

SepraPor™

Hollow Fiber Capsule Filters



SepraPor® Microporous Hollow Fiber Capsule Filters

SepraPor® XFC is a tangential flow filtration capsule containing microporous hollow fibers, and is available as a standalone filter or part of a process-ready, gamma-sterilized assembly. The SepraPor® hollow fiber filter is available in pore size ratings of 0.1 µm, 0.2 µm, and 0.45 µm, and is offered in a variety of lengths and diameters to provide ease of scalability.

Features and Benefits

- Discrete separation between micron ratings and narrow pore size distribution ensures distinct performance for each micron rating, making filter testing and selection unambiguous
- 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
- Each individual filter is integrity tested before release to ensure quality
- Autoclave or gamma sterilization allow for maximum flexibility in user-specified sterilization requirements

Typical Applications

SepraPor® XFC microporous filters are ideal for use in a variety of biopharmaceutical applications including bacterial cell concentration, mammalian cell concentration, yeast cell concentration, high productivity harvest, and continuous cell culture perfusion.

Materials of Construction

Membrane:	Polysulfone
Bundle netting:	Polypropylene
Outer sleeve:	Polysulfone
Permeate Ports:	Polysulfone
Retentate Ports:	Polysulfone
Fiber Potting:	Epoxy
End Caps:	Polysulfone

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.



Filter Capsule Dimensions

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

Filter Diameter	Filter Length	Effective Filtration Area (EFA)
0.95 cm (3/8")	31.8 cm (12.5")	0.011 m ² (0.12 ft ²)
	63.5 cm (25.0")	0.023 m ² (0.25 ft ²)
1.9 cm (3/4")	34.5 cm (13.6")	0.042 m ² (0.45 ft ²)
	66.0 cm (26.0")	0.085 m ² (0.91 ft ²)
2.5 cm (1.0")	31.8 cm (12.5")	0.075 m ² (0.81 ft ²)
	63.5 cm (25.0")	0.15 m ² (1.6 ft ²)
3.2 cm (1.25")	31.8 cm (12.5")	0.12 m ² (1.3 ft ²)
	63.5 cm (25.0")	0.23 m ² (2.5 ft ²)
5.1 cm (2.0")	35.1 cm (13.8")	0.36 m ² (3.9 ft ²)
	63.5 cm (25.0")	0.84 m ² (9.0 ft ²)
7.6 cm (3.0")	35.6 cm (14.0")	0.92 m ² (9.9 ft ²)
	67.3 cm (26.5")	2.1 m ² (23 ft ²)
10.8 cm (4.25")	39.4 cm (15.5")	2.5 m ² (27 ft ²)
	62.5 cm (24.6")	4.4 m ² (47 ft ²)

SepraPor® membrane porosity is characterized by the bubble point and corresponding clean water flux. Every SepraPor® lot is tested for bubble point and flux to confirm that its pore size rating falls within specifications. Each individual filter is integrity tested by pressurizing the filter up to its bubble point value. Each finished SepraPor® filter is clearly marked with filter type, lot number, and serial number for traceability.

Porosity	Bubble Point in 60/40% IPA/Water	Normalized Water Flux* LMH/bar @ 25 °C
0.45 µm	0.6 – 1.2 bar (9 – 17 psi)	≥ 7,500
0.2 µm	1.2 – 1.7 bar (18 – 25 psi)	≥ 3,300
0.1 µm	1.8 – 2.6 bar (26 – 38 psi)	≥ 1,800

*Measured on a 1" diameter filter, 24" length. Part no. XFCMXXC224-FFC at low Transmembrane Pressure.

Operating Characteristics

Operating Temperature Range: 0 °C to 38 °C (32 °F to 100 °F)

Maximum Operating Temperature: 50 °C (122 °F), for short-term operation such as cleaning

Porosity	Maximum Transmembrane Pressure (TMP)	Maximum Feed Pressure
0.45 µm	0.69 bar @ 25 °C (10 psi @ 75 °F)	1.03 bar @ 25 °C (15 psi @ 75 °F)
0.2 µm	1.03 bar @ 25 °C (15 psi @ 75 °F)	1.72 bar @ 25 °C (25 psi @ 75 °F)
0.1 µm	1.38 bar @ 25 °C (20 psi @ 75 °F)	2.07 bar @ 25 °C (30 psi @ 75 °F)

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.

