

SepraPor[®]

Hollow Fiber Capsule Filters



SepraPor® Hollow Fiber Capsule Filters

SepraPor® XFC is a tangential flow filtration hollow fiber capsule, and is available as a standalone filter or as part of a single-use assembly. The SepraPor hollow fiber filter is available for both microfiltration and ultrafiltration applications and is offered in a variety of lengths and diameters to provide ease of scalability.

Features and Benefits

- Discrete separation between retention ratings and narrow pore size distribution ensures distinct performance for each retention rating, making filter testing and selection unambiguous
- Fiber characterization for ultrafiltration membranes follow a novel and scientifically rigorous 3 Mw marker MWCO assignment method that allow for peak processing performance.
- Consistent dimensional and structural filter properties with low cross-sectional hollow fiber asymmetry deliver repeatable performance, allowing end user process control parameters to remain constant
- Seamlessly scales from benchtop evaluation through full scale production to offer maximum flexibility in manufacturing operations
- Micron rating confirmed by bubble point and flux analysis for every membrane lot ensures excellent lot-to-lot consistency
- Autoclave or gamma sterilization allows for maximum flexibility in user-specified sterilization requirements. Sterility validation is currently available for microfiltration filters only.
- Each individual SepraPor® filter is integrity tested before release to ensure quality

Typical Applications

SepraPor® XFC filters are ideal for use in a variety of biopharmaceutical applications including bacterial cell concentration, mammalian cell concentration, and yeast cell concentration, high productivity harvest, and continuous cell culture perfusion. The filters also are ideal for ultrafiltration applications, including diafiltration and purification of plasmid DNA. Detailed Application Notes can be found at www.meissner.com/seprapor.

Materials of Construction

Hollow fibers:	Polysulfone
Fiber bundle netting:	Polypropylene
Capsule housing:	Polysulfone
Permeate ports:	Polysulfone
Retentate ports:	Polysulfone
Fiber encapsulation:	Epoxy

A range of SepraPor® XFC capsule filter sizes are available, from lab scale to production scale. Low surface area lab scale filters can be used for process testing and validation, then scaled up to larger surface area filters for pilot and manufacturing operations. The family of SepraPor® filters is designed for ease of scalability.



SepraPor® Operating Characteristics

Operating Characteristics

Operating Temperature Range: 32 °F to 100 °F (0 °C to 38 °C)
 Maximum Operating Temperature: 122 °F (50 °C), for short-term operation such as cleaning

Retention Rating	Maximum Transmembrane Pressure (TMP)	Maximum Feed Pressure	Normalized Water Flux* LMH/bar @ 24 °C
0.4 µm	10 psig @ 77 °F (0.7 bar @ 25 °C)	15 psig @ 77 °F (1.0 bar @ 25 °C)	≥7,500
0.2 µm	15 psig @ 77 °F (1.0 bar @ 25 °C)	25 psig @ 77 °F (1.7 bar @ 25 °C)	≥3,300
0.1 µm	20 psig @ 77 °F (1.4 bar @ 25 °C)	30 psig @ 77 °F (2.1 bar @ 25 °C)	≥1,800
750 kDa	45 psig @ 77 °F (3.1 bar @ 25 °C)	65 psig @ 77 °F (4.5 bar @ 25 °C)	840 - 1,300
500 kDa			465 - 1,200
300 kDa			325 - 600
100 kDa			215 - 550
50 kDa			100 - 480
30 kDa	50 psig @ 77 °F (3.5 bar @ 25 °C)		80 - 265
10 kDa			50 - 165

* Measured on a 1" diameter filter, 24" length. Part No. XFCXXC224-FFCC at low transmembrane pressure.

