



Quality Laboratory Glass-ware

QLG is a brand of Quality Laboratory Glassware with uniform and constant high quality, manufactured in Thailand by QUALITEST CO., LTD. We repair and produce laboratory glassware according to customer design. All instruments are made from DURAN BOROSILICATE GLASS, which is well known quality proofed for laboratory and scientific glass. QLG's products are fabricated by all qualified and skilled staff with German Technology of scientific glass-blowing work-man ship and under the supervision of qualified Scientist and Engineer.



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The properties of the borosilicate glass we work with:

DURAN represents the internationally established type of borosilicate glass 3.3 (DIN-ISO3585) and the major international standards as the English, American and French. Highest possible chemical resistance, minimum thermal expansion as well as the thereby conditioned high thermal shock resistance are its essential characteristics. This optimum physical and chemical behaviour predisposes DURAN to the application in laboratories and for large industrial installations in chemical plant systems. It is considered moreover to be an all-round industrial glass in all other fields of application where maximum thermal resistance, thermal shock resistance, mechanical resistance as well as unusual chemical resistance are required.

Below 510 °C (10 14.5 dPas, lower annealing temperature), DURAN can be annealed quickly, without major permanent stresses re-freezing. To eliminate permanent stresses, DURAN is heated up to a maximum of 550 °C and main-tained at said temperature during 30 minutes For subsequent annealing the rates in the table below are recommended:

Type of Glasses	Linarer coeff. of expansion $\alpha_{20/300\text{ °C}}$ 10^{-6} K^{-1}	Chemical resistant classes			
		Transforming temperature DIN 53 324 °C	Resist. against Water	Resist. against Alcalic DIN 52322	Resist. against Acids
DURAN ®	3.3	525	1	2	1

Chemical composition of DURAN ®

DURAN ®, which is used in laboratories because of its excellent chemical and physical properties, has the following typical composition;

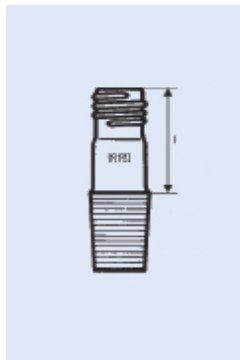
81%	by weight	SiO ₂
13%	by weight	B ₂ O ₃
4%	by weight	Na ₂ O
4%	by weight	K ₂ O
2%	by weight	Al ₂ O ₃

Physical properties and characteristics for the processing of DURAN ® by glassblowers

Maximum use temperature: 500 °C

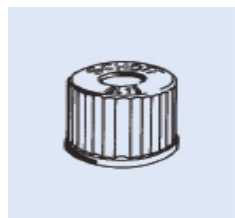
Transformation temperature DIN/ISO 3585: 525 °C

Upon cooling from the melting temperature (10 1 bis 10 3 poise), the glasses go through a wide range of viscosity, which ranges from a relatively viscous region (at about 10 4 bis 10 8 poise) to the plastic range (10 8 bis 10 12 poise) and up into the know elastic-brittle state (>10 13 poise). Thus, glass shows a constant increase in viscosity upon cooling and has no soldification point as is the case for crystalline substances. For the processing of glass, certain sections of the viscosity range are of particular importance. In the transformation range, the elastic-brittle behaviour of the glass changes to a noticeably viscous behaviour with increasing temperature, which significantly changes all physical and chemical properties as a function of temperature. Thus, the temperature region of the transformation range determines the elimination of stress during heating and the onset of stresses during cooling of the glass. The position of the transformation range is indicated by the transformation temperature T_g DIN 52324.



