SPC Micro Capsule Filters

Positively Charged, Single Layer PES Membrane

SPC Micro Capsule filters consist of a single layer, positively charged Polyethersulfone (PES) membrane. Available in 0.03, 0.10, 0.22 and 0.45 µm, the SPC Micro Capsule filters are validated for absolute bacteria retention to provide reliable sterile filtration performance with a high flow rate.

The positive charge in these filters removes negatively charged biological contaminants such as endotoxin, virus and other cell fragments. Depending on the level of contaminant and flow rate, SPC Micro Capsule filters will typically exhibit > 2-log removal of endotoxin. The combination of sterilizing and endotoxin removal functionality makes the SPC Micro Capsule filter an excellent choice for pharmaceutical and bioprocessing applications.

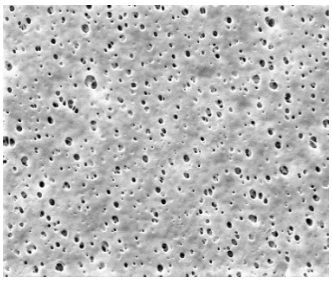
These laboratory filters are constructed with the same materials as our full-size filters to ensure consistent results throughout your process.

Critical Process provides unrivaled delivery times, technical consulting before purchasing, and very competitively priced high-performance products. Our comprehensive testing & analysis and validation services support your team whenever they need it. Your process experts partnering with our filtration experts is how we deliver your company's solution right the first time.

Sterilizing Filters

Endotoxin Removal

MICRO CAPSULES – Nominal Dimensions
Body Length: 1.9 in. (4.8 cm)
Overall Length: 2.8 to 3.8 in. (7.1 to 9.7 cm)
Outside Diameter: 2.6 in. (6.6 cm)



SPC Micro Capsule filters are recommended for sterilizing and endotoxin removal in:

- Process Water
- Water for Injection (WFI)

Maximum Operating Parameters

	MICRO CAPSULES
Liquid Operational Pressure	80 psi at 68 °F (5.52 bard at 20 °C)
Gases Operational Pressure	60 psi at 68 °F (4.14 bar at 20 °C)
Operating Temperature (water)	110 °F at 30 psid (43 °C at 2.07 bard)
Forward Differential Pressure	50 psid at 68 °F (3.45 bard at 20 °C)
Reverse Differential Pressure	40 psid at 68 °F (2.76 bard at 20 °C)
Recommended Changeout Pressure	35 psid (2.41 bard)

Sanitization & Sterilization

Autoclave	250 °F (121 °C), 30 min, 5+ cycles
Chemical Sanitization	Performed using industry standard concentrations of hydrogen peroxide, peracetic acid, sodium hypochlorite and other selected chemicals.

Integrity Testing

PORE SIZE	BUBBLE POINT MINIMUM*	
µm	PSIG	BARG
0.03	> 50**	> 3.4**
0.10	> 50**	> 3.4**
0.22	50	3.5
0.45	25	1.7

* For water wetted membrane

** Actual bubble point exceeds operational limits of Micro capsule filters.

Filtration Area (Nominal)

Area	0.62 ft^2
	576 cm^2

Construction Materials

Filtration Media	Positively Charged Single Layer Polyethersulfone (PES) Membrane (absolute rated)
Media Support	Polypropylene
End Caps, Center Core, Outer Support Cage, Micro Capsule Housing	Polypropylene
Sealing Method	Thermal Bonding

Validation

SPC Micro Capsule filters are validated using test procedures that comply with ASTM F 838-15(ae1) protocols for the determination of bacterial retention in filters used for liquid filtration. The challenge level is a minimum of 10^7 organisms per cm^2 of filter media. CPF filters have > 7-log removal when challenged with the organisms listed below (0.03µm, 0.10µm and 0.22µm meet the FDA definition of sterilizing grade filters).

0.03µm: *Acholeplasma laidlawii*
0.10µm: *Brevundimonas diminuta*
0.22µm: *Brevundimonas diminuta*
0.45µm: *Serratia marcescens*

Endotoxins

The levels of bacterial endotoxins in aqueous extracts from SPC Micro Capsule filters are below current USP limits as specified for water for injection.

Extractables

SPC Micro Capsule filters typically exhibit low levels of non-volatile residues.