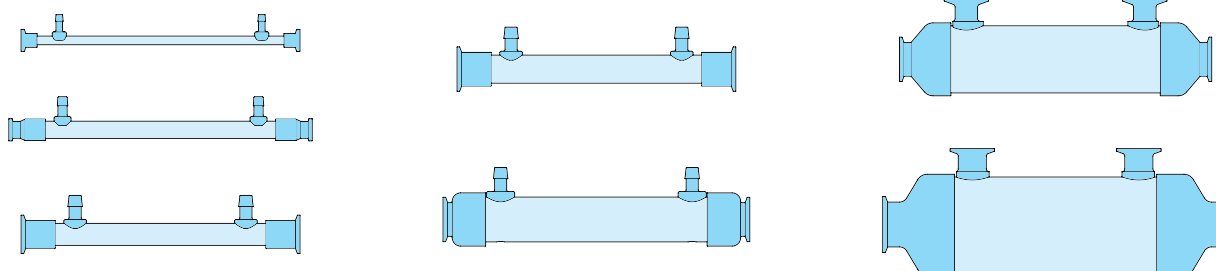
Sterilization Conditions

SepraPor® XFC filters are designed to withstand autoclaving or gamma sterilization. When autoclaving, gentle and gradual temperature and pressure gradients should be used for heating and cooling the filter, recommended not to exceed 1 °C (1.8 °F) / minute. The filter should be sterilized at 121 °C at 1 bar (15 psi) for a minimum of 30 minutes. A validated procedure that appropriately ramps temperature and pressure to and from sterilization conditions is recommended.

SepraPor® XFC filters are designed for gamma sterilization and can be included as part of a OneTouch® single-use assembly. Sterility validation is currently available for the M10, M20, and M40 filters. SepraPor® microfiltration capsule filters may be gamma irradiated with 25 - 40 kGy once. It is not recommended to autoclave or SIP an irradiated filter.

Quality Assurance

SepraPor® filters are supplied with a Certificate of Conformance. To ensure product compliance to specifications, Meissner's Quality Assurance staff continually audits the manufacturing process for conformance to its Quality Management System.



SepraPor® Dimensions & Ordering Information

Retention Rating
M10 = 0.1 µm
M20 = 0.2 µm
M40 = 0.4 µm
010 = 10 kDa
030 = 30 kDa
050 = 50 kDa
100 = 100 kDa
300 = 300 kDa
500 = 500 kDa
750 = 750 kDa

Fiber I.D.: 1.0 mm
Fiber O.D.: 1.5 mm

To specify the correct part number, please choose a Retention Rating from the chart at left and insert the code in the spaces indicated with underscore marks in the Part Number field in the chart below.

Part Number ¹	Filter Diameter	Fluid Path Length (Nominal)	Effective Filtration Area	Retentate Ports ³	Permeate Ports ³
XFC _ _ _ C012-7711	3/8" (0.95 cm)	12" (30 cm)	0.12 ft ² (0.011 m ²)	3/4" sanitary flange	1/4" hose barb
XFC _ _ _ C024-7711		24" (60 cm)	0.25 ft ² (0.023 m ²)		
XFC _ _ _ C112-7722	3/4" (1.9 cm)	12" (30 cm)	0.45 ft ² (0.042 m ²)	1" sanitary flange	3/8" hose barb
XFC _ _ _ C124-7722		24" (60 cm)	0.91 ft ² (0.085 m ²)		
XFC _ _ _ C212-00CC	1" (2.5 cm)	12" (30 cm)	0.81 ft ² (0.075 m ²)	1 1/2" sanitary flange	1/2" hose barb
XFC _ _ _ C224-00CC		24" (60 cm)	1.6 ft ² (0.15 m ²)		
XFC _ _ _ C312-FFCC	1 1/4" (3.2 cm)	12" (30 cm)	1.3 ft ² (0.12 m ²)	2" sanitary flange	1" sanitary flange
XFC _ _ _ C324-FFCC		24" (60 cm)	2.5 ft ² (0.23 m ²)		
XFC _ _ _ C412-FFCC	2.0" (5.1 cm)	12" (30 cm)	3.9 ft ² (0.36 m ²)	2" sanitary flange	1" sanitary flange
XFC _ _ _ C424-FFCC		24" (60 cm)	9.0 ft ² (0.84 m ²)		
XFC _ _ _ C512-FF00	3.0" (7.6 cm)	12" (30 cm)	9.9 ft ² (0.92 m ²)	2" sanitary flange	1" sanitary flange
XFC _ _ _ C524-FF00		24" (60 cm)	23 ft ² (2.1 m ²)		
XFC _ _ _ C712-HH00²	4 1/4" (10.8 cm)	12" (30 cm)	27 ft ² (2.5 m ²)	2" sanitary flange	1" sanitary flange
XFC _ _ _ C724-HH00²		24" (60 cm)	47 ft ² (4.4 m ²)		

¹ Irradiated capsule part numbers begin with XFG.

² Capsules with this diameter size are only available for microfiltration (0.1, 0.2, and 0.4 µm retentions) and are not offered for ultrafiltration retentions.

Additional information about this filter product is available in the SepraPor® Green Docs document at www.meissner.com/green-docs.