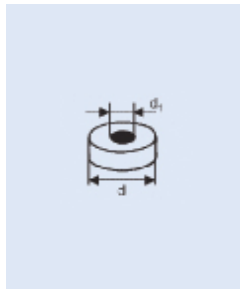
Screwthread tubes, with standard ground cone

GL	Length(l), mm	Cone, NS	CODE
14	30	14/23	S2484062
14	40	24/29	S2484082
18	35	19/26	S2484171
18	40	24/29	S2484181
25	40	19/26	S2484272
25	40	24/29	S2484282
32	50	24/29	S2484481
32	50	29/32	S2484491



Plastic screw-caps, with aperture, red, made of PBT

GL	Bore, d mm	CODE
14	9.5	S2922705
18	11	S2922706
25	15	S2922709
32	20	S2922708



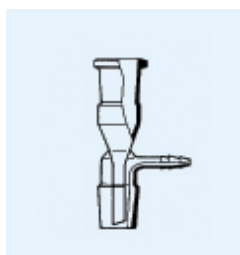
Silicone rubber sealing rings, with vulcanized-on PTFE washers

For GL	d x d1	For tube dia. , mm	CODE
14	12 x 6	5.5 - 6.5	S2923406
18	16 x 8	7.5 - 9.0	S2923508
25	22 x 10	9.0 - 11.0	S2923710
25	22 x 12	11.0 - 13.0	S2923712
32	29 x 14	13.0 - 15.0	S2923614
32	29 x 16	15.0 - 17.0	S2923616



Receiving adapters, straight, with vacuum connection

Socket, ST	Cone, ST	CODE
19/26	19/26	Q1904019
19/26	24/29	Q1904020
24/29	24/29	Q1904024
19/26	29/32	Q1904025
29/32	29/32	Q1904029



Receiving adapters, straight, with vacuum connection, with drip tip

Socket, ST	Cone, ST	CODE
19/26	19/26	Q1908019
19/26	24/29	Q1908020
24/29	24/29	Q1908024
19/26	29/32	Q1908025
29/32	29/32	Q1908029



Receiving adapters, bent, with vacuum connection

Socket, ST	Cone, ST	CODE
19/26	19/26	Q1905019
19/26	24/29	Q1905020
24/29	24/29	Q1905024
19/26	29/32	Q1905025
29/32	29/32	Q1905029



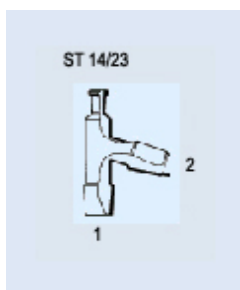
Receiving adapters, bent, with vacuum connection, with drip tip

Socket, ST	Cone, ST	CODE
19/26	19/26	Q1906019
19/26	24/29	Q1906020
24/29	24/29	Q1906024
19/26	29/32	Q1906025
29/32	29/32	Q1906029



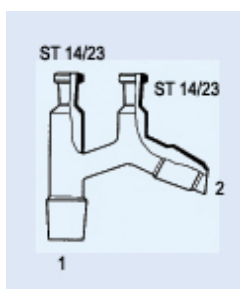
Receiving adapters, bent, with standard ground socket

Socket, ST	CODE
14/26	S2431006
19/26	S2431007
24/29	S2431008
29/32	S2431009



Distilling heads, bent, with 1 socket ST14/23, with 2 cones at 75 degree

#1 Cone, ST	#2 Cone, ST	CODE
14/23	14/23	Q1110614
19/26	19/26	Q1110619
24/29	19/26	Q1110623
24/29	24/29	Q1110624
29/32	14/23	Q1110628
29/32	29/32	Q1110629



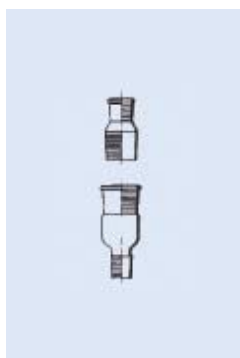
Distilling heads, bent, with 2 socket ST14/23, with 2 cones at 75 degree

#1 Cone, ST	#2 Cone, ST	CODE
14/23	14/23	Q1120614
19/26	19/26	Q1120619
24/29	19/26	Q1120623
24/29	24/29	Q1120624
29/32	14/23	Q1120628
29/32	29/32	Q1120629



