Extreme™ Hydrophilic PVDF Filters

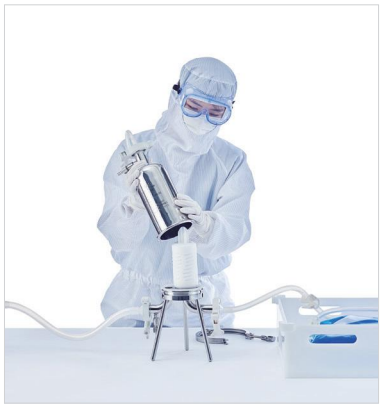
The Extreme™ Hydrophilic PVDF Filters are a series of high-performance polyvinylidene fuoride (PVDF) membrane filtration products, specifically designed for liquid filtration applications within the biopharmaceutical sector. Endowed with a highly symmetric structure, elevated porosity, minimal surface adsorption, low Total Organic Carbon (TOC)/extractables and robust chemical stability, these filters deliver exceptional filtration performance and extensive process compatibility. Whether addressing High-viscosity feed streams or operating under extreme pH conditions, filters consistently meet the stringent requirements of biopharmaceutical manufacturers.

Product Advantages

- **Proteins**: Various proteins, amino acids, peptides, antibodies, enzymes, hormones, serum, blood products, etc.
- **Polysaccharides**: Hyaluronic Acid Category, Drug Carrier/ Sustained-Release Agent, Biological Fluid Stabilizer, etc.
- **Vaccine Category**: Virus Category, Bacterial Category, various Antigens, etc.
- **Nucleic Acids**: various DNA/RNA.
- **Factors**: Growth Factor, Coagulation Factor, Stem Cell Factor, etc.

Typical Applications

- The highly symmetrical structure and low surface adsorption minimize clogging during the filtration, thereby extending the service life of the filter.
- High porosity of membranes ensures flux performance comparable to that of asymmetric membranes, enabling efficient filtration while reducing filtration time.
- High flux and strong anti-clogging capability make it suitable for filtering High Viscosity Liquids.
- Owing to the membrane's exceptional cleanliness, it exhibits low TOC and extractable levels——rendering it ideal for high-puritycritical biopharmaceutical applications such as Media Filtration.
- We offer single-layer membranes and double-layer membranes with different pore sizes, allowing customers to choose the most suitable option for their specific applications.



Technical Parameters of Disc and Capsules

	S1	S3	S6	S5	L02	L04	L05	L10	L20
Area	180cm²	300cm²	300cm²	550cm²	0.13m²	0.23m²	0.33m²	0.66m²	1.32m²
Composition Material									
Filter Membrane	Polyvinylidene Fluoride (PVDF)								
Supports	Polypropylene (PP)								
Housing	Polypropylene (PP)								
O-ring	Silicone								
Maximum Operating Pressure Difference									
Forward	0.5 MPa@25°C		0.4 MPa@25°C		0.5 MPa@25°C; 0.4 MPa@60°C;0.2 MPa@80°C				
Reverse	/		0.2 MPa@25°C		0.3 MPa@25 °C; 0.1 MPa @ 80°C				
Sterilization Conditions									
Radiation	25-40 kGy Gamma-irradiation (Secondary Radiation Not Supported)								
Autoclave	126°C, 60 min, 25 cycles								
Integrity parameter *									
ES series BP_{min} = 3200mbar | 46.4psi @20°C; wetting with water									
EM series BP_{min} = 5000mbar | 72.5psi @20°C; wetting with water									
Regulatory Compliance									
pH and Conductivity	Complies with USP<645> specified limit <1.3 μS/cm@25°C								
TOC	Complies with USP<643> TOC specified limit <0.5 mg/L								
Endotoxin	Complies with USP Endotoxin Content < 0.25 EU/mL								
Non-Fiber Releasing	Complies with the 'Non-Fiber Shedding' standard as defined in 21 CFR 210.3 (b) (6)								
Oxidizable Substances	The washing solution meets the requirements of USP Sterile Water for Injection								
Particulate	The filtrate after filtration meets the requirements of USP<788> for particle release								
Biocompatibility	Complies with USP<87> and USP<88> Complies with ISO 10993-4,5,6,10,11								
Physicochemical Test	The polymer materials used in the filter comply with the standards for physicochemical testing in USP<661>								

*The Integrity Parameters of the EB series are detailed in the COA.

