

PureFlo® PES Capsules

(High Performance Encapsulated Pharmaceutical Grade PES Filter)

The PureFlo® PES filter capsule in its all-polypropylene construction provides excellent chemical compatibility and superior flow per unit area as compared to other membrane capsules. PureFlo® PES Filter Capsules have been specially designed for sterilizing in biopharmaceutical applications. Its hydrophilic PES membrane does not require pre-wetting agents, thereby eliminating a potential source of contamination. The PES membrane is low protein-binding.

The capsules were designed for simple and efficient filtration of small volumes used in low-flow application, laboratory, and pilot runs. No adhesives, binders, or surfactants are used in the manufacturing process of these capsules. They are rinsed with pyrogen-free water to reduce extractables and downtime. All filter capsules are 100% integrity-tested to ensure filter performance each and every time out of the package. PureFlo® PES filter capsules are well-suited for pharmaceutical applications where superior flow and bacterial retention is required. The capsule can be ordered pre-sterilized.



Regulatory Compliance:

Manufactured from materials that conform to the requirements of 21 CFR Part 177 of the U.S. Code of Federal Regulations and USP Class VI Biological test for Plastics

Bacterial Retention:

Complete retention of $\geq 10^7$ organisms/cm² of *Brevundimonas diminuta* in accordance with the current HIMA challenge methodology (ASTM F838-83). Validation Guide upon request.

Autoclavable & Sanitizable:

Capsules can be autoclaved 25 times at 125 °C (257 °F) for 30 minutes or chemically sanitized in situ using common sanitizing agents or hot water at 90 °C (194 °F) for a limited time (dependent on time and temperature). Capsules must not be in situ steam-sterilized.

Water Bubble Point Specification:

0.1 µm : 23 psi (0.16 MPa) in IPA
0.2 µm : 47 psi (0.32 MPa)

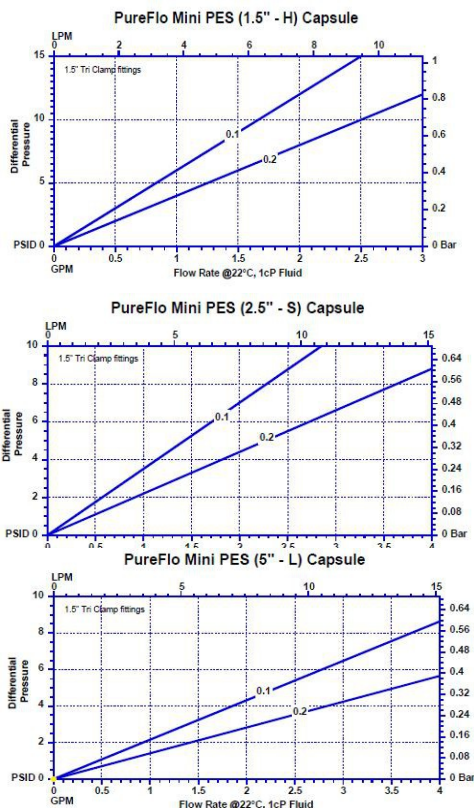
Bacterial Endotoxin:

Effluent is non-pyrogenic per USP Bacterial Endotoxin (0.25 EU/ml), determined using Limulus Amebocyte Lysate (LAL) test.

Applications	
Culture Media	Fermentation Broths
Serums	SVP (Small Volume Parenterals)
Vaccines	Product Sterilization
Reagents & Buffers	Biologics
Antibiotics Beverages	
WFI-POU Scale-up	Processes

Features	Benefits
<ul style="list-style-type: none"> Hydrophilic PES Membrane 	<ul style="list-style-type: none"> Inherently hydrophilic for cleaner filtrates High flow rate reduces processing time Low protein-binding membrane maximizing yields Biologically inert membrane Bacterial retentive to produce sterile solutions
<ul style="list-style-type: none"> Small, Compact Design 	<ul style="list-style-type: none"> Simple, quick, and efficient filtration Low hold-up volume reduces product waste
<ul style="list-style-type: none"> Low Filter Extractables 	<ul style="list-style-type: none"> No adhesives, binders, or surfactants are used during manufacturing resulting in superior downstream cleanliness All capsules are rinsed with pyrogen-free water

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Note - Graphs based on Sanitary fittings.