Connection pieces, with standard ground cone angle 90 degree

Cone, ST	CODE
14/23	S2430006
19/26	S2430007
24/29	S2430008
29/32	S2430009



Adapters, reduction-expansion, with standard ground conical joints

Cone, ST	Socket size, ST	CODE
19/26	14/23	S2411422
24/29	14/23	S2411423
14/23	19/26	S2411426
24/29	19/26	S2411428
19/26	24/29	S2411433
29/32	24/29	S2411436
14/23	29/32	S2411442
24/29	29/32	S2411444



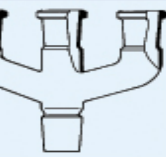
Multiple adapters, with 2 necks, 1 straight, 1 upwards

Cone, ST	Socket, ST	CODE
14/23	14/23	Q5000211
19/26	19/26	Q5000222
24/29	24/29	Q5000233
29/32	29/32	Q5000244



Multiple adapters, with 2 parallel necks

Cone, ST	Socket, ST	CODE
14/23	14/23	Q5001011
19/26	19/26	Q5001022
24/29	19/26	Q5001032
24/29	24/29	Q5001033
29/32	14/23	Q5001041
29/32	29/32	Q5001044



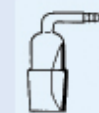
Multiple adapters, with 3 parallel necks

Cone, ST	Socket, ST	CODE
14/23	14/23	Q5015011
24/29	19/26	Q5015023
24/29	24/29	Q5015033
29/32	29/32	Q5015044



Cones, with hose connecting straight

Cone, ST	CODE
14/23	Q5092001
19/26	Q5092002
24/29	Q5092003
29/32	Q5092004



Cones, with hose connecting at 90 degree

Cone, ST	CODE
14/23	Q5095001
19/26	Q5095002
24/29	Q5095003
29/32	Q5095004



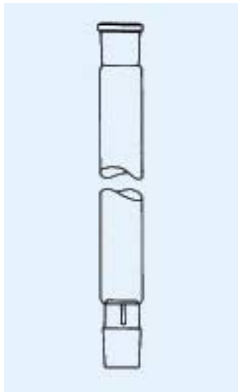
Cones, with hose connecting straight, with stopcock

Cone, ST	Stopcock bore, mm	CODE
14/23	2.5	Q5097001
19/26	2.5	Q5097002
24/29	2.5	Q5097003
29/32	2.5	Q5097004



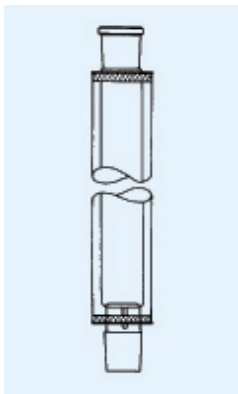
Cones, with hose connecting at 90 degree, with stopcock

Cone, ST	Stopcock bore, mm	CODE
14/23	2.5	Q5098001
19/26	2.5	Q5098002
24/29	2.5	Q5098003
29/32	2.5	Q5098004



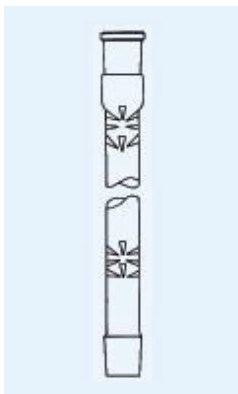
Fractionating columns, acc. to Hempel

Cone, ST	Socket, ST	Length, mm	CODE
19/26	19/26	250	Q1501200
19/26	19/26	350	Q1501300
24/29	24/29	250	Q1502200
24/29	24/29	350	Q1502300
24/29	24/29	450	Q1502400
24/29	24/29	550	Q1502500
29/32	29/32	350	Q1503300
29/32	29/32	450	Q1503400
29/32	29/32	650	Q1503600



