

PureFlo® PES Capsules (SZL) Pharmaceutical Grade PES Filter

The PureFlo® SZL Series PES filter capsule have been designed for improved wettability in processes which require critical integrity validation testing. The 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 specially designed with an easy-to-wet-out structure of PES membrane, PET support and internal Nylon end caps. 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. The capsule can be ordered pre-sterilized.



Specifications:

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 available 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)

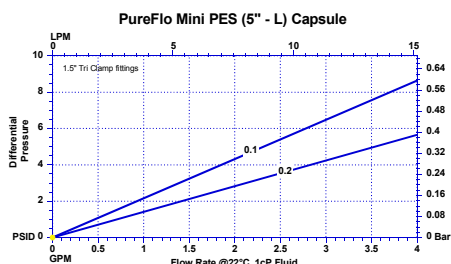
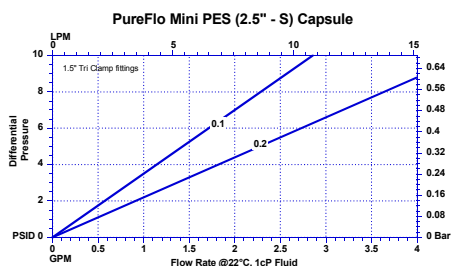
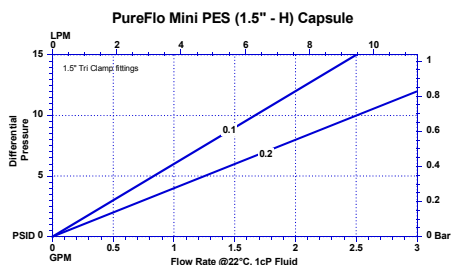
Bacterial Endotoxin:

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 easy wet-ability for integrity testing High flow rate reduces processing time Low protein-binding membrane maximizing yields Biologically inert membrane Bacterially 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 Levels of 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

PureFlo® PES Filter Capsules



Note - Graphs based on Sanitary

Materials of Construction

Membrane: Hydrophilic Polyethersulfone
Membrane Supports: PET
End Caps: Nylon
Cage, Core, Shell: Polypropylene

Fitting Connections

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

Dimensions (Nominal)

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

Effective Filtration Area

1.5 in - 0.77 ft² (720 cm²) 2.5 in - 1.48 ft² (1380 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

PureFlo PES Capsule (Pharmaceutical grade) Ordering Guide

PureFlo Capsule Filters	Vent & Drain Fitting	Filter Media	Pore size (Micron)	Length	Input Fitting	Output Fitting	Options																								
SZ	L = Female Luer Lock	S = PES	004 = 0.04	H = 1.5"	1C	1C = 1/8" Compression	<table><tr><th>Grade</th><th>O-Ring for Quick</th></tr><tr><td>-PH = Pharma Grade</td><td>-OE = O-ring EPDM</td></tr><tr><th>Shell Material</th><td>-ON = O-ring Nitrile</td></tr><tr><td>Blank = Gamma stable polypropylene</td><td>-OV = O-ring Viton</td></tr><tr><td>-NY = Nylon Construction</td><td>Blank = O-ring Silicon (Standard)</td></tr><tr><th>Prefilters</th><td></td></tr><tr><td>-E = Polyethylene shell and HDPE media support for gamma sterilization</td><td>-G(pore Size) = Glass Fiber PreFilter</td></tr><tr><td>-NI = No vent or drain Inlet fitting</td><td>-P(pore Size) = PolyPro Media PreFilter</td></tr><tr><td>-NO = No vent or drain Outlet fitting</td><td>-S(pore Size) = PES PreFilter</td></tr><tr><td>-N = No vent or drain fittings</td><td></td></tr><tr><th>Sterilizaion</th><td></td></tr><tr><td>-ETO = Ethylene oxide sterilization</td><td></td></tr></table>	Grade	O-Ring for Quick	-PH = Pharma Grade	-OE = O-ring EPDM	Shell Material	-ON = O-ring Nitrile	Blank = Gamma stable polypropylene	-OV = O-ring Viton	-NY = Nylon Construction	Blank = O-ring Silicon (Standard)	Prefilters		-E = Polyethylene shell and HDPE media support for gamma sterilization	-G(pore Size) = Glass Fiber PreFilter	-NI = No vent or drain Inlet fitting	-P(pore Size) = PolyPro Media PreFilter	-NO = No vent or drain Outlet fitting	-S(pore Size) = PES PreFilter	-N = No vent or drain fittings		Sterilizaion		-ETO = Ethylene oxide sterilization	
	Grade		O-Ring for Quick																												
-PH = Pharma Grade	-OE = O-ring EPDM																														
Shell Material	-ON = O-ring Nitrile																														
Blank = Gamma stable polypropylene	-OV = O-ring Viton																														
-NY = Nylon Construction	Blank = O-ring Silicon (Standard)																														
Prefilters																															
-E = Polyethylene shell and HDPE media support for gamma sterilization	-G(pore Size) = Glass Fiber PreFilter																														
-NI = No vent or drain Inlet fitting	-P(pore Size) = PolyPro Media PreFilter																														
-NO = No vent or drain Outlet fitting	-S(pore Size) = PES PreFilter																														
-N = No vent or drain fittings																															
Sterilizaion																															
-ETO = Ethylene oxide sterilization																															
PP Shell & Nylon end-caps	P = M8 Threaded Plug <u>Limited options</u>		010 = 0.1	S = 2.5"	1H	1H = 1/8" Hose barbs																									
Polyester support			020 = 0.2	L = 5"	1N	1N = 1/8" MNPT																									
Polypropylene Cage & Core			045 = 0.45	E = 7.5"	1NF	1NF = 1/8" FNPT																									
Internal Silicone O-ring			065 = 0.65	K = 10"	1Q	1Q = 1/8" Male Quick Coupling with Metal latch																									
			080 = 0.8		1QF	1QF = 1/8" Female Quick Coupling with Metal latch																									
70mm Diameter Capsule with Bleed Valve			120 = 1.2		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	TS = Shower Head																									
Example - 0.2um PES Pharma Grade, Luer Lock Vent/Drain, 1.5" Internal filter, 1/4" MNPT I/Q is SZLS020H2N2N-PH																															
Quick Couplings are molded. Female Quick Couplings with Plastic latch will be threaded on, compatible with CPC (Colder), LinkTech and others.																															

Your Local Distributor:

ZenPure

North & South Americas:
ZenPure Americas, Inc
www.zenpure.com
Info-us@zenpure.com
703-335-9910

All Other Regions:
ZenPure Corporation
www.zenpure.com
info@zenpure.com
+86 571 2288 6800

ZenPure and PureFlo are registered trademarks of ZenPure Corporation or an affiliated company. Copyright 2003-2012 ZenPure or an affiliated company. All rights reserved.

