, black, round filters

Recommended for the detection of very fine traces of light-coloured particles and precipitates.

*Hahnemühle*

- Made of pure celluloses and with constriction of black additives
- White and light-coloured particles can be detected easily by the strong contrast to the black filter paper
- Weight 95 g/m<sup>2</sup>
- Thickness 0.2 mm
- Filtration speed acc. to Herzberg 850 s

**Further sizes on request.**

Diam. mm	PK	Cat. No.
90	100	<b>7.657 096</b>
240	100	<b>6.236 831</b>

### 1 Filter paper, qualitative, Grade 3 hw, folded filters

Sartorius Lab Instruments

Diam. mm	PK	Cat. No.
90	100	9.049 401
110	100	9.049 402
125	100	9.049 403
150	100	9.049 404
185	100	9.049 405
240	100	9.049 406
270	100	9.049 407
320	100	9.049 408
385	100	9.049 409

Other diameters/formats are available on request.

1



### 2 Filter paper, qualitative, Grade 3 hw, circles

Sartorius Lab Instruments

Material: alpha cellulose (95 %)  
 Properties: medium speed filtration, thin  
 Filtration time: 15 to 25 secs.  
 Surface weight: 65 g/m<sup>2</sup>  
 Ash content: < 0.1 %

Diam. mm	PK	Cat. No.
55	100	9.049 420
70	100	9.049 421
90	100	9.049 422
110	100	9.049 423
125	100	9.049 424
150	100	9.049 425
185	100	9.049 426
240	100	9.049 427
270	100	9.049 428
320	100	9.049 429
385	100	9.049 457

Other diameters/formats are available on request.

2



### Filter paper, soil analysis

For detecting nutrients available to plants, low in nitrogen and phosphorus.

Sartorius Lab Instruments

#### Grade 131

Properties: slow filtration  
 Filtration time in accordance with DIN 53137: 80 to 140 secs.  
 Surface weight: 80 g/m<sup>2</sup>

#### Grade 132

Properties: medium fast filtration  
 Filtration time in accordance with DIN 53137: 35 to 75 secs.  
 Surface weight: 80 g/m<sup>2</sup>

Type	Diam. mm	PK	Cat. No.
Folded filters 131	150	100	9.049 550
Folded filters 131	185	100	9.049 551
Folded filters 132	150	100	9.049 552
Folded filters 132	185	100	9.049 553

### 3 Technical Filter Papers, sheets

Dimensions: 580 x 580 mm, creped.

Sartorius Lab Instruments

Other dimensions are available on request.

Type	Weight g / m <sup>2</sup>	Filtration time secs.	PK	Cat. No.
100/N	85	30	100	7.606 410
3 h	65	35	100	7.671 897
3 hw	65	20	100	9.049 458
3 m/N	65	30	100	7.606 373
3 S/h	200	55	100	9.049 619
3 w	65	15	100	9.067 003
4 b	75	22	100	9.067 004
6	80	15	100	7.058 772
6 S/N*	145	12	100	6.253 513

\* creped.

3



## Filtration/Filter paper, quantitative

### LLG-Filter papers for quantitative analysis

Made from 100 % cellulose.  
Ash content 0.007 %.  
Filtration speed according to DIN 53137.  
Capacity of separation according to DIN 53135.

**1**


### 1 LLG-Quantitative filter paper, circles

**Very fast, pore size 12 to 15 µm**

- for coarse, high volume precipitates
- for determinations according to the German Standard Methods for the examination of water, waste water and sludge.
- for  $\text{Fe}(\text{OH})_2$ ,  $\text{Al}(\text{OH})_3$ ,  $\text{NaSO}_4$
- ashless, equivalent black tape

Diam. mm	Filtration time secs.	PK	Cat. No.
70	10	100	9.045 840
90	10	100	9.045 841
110	10	100	9.045 842
125	10	100	9.045 843
150	10	100	9.045 844
185	10	100	9.045 845

**2**


### 2 LLG-Quantitative filter paper, circles

**Fast, pore size 8 to 12 µm.**

- most frequently used quantitative filter
- for  $\text{PbS}$ ,  $\text{Ag}_2\text{S}$ ,  $\text{FeS}$ , carbonates
- ashless, equivalent white tape

Diam. mm	Filtration time secs.	PK	Cat. No.
90	20	100	7.970 057
110	20	100	7.970 000
125	20	100	7.970 058
150	20	100	7.970 001
185	20	100	7.970 002
200	20	100	6.242 179

**3**


### 3 LLG-Quantitative filter paper, circles

**Medium fast, pore size 5 to 8 µm.**

- for  $\text{NH}_4\text{MgPO}_4$ ,  $\text{CaC}_2\text{O}_4$ ,  $\text{BaSO}_4$
- ashless, equivalent red tape

Diam. mm	Filtration time secs.	PK	Cat. No.
55	50	100	6.256 437
70	50	100	7.970 571
90	50	100	7.970 032
110	50	100	6.242 748
125	50	100	7.970 045
150	50	100	6.252 765
185	50	100	6.242 747
240	50	100	7.970 591

**4**


### 4 LLG-Quantitative filter paper, circles

**Slow, pore size 2 to 3 µm.**

- for very fine precipitates and small particles
- for soil analysis
- for  $\text{BaSO}_4$  (hot precipitate),  $\text{PbSO}_4$ ,  $\text{Cu}_2\text{O}$ ,  $\text{ZnS}$ ,  $\text{NiS}$
- ashless, equivalent blue tape

Diam. mm	Filtration time secs.	PK	Cat. No.
47	180	100	6.285 586
70	180	100	7.970 271
90	180	100	9.045 850
110	180	100	6.242 670
125	180	100	9.045 851
150	180	100	9.045 852
185	180	100	6.242 669

## 6. Distillation, separation, filtration

### Filtration/Filter paper, quantitative

#### 1 Filter Papers, Grade 540, quantitative, round

- Acid-treated for high wet-strength
- Extremely low ash content (0.006 % ash maximum)
- Nominal particle retention of 8 µm
- Medium flow rate (Herzberg filtration speed 200 s)
- High chemical resistance to strong acid and alkali suspensions

Whatman

Diam. mm	PK	Cat. No.
24	100	6.241 936
42,5	100	7.622 636
55	100	9.056 480
90	100	9.056 482
110	100	9.056 483
125	100	9.056 484
150	100	9.056 485
185	100	9.056 486
240	100	9.056 487

1



#### 2 Filter Papers, Grade 541, quantitative, round sheets

- High wet-strength
- High chemical resistance to strong acid and alkali suspensions
- Retention of gelatinous precipitate
- 22 µm nominal particle retention rating
- Fast flow rate (Herzberg filtration speed 34 s)
- Maximum of 0.006 % ash concentration

Whatman

Diam. mm	PK	Cat. No.
42,5	100	9.056 515
47	100	6.302 895
55	100	9.056 490
70	100	9.056 491
90	100	9.056 492
110	100	9.056 493
125	100	9.056 494
150	100	9.056 495
185	100	9.056 496
240	100	9.056 497
270	100	9.056 498
320	100	9.056 499
460 x 570	100	9.056 561

2



#### 3 Quantitative filter paper, Grade 589/1, circles

**Fast 12 to 25 µm  
Black ribbon**

Whatman

- for coarse, high volume precipitates
- for determinations according to the German Standard Methods for the examination of water, waste water and sludge.
- most frequently used quantitative filter
- Weight: 80 g/m<sup>2</sup>
- Thickness: 0.19 mm

Diam. mm	PK	Cat. No.
90	100	9.060 102
110	100	9.060 103
125	100	9.060 104
150	100	9.060 105
185	100	9.060 106

3



#### 4 Quantitative filter paper, type MN 640 w, circles

Fast filtration, smooth, ashless.

MACHERY-NAGEL

Diam. mm	Filtration time secs.	PK	Cat. No.
55	9	100	9.046 200
70	9	100	9.046 201
90	9	100	9.046 202
110	9	100	9.046 203
125	9	100	9.046 204
150	9	100	9.046 205

4



Grey pack, equivalent grade to black band.

## Filtration/Filter paper, quantitative

**1**

**1 Quantitative filter paper, type MN 640 m, circles**

Medium-fast, smooth, ashless.

MACHEREY-NAGEL

Diam. mm	Filtration time secs.	PK	Cat. No.
55	27	100	9.046 300
70	27	100	9.046 301
90	27	100	9.046 302
110	27	100	9.046 303
125	27	100	9.046 304
150	27	100	9.046 305

White pack, equivalent grade to white band.

**2**

**2 Quantitative filter paper, Grade 589/2**
**Medium fast, 4 to 12 µm. White ribbon.**

Whatman

- for the analysis of foodstuffs
- for carbonates of alkaline earth metals,  $(\text{NH}_4)_2[\text{P}(\text{Mo}_3\text{O}_{10})_2] \times \text{aq.}$ ,  $\text{Mg}(\text{NH}_4)\text{PO}_4$ ,  $\text{CaC}_2\text{O}_4$  (hot precipitates)
- Weight: 85 g/m<sup>2</sup>
- Thickness: 0.18 mm

Diam. mm	Description	PK	Cat. No.
12.7	filter paper circles	1000	7.009 571
50.0	filter paper circles	100	7.079 006
55.0	filter paper circles	100	9.060 200
70.0	filter paper circles	100	9.060 201
90.0	filter paper circles	100	9.060 202
110.0	filter paper circles	100	9.060 203
125.0	filter paper circles	100	9.060 204
150.0	filter paper circles	100	9.060 205
185.0	filter paper circles	100	9.060 206
240.0	filter paper circles	100	9.060 207

**3**

**3 Quantitative filter paper, Grade 589/3, circles**
**Slow < 2 µm. Blue ribbon.**

Whatman

- for very fine precipitates and small particles
- for soil analysis
- for BaSO<sub>4</sub> (hot precipitate), PbSO<sub>4</sub>, Cu<sub>2</sub>O, ZnS, NiS
- Weight: 84 g/m<sup>2</sup>
- Thickness: 0.16 mm

Diam. mm	PK	Cat. No.
12.8	1000	7.009 579
110.0	100	9.060 303
125.0	100	9.060 304
150.0	100	9.060 305
185.0	100	9.060 306

**4**

**4 Quantitative filter paper, grade 40**

Circles. Quantitative. Ashless.

Whatman

- Flow rate: Medium
- Retention: Medium
- Wet strength: Low
- Thickness: 0.21 mm
- Ash: 0.007 %

Diam. mm	PK	Cat. No.
32	100	9.049 035
42.5	100	9.056 399
55	100	9.056 400
70	100	9.056 401
90	100	9.056 402
110	100	9.056 403
125	100	9.056 404
150	100	9.056 405
185	100	9.056 406
240	100	9.056 407



#### 1 Quantitative filter paper, grade 41

Circles. Quantitative. Ashless. For filtration of coarse and gelatinous precipitates. Supplied in box of 100.

Whatman

Flow rate: Fast  
 Retention: Medium  
 Wet strength: Low  
 Thickness: 0.22 mm  
 Ash: 0.007 %

Diam. mm	PK	Cat. No.
55	100	9.056 410
60	100	9.049 045
70	100	9.056 411
90	100	9.056 412
110	100	9.056 413
125	100	9.056 414
150	100	9.056 415
185	100	9.056 416
240	100	9.056 417



#### 2 Filter paper, grade 42

Circles. Quantitative. Ashless. For filtration of fine precipitates.

Whatman

Flow rate: Slow  
 Retention: High  
 Wet strength: Low  
 Thickness: 0.20 mm  
 Ash: 0.007 %

Diam. mm	PK	Cat. No.
42.5	100	9.056 419
55	100	9.056 420
70	100	9.056 421
90	100	9.056 422
110	100	9.056 423
125	100	9.056 424
150	100	9.056 425
185	100	9.056 426
240	100	9.056 427



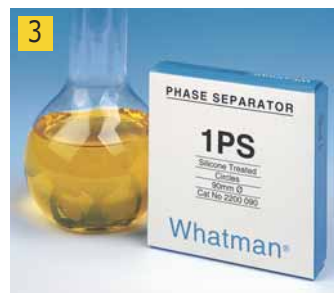
#### 3 Phase separators, 1PS

A silicone impregnated, water repellent paper which can be used to separate aqueous solutions from immiscible solvents. The aqueous phase is retained and the organic phase passes through. Will retain solid particles. Can be used either flat under suction not exceeding 70 mm Hg or quadrant folded in a conical glass funnel. Supplied in box of 100 circles. Note: This paper contains a small quantity of tin complex catalyst. It is therefore not recommended for use when this complex may cause interference, e.g. with the use of dithizone (diphenylthiocarbazone) reagent.

Whatman

Flow rate: Fast  
 Retention: Medium  
 Wet strength: High  
 Thickness: 0.16 mm  
 Ash: 0.008 %

Diam. mm	PK	Cat. No.
70	100	9.056 891
90	100	9.056 892
110	100	9.056 893
125	100	9.056 894
150	100	9.056 895
185	100	9.056 896
240	100	9.056 897
270	100	9.056 898



## Filtration/Filter paper, quantitative



### 1 Filter paper, quantitative, round filters

Ashless filters (approx. 0.004%), recommended for quantitative analysis, routine gravimetric tests and sample preparation for instrumental analysis.

*Hahnemühle*

- Acid-washed and rinsed with water to neutralise
- Free of minerals and metallic ions, ideal for the detection of metallic ions
- For analytical applications, routine quantitative and /or gravimetric procedures
- These filter papers are perfectly qualified for food control, beverage analysis and environmental monitoring

Type	Colour coding	Diam. mm	Weight g / m <sup>2</sup>	Filtration time acc. to Herzberg s	Thickness mm	PK	Cat. No.
FP 589/1	black	47.0	79	50	0.19	100	4.006 441
FP 589/1	black	55.0	79	50	0.19	100	4.006 442
FP 589/1	black	70.0	79	50	0.19	100	4.006 443
FP 589/1	black	90.0	79	50	0.19	100	4.006 444
FP 589/1	black	110.0	79	50	0.19	100	4.006 445
FP 589/1	black	125.0	79	50	0.19	100	4.006 446
FP 589/1	black	150.0	79	50	0.19	100	4.006 447
FP 589/1	black	185.0	79	50	0.19	100	4.006 448
FP 589/1	black	240.0	79	50	0.19	100	4.006 449
FP 589/2	white	12.5	85	140	0.18	1000	4.006 450
FP 589/2	white	40.5	85	140	0.18	100	4.006 451
FP 589/2	white	47.0	85	140	0.18	100	4.006 452
FP 589/2	white	55.0	85	140	0.18	100	4.006 453
FP 589/2	white	70.0	85	140	0.18	100	4.006 454
FP 589/2	white	90.0	85	140	0.18	100	4.006 455
FP 589/2	white	110.0	85	140	0.18	100	4.006 456
FP 589/2	white	125.0	85	140	0.18	100	4.006 457
FP 589/2	white	150.0	85	140	0.18	100	4.006 458
FP 589/2	white	185.0	85	140	0.18	100	4.006 459
FP 589/3	blue	47.0	84	750*	0.16	100	4.006 461
FP 589/3	blue	55.0	84	750*	0.16	100	4.006 462
FP 589/3	blue	70.0	84	750*	0.16	100	4.006 463
FP 589/3	blue	90.0	84	750*	0.16	100	4.006 464
FP 589/3	blue	110.0	84	750*	0.16	100	4.006 465
FP 589/3	blue	125.0	84	750*	0.16	100	4.006 466
FP 589/3	blue	150.0	84	750*	0.16	100	4.006 467
FP 589/3	blue	185.0	84	750*	0.16	100	4.006 468
FP 589/3	blue	240.0	84	750*	0.16	100	4.006 469
FP 589/4	yellow	90.0	81	170	0.17	100	4.006 473
FP 589/4	yellow	110.0	81	170	0.17	100	4.006 474
FP 589/4	yellow	125.0	81	170	0.17	100	4.006 475
FP 589/4	yellow	150.0	81	170	0.17	100	4.006 476
FP 589/5	red	55.0	84	450	0.17	100	4.006 480
FP 589/5	red	70.0	84	450	0.17	100	4.006 481
FP 589/5	red	90.0	84	450	0.17	100	4.006 482
FP 589/5	red	110.0	84	450	0.17	100	4.006 483
FP 589/5	red	125.0	84	450	0.17	100	4.006 484
FP 589/5	red	150.0	84	450	0.17	100	4.006 485

\*Measured with 100 mm water column instead of 50 mm



### 2 Filter paper, quantitative, Grade 388 - black spot, circles and sheets

*Sartorius Lab Instruments*

Properties: Rapid filtration, coarse porosity  
 Filtration time: 6 to 14 secs.  
 Surface weight: 84 g/m<sup>2</sup>

Diam. mm	PK	Cat. No.
55	100	9.049 500
70	100	9.049 501
90	100	9.049 502
110	100	9.049 503
125	100	9.049 504
150	100	9.049 505
185	100	9.049 571
240	100	9.049 572

Other formats and diameters are available on request.