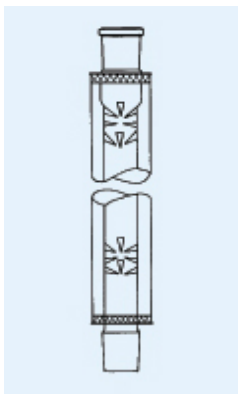
Fractionating columns, acc. to Hempel, with glass jacket

Cone, ST	Socket, ST	Length, mm	CODE
19/26	19/26	250	Q1501201
19/26	19/26	350	Q1501301
24/29	24/29	250	Q1502201
24/29	24/29	350	Q1502301
24/29	24/29	450	Q1502401
24/29	24/29	550	Q1502501
29/32	29/32	350	Q1503301
29/32	29/32	450	Q1503401
29/32	29/32	650	Q1503601



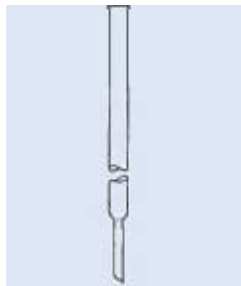
Fractionating columns, acc. to Vigreux

Cone, ST	Socket, ST	Length, mm	Number of indentations	CODE
19/26	19/26	250	11	Q1521200
19/26	19/26	350	16	Q1521300
24/29	24/29	250	11	Q1522200
24/29	24/29	350	16	Q1522300
24/29	24/29	450	22	Q1522400
24/29	24/29	550	27	Q1522500
29/32	29/32	350	16	Q1523300
29/32	29/32	450	22	Q1523400
29/32	29/32	650	31	Q1523600



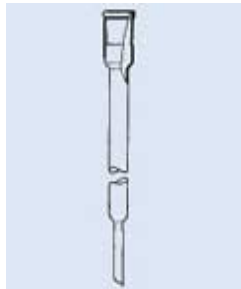
Fractionating columns, acc. to Vigreux, with glass jacket

Cone, ST	Socket, ST	Length, mm	Number of indentations	CODE
19/26	19/26	250	11	Q1521201
19/26	19/26	350	16	Q1521301
24/29	24/29	250	11	Q1522201
24/29	24/29	350	16	Q1522301
24/29	24/29	450	22	Q1522401
24/29	24/29	550	27	Q1522501
29/32	29/32	350	16	Q1523301
29/32	29/32	450	22	Q1523401
29/32	29/32	650	31	Q1523601



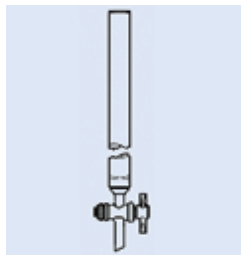
Chromatographic columns

Length, mm	Inner dia., mm	CODE
200	15	Q5400002
300	20	Q5400003
400	20	Q5400004
500	30	Q5400005
600	40	Q5400006
800	40	Q5400008



Chromatographic columns, with top socket

Length, mm	Socket, ST	Inner dia., mm	CODE
200	14/23	15	Q5401002
300	24/29	20	Q5401003
400	29/32	20	Q5401004
500	29/32	30	Q5401005
600	29/32	40	Q5401006
800	29/32	40	Q5401008



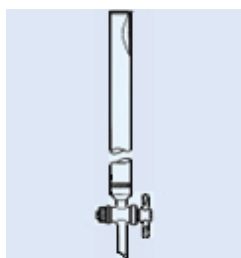
Chromatographic columns, with indentations and PTFE stopcock

Length, mm	Inner dia., mm	CODE
200	15	Q5435002
300	15	Q5435003
400	20	Q5435004
600	30	Q5435006
800	40	Q5435008



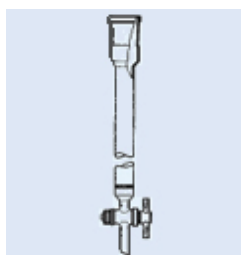
Chromatographic columns, with indentations, top socket and PTFE stopcock

