

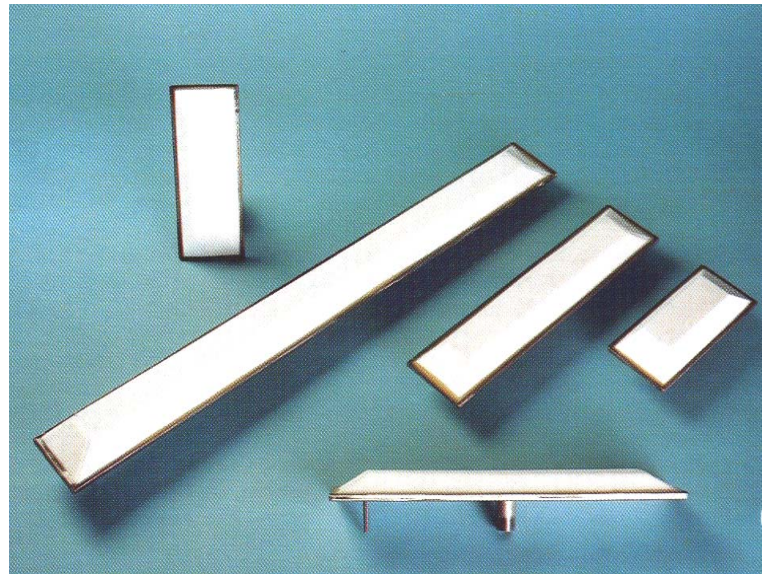
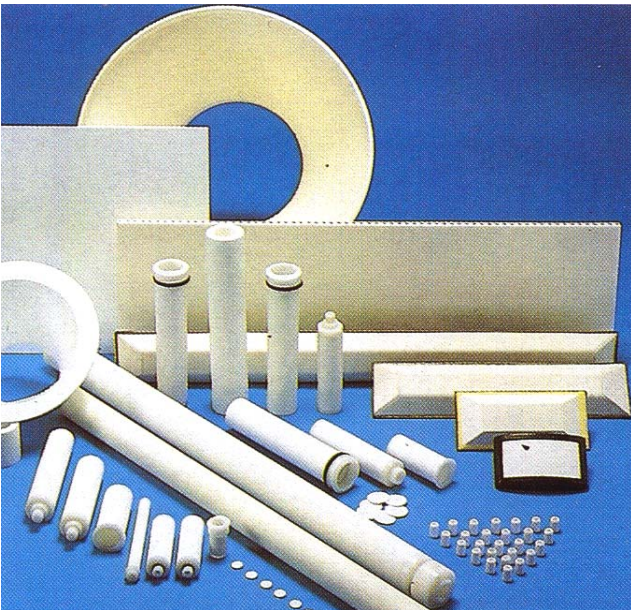
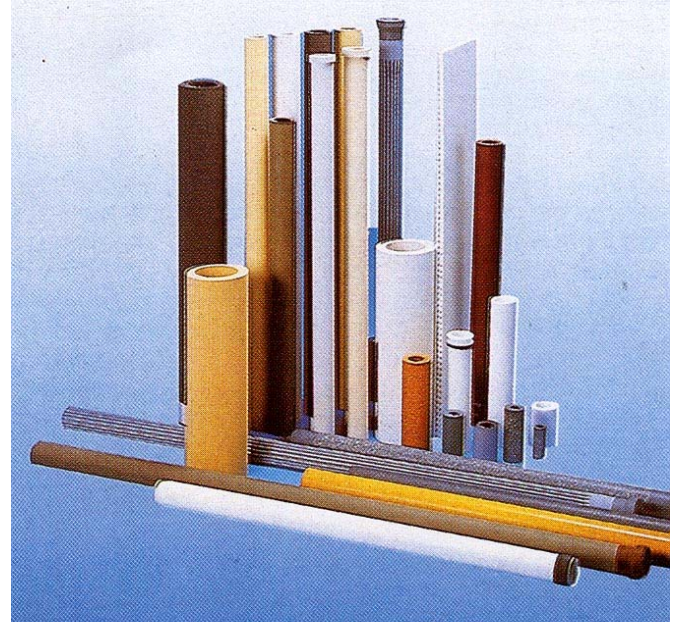
SCHUMACHER FILTER CERAMICS FOR GASES AND LIQUIDS

Leaflet E-06-01-UK

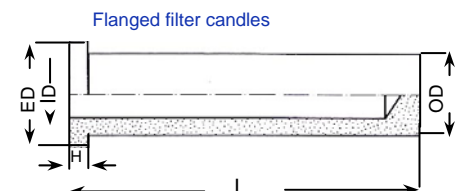
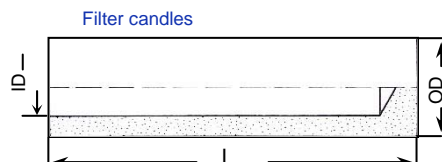
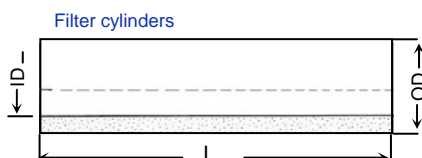


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Ceramic filter cylinders are strongest and easiest to handle. They are therefore most popular. These filter elements are supplied as cylinders, candles and flanged candles. The cylinder are available in standard dimensions (\varnothing 70/40 x 250 mm) or multiples (length 500 and 1000 mm). Flange candles normally make up tube bundles. Flange diameter is 100 mm in length of 70/40 x 1000 mm for medium and high filter outputs. When one piece flanged candles are not available, the flange itself could be attached to the filter cylinders.