#### 1 Quantitative filter paper, Grade 389 - white spot, circles and sheets

Sartorius Lab Instruments

Properties: medium speed filtration  
 Filtration time: 16 to 28 secs.  
 Surface weight: 84 g/m<sup>2</sup>

Diam. mm	PK	Cat. No.
55	100	9.049 510
70	100	9.049 511
90	100	9.049 512
110	100	9.049 513
125	100	9.049 514
150	100	9.049 515

Other formats and diameters are available on request.



#### 2 Quantitative filter paper, Grade 391 - blue spot, circles and sheets

Sartorius Lab Instruments

Properties: very slow filtration  
 Filtration time: 150 to 250 secs.  
 Surface weight: 84 g/m<sup>2</sup>

Diam. mm	PK	Cat. No.
55	100	9.049 520
70	100	9.049 585
90	100	9.049 586
110	100	9.049 587
125	100	9.049 524
150	100	9.049 588
185	100	9.049 589
240	100	9.049 590
580 x 580	100	9.049 591

Other formats and diameters are available on request.



#### 3 Filter paper, quantitative, Grade 392 - red spot, circles and sheets

Sartorius Lab Instruments

Properties: medium fast filtration  
 Filtration time: 35 to 70 secs.  
 Surface weight: 84 g/m<sup>2</sup>

Diam. mm	PK	Cat. No.
55	100	9.049 577
70	100	9.049 578
90	100	9.049 579
110	100	9.049 580
125	100	9.049 581
150	100	9.049 582
185	100	9.049 536
240	100	9.049 583
580 x 580	100	9.049 584

Other formats and diameters are available on request.



#### 4 Filter paper grade 390, green dot, quantitative, round filter

Sartorius Lab Instruments

Slow filtration. These ashless filter papers are used for quantitative and gravimetric analyses as well as for pressure and vacuum filtration.

Diam. mm	Weight g / m <sup>2</sup>	Filtration time secs.	PK	Cat. No.
47	84	100	100	6.239 206
55	84	100	100	7.300 360
70	84	100	100	7.300 358
90	84	100	100	7.079 463
100	84	100	100	7.079 766
110	84	100	100	7.079 472
125	84	100	100	7.079 380
150	84	100	100	7.077 523
185	84	100	100	6.206 309



## Filtration/Glass-fibre filters

### Glass microfibre filters

Glass microfibre filters have a fast filtration and a high loading capacity and particle retention rate. Manufactured without chemical binder from high grade borosilicate glass. (Exception: GF6, GF9). They are suitable for gravity or low suction filtration. Filtration speeds generally very much higher than conventional cellulose papers. Efficient retention of micron size particles. Must be used flat. Ideal for use in flat perforated plate Buchner type funnels (not sintered glass models). Can be used up to 500 °C

Wide range of applications including:

- retention of fine analytical precipitates
- retention of biochemical gelatinous precipitates
- water/air pollution analyses
- as prefilters for membranes
- scintillation counting
- radioimmunoassay.

1



### 1 LLG-Glass microfibre filters, filter circles

Diam. mm	Pore size µm	Filtration time secs.	Weight g / m <sup>2</sup>	Thickness mm	PK	Cat. No.
25	1.6	60	52	0.26	100	9.045 860
37	1.6	60	52	0.26	100	7.970 790
47	1.6	60	52	0.26	100	9.045 861
55	1.6	60	52	0.26	100	6.242 633
90	1.6	60	52	0.26	100	6.252 072
110	1.6	60	52	0.26	100	7.970 339
125	1.6	60	52	0.26	100	7.970 033
150	1.6	60	52	0.26	100	9.045 862
25	1.2	100	52	0.26	100	9.045 865
47	1.2	100	52	0.26	100	6.243 711
55	1.2	100	52	0.26	100	6.251 383
70	1.2	100	52	0.26	100	9.045 866
90	1.2	100	52	0.26	100	9.045 867
110	1.2	100	52	0.26	100	9.045 868
47	0.7	310	75	0.45	100	7.970 106
55	0.7	310	75	0.45	100	7.970 742
70	0.7	310	75	0.45	100	6.253 553

Filtration velocity according to Herzberg

2



### 2 Pre-filters, glass microfibre, type 134

The standard glass fibre pre-filter, placed directly on top of the membrane filter. With acrylic latex binder (4 % to 6 %, determined by ashing).

Sartorius Lab Instruments

#### Type

- A: standard glass fiber filter
- B: extra thick glass fiber filter
- C: binder-free glass fiber filter

Diam. mm	Type	PK	Cat. No.
47	C	500	6.202 135
47	A	500	9.053 709
50	A	500	9.053 710
50	C	500	9.053 770
130	A	50	9.053 717

Other formats are available on request.

3



### 3 Glass microfibre filters, MGB/MGC/MGD/MGF/MG 550-HA

Suitable for analytical and gravimetric analyses, as well as a pre-filter.

Sartorius Lab Instruments

- Hydrophilic
- Liquid Filtration
- Non-sterile

Type	Diam. mm	Weight g / m <sup>2</sup>	Thickness mm	Temp. max. °C	PK	Cat. No.
MGB	47	140	0.70	500	50	7.623 804
MGB	50	140	0.70	500	50	6.285 336
MGB	90	140	0.70	500	50	6.281 417
MGB	150	140	0.70	500	50	6.262 966
MGC	47	52	0.26	500	100	7.071 109
MGC	50	52	0.26	500	100	7.400 729
MGC	110	52	0.26	500	100	6.228 307

#### 1 Glass microfibre filters, grade GF 6, circles

Whatman

Retention rate: 99.97 %  
 Filtration time according to Gurley: 40 s

Diam. mm	Filtration time secs.	Weight g / m <sup>2</sup>	Thickness mm	PK	Cat. No.
55	200*	80	0.35	100	9.068 500
70	200*	80	0.35	100	9.068 501
90	200*	80	0.35	100	9.068 502
110	200*	80	0.35	100	9.068 503
125	200*	80	0.35	100	9.068 504
150	200*	80	0.35	100	9.068 505
185	200*	80	0.35	100	9.068 506
240	200*	80	0.35	100	9.068 507

\* to Herzberg

1



#### 2 Glass microfibre filters, grade GF/F

Whatman

This ultra-fine filter has a 98 % retention efficiency for particles as small as 0.7 µm in liquids.  
 Particle retention to 0.7 µm.

Diam. mm	PK	Cat. No.
24	100	9.056 666
25	100	9.056 676
42.5	100	9.056 716
47	100	9.056 726
55	100	9.056 780
70	100	9.056 781
90	25	9.056 782
110	25	9.056 783
125	25	9.056 784
150	25	9.056 785
257	25	9.056 787
570 x 460	25	9.056 805

2



#### 3 Glass microfibre filters, grade GF/B

Whatman

Three times thicker and with greater wet strength than GF/A. Particle retention to 1 µm.  
 Supplied in pack quantities as outlined below.

Diam. mm	PK	Cat. No.
24	100	9.056 662
25	100	9.056 672
37	100	9.056 692
42.5	100	9.056 712
47	100	9.056 722
55	100	9.056 750
70	100	9.056 751
90	25	9.056 752
110	25	9.056 753
125	25	9.056 754
150	25	9.056 755
185	25	9.056 756
570 x 460	25	9.056 802

3



#### 4 Glass microfibre filters, grade GF/C

Whatman

Extremely efficient filter made to retain fine particles and micro organisms.  
 Particle retention to 1.2 µm.

Diam. mm	PK	Cat. No.
21	100	9.056 643
24	100	9.056 663
25	100	9.056 673
37	100	9.056 693
42,5	100	9.056 713
47	100	9.056 723
50	100	9.056 759
55	100	9.056 760
70	100	9.056 761
90	100	9.056 762
100	100	6.240 479
110	100	9.056 763
125	100	9.056 764
150	100	9.056 765
203 x 254	100	6.287 413
254 x 102	50	9.056 816
570 x 460	25	9.056 803

4



## Filtration/Glass-fibre filters

1



### 1 Glass fibre papers Type MN GF 3

MACHEREY-NAGEL

**Specifications:**

Thickness: 0.28 mm  
 Weight: 50 g/m<sup>2</sup>  
 Filtration time: 25 s  
 Particle retention: 0.6 µm  
 Temperature max.: 500 °C  
 Binder: without

Diam. mm	PK	Cat. No.
25	100	4.000 602
37	100	4.000 603
45	100	4.000 604
55	100	4.000 605
70	100	6.072 986
90	100	6.203 996
110	100	6.203 327
125	100	4.000 606
150	100	7.400 610
185	100	4.000 607
240	100	4.000 608
270	100	4.000 609

2



### 2 Glass Fibre Papers Type MN 85/70

MACHEREY-NAGEL

**Specifications:**

Thickness: 0.35 mm  
 Weight: 70 g/m<sup>2</sup>  
 Filtration time: 15 s  
 Particle retention: 0.6 µm  
 Temperature max.: 200 °C  
 Binder: organic

Diam. mm	PK	Cat. No.
55	100	6.230 315
70	100	4.000 557
90	100	7.078 750
110	100	6.222 839
125	100	7.059 804
150	100	6.226 331
185	100	4.000 558
240	100	6.226 332
270	100	4.000 559
320	100	4.000 560

3



### 3 Glass fFbre Papers Type MN 85/90

MACHEREY-NAGEL

Can be used up to a maximum of 200 °C. With organic binder.

**Specifications**

Thickness: 0.4 mm  
 Weight: 90 g/m<sup>2</sup>  
 Filtration time: 15 Sec.  
 Particle retention: 0.5 µm

Diam. mm	PK	Cat. No.
25	100	4.000 566
37	100	7.058 316
45	100	7.400 141
47	100	6.309 953
55	100	9.049 600
70	100	9.049 601
90	100	9.049 602
110	100	9.049 603
125	100	9.049 604
150	100	9.049 605
185	100	9.049 606
240	100	9.049 607
270	100	4.000 567
320	100	4.000 568



## 6. Distillation, separation, filtration Filtration/Glass-fibre filters

### 1 Glass microfibre filters, grade 934-AH

Circles. High retention at high flow rates. Widely used in water pollution monitoring techniques for suspended solids, and is specified in US Method 934-AH. Particle retention to 1.5 µm.

Whatman

Diam. mm	PK	Cat. No.
24	100	9.056 667
47	100	9.056 727
55	100	9.056 730
70	100	9.056 731
90	100	9.056 732
110	100	9.056 733
125	100	9.056 734

1



### 2 Glass microfibre filters, grade GF/A

The general purpose high efficiency glass microfibre filter. Particle retention to 1.6 µm. Supplied in pack quantities as indicated.

Whatman

Diam. mm	PK	Cat. No.
21	100	9.056 641
24	100	9.056 661
25	100	9.056 671
37	100	9.056 691
42,5	100	9.056 711
47	100	9.056 721
50	100	9.056 725
55	100	9.056 740
60	100	9.056 739
70	100	9.056 741
81	100	6.256 482
90	100	9.056 742
110	100	9.056 743
125	100	9.056 744
150	100	9.056 745
254 x 203	100	9.056 811
570 x 460	25	9.056 801

2



### 3 Glass microfibre filters, grade GF/D

Thick filter made from less fibres and retaining around 3 µm particles with a very high loading capacity. Extremely high speed. Particle retention to 2.7 µm.

Whatman

Diam. mm	PK	Cat. No.
25	100	9.056 674
47	100	9.056 724
70	100	9.056 771
90	25	9.056 772
110	25	9.056 773
125	25	9.056 774
150	25	9.056 775
257	25	9.056 777

3



### 4 Quartz microfibre filters, grade QM-A

Manufactured from quartz microfibre to withstand high temperatures. Can be used up to 500 °C.

Whatman

Flow rate: Fast  
Retention: Medium  
Wet strength: High  
Thickness: 0.475 mm

Diam. mm	PK	Cat. No.
25	100	9.056 679
37	100	9.056 699
47	100	9.056 729
55	100	9.056 790
90	100	6.205 852
203 x 254	25	9.056 814

4



## Filtration/Glass-fibre filters



### 1 Glass fibre filters without binder

Recommended filters for controlling both air and water pollution.

Hahnemühle

- Made of 100 % borosilicate glass fibres without binders
- Extremely low content in alkali-earth metals
- Chemical stability: It keeps all its properties in contact with acid solutions (except hydrofluoric acid) and basic solutions at moderate concentrations
- Usable as a pre-filter for membranes to prevent the membranes from silting up
- Deposition of (radioactive) aerosols and monitoring of nuclear power plants
- Gravimetric analysis of organic and inorganic impurities in water and waste water according to DIN 38409 and EN 872 (suspended particles)
- Measurement of immission, measurement of dust in air and gases, monitoring of the efficiency of filtration and dedusting, monitoring the combustion air of power plants and of the steel and iron industry
- Measurement of dust release in workplace and production processes and the purification of compartment air
- Stability at high temperatures: It keeps its properties up to 500 °C
- High flow speed and high permeability to air

Type	Dimensions mm	Weight g / m <sup>2</sup>	Filtration time secs.	Thickness mm	PK	Cat. No.
GF50	Ø 25	56	19	0.29	100	4.006 614
GF50	Ø 37	56	19	0.29	100	4.006 615
GF50	Ø 47	56	19	0.29	100	4.006 617
GF50	Ø 70	56	19	0.29	100	4.006 620
GF50	Ø 90	56	19	0.29	100	4.006 622
GF50	Ø 125	56	19	0.29	100	4.006 625
GF50	203 x 254	56	19	0.29	100	4.006 627
GF51	Ø 47	140	44	1.00	100	4.006 630
GF52	Ø 47	54	25	0.28	100	4.006 640
GF52	Ø 50	54	25	0.28	100	4.006 641
GF52	Ø 70	54	25	0.28	100	4.006 643
GF52	Ø 90	54	25	0.28	100	4.006 644
GF52	Ø 110	54	25	0.28	100	4.006 645
GF55	Ø 47	75	67	0.40	100	4.006 661
GF55	60 x 90	75	67	0.40	300	6.292 106

Filtration time acc. to Gurley



### 2 Fibre Filters with inorganic binder

Recommended filters for environmental analysis and controlling both air and water pollution.

Hahnemühle

- Made of 100 % borosilicate glass fibres with binders
- Glass fibre filters capture fine particles down to 1 µm from liquids, in air, gases and aerosols with even 0.3 to 0.5 µm being absorbed
- Extremely low content in alkali-earth metals
- Chemical stability: It keeps all its properties in contact with acid solutions (except hydrofluoric acid) and basic solutions at moderate concentrations
- Stable at temperatures up to 500 °C
- Gravimetric analysis of organic and inorganic impurities in water and waste water according to DIN 38409 and EN 872 (suspended particles)
- Measurement of immission, measurement of dust in air and gases, monitoring of the efficiency of filtration and dedusting, monitoring the combustion air of power plants and of the steel and iron industry
- Measurement of dust release in workplace and production processes and the purification of compartment air
- Measurement of scintillation

Type	Diam. mm	Weight g / m <sup>2</sup>	Filtration time secs.	Thickness mm	PK	Cat. No.
GF 6	25	80	40	0.35	100	4.006 668
GF 6	47	80	40	0.35	100	4.006 671
GF 6	50	80	40	0.35	100	4.006 672
GF 6	55	80	40	0.35	100	4.006 673
GF 6	70	80	40	0.35	100	4.006 674
GF 6	90	80	40	0.35	100	4.006 675
GF 6	100	80	40	0.35	100	4.006 676
GF 6	125	80	40	0.35	100	4.006 678
GF 6	150	80	40	0.35	100	4.006 679
GF 6	185	80	40	0.35	100	4.006 680
GF 8	55	75	12	0.35	100	4.006 684
GF 9	50	70	27	0.35	100	4.006 690
GF 9	90	70	27	0.35	100	4.006 693

Filtration time acc. to Gurley

### 1 2 Membrane Filters Microsart™ e.motion

The membrane filters suitable for use in the Microsart™ e.motion are individually sterile-sealed, without protective paper on top of each filter, in a specially designed individual package on a band. For complete traceability, the membrane filter type, diameter, lot number and a unique serial number are printed on the package of each membrane filter unit. Specially developed pore structures of the 0.45 µm high flow membrane filters permit faster filtration based on their high flow rates and throughputs.