PureFlo® PES Capsule (Pharmaceutical grade) Ordering Guide

PureFlo Capsule Filters	Vent & Drain Fitting	Filter Media	Pore size (Micron)	Length	Input Fitting	Output Fitting	Options
SK 70mm Diameter Capsule	L = Female Luer Lock P = M8 Threaded Plug - Limited options	S = PES	004 = 0.04um	H = 1.5"	1C 1C	= 1/8" Compression	Grade -PH = Pharma Grade Shell Material Blank = Polypropylene -GP = Gamma stable polypropylene shell -NY = Nylon Construction -E = Polyethylene shell and HDPE media support for gamma sterilization Vent & Drain -NI = No vent or drain Inlet fitting -NO = NO vent or drain Outlet fitting -N = No vent or drain fittings Sterilization -ETO = Ethylene oxide sterilization
			010 = 0.1um	S = 2.5"	1H 1H	= 1/8" Hose barbs	
			020 = 0.2um	L = 5"	1N 1N	= 1/8" MNPT	
			050 = 0.45um	E = 7.5"	1NF 1NF	= 1/8" FNPT	
			065 = 0.65um	K = 10"	1Q	1Q = 1/8" Male Quick Coupling with Metal latch	
			080 = 0.8um		1QF 1QF	= 1/8" Female Quick Coupling with Metal latch	
			120 = 1.2um		1QFV 1QFV	= 1/8" Female Valved Quick Coupling with Metal latch	
					1QV	1QV = 1/8" Male Valved Quick Coupling with Metal latch	
					2H	2H = 1/4" to 1/2" Hose barbs	
					2HS	2HS = 1/4" to 3/8" Hose barbs	
		2LF 2LF	= Large Female Luer Lock fitting				
		2N	2N = 1/4" MNPT				
		2NF 2NF	= 1/4" FNPT				
		2P	2P = 1/4" Push to Connect				
		2PE 2PE	= 1/4" Push to Connect Elbow				
		2Q	2Q = 1/4" Male Quick Coupling for Metal latch				
		2QF	2QF = 1/4" Female Quick Coupling with Metal latch				
		2QFP 2QFP	= 1/4" Female Quick Coupling with Plastic latch				
		2QFV 2QFV	= 1/4" Female Valved Quick Coupling with Metal latch				
		2QP 2QP	= 1/4" Male Quick Coupling for Plastic latch				
		2QV 2QV	= 1/4" Male Valved Quick Coupling with Metal latch				
		2V 2V	= 1/4" Walther Quick Connect				
		3H 3H	= 3/8" Hose Barb				
		3HE 3HE	= 3/8" Hose Barb Elbow				
		3H-FB	3H-FB = 3/8" Hose Barb with filling bell or -FC with Cap				
		3NF 3NF	= 3/8" FNPT				
		4H 4H	= 1/2" Hose Barb				
		4N	4N = 1/2" MNPT				
		4Q	4Q = 1/2" Male Quick Coupling for Plastic latch				
		MT MT	= 1/2" Tri clamps				
		TC TC	= 1-1/2" Tri clamp				
		TS	= Shower Head				
Example - Capsule, Luer Lock V/D, 2.5" Internal filter, 0.2 micron PES Capsule, Pharma Grade, with 1.5" Tri-Clamp fittings would be SKLS020STCTC-PH							



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Materials of Construction

Membrane: Hydrophilic Polyethersulfone
Membrane Supports: Polypropylene
Cage, Core, End Caps: Polypropylene

Fitting Connections

NPT, Sanitary Flange, Hose Barb, Coupling
Vent/Drain - Luer Lock, Plug, Bleed Valve

Dimensions (Nominal)

Length: 1.5 in (38 mm), 2.5 in (63.5 mm)
5.0 in (127 mm), 7.5 in (191 mm), 10 in (254 mm)
Diameter: 2.88 in (73 mm)

Effective Filtration Area

1.5 in - 0.77 ft² (715 cm²) 2.5 in - 1.48 ft² (1375 cm²)
5.0 in - 2.8 ft² (2600 cm²) 7.5 in - 4.3 ft² (3990 cm²)
10 in - 5.6 ft² (5200 cm²)

Operating Conditions

Maximum Operating Pressure:
Liquid: 5.5 bar (80 psi) at 22 °C
Gas: 4.1 bar (59.5 psi) at 22 °C
Minimum Burst Pressure:
8.3 bar (120 psi) at 22 °C
Maximum Forward Differential Pressure:
5 bar (72.5 psi) at 22 °C
Maximum Reverse Differential Pressure:
2.1 bar (30.5 psi) at 22 °C
Maximum Operating Temperature:
PP & Gamma PP: 80 °C
HDPE: 60 °C