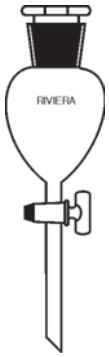


Funnels, Separating, Globe Shape, with Glass Stopcock & I/C Stopper, Made from Heat Resistant, Low Expansion Borosilicate Glass, RIVIERA

Cat No.	Capacity ml	Stopper Size	Qty. Per Pack Pcs
21112 25	125	19/26	2

Funnels, Separating, Globe Shape, with Glass Stopcock & I/C Stopper, Made from DURAN Glass

Cat No.	Capacity ml	Stopper Size	Qty. Per Pack Pcs
21112 36	250	19/26	2
21112 44	500	24/29	1
21112 54	1000	29/32	1
21112 63	2000	29/32	1

Filter Crucibles with Sintered Disc, Made from Heat Resistant, Low Expansion Borosilicate Glass, RIVIERA

Cat No.	Capacity ml	Porosity Grade	Qty. Per Pack Pcs
72000 151	15	G 1	10
72000 152	15	G 2	10
72000 153	15	G 3	10
72000 154	15	G 4	10
72000 301	30	G 1	10
72000 302	30	G 2	10
72000 303	30	G 3	10
72000 304	30	G 4	10
72000 501	50	G 1	10
72000 502	50	G 2	10
72000 503	50	G 3	10
72000 504	50	G 4	10

Filter Crucibles with Sintered Disc, DURAN

Cat No.	Capacity ml	Porosity Grade	Qty. Per Pack Pcs
25851 11	15	G 1	10
25851 12	15	G 2	10
25851 13	15	G 3	10
25851 14	15	G 4	10
25851 21	30	G 1	10
25851 22	30	G 2	10
25851 23	30	G 3	10
25851 24	30	G 4	10
25851 31	50	G 1	10
25851 32	50	G 2	10
25851 33	50	G 3	10
25851 34	50	G 4	10

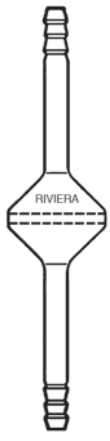
Funnels, Buchner Type, with Sintered Disc, Made from Heat Resistant, Low Expansion Borosilicate Glass, RIVIERA

Cat No.	Capacity ml	Porosity Grade	Qty. Per Pack Pcs
72010 0351	35	G 1	1
72010 0352	35	G 2	1
72010 0353	35	G 3	1
72010 0354	35	G 4	1
72010 0801	80	G 1	1
72010 0802	80	G 2	1
72010 0803	80	G 3	1
72010 0804	80	G 4	1
72010 2001	200	G 1	1
72010 2002	200	G 2	1
72010 2003	200	G 3	1
72010 2004	200	G 4	1

Funnels, Buchner Type, with Sintered Disc, DURAN

Cat No.	Capacity ml	Porosity Grade	Qty. Per Pack Pcs
25852 01	50	G 1	1
25852 02	50	G 2	1
25852 03	50	G 3	1
25852 04	50	G 4	1
25852 11	75	G 1	1
25852 12	75	G 2	1
25852 13	75	G 3	1
25852 14	75	G 4	1
25852 21	125	G 1	1
25852 22	125	G 2	1
25852 23	125	G 3	1
25852 24	125	G 4	1
25852 31	500	G 1	1
25852 32	500	G 2	1
25852 33	500	G 3	1
25852 34	500	G 4	1
25852 41	1000	G 1	1
25852 42	1000	G 2	1
25852 43	1000	G 3	1
25852 44	1000	G 4	1

Pipeline Filters, with Sintered Disc, Made from Heat Resistant, Low Expansion Borosilicate Glass, RIVIERA



Cat No.	Capacity ml	Porosity Grade	Qty. Per Pack Pcs
72020 901	90	G 1	1
72020 902	90	G 2	1
72020 903	90	G 3	1
72020 904	90	G 4	1

SINTERED GLASSWARE, DURAN

Porosity Grades

Porosity Grade	New Identification Mark ISO 4793	Nominal Max. Pore Size μm	Fields of applications, examples
1	P 160	100 - 160	Coarse filtration. filtration of coarse precipitates, gas distribution in liquids. Liquid distribution, coarse gas filtration. Extraction apparatus for coarse grain materials. Loose filter layer subtrates for gelatinous precipitates.
2	P 100	40 - 100	Preparative fine filtration. Preparative work with crystalline precipitates. Mercury filtration.
3	P 40	16 - 40	Analytical filtration. Analytical work with medium-line precipitates. Preparative work with fine precipitates. Filtration in cellulose chemistry, fine gas filtration. Extraction apparatus for fine-grained materials.
4	P 16	10 - 16	Analytical filtration. Analytical work with very fine precipitates (e. g. $BaSO_4$, Cu_2O). Preparative work with precipitates of appropriate fineness. Non-return and stop valves for Mercury.

