

# Supradisc™ Depth Filter Modules

## Benefits of Depth Filter Sheets in Module Form



### SD Range

Standard range for numerous applications.

### SDP Range

A filter material low in endotoxins for applications in the pharmaceutical industry.

### BIO Range (Kieselguhr-free)

Highly pure natural and modified grades of cellulose – ideal for applications where minimum ion extraction and low protein adsorption are of major concern.

### SDT Range

This series is characterized by open construction and reduced thickness to give a low filtration resistance and high flow rates. Therefore it is ideally suited for viscous media, for the removal of gel particles and coarsely dispersed components.

### SH Range

Permits reliable filtration up to 160 °C (320 °F) and has been specially developed for application in APIs.

### SD AKS Range (Activated Carbon)

Due to the incorporation of activated carbon into the matrix of the filter this range possesses an extremely high adsorption capacity and is therefore among others recommended for decolorization, deodorization, and dechlorination tasks and removal of lipids from protein solutions.



The **Supradisc** module design concept combines the advantages of conventional depth filter sheets with the positive features of enclosed filters.

### Module Concept

Each module consists of three major components:

- Filter cells or lenticles
- Tubular
- Adapters

The individual filter cells comprising two filter media layers and a drainage plate are edge-sealed in an injection-molding process.

Up to 21 cells are stacked on a tubular core, compressed and joined to form a module.

This design results in reliable sealing between the filter cells, even if the module is in a dry state, which eliminates the need for retightening after wetting.

### Filter Media

Depth filters, which prove highly successful in a vast range of applications, are incorporated as filter media. Due to their excellent mechanical strength, they can be readily incorporated into modules.

Almost all grades of depth filters available in Pall sheet format are also available in modular configuration, so that change-over from open sheet filter systems to closed systems is relatively easy.

### The Complete Filter System

The proven adapter is fitted with two O-rings and a bayonet lock, a successful concept, adopted by the pharmaceutical industry for filter cartridges. Consequently, **Supradisc** modules can be mounted into filter housings rapidly and easily.

Due to their specific design, **Supradisc** modules are characterized by a very high mechanical stability.

A range of module types with different permeabilities, filter media, and diameters – 284 and 410 mm (11.2 and 16.1 in.) – permits precise optimization of the filter system to specific filtration tasks.

Modules to retrofit most commercial housings are available.

### Features and Benefits

- Permits filtration without product losses due to the enclosed design
- Requires less space than classical filtration systems due to its vertical design
- Offers maximum reliability against product contamination
- Affords maximum operational safety due to the exclusion of emissions
- Very simple to handle due to rapid module change and ease of cleaning
- Modules with double O-ring adapters guarantee maximum reliability during the entire process
- A depth filter system with an extremely high retention capability for solids
- Long service life: due to the mechanical depth filter effect and the ZETA potential, particles are retained by both mechanical and electrokinetic adsorption
- Grades for the retention of yeast, bacteria, and colloids are available
- Supplied as a ready-to use unit, subsequent retightening after wetting is not necessary, simplifying handling
- Highly efficient in the protection of downstream membrane filters with “police filter” duties, media and media-difficult filter
- Can be sterilized by autoclaving or steam-sterilization or disinfected with hot water or by chemical means
- Can be disposed of with common industrial waste and can be incinerated

**Note:** For used depth filters, the disposal regulations applicable for the filtered product must be considered.

# Supradisc Depth Filter Modules

## Technical Specifications

### Operating Conditions<sup>(1)</sup>

Maximum Operating Temperature	85 °C (185 °F)
Maximum Operating Pressure	2.5 bard (36 psid)

<sup>(1)</sup> With compatible fluids, which do not soften, swell or adversely affect the products or its material of construction.

### Plastic Parts of Construction of Supradisc Modules

Supradisc Components	Polypropylene Polyamid (high temperature version)
O-rings	Silicone elastomer

### Sterilization

**Steam in Place** 125 °C (257 °F), for 30 minutes at 0.3 bard (4.3 psid) maximum.

### Nominal Dimensions – Supradisc Modules

<b>Nominal Total Length</b>	<b>Double-O-ring Execution:</b> 332 mm (13.1 in.)
	<b>Flat Gasket Execution:</b> 272 mm (10.7 in.)
<b>Nominal Diameter</b>	284 mm (11.2 in.)
	413 mm (16.3 in.)

Table 1

Sheet	Depth Filter Type	Weight per Area (g/m <sup>2</sup> )	Ash Content (%)	Extractable Ions Soluble in 0.025 µm H <sub>2</sub> SO <sub>4</sub> (mg/m <sup>2</sup> )		
				Ca	Fe	Al
B010	BIO 10	1400	< 1	0.28 ppm <sup>(1)</sup>	< 0.05 ppm <sup>(1)</sup>	< 5 ppb <sup>(1)</sup>
B020	BIO 20	1400	< 1	0.17 ppm <sup>(1)</sup>	< 0.05 ppm <sup>(1)</sup>	< 5 ppb <sup>(1)</sup>
B040	BIO 40	1200	< 1	0.48 ppm <sup>(1)</sup>	< 0.05 ppm <sup>(1)</sup>	< 5 ppb <sup>(1)</sup>
XEK1	EK 1	1400	51	1600	15	140
XEK0	EK	1350	46	1400	10	120
X050	KS 50	1350	46	1400	10	120
X080	KS 80	1350	46	1200	15	120
X100	K 100	1350	46	1400	15	120
X150	K 150	1350	46	1300	15	120
X200	K 200	1350	46	1200	15	110
X250	K 250	1300	46	1000	15	70
X300	K 300	1300	46	900	15	50
X700	K 700	1300	46	900	15	50
X900	K 900	1300	46	900	25	40
C100	K 100 IR	1400	51	200	20	75
C250	K 250 IR	1250	46	150	15	50
C800	K 800 IR	1250	46	120	10	30
C900	K 900 IR	1200	46	120	10	30
T950	T 950	850	40	600	13	25
T100	T 1000	950	35	570	15	30
T150	T 1500	850	33	500	12	25
T210	T 2100	700	15	350	11	20
T260	T 2600	700	< 1	300	1	5
T350	T 3500	880	15	450	15	30
T550	T 5500	750	< 1	300	1	5

<sup>(1)</sup> Soluble after 50 L/m<sup>2</sup> flushing with WFI.

### Part Numbering and Ordering Information

Code	Filter Spacing	Code	Filter Type	Code	Gasket Option	Code	Filter Area	Code	Gasket Material	Code	Plastic Parts
00	Standard	See Above Table 1		S	Double O-ring	203	0.3 m <sup>2</sup> (3.2 ft <sup>2</sup> )	S	Silicone elastomer	P	Polypropylene
01	High Temperature			C	Flat Gasket	205	0.5 m <sup>2</sup> (5.9 ft <sup>2</sup> )	Other Gaskets available on request		A	Polyamide <sup>(2)</sup>
30	Increased cell distance					209	1.0 m <sup>2</sup> (10.7 ft <sup>2</sup> )				
						216	1.8 m <sup>2</sup> (19.3 ft <sup>2</sup> )				
						509	2.3 m <sup>2</sup> (24.7 ft <sup>2</sup> )				
						516	4.0 m <sup>2</sup> (43.0 ft <sup>2</sup> )				
						520	5.0 m <sup>2</sup> (53.8 ft <sup>2</sup> )				

<sup>(2)</sup> High Temperature only.