Length, mm	Socket, ST	Inner dia., mm	CODE
200	14/23	10	Q5440702
400	29/32	20	Q5440704
600	29/32	30	Q5440706
800	29/32	40	Q5440708



Chromatographic columns, with glass disc pore, top socket and PTFE stopcock

Length, mm	Inner dia., mm	CODE
300	20	Q5445703
400	20	Q5445704
600	30	Q5445706
800	40	Q5445708

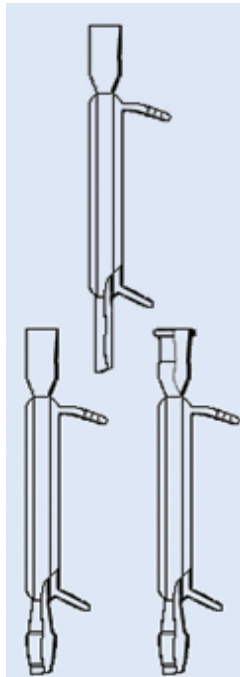


Chromatographic columns, with glass disc pore, top socket and PTFE stopcock

Length, mm	Socket, ST	Inner dia., mm	CODE
300	14/23	20	Q5450703
400	29/32	20	Q5450704
600	29/32	30	Q5450706
800	29/32	40	Q5450708

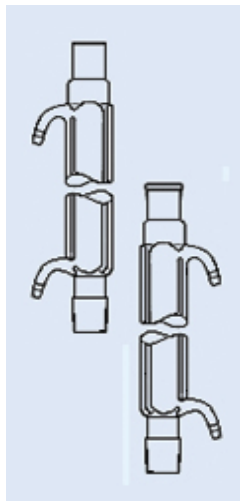
**all glass components are made of DURAN®

-- Columns



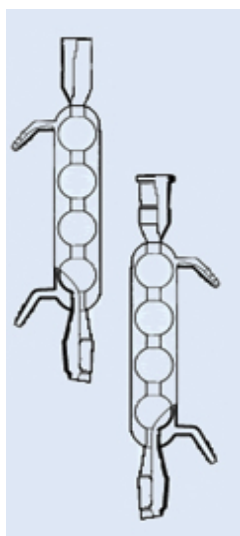
Liebig-condensers

Length, mm	Cone, ST	Socket, ST	CODE
160	-	-	W1700160
160	19/26	-	W1702160
160	14/23	14/23	W1706160
160	19/26	19/26	W1708160
250	-	-	W1700250
250	19/26	-	W1702250
250	24/29	-	W1703250
250	29/32	-	W1704250
250	14/23	14/23	W1706250
250	19/26	19/26	W1708250
250	24/29	24/29	W1709250
250	29/32	29/32	W1710250
400	-	-	W1700400
400	24/29	-	W1703400
400	29/32	-	W1704400
400	24/29	24/29	W0709400
400	29/32	29/32	W1710400



Davies-condensers

Length, mm	Cone, ST	Socket, ST	CODE
160	19/26	-	W1739160
160	19/26	19/26	W1739163
250	19/26	-	W1739250
250	24/29	-	W1739251
250	29/32	-	W1739252
250	19/26	19/26	W1739253
250	24/29	24/29	W1739254
250	29/32	29/32	W1739255
400	24/29	-	W1739401
400	29/32	-	W1739402
400	24/29	24/29	W1739404
400	29/32	29/32	W1739405