Sartorius Lab Instruments

All Microsart membrane filters are "multi-fit" and can be used in all standard dispenser systems.

The membrane filters have a diameter of 47 mm or 50 mm, and are white, green or grey with a high-contrast 3.1 mm grid.



**Danger**

H phrases: H228

Pore size µm	Colour	Diam. mm	PK	Cat. No.
0,45 High Flow	white/black	50	300	6.286 804
0,45 High Flow	white/black	47	300	9.054 050
0,45 High Flow	white/green	47	300	9.054 051
0,45	white/black	47	300	9.054 052
0,45	white/black	50	300	9.054 053
0,45	grey/white	47	300	9.054 054
0,45	grey/white	50	300	9.054 055
0,45	green/dark green	47	300	9.054 056
0,45	green/dark green	50	300	9.054 057
0,45	white/green	47	300	9.054 058
0,45	white/green	50	300	9.054 059
0,65	grey/white	47	300	9.054 060
0,65	grey/white	50	300	9.054 061
0,8	grey/white	47	300	9.054 062
0,8	grey/white	50	300	9.054 063



### 3 Membrane filters, Grade TE, PTFE with support

3



Whatman

**Applications:**

- Ideal venting filter for all applications
- For aggressive media and cryogenic liquids
- Separation of free water from organic solutions
- Outstanding as gas/liquid barrier
- Filtration of air and (hot) gases

**Properties:**

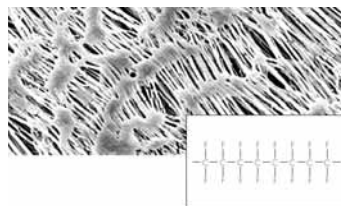
- Chemically inert to aqueous and organic solutions as well as concentrated acids and bases
- Hydrophobic - for aqueous filtration the pressure must be higher than the water breakthrough pressure
- Can be used up to 145 °C
- Can be sterilised by all methods except gamma radiation



Type	Diam. mm	Pore size µm	PK	Cat. No.
TE 35	25	0.20	50	9.058 682
TE 35	47	0.20	50	9.058 683
TE 35	50	0.20	50	9.058 684
TE 36	47	0.45	50	9.058 663
TE 36	50	0.45	50	9.058 664
TE 37	25	1.00	50	9.058 642
TE 37	47	1.00	50	9.058 643
TE 37	50	1.00	50	9.058 644
TE 38	47	5.00	50	9.058 623
TE 38	50	5.00	50	9.058 624

## Filtration/Membrane filters

1



### 1 Membranfilter, hydrophob, PTFE

Sartorius Lab Instruments



White. For the filtration of air and gases, as well as the filtration of solvents and acids.

- Good chemical resistance
- Autoclavable
- Non-sterile

Diam. mm	Pore size µm	PK	Cat. No.
13	0.20	100	9.054 361
25	0.20	100	9.054 364
47	0.20	100	9.054 368
50	0.20	100	9.054 369
142	0.20	25	9.054 373
13	0.45	100	9.054 341
25	0.45	100	9.054 344
47	0.45	100	9.054 348
90	0.45	25	9.054 351
100	0.45	25	9.054 352
142	0.45	25	9.054 353
293	0.45	25	9.054 358
13	1.20	100	9.054 321
25	1.20	100	9.054 324
47	1.20	100	9.054 328
50	1.20	100	9.054 329
100	1.20	25	9.054 332
142	1.20	25	9.054 335
25	5.00	100	9.054 304
47	5.00	100	9.054 308
50	5.00	100	9.054 309
100	5.00	25	9.054 312
142	5.00	25	9.054 315

2



### 2 Membrane filters, inorganic, Anodisc®

Whatman

Material: Anopore®. White.

The inorganic membrane Anopore® consists of high-purity aluminium oxide and can be used for a wide range of applications. The unique material has a precise, non-deformable honeycomb structure with a narrow pore size distribution range that guarantees very efficient particle retention. In addition, the membrane has a low protein binding capacity, minimal autofluorescence, is non-toxic and supports cellular growth.

Diam. mm	Pore size µm	PK	Cat. No.
13	0.02	100	9.951 034
25	0.02	50	9.951 035
47	0.02	50	7.604 787
13	0.10	100	9.951 036
25	0.10	50	6.235 017
47	0.10	50	9.951 038
13	0.20	100	9.951 039
25	0.20	50	9.951 040
47	0.20	50	9.951 041

3



### 3 Membrane filters, Nylon

Whatman



Hydrophilic, durable and compatible with a wide range of aqueous solutions, organic solvents and for the filtration of biological preparations and media. Autoclavable at 121 °C.

Diam. mm	Pore size µm	PK	Cat. No.
13	0.20	100	9.951 042
13	0.45	100	9.951 045
25	0.45	100	9.951 046
47	0.20	100	9.951 043
47	0.80	100	9.951 049
47	0.45	100	9.951 047
90	0.20	50	9.951 044
90	0.45	50	9.951 048

### 1 Nuclepore® membrane filter, PC



Whatman

- Hydrophilic, low protein binding
- Smooth surface for easy identification of particles
- Highly resistant to chemicals and good thermal stability
- Autoclavable up to 121 °C

**Applications:** Ideal for environmental and water analysis.

Diam. mm	Pore size µm	PK	Cat. No.
25	0.20	100	7.050 391
25	0.40	100	7.052 016
25	0.80	100	6.314 452
47	0.05	100	6.902 504
47	0.20	100	6.312 964
47	0.40	100	6.313 989

Further products can be found in our online shop.



### 2 Membrane filters, blotting, Polycarbonate



Sartorius Lab Instruments

Type 230. Polycarbonate (PC), white, non-sterile. Ultrapure, polycarbonate membrane with especially smooth surface and fine pore distribution. Applications include COD/TOC testing, particle analysis or epifluorescence microscopy.

Diam. mm	Pore size µm	PK	Cat. No.
25	0.4	100	9.049 182
47	0.4	100	9.049 183
25	0.2	100	9.049 180
47	0.2	100	9.049 181
50	0.2	100	7.511 100

Other patterns are available on request.



### 3 Membrane Filters, Grade RC, Regenerated cellulose



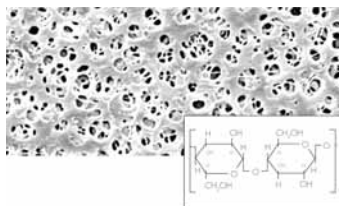
Whatman

- spontaneously wetted, very good wet-strength
- high chemical resistance, useful for aqueous and organic media
- hydrophilic
- can be used up to 180 °C
- sterilisable by all methods
- suitable for use as sterile filter to ASTM-D 3862-80

**Application:** For the sterilisation and particle filtration of aqueous and organic solutions

Type	Diam. mm	Pore size µm	PK	Cat. No.
RC 55	25	0.45	100	9.057 785
RC 55	47	0.45	100	9.057 791
RC 55	50	0.45	100	9.057 792
RC 55	100	0.45	25	9.057 795
RC 55	110	0.45	25	6.234 997
RC 55	142	0.45	25	9.057 798
RC 58	47	0.20	100	9.057 771
RC 58	50	0.20	100	9.057 772
RC 60	50	1.00	100	9.057 712



**1**


### 1 Membrane filters, regenerated cellulose

*Sartorius Lab Instruments*


The very low adsorption membranes are hydrophilic, solvent-resistant (pH 3-12) and therefore suitable for the particle removal from solvents.

Diam. mm	Pore size µm	Sterile	PK	Cat. No.
13	0.20	-	100	9.053 161
13	0.45	-	100	9.053 141
25	0.20	-	100	9.053 164
25	0.45	-	100	9.053 144
47	0.20	-	100	9.053 168
47	0.45	-	100	9.053 148
50	0.20	-	100	9.053 169
50	0.45	-	100	9.053 149
50	0.45	+	100	6.265 977
100	0.20	-	25	9.053 172
100	0.45	-	25	9.053 152
142	0.20	-	25	9.053 175
142	0.45	-	25	9.053 155
293	0.20	-	25	9.053 177
293	0.45	-	25	9.053 157

**2**


### 2 Membrane filters, cellulose acetate

*Sartorius Lab Instruments*


Type 111. Resistant to steam sterilisation up to 134 °C, or in dry heat up to 180 °C. Very low adsorption (important when filtering proteinaceous solutions). Suitable for particle removal and ultracleaning of aqueous solutions, methanol, ethanol, high-grade alcohols and residue analysis of fuels and oils. The extractable content of these filters make up <1 % of their weight. Other pore sizes and formats available on request.

Diam. mm	Pore size µm	PK	Cat. No.
25	0.20	100	9.053 064
25	0.45	100	9.053 044
47	0.20	100	9.053 068
47	0.45	100	9.053 048
47	0.65	100	9.053 028
50	0.20	100	9.053 069
50	0.45	100	9.053 049
142	0.20	25	9.053 075
142	0.45	25	9.053 055
142	1.20	25	9.053 195
142	5.00	25	7.017 726
293	1.20	25	9.053 197

Other patterns are available on request.

### Membrane filters, Grade OE, made from cellulose acetate

*Whatman*

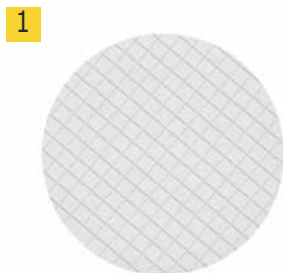

Very high wet strength and very low ability for protein binding. For filtration of aqueous, alcohol and oil-based solutions at temperatures up to 180 °C.

Description	Diam. mm	Pore size µm	PK	Cat. No.
OE 67	25	0.45	100	9.057 565
OE 67	47	0.45	100	9.057 571
OE 67	50	0.45	100	9.057 572
OE 67	142	0.45	25	9.057 578
OE 66	25	0.20	100	9.057 605
OE 66	47	0.20	100	9.057 611
OE 66	50	0.20	100	9.057 612
OE 66	142	0.20	25	9.057 618



### 1 Membrane filters, Grade ME, mixed cellulose esters, Grade ME

**Applications:** For microbiological analysis (sterile with grid) Whatman  
**Properties:** 0.45 µm pore size, 100 % microbe retention of *serratia marcescens*  
 1.2 µm pore size for microbiological control of yeasts



**Warning**

H phrases: H228

Description	Pore size µm	Diam. mm	PK	Cat. No.
ME 25/21 ST	0.45	50	100	9.058 179
ME 24/21 ST	0.2	47	100	9.058 199
ME 24/21 ST	0.2	50	100	9.058 200

### 2 Membrane filters, Grade ME, made from mixed cellulose esters



**Applications:**  
 - Excellent for gravimetical analysis  
 - Especially for aqueous solutions  
 - Ideally suitable for contamination test

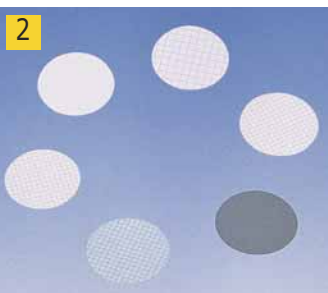
**Properties:**  
 - Economical  
 - Constant weight  
 - Hydrophilic  
 - Not sterile  
 - Can be used up to 125 °C  
 - Autoclavable up to 121 °C



**Warning**

H phrases: H228

Type	Diam. mm	Pore size µm	PK	Cat. No.
ME24	25	0.20	100	9.058 965
ME24	47	0.20	100	9.058 969
ME24	50	0.20	100	9.058 987
ME24	142	0.20	25	9.058 981
ME25	25	0.45	100	9.058 935
ME25	47	0.45	100	9.058 939
ME25	50	0.45	100	9.058 942
ME25	100	0.45	50	9.058 946
ME25	110	0.45	50	9.057 812
ME25	142	0.45	25	9.058 951
ME27	25	0.80	100	9.058 865
ME27	47	0.80	100	9.058 869
ME27	50	0.80	100	9.058 872
ME28	47	1.20	100	9.058 839
ME28	50	1.20	100	9.058 842
ME29	25	3.00	100	9.057 800
ME29	47	3.00	100	9.058 809
ME29	50	3.00	100	9.058 812



### 3 Membrane filters, Cellulose mixed ester



Composed of cellulose acetate (~20 %) and cellulose nitrate (~80 %).



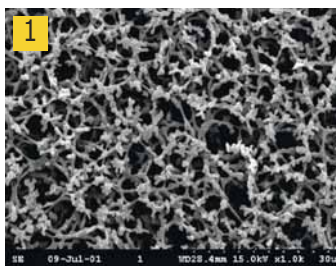
**Danger**

H phrases: H228

Type	Diam. mm	Pore size µm	PK	Cat. No.
Gridded white	47	0.45	100	9.951 016
Gridded white	25	0.80	100	9.951 018



## Filtration/Membrane filters



### 1 Membrane filters, Grade NC, made from cellulose nitrate

Whatman



**Applications:**

- For prefiltration and dust measurement, clarification and sterile filtration
- For aqueous solutions

**Properties:**

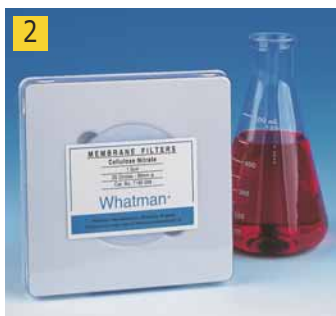
- Very easily wetted
- Hydrophilic
- Can be used up to 125 °C
- Autoclavable up to 121 °C



**Warning**

H phrases: H228

Type	Diam. mm	Pore size µm	PK	Cat. No.
NC 10	47	0.10	100	9.057 341
NC 10	50	0.10	100	9.057 342
NC 20	47	0.20	100	9.058 327
NC 20	50	0.20	100	9.058 328
NC 45	25	0.45	100	9.057 219
NC 45	47	0.45	100	9.057 220
NC 45	50	0.45	100	9.057 222
NC 45	100	0.45	50	9.057 225
NC 45	110	0.45	50	9.057 226
NC 45	142	0.45	25	9.057 228



### 2 Membrane Filters, Cellulose nitrate, WCN

Whatman



Plain white. Circles.

**Application**

- For prefiltration and dust measurement, clarification and filtration
- Filtration of aqueous solutions

**Properties**

- Very easily wettable
- Hydrophilic
- Used up to 125 °C
- Autoclavable (121 °C)



**Warning**

H phrases: H228

Diam. mm	Pore size µm	PK	Cat. No.
25	0.10	100	9.950 979
47	0.10	100	9.950 980
13	0.20	100	9.950 981
25	0.20	100	9.950 982
47	0.20	100	9.950 983
90	0.20	25	9.950 984
142	0.20	25	9.950 985
13	0.45	100	9.950 988
25	0.45	100	9.950 989
47	0.45	100	9.950 991
50	0.45	100	9.950 992
90	0.45	25	9.950 994
142	0.45	25	9.950 995
47	0.65	100	9.950 998
25	0.80	100	9.951 001
37	0.80	100	9.951 002
47	0.80	100	9.951 003
90	0.80	25	9.951 004
25	1.00	100	9.951 005
47	1.00	100	9.951 006
50	1.20	100	9.951 008
142	1.20	25	9.951 009
25	3.00	100	9.951 010
47	3.00	100	9.951 011
25	5.00	100	9.951 012
47	5.00	100	9.951 013
90	5.00	25	9.951 014

1 Membrane filters type 113, cellulose nitrate



Sartorius Lab Instruments

White. Very low content of extractable materials. Weight constant after 60 minutes of drying at 105 °C. Suitable for residue analysis, microscopic viewing in incident or transmitted light, chemotaxis, x-ray fluorescence, spectrometry and gravimetric analysis. Autoclavable at 121 °C. Other pore sizes and formats are available on request.



H phrases: H228

1



Diam. mm	Pore size µm	PK	Cat. No.
25	8.00	100	9.053 304
25	1.20	100	9.053 364
25	0.80	100	9.053 384
25	0.45	100	9.053 424
47	8.00	100	9.053 308
47	1.20	100	9.053 368
47	0.80	100	9.053 388
47	0.45	100	9.053 428
50	8.00	100	9.053 309
50	3.00	100	9.053 349
50	1.20	100	9.053 369
50	0.80	100	9.053 389
50	5.00	100	9.053 329
50	0.45	100	9.053 429

Other patterns are available on request.