Note: Model, specification and performance parameters among various series of products are different. Specific product parameters vary by series. It is recommended to contact the technical support team of LePure Biotech's for detailed product technical information based on actual application requirements.

Technical Parameters of Cartridges

	G02	G05	G10	G20	G30	G40
Area	0.13 m2	0.33 m^2	0.66 m^2	1.32 m^2	1.98 m^2	2.64 m^2
Composition Material						
Filter Membrane	Polyvinylidene Fluoride (PVDF)					
Support Layer	Polypropylene (PP)					
Housing	Polypropylene (PP)					
Sealing Ring	Silicone					
Maximum Operating Pressure Difference						
Forward	0.5 MPa@25°C; 0.4 MPa@60°C; 0.2 MPa@80°C					
Reverse	0.3 MPa@25°C; 0.1 MPa@80°C					
Sterilization Conditions						
Autoclave	134°C, 30 min, 30 cycles					
SIP	134°C, 30 min, 30 cycles					
Integrity parameter *						
ES series BP_{min} = 3200mbar | 46.4psi @20°C; wetting with water						
EM series BP_{min} = 5000mbar | 72.5psi @20°C,wetting with water						
Regulatory Compliance						
pH and Conductivity	Complies with USP<645> specified limit <1.3 µS/cm@25°C					
TOC	Complies with USP<643> TOC specified limit <0.5 mg/L					
Endotoxin	Complies with USP Endotoxin Content < 0.25 EU/mL					
Non-Fiber Releasing	Complies with the 'Non-Fiber Shedding' standard as defined in 21 CFR 210.3 (b) (6)					
Oxidizable Substances	The washing solution meets the requirements of USP Sterile Water for Injection					
Particulate	The filtrate after filtration meets the requirements of USP<788> for particle release					
Biocompatibility	Complies with USP<87> and USP<88> Complies with ISO 10993-4,5,6,10,11					
Physicochemical Test	The polymer materials used in the filter comply with the standards for physicochemical testing in USP<661>					

*The Integrity Parameters of the EB series are detailed in the COA.