MATERIALS	NATURE OF MATERIAL	GRADE	NOMINAL RETENTION IN MICRON		POROSITY (%)	SPECIFIC WEIGHT (Kg/dm ³)
			LIQUIDS	GASES		
AEROLITH	a mixture of crystalline and amorphous silicates remarkable for its wide range of applications. It is pure white, possesses thermal resistance up to 400°C and chemical resistance to hot and cold, neutral and acidic liquids and gases. Avoid thermal shocks.	10	10	5	50	1,25
		20	20	10	47	
		30	30	15		
		40	40	20		
SCHUMATERM	a mixture of alumina silicates, is stable up to 600°C. Its main uses are for filtration of liquids, as linings for nutsches and as support bodies for pre coat filtration. Colour: ochre. Avoid thermal shocks.	10	10	5	47	1,10
		20	20	10	37	
		30	30	15		
		40	40	20		
		50	50	25		
		60	60	30		
SCHUMALITH	inorganically-bonded silicon carbide, has a very good resistance to solutions of acids and acidic salts. The same is true for saturated and superheated steam, and also for hot gases up to 1000°C. In grain size 3 it can be used for the sterile filtration of gases. Colour: brilliant grey. Avoid thermal shocks.	5	5	2	35	2,20
		20	20	10		
		30	30	15		
CARBO	is technically pure carbon and consequently very resistant to chemical reaction. It is not attacked by hydrofluoric acid and can be utilised in the whole range from pH 0 to pH 14. CARBO is stable in oxidising atmospheres up to around 200°C and in reducing ones up to about 1000°C. Colour: black	10	10	5	30	1,1
		20	20	10	42	
		30	30	15		
		40	40	20		
FILTROPLAST	consist of a homogeneous plastic porous structure with an extremely smooth surface, high resistance to abrasion and is free from particle release. It is chemically resistant, and meets the requirements of the food industry. FILTROPLAST parts are dimensionally stable, but nevertheless show a high elasticity. FILTROPLAST is very light because of the low density. It is easy to machine, can be welded, and because of its porous structure, easily glued. Colour: white.	K 10	10	5	45	0,5
		K 20	20	10	50	
		K 30	30	15		
		K 40	40	20		
SCHUMASORB AKC	consists of carbon bonded activated carbon. Consequently, it contains only chemically resistant and biologically inert carbon. The universal suitability of this pure carbon filter-adsorbent is limited only by the known properties of activated carbon material. The product is chemically resistant within the pH-range from 0 to 14. The maximum operating temperature in the presence of atmospheric oxygen is about 180. Colour: black.	10	-	-	60-65	1,71 ÷ 0,75
		20	-	-		

OUTPUT – The table shows the data used to calculate the filter dimensions. As output depends on specific circumstances, please contact our technical office for confirmations.

MATERIAL	CYLINDER	COMPRESSED AIR Nmc/h a 7 BAR OUTPUT	ΔP BAR	WATER OUTPUT l/ora	ΔP BAR
AEROLITH 10	60/40 x 250	200	0.2	500	0.2
SCHUMALITH SC 5	70/40 x 250	65	0.2	65	0.2
SCHUMALIT SC 10	70/40 x 250	65	0.02	65	0.02
SCHUMASORB 10	70/40 x 250	-	-	120	0.2
SCHUMASORB 20	70/40 x 250	200	0.2	45	0.2
CARBO 20	70/40 x 250	80	0.2	350	0.2

MATERIAL FEATURES

The need for medium and fine filtration retentions and for the cleaning of the filter elements has led to the production and evolution of filter cartridges in various materials: ceramic, carbon and plastics. These materials are very different from each other, and so many types of applications are possible.

GRADE – We give a number to every grade of porosity.

The higher the grades, the greater is the diameter of the pores and the retention for large contaminants. But grades of different materials cannot be compared with one another.

DIAMETER OF THE PORES – Every porous material has a characteristic distribution of the pores, and we measure the average of the pores (MP) and of largest pores (LP). These diameters are given by the bubble point. The filtration efficiency, the fineness of the filtration etc. do not depend only on the diameters of the pores, but also on the concentration of the contaminant particles and on their shapes, on the velocity of the filtration and on the viscosity of the fluid to be filtered.

The volume of the pores (or porosity) is the ratio of empty against full, i.e the total volume of the pores that can be filled by a liquid against the total volume of the material. Expressed in percentage.

CLEANING OF THE POROUS MATERIALS

The porous elements can be cleaned by the user in the following way:

The oldest method is to wash the elements in counter current.

This works if the contaminant is not too sticky and if a good pressure for the counter washing is available. The difficulty is that often "preferential passages" are created and dirty pores are neglected.

It is possible to use a brush and water. This is effective when the contaminant is made up of large particles which are retained by the surface of the filtering material.

Solvents and aggressive cleaning agents can be used, if these will not damage the material. If the filters can be cleaned, they can be used many times.

SPECIFIC WEIGHT

These specific weights apply to the apparent mass. As the materials contain a high volume of void, the actual material has a much higher specific weight, but this does not concern the sizing of the filter.