2 Membrane filters type 113, cellulose nitrate



Sartorius Lab Instruments

White. Very low content of extractable materials. Weight constant after 60 minutes of drying at 105 °C. Suitable for residue analysis, microscopic viewing in incident or transmitted light, chemotaxis, x-ray fluorescence, spectrometry and gravimetric analysis. Autoclavable at 121 °C. Other pore sizes and formats are available on request.



H phrases: H228

2



Ø mm	Pore size µm	PK	Cat. No.
90	0.45	25	9.053 431
100	1.20	25	9.053 372
142	5.00	25	9.053 335
142	5.00	100	7.017 720
142	0.45	25	9.053 432

Other patterns are available on request.

We can supply this  
manufacturer's  
whole  
product range !



SARTORIUS

## Filtration/Membrane filters

1



### 1 2 Membrane filters, type 114, cellulose nitrate

White membrane with black grid, for detection of bacteria with dyed media, particle count & microscopy, individually, sterile packaged/non sterile.

Sartorius Lab Instruments



H phrases: H228

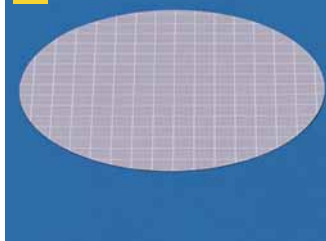
Diam. mm	Pore size µm	Sterile	PK	Cat. No.
25	0.80	-	100	9.054 014
47*	0.45	+	100	6.234 545
47	0.20	+	300	6.267 187
50	1.20	+	100	6.285 272
47	1.20	+	1000	7.017 045
47	0.80	+	1000	7.017 048
50	0.80	+	100	7.017 049
50	0.45	-	1000	7.017 052
50	0.45	+	1000	7.017 053
50	0.20	+	1000	7.075 961
47	0.20	+	1000	7.078 912
47	1.20	+	100	9.054 002
47	1.20	-	100	9.054 008
50	1.20	-	100	9.054 009
47	0.80	+	100	9.054 012
47	0.80	-	100	9.054 018
50	0.80	-	100	9.054 019
47	0.65	+	100	9.054 022
50	0.65	+	100	9.054 023
47	0.65	-	100	9.054 028
47	0.45	+	100	9.054 032
50	0.45	+	100	9.054 033
25	0.45	-	100	9.054 034
47	0.45	-	100	9.054 038
50	0.45	-	100	9.054 039
47	0.20	+	100	9.054 042
50	0.20	+	100	9.054 043
25	0.20	-	100	9.054 044
47	0.20	-	100	9.054 048
50	0.20	-	100	9.054 049

\* High flow.

2



3



### 3 Membrane filters Type 130, cellulose nitrate

Gray membrane (after wetting, black) with white grid, for detection of yeasts and molds, particle count and microscopy, individually, sterile packaged/non sterile.

Sartorius Lab Instruments

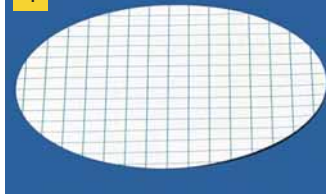


H phrases: H228

Diam. mm	Pore size µm	Sterile	PK	Cat. No.
50	0.65	+	1000	7.017 078
47 for SMART Filter Dispenser	0.45	+	3	7.054 644
47	0.65	+	100	9.054 122
47	0.45	+	100	9.054 132
50	0.45	+	100	9.054 133
50	0.45	-	100	9.054 139

Other types available on request.

4



### 4 Membrane filters, type 139, cellulose nitrate

White membrane with green grid, for detection of bacteria with dyed media, particle count and microscopy, individually, sterile packaged/non sterile.

Sartorius Lab Instruments



H phrases: H228

Diam. mm	Pore size µm	Sterile	PK	Cat. No.
47	1.20	+	100	7.200 435
47	0.45	+	100	9.054 460
50	0.45	+	100	9.054 462
47*	0.45	+	100	9.054 464
50*	0.45	+	100	9.054 465

\* High flow.

#### 1 LLG-Syringe Filters SPHEROS

Cost-effective syringe filters for filtration of a broad variety of solvents and aqueous or inorganic solutions. These syringe filters cover most applications in HPLC, pharmaceutical, environmental, biotechnology, and food and beverage testing laboratories.

- Robust Polypropylene housing
- Multifunctional syringe filters with female Luer-Lock inlet and male Luer-Slip outlet
- Suitable for all syringes with Luer connection
- Sterile or non-sterile
- Sterile products in individual hard blister packaging and dispenser box



#### 2 3 LLG Syringe Filters SPHEROS, Cellulose Acetate

Hydrophilic membrane for filtration of aqueous liquids. Low protein binding capacity. Especially suitable for biological macromolecules, water soluble oligomers and polymers. With female Luer-Lock inlet and male Luer-Slip outlet. Sterile products in individual hard blister packaging and dispenser box.

Filter diam.	Pore size	Housing	Sterile	PK	Cat. No.
mm	µm				
13	0.22	PP, red	-	100	6.272 802
13	0.45	PP, red	-	100	6.272 803
25	0.22	PP, red	-	50	6.272 804
25	0.22	PP, red	-	500	4.668 145
25	0.45	PP, red	-	50	6.272 805
25	0.45	PP, red	-	500	4.668 146
13	0.22	PP, red	+	100	6.272 806
13	0.45	PP, red	+	100	6.272 807
25	0.22	PP, red	+	45	6.272 808
25	0.45	PP, red	+	45	6.272 809

2



3



#### 4 LLG Syringe Filters SPHEROS, PES

Hydrophilic membrane for aqueous and polar organic solutions with low protein binding capacity. Especially suited for sterile filtration of solutions and media in cell culture as well as for ion chromatography and organic acids. With female Luer-Lock inlet and male Luer-Slip outlet. Sterile filters individually packed in a hard blister package.

Filter diam.	Pore size	Housing	Sterile	PK	Cat. No.
mm	µm				
25	0.22	PP, green	-	50	6.272 640
25	0.45	PP, green	-	50	6.272 641
25	0.22	PP, green	+	45	6.272 642
25	0.45	PP, green	+	45	6.272 643

4



#### 5 LLG Syringe Filters SPHEROS, Nylon

Hydrophilic membrane for filtration of aqueous and organic/aqueous liquids with medium polarity. Very good chemical resistance to esters, alkaline solutions and alcohols. With female Luer-Lock inlet and male Luer-Slip outlet.

Filter diam.	Pore size	Housing	Sterile	PK	Cat. No.
mm	µm				
13	0.22	PP, pink	-	100	6.272 810
13	0.45	PP, pink	-	100	6.272 811
25	0.22	PP, pink	-	50	6.272 812
25	0.22	PP, pink	-	500	4.668 147
25	0.45	PP, pink	-	50	6.272 813
25	0.45	PP, pink	-	500	4.668 148

5



#### 6 LLG Syringe Filters SPHEROS, PTFE

Hydrophobic membrane for filtration of non-polar liquids and gases. Very good chemical resistance to all kinds of solvents and alkaline solutions. With female Luer-Lock inlet and male Luer-Slip outlet.

Filter diam.	Pore size	Housing	Sterile	PK	Cat. No.
mm	µm				
13	0.22	PP, white	-	100	6.272 816
13	0.45	PP, white	-	100	6.272 817
25	0.22	PP, white	-	50	6.272 818
25	0.22	PP, white	-	500	4.668 149
25	0.45	PP, white	-	50	6.272 819
25	0.45	PP, white	-	500	4.668 150

6



### LLG-Syringe Filters

We offer a line of syringe filters especially designed to provide efficient filtration of a broad variety of fluids, solvents, aqueous or inorganic solutions. Our syringe filters cover most applications in HPLC, pharmaceutical, environmental, biotechnology and food and beverage testing laboratories.

- Housing injected in Polypropylene or MABS
- Multifunctional Syringe filters equipped with Luer-Lock connections on both sides or female Luer-Lock input and male Luer-Slip output
- Suitable for all syringes with Luer connection
- Pre-sterilised or non-sterile
- Sterile products in individual hard blister
- Superior pressure stability

**1**


### 1 2 3 LLG Syringe Filter CA, Cellulose acetate

Hydrophilic membrane for filtration of aqueous solutions.

This membrane features excellent shape stability in aqueous solutions and a very low binding capacity for proteins (21 µg per 25 mm Filter). Ideal for use with biological macromolecules, water soluble oligomers and polymers. With Luer-Lock input and Luer-Lock or Luer-Slip output.

**2**


Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	Acrylic, blue	500	<b>9.055 500</b>
non sterile	13	0.45	Acrylic, yellow	500	<b>9.055 502</b>
non sterile	13	0.80	Acrylic, green	500	<b>9.055 504</b>
non sterile	25	0.20	Acrylic, blue	500	<b>9.055 501</b>
non sterile	25	0.45	Acrylic, yellow	500	<b>9.055 503</b>
non sterile	25	0.80	Acrylic, green	500	<b>7.970 389</b>
sterile	13	0.20	Acrylic, blue	50	<b>9.055 510</b>
sterile	13	0.45	Acrylic, yellow	50	<b>9.055 512</b>
sterile	13	0.80	Acrylic, green	50	<b>6.285 694</b>
sterile	25	0.20	Acrylic, blue	50	<b>9.055 511</b>
sterile	25	0.45	Acrylic, yellow	50	<b>9.055 513</b>
sterile	25	0.80	Acrylic, green	50	<b>6.285 699</b>
sterile	25	0.20	Acrylic, transparent*	50	<b>6.285 703</b>
sterile	25	0.45	Acrylic, transparent*	50	<b>6.285 704</b>
sterile	25	0.80	Acrylic, transparent*	50	<b>6.285 705</b>

\*Luer-Slip output

**3**

**4**


### 4 LLG Syringe Filter NY, Nylon/Polyamide

This is a rather hydrophilic membrane; it is recommended for filtration of aqueous and organic/aqueous medium polar liquids. Excellent chemical compatibility with esters, bases and alcohols. With Luer-Lock input and Luer-Slip output.

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.22	PP	500	<b>9.055 520</b>
non sterile	13	0.45	PP	500	<b>9.055 522</b>
non sterile	25	0.22	PP	500	<b>9.055 521</b>
non sterile	25	0.45	PP	500	<b>9.055 523</b>
sterile	25	0.22	Acrylic	50	<b>6.285 707</b>
sterile	25	0.45	Acrylic	50	<b>6.285 708</b>

**5**


### 5 LLG Syringe Filter PE, Polyethylene

Universal filter membrane for all analytical requirements. For aqueous and aggressive organic solvent filtration. Wide application in sample preparation, Ion chromatography. With Luer-Lock input and Luer-Slip output.

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.2	PP	500	<b>9.055 540</b>
non sterile	13	0.5	PP	500	<b>9.055 542</b>
non sterile	25	0.2	PP	500	<b>9.055 541</b>
non sterile	25	0.5	PP	500	<b>9.055 543</b>



#### 1 LLG Syringe Filter RC, Regenerated cellulose

Hydrophilic membrane features very low adsorption. It is recommended for filtration of aqueous and organic/aqueous liquids. For filtration of polar and medium polar liquids. With Luer-Lock input and Luer-Slip output.

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	PP	500	9.055 530
non sterile	13	0.45	PP	500	9.055 532
non sterile	25	0.20	PP	500	9.055 531
non sterile	25	0.45	PP	500	9.055 533



#### 2 LLG Syringe Filter PTFE, Polytetrafluorethylene

Hydrophobic membrane. Ideal for filtration of non-polar liquids and gases. It is very resistant to various solvents as well as acids and bases. With Luer-Lock input and Luer-Slip output.

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	PP	500	7.970 402
non sterile	13	0.45	PP	500	7.970 385
non sterile	25	0.20	PP	500	9.055 535
non sterile	25	0.45	PP	500	6.255 331



#### 3 LLG Syringe Filter PVDF, Polyvinylidene fluoride

Hydrophilic membrane for aqueous polar and light unpolar solutions. Very low protein binding High flow rates ideal for use with biological macromolecules, water soluble oligomers and polymers. With Luer-Lock input and Luer-Slip output.

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	PP	500	7.970 258
non sterile	13	0.45	PP	500	9.055 534
non sterile	25	0.20	PP	500	7.970 387
non sterile	25	0.45	PP	500	7.970 286
sterile	13	0.20	Acrylic	50	6.285 697
sterile	13	0.45	Acrylic	50	6.285 698
sterile	25	0.20	Acrylic	50	6.258 299
sterile	25	0.45	Acrylic	50	6.285 702



#### 4 LLG Syringe Filter GF, Glass-fibre

Hydrophilic membrane suitable for pre-filtration. They can be used for solutions with high particulate loads or for highly viscous solutions (e.g. soil samples, fermentation broths) either alone or in combination with other filters. With Luer-Lock input and Luer-Slip output.

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	25	0.7	PP	500	9.055 550
non sterile	25	1.0	PP	500	9.055 551
non sterile	25	1.2	PP	500	9.055 552
non sterile	25	3.1	PP	500	9.055 553



#### 5 Syringe filters Puradisc™ PTFE

Hydrophobic membrane. Ideal for filtration of non-polar liquids and gases.

Whatman

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	4	0.20	PP	100	9.951 252
non sterile	4	0.45	PP	100	9.951 253
non sterile	13	0.10	PP	100	9.951 255
non sterile	13	0.20	PP	100	9.951 256
non sterile	13	0.20	PP w. tip	50	9.951 249
non sterile	13	0.45	PP	100	9.951 257
non sterile	13	0.45	PP w. tip	50	9.951 250
non sterile	13	1.00	PP	100	9.951 258
non sterile	25	0.20	PP	50	9.951 069
non sterile	25	0.20	PP	200	9.951 070
non sterile	25	0.45	PP	50	9.951 071
non sterile	25	0.45	PP	200	9.951 072
non sterile	25	1.00	PP	50	9.951 073



## Filtration/Syringe filters

**1**


### 1 Syringe filters Puradisc™ Nylon

Hydrophilic membrane; it is recommended for filtration of aqueous and organic/aqueous medium polar liquids.

*Whatman*

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	4	0.20	PP	100	9.951 265
non sterile	4	0.45	PP	100	9.951 266
non sterile	13	0.20	PP	100	9.951 268
non sterile	13	0.45	PP	100	9.951 269
non sterile	25	0.20	PP	50	9.951 065
non sterile	25	0.20	PP	200	9.951 066
non sterile	25	0.45	PP	50	9.951 067
non sterile	25	0.45	PP	200	9.951 068
sterile	4	0.20	PP	50	9.951 264

**2**


### 2 Syringe filters Puradisc™ Polyethersulfone (PES)

Hydrophilic membrane for aqueous and light organic solutions with a low binding capacity for proteins.

*Whatman*

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	PP	100	9.951 239
non sterile	13	0.45	PP	100	9.951 241
non sterile	25	0.20	PP	200	9.951 063
non sterile	25	0.45	PP	200	9.951 064
sterile	13	0.20	PP	50	9.951 238
sterile	13	0.45	PP	50	9.951 240
sterile	25	0.20	PP	50	9.951 061
sterile	25	0.45	PP	50	9.951 062

**3**


### 3 Syringe filters Puradisc™ Polypropylene

Suitable for HPLC sample filtration (water-based) and aggressive water solutions such as acids and alkalis.

*Whatman*

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	PP	100	9.951 245
non sterile	13	0.45	PP	100	9.951 246
non sterile	25	0.20	PP	50	9.951 074
non sterile	25	0.20	PP	200	9.951 075
non sterile	25	0.45	PP	50	9.951 076
non sterile	25	0.45	PP	200	9.951 077

**4**


### 4 Syringe filters Puradisc™ FP30

For aqueous solutions. Polycarbonate (PC) housing. Membrane cellulose nitrate (CN) or cellulose acetate (CA). Filtration of protein-containing solutions with minimal sample loss.