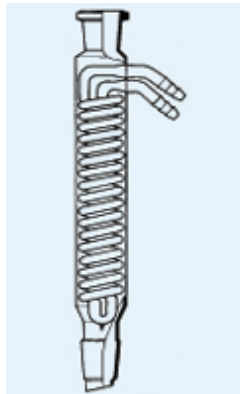


Allihn-condensers

Length, mm	Cone, ST	Socket, ST	CODE
160	14/23	14/23	W1725160
160	19/26	19/26	W1726160
250	19/26	-	W1722250
250	24/29	-	W1723250
250	29/32	-	W1724250
250	14/23	14/23	W1725250
250	19/26	19/26	W1726250
250	24/29	24/29	W1727250
250	29/32	29/32	W1728250
400	24/29	-	W1723400
400	29/32	-	W1724400
400	24/29	24/29	W1727400
400	29/32	29/32	W1728400

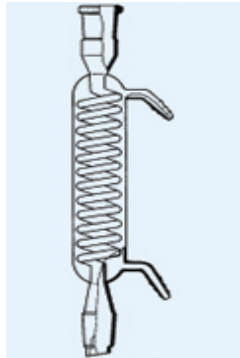
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-- Condensers



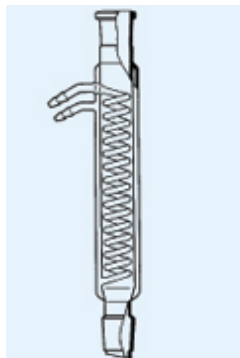
Dimroth-condensers

Length, mm	Cone, ST	Socket, ST	CODE
160	14/23	14/23	W1740160
160	19/26	19/26	W1742160
160	29/32	29/32	W1744160
250	14/23	14/23	W1740250
250	19/26	19/26	W1742250
250	24/29	24/29	W1743250
250	29/32	29/32	W1744250
400	24/29	24/29	W1743400
400	29/32	29/32	W1744400



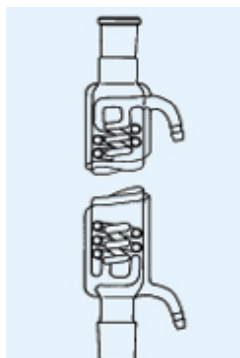
Spiral-condensers

Length, mm	Cone, ST	Socket, ST	CODE
160	14/23	14/23	W1770164
160	24/29	24/29	W1770160
160	29/32	29/32	W1772160
250	14/23	14/23	W1770254
250	24/29	24/29	W1770250
250	29/32	29/32	W1772250
400	24/29	24/29	W1770400
400	29/32	29/32	W1772400



Jacketed coil condensers

Length, mm	Cone, ST	Socket, ST	CODE
160	29/32	29/32	W1756160
250	24/29	24/29	W1755250
250	29/32	29/32	W1756250
400	24/29	24/29	W1755400
400	29/32	29/32	W1756400



Jacketed coil condensers, with double coil condensers

Length, mm	Cone, ST	Socket, ST	CODE
160	29/32	29/32	W1762160
250	24/29	24/29	W1760250
250	29/32	29/32	W1762250
400	24/29	24/29	W1760400
400	29/32	29/32	W1762400
600	29/32	29/32	W1762600



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Flasks, round bottom, center neck, with socket

Capacity, ml	Socket, ST	CODE
25	14/23	S1417013
25	19/26	S2417014
50	14/23	S2417020
50	19/26	S2417017
50	24/29	S2417018
50	29/32	S2417019
100	14/23	S2417025
100	19/26	S2417024
100	24/29	S2417026
100	29/32	S2417027
250	24/29	S2417036
250	29/32	S2417037
500	24/29	S2417044
500	29/32	S2417046
500	45/40	S2417047
1000	24/29	S2417054
1000	29/32	S2417056
1000	45/40	S2417057



Flasks, round bottom, 2 necks, with side neck at an 20 degree, 2 sockets

Capacity, ml	Center Socket, ST	Side Socket, ST	CODE
100	14/23	14/23	W0699100
250	14/23	14/23	W0699250
100	24/29	14/23	W0700100
250	24/29	14/23	W0700250
500	24/29	14/23	W0700500
1000	24/29	14/23	W0700001
250	24/29	19/26	W0701250
500	24/29	19/26	W0701500
1000	24/29	19/26	W0701001
1000	24/29	24/29	W0701002
100	29/32	14/23	W0703100
250	29/32	14/23	W0703250
500	29/32	14/23	W0703500
1000	29/32	14/23	W0703001
250	29/32	19/26	W0705250
500	29/32	19/26	W0705500
1000	29/32	19/26	W0705001