TOC and Conductivity

SPC Micro Capsule filters conform with TOC standards of USP <643> and the water conductivity standards of USP <645> after an appropriate flush with purified water.

Toxicity Compliance

Materials used to construct SPC Micro Capsule filters are non-toxic and meet the requirements for the MEM Elution Cytotoxicity Test and the requirements for Biological Reactivity Tests in the current version of the United States Pharmacopeia (USP) for Class VI - 121 °C Plastics.

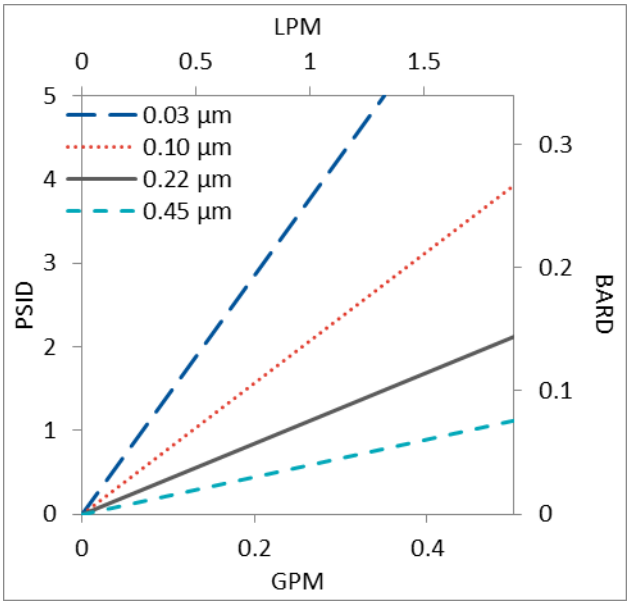
Non-Fiber Releasing

SPC Micro Capsule filters comply with Title 21 CFR sections 210.3 (b)(6) and 211.72, for non-fiber releasing filters.

FDA Compliance

Materials meet the requirements listed by the FDA as appropriate for use in articles intended for repeated food contact as specified in Title 21 CFR sections 174.5, 177.1500, 177.1520, 177.1630, 177.2440, and 177.2600 as applicable.

Flow Rates for SPC Micro Capsules by Pore Size



Flow rates for Micro Capsule filters are per filter. The test fluid is water at ambient temperature. Flows are tested using a Micro capsule filter with ½" Sanitary inlet and outlet ports. Rates will vary based on end configuration of the Micro capsule.

SPC Micro Capsule Filters Ordering Information

All Critical Process filters are configurable to meet customer specifications.
Fill in the corresponding codes in the boxes below to build your Part Number.

To consult with one of our technical team members, request a quote or place an order:
call (603) 880-4420 or contact us here.

Please note this product is not designed or approved for use in Hemodialysis applications

Micro Capsule Filters

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Pore Size Code
-03 = 0.03 µm
-10 = 0.10 µm
-20 = 0.22 µm
-40 = 0.45 µm

Pre-Sterilized or Not
S = Pre-Sterilized
N = Not Sterilized

Inlet
1 = 1/8" Hose Barb
2 = 1/4" Hose Barb
3 = 1/2" Hose Barb
4 = Luer Lock
5 = 1/2" Sanitary*
6 = 1/4" MNPT

Inlet Vent Port
1 = 1/8" Hose Barb
2 = 1/4" Hose Barb
3 = 1/2" Hose Barb
4 = Luer Lock
6 = 1/4" MNPT
7 = Side Bleed Valve

Outlet
1 = 1/8" Hose Barb
2 = 1/4" Hose Barb
3 = 1/2" Hose Barb
3B = 1/2" Hose Barb with Filling Bell
4 = Luer Lock
5 = 1/2" Sanitary*
6 = 1/4" MNPT

Side Vent O-Ring**
B = Buna
E = EP
S = Silicone
V = Viton (or FKM)
K = FFKM

Outlet Vent Port
1 = 1/8" Hose Barb
2 = 1/4" Hose Barb
3 = 1/2" Hose Barb
4 = Luer Lock
6 = 1/4" MNPT
7 = Side Bleed Valve

*When choosing the Sanitary Inlet/Outlet, the Luer Lock or bleed valve option is required for the Vent Port
** O-Ring is only available on Bleed Valve

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