*Whatman*

Type	Filter diam.	Pore size	Housing	Membrane	PK	Cat. No.
	mm	µm				
non sterile	30	0.20	PC	CA	50	9.049 934
non sterile	30	0.20	PC	CA	100	9.603 585
non sterile	30	0.20	PC	CA	500	9.603 584
non sterile	30	0.20	PC*	CA	500	9.049 919
non sterile	30	0.45	PC	CA	50	9.049 932
non sterile	30	0.45	PC	CA	100	9.049 927
non sterile	30	0.45	PC	CA	500	9.049 933
non sterile	30	0.80	PC	CA	50	9.049 936
non sterile	30	0.80	PC	CA	500	9.049 920
non sterile	30	1.20	PC	CA	50	9.049 937
non sterile	30	1.20	PC	CA	500	9.049 925
non sterile	30	5.00	PC	CN	50	9.049 931
non sterile	30	5.00	PC	CN	100	9.049 926
non sterile	30	5.00	PC	CN	500	9.603 581
sterile	30	0.20	PC	CA	50	9.049 913
sterile	30	0.20	PC*	CA	50	9.049 917
sterile	30	0.45	PC	CA	50	9.049 912
sterile	30	0.80	PC	CA	50	9.049 915
sterile	30	1.20	PC	CA	50	9.049 916
sterile	30	5.00	PC	CN	50	9.049 911
sterile	30	0.20	PC	PTFE	50	9.049 918

\* with Luer-Lock outlet

#### 1 2 Syringe filters GD/X®

Whatman GD/X syringe filters are the perfect solution for samples with high viscosity or samples that contain particles. Four filter layers decrease clogging and therefore filter exchange during processing is avoided. These filters allow 3 to 7 times higher throughput than traditional types.

Whatman

Type	Filter diam.	Pore size	Housing	Membrane	PK	Cat. No.
	mm	µm				
non sterile	25	0.20	PP	Nylon	150	9.056 820
non sterile	25	0.45	PP	Nylon	150	9.056 821
non sterile	13	0.20	PP	PVDF	150	6.283 543
non sterile	25	0.20	PP	PVDF	150	9.056 822
non sterile	25	0.45	PP	PVDF	150	9.056 823
non sterile	25	0.20	PP	RC	150	9.056 807
non sterile	25	0.45	PP	RC	150	9.056 809
non sterile	25	0.45	PP	RC	1500	9.056 810
non sterile	25	0.20	PP	PTFE	150	6.073 051
non sterile	25	0.45	PP	PTFE	150	6.204 535
non sterile	13	0.20	PP	CA	150	6.225 246
non sterile	13	0.45	PP	CA	150	7.632 839
non sterile	25	0.20	PP	CA	150	7.630 830
non sterile	25	0.45	PP	CA	150	6.800 153

1



2



#### 3 Inorganic membrane syringe filters, Anotop®

The Anopore® inorganic membrane consists of high-purity aluminium oxide and can be used for a wide range of applications. This unique material has a precise, non-deformable, honeycomb structure with a relatively consistent pore size that guarantees very efficient particle retention. In addition, the membrane has a low protein binding capacity, minimal autofluorescence, is non-toxic and supports cellular growth.

Whatman

- Anotop® 10 Plus/25 Plus contains a glass microfiber prefilter
- Housing: PP
- Extractable materials: low
- Inlet connection: Female luer lock
- Outlet connection: Male slip luer

Housing diameter: 10 mm  
 Housing material: PP  
 Extractable substances: low  
 Retained volume: < 20 µl

3



Type	Residual volume	Filter diam.	Pore size	Membrane	PK	Cat. No.
	ml	mm	µm			
non-sterile	0,02	1	0.02	Anotop® 10	50	9.951 186
non-sterile	0,02	10	0.10	Anotop® 10	50	9.951 187
non-sterile	0,02	10	0.20	Anotop® 10	50	9.951 188
non-sterile	0,15	25	0.02	Anotop® 25	50	9.951 198
non-sterile	0,15	25	0.10	Anotop® 25	50	9.951 199
non-sterile	0,15	25	0.20	Anotop® 25	50	9.951 200
non-sterile	0,15	25	0.20	Anotop® 25	200	9.951 201
sterile	0,02	10	0.02	Anotop® 10	50	9.951 189
sterile	0,02	10	0.10	Anotop® 10	50	9.951 190
sterile	0,02	10	0.20	Anotop® 10	50	9.951 191
sterile	0,15	25	0.02	Anotop® 25	50	9.951 202
sterile	0,15	25	0.10	Anotop® 25	50	9.951 203
sterile	0,15	25	0.20	Anotop® 25	50	9.951 204

Further products can be found in our online shop.



## Filtration/Syringe filters

1



### 1 Syringe filters Spartano®, Regenerated cellulose

Versatile use - ready-to-use filter units with a hydrophilic, low protein-binding membrane made of regenerated cellulose. First class chemical resistance against the usual aqueous and organic HPLC solvents

- Spartano® 13 and 30 are tested and certified for UV absorbance substances at wavelengths of 210 nm and 254 nm with water, methanol and acetonitrile;
- Spartano® 13 has an extremely low hold up volume; <10 µl, for optimal filtration

Whatman

#### Applications:

Ideal for HPLC sample preparation to achieve reproducible results. Carefully controlled manufacture guarantees lowest traces of UV- absorbing, extractable components.

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	LLF/LM	100	9.049 948
non sterile	13	0.20	LLF/LM	500	9.049 980
non sterile	13	0.20	LLF/Mini-Tip	100	9.049 943
non sterile	13	0.20	LLF/Mini-Tip	500	9.049 951
non sterile	13	0.45	LLF/LM	100	9.049 949
non sterile	13	0.45	LLF/Mini-Tip	100	9.049 944
non sterile	13	0.45	LLF/Mini-Tip	500	9.049 950
non sterile	30	0.20	LLF/LM	100	9.049 941
non sterile	30	0.20	LLF/LM	500	9.049 965
non sterile	30	0.45	LLF/LM	50	9.049 960
non sterile	30	0.45	LLF/LM	100	9.049 942
non sterile	30	0.45	LLF/LM	500	9.049 959

LLF = luer-lock female  
LM = luer male

2



### 2 Syringe filters, disposable, ReZist® PTFE

- Hydrophobic PTFE-membrane, laminated with polypropylene
- first class chemical resistance opposite to common organic HPLC solvents

Whatman

#### Application:

Filtration of aggressive solutions.  
GF92 membrane to the prefiltration of loaded solutions.

Type	Filter diam.	Pore size	Housing	Membrane	PK	Cat. No.
	mm	µm				
non sterile	13	0.20	PP*	PTFE	100	9.049 981
non sterile	13	0.45	PP*	PTFE	100	9.049 982
sterile	30	0.20	PP	PTFE	50	9.049 955
non sterile	30	0.20	PP	PTFE	100	9.049 961
non sterile	30	0.20	PP	PTFE	500	9.049 990
non sterile	30	0.45	PP	PTFE	100	9.049 962
non sterile	30	0.45	PP	PTFE	500	9.049 991
non sterile	30	1.00	PP	PTFE	100	9.049 963
non sterile	30	1.00	PP	PTFE	500	9.049 992
non sterile	30	5.00	PP	PTFE	100	9.049 964
non sterile	30	5.00	PP	PTFE	500	9.049 993
non sterile	30		PP	GF92	100	9.049 996
non sterile	30		PP	GF92	500	9.049 997

\*with Mini-Tip outlet

3



### 3 Syringe filters, Minisart® High-Flow, PES

Housing MBS. Minisart® High Flow PES (Polyethersulfone) syringe filters for sterile filtration, particle removal and ultra-cleaning. Covers a wide pH range.

Sartorius Lab Instruments

These independent ready-to-use syringe filters with PES membrane filter feature excellent flow speed and high filterable volume. The Minisart® High Flow is a syringe filter for rapid volume sterilisation with maximum user convenience. Ready-to-use units, which offer flow rates at low inlet pressures, allow for a correspondingly rapid sterile filtration.

Filter diam.	Pore size	Description	Colour	Sterile	PK	Cat. No.
mm	µm					
28	0.10	Male Luer Lock	Dark Red	+	50	9.049 866
28	0.22	Male Luer Lock	Royal Blue	x	50	6.261 787
28	0.22	Male Luer Lock	Royal Blue	+	50	9.049 129
28	0.22	Male Luer Slip	Royal Blue	+	50	6.201 927
28	0.22	Male Luer Lock	Royal Blue	-	500	9.049 130
28	0.22	Male Luer Slip	Royal Blue	-	500	6.252 364
28	0.45	Male Luer Lock	Amber	+	50	6.206 703
28	0.45	Male Luer Lock	Amber	-	500	6.201 960
28	0.45	Male Luer Slip	Amber	x	50	6.251 896
28	0.45	Male Luer Slip	Amber	+	50	9.049 865
28	0.45	Male Luer Slip	Amber	-	500	7.400 725

x = sterilization by gamma irradiation

### Syringe filter Minisart® NML, SFAC

Housing MBS. SFCA/CA (Surfactant-free Cellulose Acetate) membrane. For sterile, particle free, ultrapure filtration of small volumes of liquid up to approx. 100 ml. Color coded and printed for easy membrane and pore size identification. With hydrophilic cellulose acetate membrane for minimum adsorption. Ready-to-use immediately. With female luer-lock inlet, male luer slip outlet.

Sartorius Lab Instruments

Filter diam.	Pore size	Colour	Description	Sterile	PK	Cat. No.
mm	µm					
28	0.20	Blue	SFCA, Male Luer Lock*	+	50	6.250 269 <b>1</b>
28	0.20	Blue	SFCA, Male Luer Lock*	x	50	6.224 111
28	0.20	Blue	SFCA, Male Luer Lock*	-	500	9.049 107
28	0.20	Blue	SFCA, Male Luer Slip*	+	50	9.604 009
28	0.20	Blue	SFCA, Male Luer Slip*	-	500	7.017 212
28	0.45	Yellow	SFCA, Male Luer Lock*	+	50	6.900 911 <b>2</b>
28	0.45	Yellow	SFCA, Male Luer Lock*	x	50	7.620 792
28	0.45	Yellow	SFCA, Male Luer Lock*	-	500	9.049 108
28	0.45	Yellow	SFCA, Male Luer Slip*	+	50	9.604 011
28	0.45	Yellow	SFCA, Male Luer Slip*	-	500	7.017 213
28	0.65	Pink	SFCA, Male Luer Slip	+	50	6.901 409 <b>3</b>
28	0.80	Green	SFCA, Male Luer Lock	+	50	9.049 103 <b>4</b>
28	0.80	Green	SFCA, Male Luer Lock	-	500	9.049 109
28	1.20	Red	SFCA, Male Luer Lock	+	50	9.049 104
28	1.20	Red	SFCA, Male Luer Lock	-	500	9.049 122
28	5.00	Brown	SFCA, Male Luer Lock*	+	50	9.049 105 <b>5</b>
28	5.00	Brown	SFCA, Male Luer Lock	-	500	9.049 123

\* CE-marked  
x = sterilization by gamma irradiation



### 6 Syringe filter Minisart® RC

Housing PP. Regenerated cellulose (RC). Ready-to-use units with a hydrophilic, solvent-resistant membrane made of regenerated cellulose, making sample preparation quick and easy. Suitable for aqueous/organic solutions.

Sartorius Lab Instruments

Filter diam.	Pore size	Description	Colour	Sterile	PK	Cat. No.
mm	µm					
25	0.20	Male Luer Slip	White, Printed	+	50	7.076 270
25	0.20	Male Luer Slip	White, Printed	-	50	9.049 094
25	0.20	Male Luer Slip	White, Printed	-	200	6.250 422
25	0.20	Male Luer Slip	White, Printed	-	500	9.049 095
25	0.45	Male Luer Slip	White, Printed	-	50	9.049 097
25	0.45	Male Luer Slip	White, Printed	-	200	6.201 608
25	0.45	Male Luer Slip	White, Printed	-	500	9.049 098
15	0.20	Male Luer Slip	White, Printed	+	50	7.075 954
15	0.20	Male Luer Slip	White, Printed	-	50	9.049 087
15	0.20	Male Luer Slip	White, Printed	-	500	9.049 088
15	0.45	Male Luer Slip	White, Printed	-	50	9.049 091
15	0.45	Male Luer Slip	White, Printed	-	500	9.049 092
4	0.20	Male Luer Slip	Blue Tray	-	50	9.049 081
4	0.20	Male Luer Slip	Blue Tray	-	500	9.049 082
4	0.45	Male Luer Slip	Yellow Tray	-	50	9.049 084
4	0.45	Male Luer Slip	Yellow Tray	-	500	9.049 085



### 7 Syringe filter Minisart® NY/NY25 Plus

Housing PP. NY (Nylon) and NY25 Plus (Glass Fiber 0.7 µm<sup>2</sup> + Nylon).

Sartorius Lab Instruments

Filter diam.	Pore size	Description	Colour	Sterile	PK	Cat. No.
mm	µm					
25	0.20	Male Luer Slip	White, Printed	+	50	7.970 531
25	0.20	Male Luer Slip	White, Printed	-	500	6.232 794
25	0.45	Male Luer Slip	White, Printed	+	50	7.616 056
25	0.45	Male Luer Slip	White, Printed	-	500	6.207 149
15	0.20	Male Luer Slip	White, Printed	-	50	6.255 610
15	0.45	Male Luer Slip	White, Printed	-	50	6.284 026
25	0.45	Male Luer Slip	White, Printed	-	50	6.252 610
25	0.45	Male Luer Slip	White, Printed	-	500	7.500 023





## Filtration/Syringe filters



### 1 Syringe filter Minisart® SRP, PTFE

Housing PP. With a chemical-resistant, hydrophobic PTFE membrane for high purification of solvents or aggressive liquids in HPLC or GC analysis. Low adsorption.

Sartorius Lab Instruments

Filter diam.	Pore size	Description	Colour	Sterile	PK	Cat. No.
mm	µm					
25	0.20	Male Luer Slip	White, Printed	+	50	7.076 124
25	0.20	Male Luer Slip	White, Printed	-	50	9.049 115
25	0.20	Male Luer Slip	White, Printed	-	200	6.250 452
25	0.20	Male Luer Slip	White, Printed	-	500	9.049 114
25	0.45	Male Luer Slip	White, Printed	-	50	9.049 116
25	0.45	Male Luer Slip	White, Printed	-	200	6.250 514
25	0.45	Male Luer Slip	White, Printed	-	500	9.049 117
15	0.20	Male Luer Slip	White, Printed	+	50	7.080 155
15	0.20	Male Luer Slip	White, Printed	-	50	9.604 022
15	0.20	Male Luer Slip	White, Printed	-	500	7.017 207
15	0.45	Male Luer Slip	White, Printed	-	50	9.604 024
15	0.45	Male Luer Slip	White, Printed	-	500	9.049 073
4	0.20	Male Luer Slip	Blue Tray	-	500	6.255 634
4	0.45	Male Luer Slip	Yellow Tray	-	50	9.049 146
4	0.45	Male Luer Slip	Yellow Tray	-	500	9.049 147

Minisart SRP 15 and SRP 25 are also available in 0.2 µm pore sizes (and sterile).

### 2 Syringe filter CHROMAFIL®, Cellulose acetate (CA)

Hydrophilic membrane for filtration of water-soluble oligomers and polymers, especially suited for biological macromolecules. Very high shape stability in aqueous solutions extremely low binding capacity for proteins (21 µg/ 25 mm filter).

MACHEREY-NAGEL

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	PP-colourless/labelled*	100	7.971 473
non sterile	13	0.45	PP-colourless/labelled*	100	6.287 307
non sterile	25	0.20	PP-yellow/red	100	9.049 038
non sterile	25	0.20	PP-yellow/red	400	9.049 039
non sterile	25	0.20	PP-colourless/labelled*	100	4.003 419
non sterile	25	0.20	PP-colourless/labelled*	400	4.003 420
non sterile	25	0.45	PP-colourless/red	100	9.049 040
non sterile	25	0.45	PP-colourless/red	400	9.049 041
non sterile	25	0.45	PP-colourless/labelled*	100	4.003 421
non sterile	25	0.45	PP-colourless/labelled*	400	4.003 422
sterile	25	0.20	PP-yellow/red	50	9.049 036
sterile	25	0.45	PP-colourless/red	50	9.049 037

\* CHROMAFIL® Xtra



### 3 Syringe filter CHROMAFIL®, Cellulose mixed ester (MV)

Hydrophilic membrane. This membrane is recommended for all filtrations of aqueous or polar organic samples.