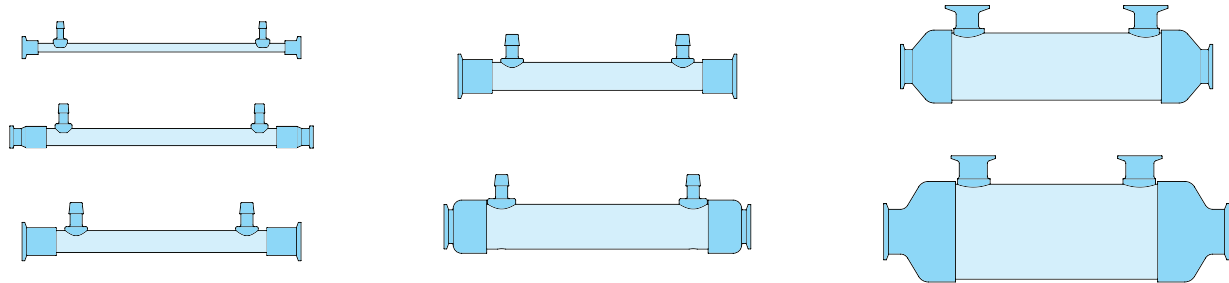
The filter should be sterilized at 121 °C (249.8 °F) at 1 bar (15 psi) for a minimum of 30 minutes. A validated procedure that appropriately ramps temperature and pressure to and from sterilization conditions is recommended.

SepraPor® XFC filters are designed for gamma sterilization and can be included as part of a OneTouch® single-use assembly. To specify a gamma irradiated capsule filter, contact Meissner.

SepraPor® Capsule Filters

Quality

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



Ordering Information

Part Number*	Filter Diameter	Fluid Path Length	EFA	Retentate Ports	Permeate Ports
XFC ___ C012-771	0.95 cm (3/8")	30 cm (12")	0.011 m ² (0.12 ft ²)	1/2" sanitary flange	1/4" hose barb
XFC ___ C024-771	0.95 cm (3/8")	60 cm (24")	0.023 m ² (0.25 ft ²)	1/2" sanitary flange	1/4" hose barb
XFC ___ C112-772	1.9 cm (3/4")	30 cm (12")	0.042 m ² (0.45 ft ²)	1/2" sanitary flange	3/8" hose barb
XFC ___ C124-772	1.9 cm (3/4")	60 cm (24")	0.085 m ² (0.91 ft ²)	1/2" sanitary flange	3/8" hose barb
XFC ___ C212-00C	2.5 cm (1.0")	30 cm (12")	0.075 m ² (0.81 ft ²)	1" sanitary flange	1/2" hose barb
XFC ___ C224-00C	2.5 cm (1.0")	60 cm (24")	0.15 m ² (1.6 ft ²)	1" sanitary flange	1/2" hose barb
XFC ___ C312-00C	3.2 cm (1.25")	30 cm (12")	0.12 m ² (1.3 ft ²)	1" sanitary flange	1/2" hose barb
XFC ___ C324-00C	3.2 cm (1.25")	60 cm (24")	0.23 m ² (2.5 ft ²)	1" sanitary flange	1/2" hose barb
XFC ___ C412-FFC	5.1 cm (2.0")	30 cm (12")	0.36 m ² (3.9 ft ²)	1.5" sanitary flange	1/2" hose barb
XFC ___ C424-FFC	5.1 cm (2.0")	60 cm (24")	0.84 m ² (9.0 ft ²)	1.5" sanitary flange	1/2" hose barb
XFC ___ C512-FF0	7.6 cm (3.0")	30 cm (12")	0.92 m ² (9.9 ft ²)	1.5" sanitary flange	1" sanitary flange
XFC ___ C524-FF0	7.6 cm (3.0")	60 cm (24")	2.1 m ² (23 ft ²)	1.5" sanitary flange	1" sanitary flange
XFC ___ C712-HHF	10.8 cm (4.25")	30 cm (12")	2.5 m ² (27 ft ²)	2" sanitary flange	1.5" sanitary flange
XFC ___ C724-HHF	10.8 cm (4.25")	60 cm (24")	4.4 m ² (47 ft ²)	2" sanitary flange	1.5" sanitary flange

* Select a pore size to complete the part number.

- M10** = 0.1 µm
- M20** = 0.2 µm
- M40** = 0.45 µm