To determine possible application of glass filter discs and apparatus, it is necessary to know not only the porosity, but also the flow rates of liquids and gases. The data applies to filter discs of 30 mm diameter. the flow rates for other disc diameters can be calculated by multiplying the value of a 30 mm disc by the conversion factor as shown in the table below.

Filter disc diameter mm	10	20	30	40	60	90	120	150	175
Conversion factor	0.13	0.55	1.0	1.5	2.5	4.3	6.8	9.7	15.0

CARE AND CLEANING

Temperature Change, Drying and Sterilization :

Please take a note of the following tips. They ensure that no inner stress occurs between the vessel and the filter discs, which can lead to the filter breaking.

1. Avoid sudden changes in temperature and unequal heating. Sintered glass filter funnels, pipe line filter tubes and other sintered glass apparatus with disc diameters exceeding 20 mm, which are to be dried or sterilized, should be placed in cold ovens or sterilizers.
2. The speed of heating and cooling should not exceed 8^{0}C/min.
3. Before filtering hot substances bring the filter unit slowly up to temperature in the hot cabinet.
4. Wet filter units should be heated slowly up to 80^{0}C and dried for one hour before increasing the temperature.

Filtration apparatus should, whenever possible, stand on its rim (stem upwards) in the oven or sterilizer. A perforated support base is advantageous since it allows air convection between the inside of the vessel and the body of the oven. If angled position of the filtration apparatus is unavoidable (pipeline filter tubes), then any point of support which is near to the filter seal position should be protected against premature heating. This is done by using an underlay of heat-insulating material.

The apparatus should remain in the oven or sterilizer during cooling. Due to the thermal inertia of this type of oven, the cooling time is adequate.

Cleaning new Sintered Glassware :

Before using sintered glass filter apparatus for the first time, hot hydrochloric acid followed by several rinses of distilled water should be sucked through the filter disc under a good vacuum. This removes dust particles and powdered glass. It is important each successive water rinse be started only after the preceding one is completely flushed through. This so-called “tear through” method must only be used for cleaning filters. It should never be adopted for preparative or analytical filtration.

Mechanical Cleaning

Sintered glass filters should always be cleaned immediately after use.

If no precipitate has entered the pores, surface rinsing under the tap or with a wash bottle is often sufficient. The filter disc surface can be wiped clean with a small brush.

(Do not remove filter medium with sharp objects.)

Where some of the precipitate has entered the pores, backflushing is necessary. In the case of porosites 0 to 2 this can be done simply by using a water tap, connecting it with the rubber tubing to the stem of sintered piece and allowing water to run backwards through the filter disc. The water pressure must not exceed 1kp/cm^2.

For porosites 3, 4 and 5 the precipitate is flushed or wiped off the disc, and the water is sucked through in the opposite direction to filtration.

Filters clogged by dirt and dust during gas filtration can be restored by treatment with a warm detergent solution followed by blowing through clean air from the clean side of the filter. Dirt particles are brought to the surface by the foam and removed by rinsing with water.

Chemical Cleaning

If, after mechanical cleaning, some of the pores remain clogged, or if it is desirable to make sure that no residue from the previous work remains before filtering a new substance, then thorough chemical cleaning is required. The choice of solvent obviously depends on the nature of the contamination.

For example :

Barium sulphate	- hot conc, sulphuric acid (100^{0}C)
Silver chloride	- hot ammonia liquor
Red copper oxide	- hot hydrochloric acid & potassium chloride
Mercury residue	- hot, conc. nitric acid
Mercury sulphide	- hot aqua regia
Albumen	- hot ammonia liquor or hydrochloric acid
Grease, oil	- carbon tetrachloride
Other organic substances	- hot, conc. sulphuric acid with an addition of nitric acid, sodium nitrate or potassium dichromate
Animal charcoal	- careful heating with a mixture of 5 volumes of conc. sulphuric acid + 1 volume of conc. nitric acid to about 200 ^{0}C

Prolonged rinsing of water must obviously follow.

For biochemical work cleaning with dichromatic sulphuric acid should be avoided, since trivalent chromium compounds, present or newly formed by reduction, are absorbed on the surface of the filter disc. When they are released during susequent use, biological substances can be seriously damaged. This danger is eliminated by using sulphuric acid with a nitrate or perchlorate addition. Only easily soluble reduction products are formed which can be completely removed by re-washing with water. Since hot, conc. phosphoric acid and hot alkaline solutions attack the glass surface, they are unsuitable as cleaning agents.