MACHEREY-NAGEL

Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	25	0.20	PP-yellow/yellow	100	9.049 030
non sterile	25	0.20	PP-colourless/labelled*	100	4.003 407
non sterile	25	0.45	PP-colourless/yellow	100	9.049 032
non sterile	25	0.45	PP-colourless/yellow	400	9.049 033
non sterile	25	0.45	PP-colourless/labelled*	100	4.003 405
non sterile	25	0.45	PP-colourless/labelled*	400	4.003 406

\* CHROMAFIL® Xtra





### 1 Syringe filter CHROMAFIL<sup>®</sup>, regenerated Cellulose (RC)

Hydrophilic membrane with very low adsorption for aqueous and organic/aqueous liquids i.e. polar and medium polar sample solutions. Binding capacity for proteins 84 µg/25 mm filter.

MACHEREY-NAGEL

1



Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	13	0.20	PP-colourless/labelled*	100	6.287 308
non sterile	13	0.45	PP-colourless/labelled*	100	6.287 309
non sterile	15	0.20	PP-yellow/blue <sup>1)</sup>	100	9.049 025
non sterile	15	0.45	PP-colourless/blue <sup>1)</sup>	100	9.049 026
non sterile	25	0.20	PP-yellow/blue	100	9.049 042
non sterile	25	0.20	PP-yellow/blue	400	9.049 043
non sterile	25	0.20	PP-colourless/labelled*	100	4.003 424
non sterile	25	0.20	PP-colourless/labelled*	400	4.003 425
non sterile	25	0.45	PP-colourless/blue	100	9.049 044
non sterile	25	0.45	PP-colourless/blue	400	9.049 046
non sterile	25	0.45	PP-colourless/labelled*	100	4.003 426
non sterile	25	0.45	PP-colourless/labelled*	400	6.233 891

\* CHROMAFIL<sup>®</sup> Xtra<sup>1)</sup> with mini tip outlet

### 2 Syringe filter CHROMAFIL<sup>®</sup>, Polytetrafluoroethylene (PTFE)

A hydrophobic membrane. Ideal for filtration of non-polar liquids and gases. It is very resistant to various solvents as well as acids and bases. By flushing with alcohol, followed by water, the original hydrophobic membrane can be made more hydrophilic.

MACHEREY-NAGEL

2



Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	3	0.20	PP-colourless	100	9.049 053
non sterile	3	0.45	PP-colourless	100	9.049 054
non sterile	13	0.20	PP-colourless/labelled*	100	7.970 889
non sterile	13	0.45	PP-colourless/labelled*	100	6.268 887
non sterile	15	0.20	PP-yellow/colourless <sup>1)</sup>	100	9.049 055
non sterile	15	0.45	PP-colourless <sup>1)</sup>	100	9.049 056
non sterile	25	0.20	PP-yellow/colourless	100	9.049 057
non sterile	25	0.20	PP-yellow/colourless	400	9.049 058
non sterile	25	0.20	PP-colourless/labelled*	100	4.003 409
non sterile	25	0.20	PP-colourless/labelled*	400	4.003 410
non sterile	25	0.45	PP-colourless/labelled*	100	9.049 059
non sterile	25	0.45	PP-colourless/labelled*	400	9.049 060
non sterile	25	1.00	PP-colourless/labelled*	100	6.242 808

\* CHROMAFIL<sup>®</sup> Xtra<sup>1)</sup> with mini tip outlet

### 3 Syringe filter CHROMAFIL<sup>®</sup>, Polyester (PET)

Hydrophilic membrane for polar as well as non-polar solvents. The HPLC filter, especially suited for mixtures of water and organic solvents; for TOC/DOC determination; not cytotoxic, does not inhibit the growth of microorganisms and higher cells. Polyester filter with integrated glass fibre prefilter (GF/PET): recommended for solutions with a high load of particulate matter or for highly viscous solutions.

MACHEREY-NAGEL

3



Type	Filter diam.	Pore size	Housing	PK	Cat. No.
	mm	µm			
non sterile	15	0.20	PP-yellow/orange <sup>1)</sup>	100	9.049 065
non sterile	15	0.45	PP-colourless/orange <sup>1)</sup>	100	9.049 066
non sterile	25	0.20	PP-yellow/orange	100	9.049 067
non sterile	25	0.20	PP-yellow/orange	400	9.049 068
non sterile	25	0.20	PP-colourless/labelled*	100	4.003 417
non sterile	25	0.20	PP-colourless/labelled*	400	4.003 418
non sterile	25	0.45	PP-colourless/orange	100	9.049 069
non sterile	25	0.45	PP-colourless/orange	400	9.049 070
non sterile	25	0.45	PP-colourless/labelled*	100	6.232 548
non sterile	25	0.45	PP-colourless/labelled*	400	4.003 416
non sterile	25	1.20	PP-colourless/labelled*	100	6.232 549
non sterile	25	1.20	PP-colourless/labelled*	400	6.233 172
non sterile	25	1.0/0.20	PP-blue/orange <sup>2)</sup>	100	9.049 079
non sterile	25	1.0/0.45	PP-black/orange <sup>2)</sup>	100	9.049 080
non sterile	25	1.0/0.20	PP-blue/orange <sup>2)</sup>	400	9.049 020
non sterile	25	1.0/0.45	PP-black/orange <sup>2)</sup>	400	9.049 021
non sterile	13	0.20	PP-colourless/labelled*	100	6.287 311
non sterile	13	0.45	PP-colourless/labelled*	100	6.287 312

\* CHROMAFIL<sup>®</sup> Xtra<sup>1)</sup> with mini tip outlet<sup>2)</sup> with glass-fibre prefilter

## Filtration/Syringe filters

**1**


### 1 Syringe filter CHROMAFIL®, Polyamide (PA)

Hydrophilic membrane. The membrane is recommended for filtration of medium polar organic/aqueous liquids.

MACHEREY-NAGEL

Type	Filter diam. mm	Pore size µm	Housing	PK	Cat. No.
non sterile	3	0.20	PP-colourless	100	<b>9.049 047</b>
non sterile	3	0.45	PP-colourless	100	<b>9.049 048</b>
non sterile	13	0.20	PP-colourless/labelled*	100	<b>6.287 310</b>
non sterile	13	0.45	PP-colourless/labelled*	100	<b>6.283 261</b>
non sterile	25	0.20	PP-yellow/green	100	<b>9.049 049</b>
non sterile	25	0.20	PP-yellow/green	400	<b>9.049 050</b>
non sterile	25	0.20	PP-colourless/labelled*	100	<b>4.003 411</b>
non sterile	25	0.20	PP-colourless/labelled*	400	<b>4.003 412</b>
non sterile	25	0.45	PP-colourless/green	100	<b>9.049 051</b>
non sterile	25	0.45	PP-colourless/green	400	<b>9.049 052</b>
non sterile	25	0.45	PP-colourless/labelled*	100	<b>6.232 389</b>
non sterile	25	0.45	PP-colourless/labelled*	400	<b>6.234 011</b>

\* CHROMAFIL® Xtra

**2**


### 2 Syringe filter CHROMAFIL®, Hydrophilized Polytetrafluoroethylene (H-PTFE)

Hydrophilized polytetrafluoroethylene syringe filters labelled for method validation and certification

MACHEREY-NAGEL

- Hydrophobic membrane with additional hydrophilic characteristics
- For polar and nonpolar solutions
- Resistant against all kinds of solvents as well as acids and bases

Type	Filter diam. mm	Pore size µm	Housing	PK	Cat. No.
non sterile	13	0.20	PP-colourless/labelled	100	<b>6.266 191</b>
non sterile	13	0.45	PP-colourless/labelled	100	<b>6.266 192</b>
non sterile	25	0.20	PP-colourless/labelled	100	<b>6.266 189</b>
non sterile	25	0.45	PP-colourless/labelled	100	<b>7.658 851</b>
non sterile	25	0.45	PP-colourless/labelled	400	<b>6.266 190</b>

**3**


### 3 Syringe filter CHROMAFIL®, Polyethersulfone (PES)

Hydrophilic membrane for aqueous and light organic solutions. Very low adsorption of pharmaceuticals and proteins. Good stability against acids and bases. Binding capacity for proteins 29 µg per 25 mm filter.

MACHEREY-NAGEL

Type	Filter diam. mm	Pore size µm	Housing	PK	Cat. No.
non sterile	25	0.20	PP-colourless/labelled*	100	<b>4.003 427</b>
non sterile	25	0.45	PP-colourless/labelled*	100	<b>4.003 429</b>
non sterile	25	0.45	PP-colourless/labelled*	400	<b>4.003 430</b>
non sterile	25	5.00	PP-colourless/labelled*	100	<b>4.003 431</b>

\* CHROMAFIL® Xtra

**4**


### 4 Syringe filter CHROMAFIL®, Polyvinylidene fluoride (PVDF)

Hydrophilic membrane, for aqueous solutions, water-soluble oligomers and polymers like proteins binding capacity for proteins 20 µg/25 mm filter. The PVDF filter with integrated glass fibre prefilter (GF/P) is recommended for filtration of biological samples with high particle loads. This filter features a high binding capacity for proteins. Also suited for filtration of polar and non-polar solutions.

MACHEREY-NAGEL

Type	Filter diam. mm	Pore size µm	Housing	PK	Cat. No.
non sterile	13	0.20	PP-colourless/labelled	100	<b>6.287 313</b>
non sterile	13	0.45	PP-colourless/labelled	100	<b>6.287 314</b>
non sterile	25	0.20	PP-colourless/labelled	100	<b>4.003 413</b>
non sterile	25	0.20	PP-colourless/labelled	400	<b>4.003 414</b>
non sterile	25	0.45	PP-colourless/labelled	100	<b>9.049 063</b>
non sterile	25	0.45	PP-colourless/labelled	400	<b>4.003 415</b>
non sterile	25	1.0/0.45	PP-black/white*	100	<b>4.003 401</b>
non sterile	25	1.0/0.45	PP-black/white*	400	<b>4.003 402</b>

\* with glass fibre prefilter

### 1 Syringe filter CHROMAFIL®, Glass-fibre (GF)

Inert Filter, nominal pore size 1µm, allows higher flow rates than smaller pore filters. For solutions with high loads of particulate matter or for highly viscous solutions (e. g. soil samples, fermentation broths) as prefilters for other CHROMAFIL® filters, they prevent plugging of the membrane.

MACHERY-NAGEL

1



Type	Filter diam. mm	Pore size µm	Housing	PK	Cat. No.
non sterile	15	1	PP-blue/colourless <sup>1)</sup>	100	9.049 077
non sterile	25	1	PP-yellow/black	100	9.049 078
non sterile	25	1	PP-yellow/black	400	6.229 751
non sterile	13	1	PP-colourless/labelled*	100	7.971 495
non sterile	25	1	PP-colourless/labelled*	100	6.232 362
non sterile	25	1	PP-colourless/labelled*	400	4.003 423

\*CHROMAFIL® Xtra  
<sup>1)</sup> with mini tip outlet

### 2 Syringeless filters SEPARA

SEPARA integrates in one single device auto-sampler vial, filtration membrane, plunger, and cap/septa. The single step filtering process is efficient and saves time. Fast and simple to use. Reducing sample loss. After filtration the sample is ready to use in most standard autosampler. The pre-slit cap ensures easy and clean transfer of sample. 5 different septa material, PP vial with Ø 12 x 33 mm, Filtering capacity 0.48 ml, dead volume <30 µl, maximum operating temperature 50 °C

GVS S.p.A.

2



Membrane	Pore size µm	Colour	PK	Cat. No.
Nylon	0.22	light blue	100	6.287 339
PTFE	0.22	pink	100	6.287 340
Regen. Cellulose	0.22	grey	100	6.287 341
PVDF	0.22	yellow	100	6.287 342
PES	0.22	light green	100	6.287 343
Nylon	0.45	blue	100	6.287 344
PTFE	0.45	red	100	6.287 345
Regen. Cellulose	0.45	black	100	6.287 346
PVDF	0.45	orange	100	6.287 347
PES	0.45	green	100	6.287 348

### 3 Syringeless filters Mini-UniPrep™

The Whatman Mini-UniPrep™ filter provides a quick and easy means of removing particles from HPLC samples. In comparison to other methods the amount of time required for sample preparation is reduced to one third. Mini-Uni-Prep™ is a ready-to-use filter unit consisting of a 0.4ml chamber and a plunger. The plunger contains a filtration membrane at one end and a cap with septum at the other. The plunger is pressed through the sample in the chamber. The pressure generated forces the filtrate into the plunger reservoir, with air escaping through the vent hole until the locking mechanism engages to form an airtight seal. The unit can now be placed in any autosampler and the sample analysed.

Whatman

3



Pore size µm	Membrane	Housing	PK	Cat. No.
0.2	PTFE	PE	100	9.056 824
0.2	RC	PE	100	9.056 825
0.45	RC	PE	100	9.056 826
0.45	PVDF	PE	100	9.056 827
0.45	DpPP	PE	100	9.056 828
0.45	GMF	PE	100	9.056 829
0.45	Nylon	PE	100	9.056 830
0.45	PTFE	PE	100	9.056 831
0.45	PP	PE	100	9.056 832
0.45	PES	PE	100	6.229 725
0.2	PES	PE	100	6.283 544
0.2	PTFE	Glass	100	6.283 545
0.2	Nylon	Glass	100	6.283 546
0.2	RC	Glass	100	6.283 547
0.45	PTFE	Glass	100	6.283 548
0.45	RC	Glass	100	6.283 549
0.2	Nylon	Glass	100	6.401 676

## Filtration/Syringe filters



### 1 Disposable Filtration Capsules, Polycap TF™

Whatman



Hydrophobic PTFE membrane for applications involving organic solvents and chemically aggressive solutions.

- Maximum operating pressure of 4.1 bar forward and 3.0 bar reverse
- 1 µm capsules incorporate a PP prefilter
- Autoclavable up to 132 °C maximum
- Connectors: stepped barb (SB) and female national pipe thread (FNPT)

Porosity	Filter diam.	Connection	Sterile	PK	Cat. No.
µm	mm	in / out			
0,2	36	1/4-3/8" SB / 1/4-3/8" SB	-	1	9.951 126
0,2	75	1/4-3/8" SB / 1/4-3/8" SB	-	1	9.951 128
1,0	36	1/4-3/8" SB / 1/4-3/8" SB	-	1	9.951 127
1,0	75	3/8-1/2" SB / 3/8-1/2" SB	-	1	9.951 129
0,2	36	3/8" FNPT / 3/8" FNPT	-	5	6.803 130
0,2	75	3/8" FNPT / 3/8" FNPT	-	5	6.803 246

### Filtration Capsules Polycap TC

Whatman

Polycap TC filtration capsules feature dual layer polyethersulfone (PES) membranes and provide efficient filtration for aqueous solutions.

- 100 % integrity-tested during manufacturing
- Polypropylene housing thermally fused to eliminate surfactants and mold releasing agents that could affect analysis
- Manufactured according to ISO9001:2008 QMS standards
- Available in sterile versions with a filling bell option
- PES membranes protein adsorption characteristics: HAS 0.4 µg/cm<sup>2</sup>; Insulin 2.0 µg/cm<sup>2</sup>; gammaglobulin 1.5 µg/cm<sup>2</sup>
- Connectors: stepped barb (SB)

Porosity	Filter diam.	Connection	Sterile	PK	Cat. No.
µm	mm	in / out			
0,8/0,2*	75	1/4-3/8" SB / 1/4-3/8" SB	+	1	6.257 668
0,8/0,2*	150	3/8-1/2" SB / 1/4-3/8" SB	+	1	6.257 914

\* filling bell



### 2 Mini-cartridge filters

Sartorius Lab Instruments



Mini-cartridge filters are inserted into a stainless steel housing. The bayonet closure provides a secure seal against back-pressure surges. An inner O-ring seals the lower part of the housing (except for the aeration housing). For the filtration of larger volumes and for long service lives. Individually tested. Their integrity can be checked at any time. Can be autoclaved repeatedly.

There are several different types which differ in the filter material used:

Sartobran-P

Heterogeneous double membrane of cellulose acetate, for the sterile filtration of liquids.

Sartofluor

Hydrophobic PTFE membrane filter, for the sterile filtration of air and gases.

Sartopure-PP3

High performance PP fleece prefilters for particle reduction.