Flasks, round bottom, 3 necks, with side neck at an 20 degree, 3 sockets

Capacity, ml	Center Socket, ST	Side Socket, ST	CODE
100	29/32	14/23	S2418827
250	24/29	14/23	S2418836
250	29/32	14/23	S2418837
500	24/29	24/29	S2418845
500	29/32	14/23	S2418846
1000	24/29	14/23	S2418853
1000	29/32	14/23	S2418855



Flasks, round bottom, 3 necks, with side neck parallel, 3 sockets

Capacity, ml	Center Scket, ST	Side Scket, ST	CODE
250	24/29	19/26	S2418536
250	29/32	14/23	S2418537
500	24/29	19/26	S2418544
500	29/32	14/23	S2418546
500	29/32	29/32	S2418545
1000	29/32	14/23	S2418556
1000	29/32	29/32	S2418555
2000	29/32	14/23	S2418563
2000	29/32	29/32	S2418565



Flasks, erlenmeyer, center neck, with socket

Capacity, ml	Scket, ST	CODE
100	19/26	S2419324
100	24/29	S2419326
100	29/32	S2419327
200	29/32	S2419332
250	24/29	S2419336
250	29/32	S2419337
250	45/40	S2419338
300	29/32	S2419339
500	24/29	S2419344
500	29/32	S2419346
500	45/40	S2419347
1000	24/29	S2419354
1000	29/32	S2419356



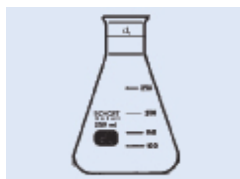
Flasks, flat bottom, center neck, with socket

Capacity, ml	Scket, ST	CODE
100	19/26	S2417124
100	24/29	S2417126
100	29/32	S2417127
250	24/29	S2417136
250	29/32	S2417137
500	24/29	S2417144
500	29/32	S2417146
1000	24/29	S2417154
1000	29/32	S2417156



Flasks, pear shape, center neck, with socket

Capacity, ml	Scket, ST	CODE
10	14/23	S2419508
25	14/23	S2419514
50	14/23	S2419520
100	14/23	S2419525



Flasks, erlenmeyer, center neck

Capacity, ml	CODE
125	S2121626



Support stand, cast iron rustproof painted base, with stainless steel rod

Base		Rod	For support rod	CODE
Length, mm	Width, mm	Length, mm	O.D., mm	
150	100	500	10	W8411001
180	120	750	12 - 14	W8411002
210	130	1000	12 - 14	W8411003
300	150	1000	12 - 14	W8411004



Support rod, stainless steel

Length, mm	O.D., mm	CODE
500	10	W8417000
500	12	W8417010
750	12	W8417020
1000	12	W8417030
1250	12	W8417040
1500	12	W8417050

Support rod, aluminum

Length, mm	O.D., mm	CODE
500	10	W8417100
750	12	W8417110
1000	12	W8417120
1250	12	W8417130
1500	12	W8417140



Bossheads, aluminum lacquered

For rod dia. , mm	CODE
10 - 15	W8435000
16 - 20	W8435001



Universal clamps, interlocking round jaws, with woolen cloth lining

Length, mm	Opening, mm	CODE
240	55	W8438000



Burette clamps, rust proof painted

	CODE
cast iron	
1 burette	W8425001
2 burettes	W8425002
Aluminum	
1 burette	W8425003
2 burettes	W8425004



Bunsen burner, with air regulation and needle valve for gas regulation,

Height (mm)	CODE
aprox. 160	B0010001

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