Type	Description	PK	Cat. No.
5231507H8B	Sartobran-P (0.1 m <sup>2</sup> , 0.45 + 0.2 µm)	5	9.604 602
5231507H9B	Sartobran-P (0.2 m <sup>2</sup> , 0.45 + 0.2 µm)	5	9.604 601
5181507T8B	Sartofluor (0.1 m <sup>2</sup> , 0.2 µm)	5	9.604 605
5181507T9B	Sartofluor (0.2 m <sup>2</sup> , 0.2 µm)	5	9.604 604
5051502P9B	Sartopure-PP3 (0.15 m <sup>2</sup> , 3 µm)	5	6.314 874
5051505P8B	Sartopure-PP3 (0.09 m <sup>2</sup> , 0.65 µm)	5	6.315 037

#### 1 Membrane filter holders, PC



Sartorius Lab Instruments

Reusable filter holder, without filter. Filter has to be selected separately.  
For particle removal, sterile filtration of aqueous solutions or for venting of sterile vessels.  
Autoclavable. With Luer connection.

Filter diam.	Pore size	Connection	Colour	Sterile	PK	Cat. No.
mm	µm					
13	0.45	Female Luer Lock   Luer Slip	Clear	-	12	9.049 241
25	0.45	Female Luer Lock   Luer Slip	Clear	-	12	9.049 242



#### 2 LLG-Inline-filters, PTFE



The 50mm inline filter with its ultra pure Polypropylene housing (ultrasonic welded) is designed to contain 47 mm membranes. The filter comes with 6-12mm hose connectors (tapered) at the inlet and the outlet side. The PTFE-membrane can be used for filtration of aggressive chemicals including acids and non-aqueous solutions. Due to its high filter area of 1735mm<sup>2</sup> the filter is suitable for long term gas filtration /venting applications, it could be used for filtration of higher volumes of liquid (up to approximately 500ml, depending on the particle load of the filtrated suspension) or for filtration of aggressive non aqueous liquids.

- hydrophobic PTFE-membrane
- Housing polypropylene
- autoclavable at 121 °C for 20 minutes at 2 bar, max. 3 cycles
- stepped hose connector of 6-10 mm on either sides
- high throughput with low pressure drop
- max. operating pressure 4.0 bar

Diam.	Pore size	PK	Cat. No.
mm	µm		
50	0.20	5	9.059 513
50	0.45	5	9.059 514



#### 3 In-line filters Midisart® 2000



Sartorius Lab Instruments

For sterile ventilation of fermenters, culture vessels, etc. or to act as a water barrier between the suction flask and the vacuum pump in filtration applications. The supported PTFE membrane within a PP housing gives excellent chemical resistance. Filter in either direction (3 bar max. pressure).

- Stepped horse-barb of 6-12 mm on either sides
- sterile single packed filters, autoclavable

Filter diam.	Pore size	Connection	Colour	Sterile	PK	Cat. No.
mm	µm					
62	0.45	Hose barb	White	+	12	9.049 156
62	0.45	Hose barb	White	+	25	9.049 157
62	0.20	Hose barb	White	+	12	9.049 151
62	0.20	Hose barb	White	+	25	9.049 152
62	0.20	Hose barb	White	-	100	9.049 153
62	0.45	1/8" NPT	White	+	12	7.017 319
62	0.45	1/8" NPT	White	+	25	7.017 320
62	0.20	1/8" NPT	White	+	12	7.017 321
62	0.20	1/8" NPT	White	+	25	6.227 120





### 1 Filtration capsules, Sartobran 150 and 300

Sartorius Lab Instruments



Ready-to-use pressure filtration capsules for sterile filtration of media and aqueous solutions with volumes of up to 20 litres (Sartobran 150), or 40 litres (Sartobran 300). The units consist of a polypropylene housing containing a double-layer cellulose acetate membrane (0.2 µm and 0.45 µm). The membranes, which have an area of 150 cm<sup>2</sup> or 300 cm<sup>2</sup>, have extremely low protein adsorption levels. Autoclavable at up to 134 °C. Automatically air vented via an integral PTFE membrane. Sterile and individually packed. With 6 to 12 mm flexible tubing connections (SO) or 1/2 inch tri-clamp (TC).

Type	PK	Cat. No.
Sartobran 150 SO/SO	5	9.604 615
Sartobran 150 TC/SO	5	9.604 616
Sartobran 150 TC/TC	5	9.604 617
Sartobran 300 SO/SO	2	9.604 618
Sartobran 300 SO/SO	5	9.604 619

### 2 Manifolds Microsart®, stainless steel



For microbiological quality control. Quick connectors at both sides of the manifolds enable fast connections of either tubing, another manifold or end caps. Various funnel and filtration units are available.

Sartorius Lab Instruments

- Full autoclavability without disassembly
- Sterile venting
- Reduced risk of secondary contamination
- Low working height
- Rubber feet providing better stability at the workplace

#### Scope of supply:

**Microsart® Manifolds for Microsart® funnels and filters:** Manifold, filter base support with sinter frit, blind coupling, 20 cm tubing and venting filter

**Microsart® Manifolds for Biosart® 100 monitors:** Manifold, filter base support with sinter frit, Biosart® adapter, blind coupling, 20 cm tubing and venting filter

**Microsart® Manifolds for Biosart® 250 funnels:** Manifold, filter base support with sinter frit, blind coupling, 20 cm tubing and plug for venting holes

**Microsart® Manifolds including stainless steel funnels (100/500 ml):** Manifold, filter base support with sinter frit, blind coupling, 20 cm tubing and plug for venting holes

Type	Description	Dimensions (W x D x H) mm	PK	Cat. No.
Microsart® Manifolds for Microsart® funnels and filters	1 branch	176 x 98 x 120 *	1	4.669 470
Microsart® Manifolds for Microsart® funnels and filters	2 branch	246 x 118 x 130*	1	4.669 471
Microsart® Manifolds for Microsart® funnels and filters	3 branch	474 x 98 x 120 *	1	4.669 472
Microsart® Manifolds for Microsart® funnels and filters	6 branch	924 x 98 x 120 *	1	4.669 473
Microsart® Manifolds for Biosart® 100 monitors	1 branch	176 x 98 x 120 *	1	4.669 474
Microsart® Manifolds for Biosart® 100 monitors	2 branch	246 x 118 x 130*	1	4.669 475
Microsart® Manifolds for Biosart® 100 monitors	3 branch	474 x 98 x 120 *	1	4.669 476
Microsart® Manifolds for Biosart® 100 monitors	6 branch	924 x 98 x 120 *	1	4.669 477
Microsart® Manifolds for Biosart® 250 funnels	1 branch	176 x 98 x 120 *	1	4.669 478
Microsart® Manifolds for Biosart® 250 funnels	3 branch	474 x 98 x 120 *	1	4.669 479
Microsart® Manifolds for Biosart® 250 funnels	6 branch	924 x 98 x 120 *	1	4.669 480
Microsart® Manifolds including stainless steel funnels 100 ml	1 branch	176 x 98 x 120 *	1	4.669 481
Microsart® Manifolds including stainless steel funnels 100 ml	3 branch	474 x 98 x 120 *	1	4.669 482
Microsart® Manifolds including stainless steel funnels 100 ml	6 branch	924 x 98 x 120 *	1	4.669 483
Microsart® Manifolds including stainless steel funnels 500 ml	1 branch	176 x 98 x 120 *	1	4.669 484
Microsart® Manifolds including stainless steel funnels 500 ml	3 branch	474 x 98 x 120 *	1	4.669 485
Microsart® Manifolds including stainless steel funnels 500 ml	6 branch	924 x 98 x 120 *	1	4.669 486

\* Dimensions without funnels and tubing





### 1 LLG-Filtering apparatus

Universally applicable filtration unit made of high-quality borosilicate glass. Wide range of applications for filtration with filter paper or membrane filters (47 mm).

- Large funnel (300 ml) with scale
- Filter flask 1 or 2 litres, with scale
- Safe plastic olive
- Filter plate with porosity 2
- Filter plates with porosity 1 or 3 optionally available
- All components available as spare parts

**Scope of delivery:** 1000 (2000) ml Filter flask NS45/40, funnel 300 ml, filter holder NS45/40 with connector GL14 and filter plate 47 mm (por. 2), clamp.

Description	PK	Cat. No.
LLG-Filtering apparatus 1000 ml	1	6.291 850
LLG-Filtering apparatus 2000 ml	1	6.291 851

1



### 2 Filtering apparatus DURAN®

The DURAN® filtering apparatus is made of high-quality borosilicate glass. Aside from glass, the medium only comes into chemical contact with PTFE. This means that the filtering apparatus can be used to filter virtually any chemical. Thanks to the PTFE disc holder, fritted glass discs of different porosities can be used in addition to the slit-sieve disc. This creates a wide application scope for filtration using filter paper, membrane filters (47mm) or simply using glass filters. Different porosities are available between 10 µm and 160µm, which makes it possible to perform coarse and fine filtration in addition to analytical filtration. Furthermore, the filtering apparatus is suitable for the filtration of HPLC media, testing for bacterial contamination, residue analysis and the filtration of other media.

*DWK Life Sciences*

**Scope of delivery:** 1000 (2000) ml suction bottle with NS 45/40, extension NS 45/40 with hose connection GL 14, PTFE adapter plate, Filter disc D50 (Porosität 2), slit-sieve disc D48, filter funnel 250 (500) ml, clamp (Alu), straight plastic hose connection with seal, threaded cap GL 14

Description	PK	Cat. No.
Filtering apparatus DURAN®, 1000 ml / 250 ml	1	9.052 744
Filtering apparatus DURAN®, 2000 ml / 500 ml	1	7.910 686

2



### 3 Glass units for vacuum filtration, PTFE-coated

Type 163. For particle testing or radiochemical work. For ultrafiltration and sterile filtration. Autoclavable. PTFE-coated, steel screen filter support.

*Sartorius Lab Instruments*

Type	Capacity ml	Filter size mm	PK	Cat. No.
Unit for vacuum filtration, PTFE-coated	30	Ø 25	1	9.604 205
Unit for vacuum filtration, PTFE-coated	250	Ø 47/50	1	9.604 308
Rubber stopper			1	6.202 667
Perforated plate and PTFE-ring			1	7.017 199
Clamps			1	7.017 296
Perforated plate, PTFE coated			1	7.017 297

3



### 4 Glass vacuum filter holders, glass frit

Two compact, glass vacuum filter holders for simple particle testing and clarification of solutions. With glass frit membrane filter support and anodised aluminium clamp.

*Sartorius Lab Instruments*

**Scope of delivery**

Size 25 mm, 30 ml: Glass vacuum filtration unit with filter support consisting of PTFE ring and glass frit.

Size 47/50 mm, 250 ml: Glass vacuum filtration unit with silicone cover and filter support consisting of PTFE ring and glass frit.

Type	For Filter size	Volume ml	PK	Cat. No.
with glass frit	25 mm dia.	30	1	9.604 204
with glass frit	47/50 mm dia.	250	1	9.604 307

4



## Filtration/Filtration apparatus



### 1 Filter holders, Type 16309

Completely made of glass.  
For particle removal from solvents. With 250 ml attachment.  
For filter Ø 47 and 50 mm. With ground in vacuum bottle made of borosilicate glass, 1 l.

Sartorius Lab Instruments

Type	Capacity ml	Filter size mm	PK	Cat. No.
All-glass unit	250	Ø 47 - 50mm	1	9.604 076



### 2 Vacuum filtration equipment, GV 025 series

- funnel volume 60 ml  
- for filter 25 mm diameter

Whatman

Type	Description	PK	Cat. No.
GV/MV 050/0/06	Spring clip complete	1	7.010 136
GV 025/0/01	Glass attachment 60 ml	1	7.010 149
GV 025/0/03	Glass frit	1	7.010 151
GV 025/0/05	PTFE centering ring	1	7.010 152
GV 025/0/06	Feather clamp complete	1	7.010 153
GV 025/2/02	Lower part from glass	1	7.010 155
GV 025/2/08	Erlenmeyer flasks 250 ml	1	7.010 157
GV 050/0/01	Glass essay 250 ml	1	7.010 158
GV 050/0/02	Lower part from glass	1	7.010 159
GV 050/0/03	Glass frit	1	7.010 160
GV 050/0/05	PTFE centering ring	1	7.010 161
GV 050/2/12	Lower part with NS 45	1	7.010 166
GV 025/0	Vacuum filtration equipment 25 mm, glass frit D2, 60 ml	1	9.603 250
GV 025/2	Vacuum filtration equipment 25 mm, glass frit D2, 60 ml funnel volume, 250 ml erlenmeyer flask	1	9.603 252



### 3 Vacuum or pressure filtration apparatus, Typ 16510, PC

For vacuum or pressure filtration up to 2 bar.  
For ultra or sterile filtration.  
With collecting bottle 250 ml.  
For filter 47 mm diameter filters.

Sartorius Lab Instruments

Type	Volume ml	Filter size mm	PK	Cat. No.
PC filtration apparatus	250	Ø 47mm	1	9.049 243



#### 1 LLG-Porcelain filter crucibles, DIN 12909

Glazed, with porous bottom.

Capacity ml	Ext. diam. mm	Height mm	Pore size µm	PK	Cat. No.
8	25	28	6	1	9.052 080
8	25	28	7	1	9.052 081
8	25	28	8	1	9.052 082
15	30	35	6	1	9.052 083
15	30	35	7	1	9.052 084
15	30	35	8	1	9.052 085
25	35	40	6	1	6.233 176
25	35	40	7	1	6.233 748
25	35	40	8	1	9.052 086
35	40	43	6	1	9.052 087
35	40	43	7	1	9.052 088
35	40	43	8	1	9.052 089
50	45	50	6	1	9.052 090
50	45	50	7	1	9.052 091
50	45	50	8	1	9.052 092

1



#### 2 Filter crucibles, VitraPOR®, borosilicate glass 3.3

For analytical filtration in laboratories.

ROBU

- Resistant to acids, alkalis and solvents
- Temperature resistant up to 540 °C
- With numbering

Capacity ml	Diam. mm	Porosity	PK	Cat. No.
15	23	1	1	9.052 060
15	23	2	1	9.052 061
15	23	3	1	9.052 062
15	23	4	1	9.052 063
15	23	5	1	9.052 064
30	30	0	1	6.087 623
30	30	1	1	9.052 036
30	30	2	1	9.052 037
30	30	3	1	9.052 038
30	30	4	1	9.052 039
30	30	5	1	9.052 040
30	30	ASTM Coarse	1	4.671 417
30	30	ASTM Fine	1	6.273 460
50	40	0	1	6.280 506
50	40	1	1	9.052 041
50	40	2	1	9.052 042
50	40	3	1	9.052 043
50	40	4	1	9.052 044
50	40	5	1	9.052 065
50	40	ASTM Coarse	1	7.982 409
50	40	ASTM Fine	1	7.971 642

2



#### 3 Filter-Crucibles VitraPOR®, CFE, Borosilicate Glass 3.3

For crude fibre extraction in common systems with numbering.

ROBU

The filter discs of the CFE crucibles have an improved sintering hardness to withstand the chemical load in the analytical processes.

Capacity ml	Diam. mm	Porosity	PK	Cat. No.
30	34	1	1	6.204 827
30	34	2	1	6.302 168
30	34	3	1	6.203 889

3



## Filtration/Filtration apparatus



### 1 Filter crucibles, DURAN®

With sintered glass filter disc at base, as outlined below.  
Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DWK Life Sciences

Capacity ml	Diam. mm	Porosity	PK	Cat. No.
30	36	1	1	9.052 021
30	36	2	1	9.052 022
30	36	3	1	9.052 023
30	36	4	1	9.052 024
30	36	5	1	9.052 025
50	46	1	1	9.052 031
50	46	2	1	9.052 032
50	46	3	1	9.052 033
50	46	4	1	9.052 034



### 2 Rubber sleeves, EPDM



Deutsch & Neumann

For filter crucibles. Temperature resistant up to 150 °C. Autoclavable.

Diam. mm	PK	Cat. No.
26	1	9.052 114
33	1	9.052 121
41	1	9.052 126
49	1	9.052 131



### 3 Adapters for filter crucibles, borosilicate glass 3.3

Borosilicate glass 3.3, autoclavable.

ROBU

Diam. mm	Stem diam. mm	PK	Cat. No.
34	10	1	9.052 213
40	10	1	9.052 214
50	10	1	9.052 215



### 4 Adapters for filter crucibles, Duran®

Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DWK Life Sciences

Diam. mm	Height mm	PK	Cat. No.
27	108	1	9.052 216
34	110	1	9.052 222
41	125	1	9.052 226
50	132	1	9.052 232



### 5 Filter holders, DURAN®

DURAN®. Dismountable, modular filter holders with screwthreaded top manifold, PP funnel outlet and two FKM seals. Accessory sintered filter discs (9.052 941 to 9.052 954) are screwed in between two FKM seals. The filter discs are easy to replace. Membrane or paper filters can be stretched across the disc. Filter plates must be ordered separately.

DWK Life Sciences

Capacity ml	Plate diam. mm	Thread diam. mm	PK	Cat. No.
30	24	28	1	9.052 903
250	50	54	1	9.052 905
1000	90	95	1	9.052 910

➔ Exhaust Device please see page 1271.

### 1 Filter holders, glass, top manifold only, DURAN®

DURAN®. For use in dismountable filter holders. With screwthread, without PP outlet funnel, filter disc or FKM rubber seals.

DWK Life Sciences

Capacity ml	Thread diam. mm	PK	Cat. No.
30	28	1	9.052 913
250	54	1	9.052 915
1000	95	1	9.052 920



### 2 Filter discs, DURAN®

With glass rim. For use in dismountable filter holders. Patented design. Filter discs must always be screwed in between two FKM rubber seals. Without top manifold, PP outlet funnel or seals.

DWK Life Sciences

Plate diam. mm	Porosity	PK	Cat. No.
24	1	1	9.052 941
24	2	1	9.052 942
24	3	1	9.052 943
24	4	1	9.052 944
50	1	1	9.052 951
50	2	1	9.052 952
50	3	1	9.052 953
50	4	1	9.052 954
90	1	1	9.052 961
90	2	1	9.052 962
90	3	1	9.052 963
90	4	1	9.052 964



### 3 Filter discs, VitraPOR®

Surfaces untreated, round centered. Further sizes and bi-plane ground are available online.

**NEW**  
ROBU

Plate diam. mm	Thickness mm	Porosity	PK	Cat. No.
30	3,5 ± 0,8	2	1	6.072 553
30	3,5 ± 0,8	3	1	6.201 347
30	3,5 ± 0,8	4	1	6.259 302
30	3,5 ± 0,8	Fine	1	4.671 418
60	5,0 ± 1,1	2	1	4.671 419
60	5,0 ± 1,1	3	1	4.671 421
60	5,0 ± 1,1	4	1	6.267 343
60	5,0 ± 1,1	Fine	1	4.671 422
90	6,5 ± 1,5	2	1	4.671 423
90	6,5 ± 1,5	3	1	4.671 424
90	6,5 ± 1,5	4	1	4.671 425
90	6,5 ± 1,5	Fine	1	4.671 426
120	8,5 ± 1,9	2	1	6.262 268
120	8,5 ± 1,9	3	1	4.671 427
120	8,5 ± 1,9	4	1	4.671 428
120	8,5 ± 1,9	Fine	1	4.671 429



### 4 FKM seals

For use in dismountable filter holders.

DWK Life Sciences

For diam. mm	PK	Cat. No.
24	1	9.052 923
50	1	9.052 925
90	1	9.052 930





## Filtration/Filtration apparatus



### 1 Slotted sieve disc (perforated plate) DURAN®

Can be used in the 250ml capacity dismountable filter holder as a carrier for membrane and paper filters.

DWK Life Sciences

Plate diam.	PK	Cat. No.
mm		
48	1	9.052 901



### 2 Filter funnels VitraPOR®, Borosilicate glass 3.3

Borosilicate glass 3.3, with sintered disc filter as outlined below. Autoclavable.

ROBU

Capacity	Diam.	Stem diam.	Porosity	PK	Cat. No.
ml	mm	mm			
50	36	10	1	1	9.052 367
50	36	10	2	1	9.052 368
50	36	10	3	1	9.052 369
50	36	10	4	1	9.052 370
75	48	10	1	1	9.052 371
75	48	10	2	1	9.052 372
75	48	10	3	1	9.052 373
75	48	10	4	1	9.052 374
125	60	10	1	1	9.052 375
125	60	10	2	1	9.052 376
125	60	10	3	1	9.052 377
125	60	10	4	1	9.052 378
250	80	18	1	1	9.052 066
250	80	18	2	1	9.052 067
250	80	18	3	1	9.052 068
250	80	18	4	1	9.052 069
500	95	22	1	1	9.052 379
500	95	22	2	1	9.052 380
500	95	22	3	1	9.052 381
500	95	22	4	1	9.052 382
1000	124	22	1	1	9.052 383
1000	124	22	2	1	9.052 384
1000	124	22	3	1	9.052 385
1000	124	22	4	1	9.052 386
4000	180	30	1	1	9.052 387
4000	180	30	2	1	9.052 388
4000	180	30	3	1	9.052 389
4000	180	30	4	1	9.052 390



### 3 Filter funnels, glass DURAN®

Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DWK Life Sciences

Capacity	Diam.	Stem diam.	Height	Porosity	PK	Cat. No.
ml	mm	mm	mm			
50	35	10	130	1	1	9.052 301
50	35	10	130	2	1	9.052 302
50	35	10	130	3	1	9.052 303
50	35	10	130	4	1	9.052 304
50	35	10	130	5	1	9.052 305
75	45	10	132	1	1	9.052 311
75	45	10	132	2	1	9.052 312
75	45	10	132	3	1	9.052 313
75	45	10	132	4	1	9.052 314
75	45	10	132	5	1	9.052 315
125	60	10	140	1	1	9.052 321
125	60	10	140	2	1	9.052 322
125	60	10	140	3	1	9.052 323
125	60	10	140	4	1	9.052 324
125	60	10	140	5	1	9.052 325
500	95	22	240	1	1	9.052 331
500	95	22	240	2	1	9.052 332
500	95	22	240	3	1	9.052 333
500	95	22	240	4	1	9.052 334
500	95	22	240	5	1	9.052 335
1000	120	22	270	1	1	9.052 341
1000	120	22	270	2	1	9.052 342
1000	120	22	270	3	1	9.052 343
1000	120	22	270	4	1	9.052 344
1000	120	22	270	5	1	9.052 345
4000	175	30	425	1	1	9.052 361
4000	175	30	425	2	1	9.052 362
4000	175	30	425	3	1	9.052 363
4000	175	30	425	4	1	9.052 364



## 6. Distillation, separation, filtration Filtration/Filtration apparatus

### 1 Filter funnels, glass DURAN®, conical

Conical. Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DWK Life Sciences

Capacity: 25 mm  
 Diameter: 55 mm  
 Plate diameter: 25 mm  
 Stem diameter: 8 mm  
 Height: 100 mm

Type	Porosity	PK	Cat. No.
39D	3	1	9.052 453
39D	4	1	9.052 454



### 2 Slotted sieve filter funnels (Buchner funnels), DURAN®

Buchner pattern funnel with slotted sieve (perforated) filter plate.  
 Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

DWK Life Sciences

Capacity	Diam.	Stem diam.	Height	PK	Cat. No.
ml	mm	mm	mm		
70	48	10	132	1	9.252 022
125	60	10	140	1	9.252 028
220	73	18	190	1	9.252 034
500	95	22	240	1	9.252 044
1000	120	22	270	1	9.252 054



### 3 LLG Buchner funnels, porcelain

For filterpaper diam.	Capacity	PK	Cat. No.
mm	ml		
45	35	1	6.239 903
55	70	1	6.237 328
70	120	1	6.231 541
90	240	1	9.252 500
110	400	1	9.252 501
125	600	1	9.252 502
150	1000	1	9.252 503
185	2000	1	9.252 504
240	4000	1	9.252 505
295	7000	1	9.252 506



### 4 Buchner funnels, porcelain

To DIN 12905.

Haldenwanger

For filter diam.	Capacity	DIN	PK	Cat. No.
mm	ml			
18	3		1	9.252 018
27	10		1	9.252 027
40	25		1	6.078 858
45	50	12905	1	9.252 045
55	75	12905	1	9.252 055
70	135	12905	1	9.252 070
90	290	12905	1	9.252 090
110	580	12905	1	9.252 110
125	795	12905	1	9.252 125
150	1250	12905	1	9.252 150
185	1900	12905	1	9.252 185
240	4300	12905	1	9.252 240
270	5800	12905	1	9.252 270
320	10600	12905	1	9.252 320



## Filtration/Filtration apparatus



### 1 Buchner funnels, PTFE

**NEW**

BOLA



Chemically resistant and temperature resistant from -200 to 250 °C. FDA conform. Autoclavable.

For filterpaper diam.	Capacity	PK	Cat. No.
mm	ml		
45	50	1	4.668 557
55	75	1	4.668 558
70	135	1	4.668 559
90	390	1	4.668 560



### 2 Filter funnels, PP, Buchner

Kartell



PP. Two-piece construction. Top and bottom sections can be separated. Easy to clean. Autoclavable. Suitable for foodstuff.

For filterpaper diam.	Capacity	PK	Cat. No.
mm	ml		
42.5	40	1	9.252 330
55	70	1	9.252 331
70	180	1	9.252 332
80	285	1	9.252 333
90	390	1	9.252 334
110	810	1	9.252 335
160	2100	1	9.252 338
240	6000	1	9.252 339



### 3 Protective collars, EPDM.

For filter flasks.

Special design centres the funnel and flask and provides stable support for funnels, filters and manifolds placed on them. A clean seal is made between the flask rim and container placed on it. Application of the vacuum provides a tight seal. Also provides all-round protection for glass filter flask rims, significantly reducing impact damage and extending working life.

For bottles ml	Diam.	Height	PK	Cat. No.
	mm	mm		
100	23	11	1	9.052 391
250, 500	33	15	1	9.052 392
1000	44	25	1	9.052 393
2000, 3000	58	25	1	9.052 394
5000, 10000	68	25	1	9.052 395



### 4 Rubber Spacers (GuKo), natural rubber

Rubber Spacers, made of natural rubber (NR). Conical, to fit filter funnels or crucibles into suction flasks. Durometer 40 Shore A

Deutsch &amp; Neumann

Top diam. mm	Bottom diam. mm	Height mm	Wall thickness mm	Colour	PK	Cat. No.
21	12.0	18	2.5	grey	1	9.052 412
27	17.0	20	3.0	grey	1	9.052 417
33	21.0	24	3.0	grey	1	9.052 423
41	27.5	27	4.0	grey	1	9.052 427
53	33.0	34	5.0	grey	1	9.052 432
68	48.0	35	5.5	grey	1	9.052 436
78	58.0	35	6.0	grey	1	9.052 439
89	66.0	40	6.5	grey	1	9.052 443
33	21.0	24	3.0	red	1	6.079 121
41	27.5	27	4.0	red	1	6.071 789
53	33.0	34	5.0	red	1	6.078 202
68	48.0	35	5.5	red	1	6.071 787
78	58.0	35	6.0	red	1	6.071 788
89	66.0	40	6.5	red	1	6.070 153

#### 1 Set of rubber spacers (GuKo), natural rubber

Comprises of 5, 7 or 8 Gukos with an external lower diameter of 12 mm, 17 mm, 21 mm, 27.5 mm, 33 mm, 48 mm, 58 mm and 66 mm each. Hardness 40 Shore A.

Deutsch & Neumann

1



Type	Colour	PK	Cat. No.
1-5, 5-parts	grey	1	6.077 882
1-7, 7-parts	grey	1	6.077 417
1-8, 8-parts	grey	1	9.052 400
1-5, 5-parts	red	1	6.078 144
1-7, 7-parts	red	1	6.078 145
1-8, 8-parts	red	1	6.077 415

#### Vacuum Adapter, PTFE

For safe assembly of standard filter funnels made of glass or plastic on laboratory bottles. With lateral 2-step hose connector for connection to a vacuum pump. Pass-through with O-ring made of FKM. FDA conform. Chemikally resistant. Autoclavable.

BOLA

#### Specifications

Temperature range: -15 - 200 °C  
 2-step hose connector (outer diam. 1/outer diam. 2): 9 mm/12 mm

#### 2 Vacuum Adapter GL, PTFE

**NEW**

BOLA

For funnel outlet diam. mm	For thread size GL	PK	Cat. No.
22	45	1	6.273 897

2



#### 3 Vacuum Adapter NS, PTFE

**NEW**

BOLA

For funnel outlet diam. mm	Joint size (NS)	PK	Cat. No.
8	14/23	1	4.670 724
11	19/26	1	4.670 725
22	29/32	1	6.273 419
22	45/40	1	4.670 723

3



#### 4 Filter flasks, Erlenmeyer shape, borosilicate glass 3.3

According to ISO 6556 standards. The glass side arm or the Polypropylene side arm is suitable to work with 6 mm to 10 mm hose diameters. The Polypropylene side arm has a screw thread connector for easy and safe fitting of the tubing.

ISOLAB

Capacity ml	lateral connection	PK	Cat. No.
100	glass	1	4.008 437
250	glass	1	6.241 652
500	glass	1	6.241 291
1000	glass	1	6.239 008
2000	glass	1	4.008 438
100	PP	1	4.008 439
250	PP	1	6.237 706
500	PP	1	6.237 707
1000	PP	1	6.237 708
2000	PP	1	6.242 170

4



#### 5 Filter flasks, Erlenmeyer shape, DURAN®

DIN 12476. ISO 6556. With PBT tubing connection and silicone (VMQ) seal. Heavy wall for vacuum use. These filtering flasks fulfil the regulations of the equipment and product safety regulations.

DWK Life Sciences

Capacity ml	Diam. mm	Neck diam. mm	Height mm	PK	Cat. No.
100	64	24	105	1	9.051 424
250	85	34	155	1	9.051 436
500	105	34	185	1	9.051 444
1000	135	45	230	1	9.051 454
2000	166	60	255	1	9.051 455

5



## Filtration/Filtration apparatus

**1**

**1** Filter flasks, bottle shape, DURAN®

**NEW**

DIN 12476. ISO 6556. With PBT tubing connection and silicone (VMQ) seal. Heavy wall for vacuum use. These filtering flasks fulfil the regulations of the equipment and product safety regulations.

DWK Life Sciences

Capacity	Diam.	Neck diam.	Height	PK	Cat. No.
ml	mm	mm	mm		
3000	170	58	295	1	9.051 456
5000	185	68	360	1	9.051 457
10000	240	70	420	1	9.051 458
15000	257	70	500	1	9.051 459
20000	290	70	535	1	9.051 460

**2**

**2** DURAN® Filtering Flask with Glass Hose Connection, Erlenmeyer shape

DWK Life Sciences



Due to the heavy wall thickness the apparatus is vacuum-tight.

Capacity	Diam.	Neck diam.	Height	PK	Cat. No.
ml	mm	mm	mm		
100	64	24	105	1	9.051 201
250	85	34	155	1	9.051 202
500	105	34	185	1	9.051 205
1000	135	45	230	1	9.051 210
2000	166	60	255	1	9.051 220

**3**

**3** Filter flasks, glass DURAN®

DIN 12476. ISO 6556. Erlenmeyer shape. Heavy wall, for vacuum use. With ground 17.5/26 socket for vacuum tubing with 15 mm to 18 mm external diameter. These filtering flasks fulfil the regulations of the "equipment and product safety regulations".

DWK Life Sciences

Capacity	Diam.	Neck diam.	Height	PK	Cat. No.
ml	mm	mm	mm		
250	85	34	155	1	9.051 236
500	105	34	185	1	9.051 244
1000	135	45	230	1	9.051 254
2000	166	60	255	1	9.051 263

**4**

**4** Filter flasks with side-arm socket, glass DURAN®

Bottle shape. Heavy wall, for vacuum use. With ground 17.5/26 socket for vacuum tubing with 15 mm to 18 mm external diameter. These filtering flasks fulfil the regulations of the "equipment and product safety regulations".

DWK Life Sciences

Capacity	Diam.	Neck diam.	Height	PK	Cat. No.
ml	mm	mm	mm		
3000	170	58	295	1	9.051 268
5000	185	68	360	1	9.051 273
10000	240	70	420	1	9.051 286
15000	255	70	500	1	9.051 288
20000	290	70	535	1	9.051 291

**5**

**5** Filter flask DURAN®

Witt-pattern. Complete with interchangeable, flat-ground jointed, tube lid with cone, and plastic flexible tubing connection on one side. Vacuum resistant.

DWK Life Sciences

DN	Height mm	Lid	PK	Cat. No.
100	160	29/32	1	9.051 519
150	200	29/32	1	9.051 531
200	300	29/32	1	7.022 240
100	160	45/40	1	9.051 619
150	200	45/40	1	9.051 631