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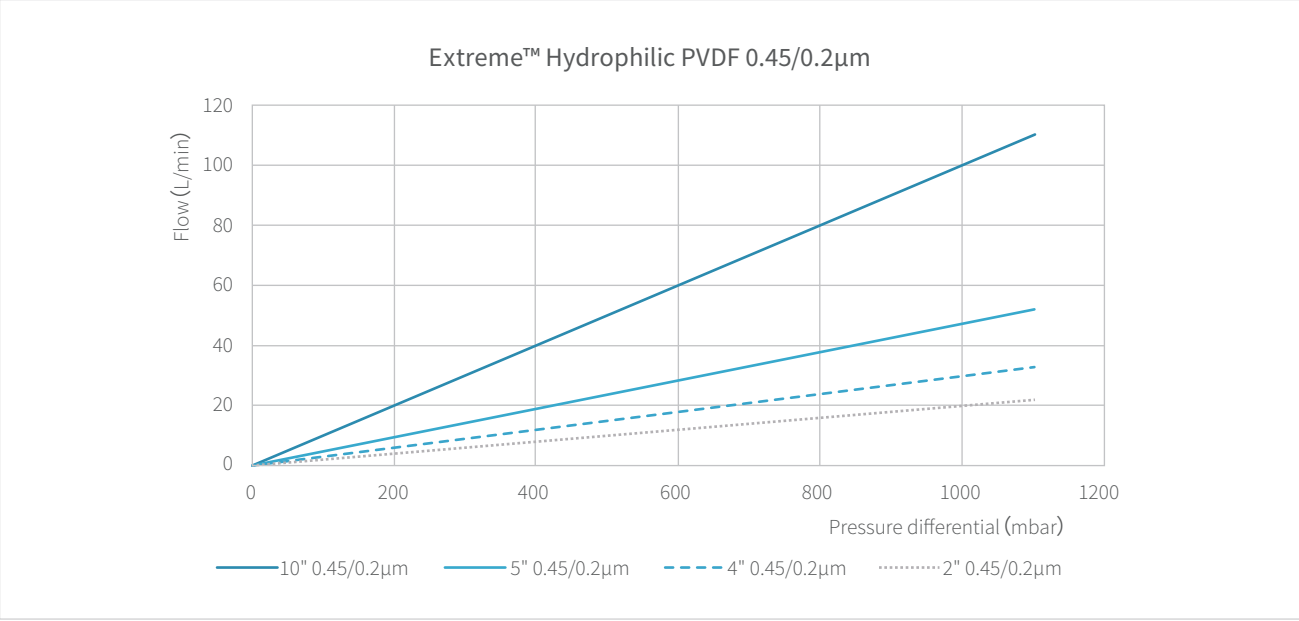
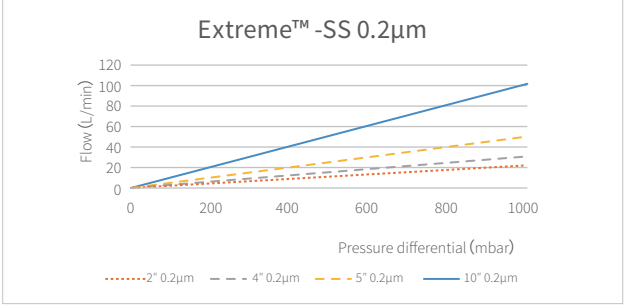
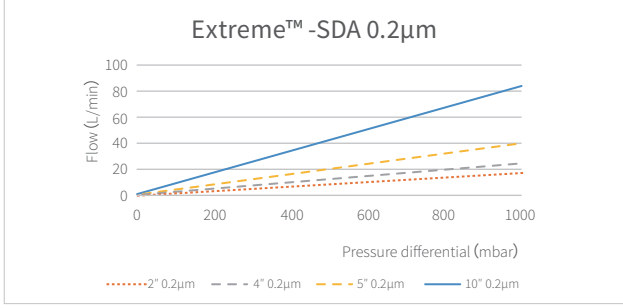
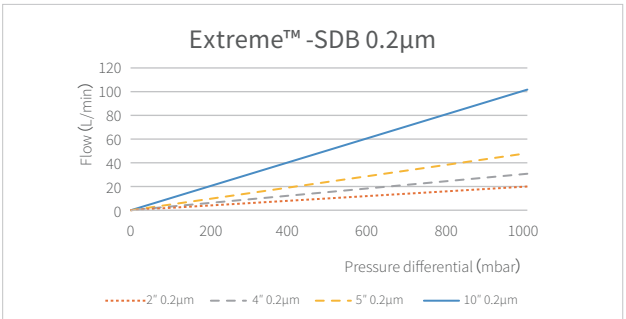
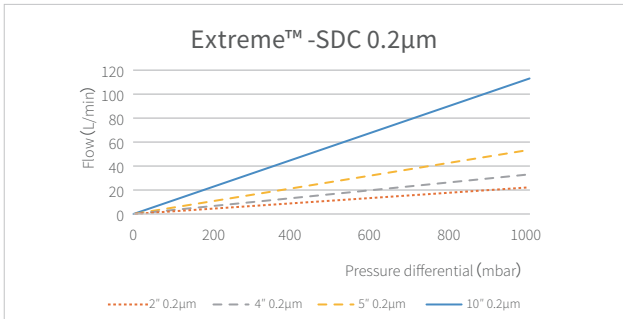
Water Flow Rates











Ordering Information

Extreme™ Disc and Capsule Filters

L02	ESDA	A	O	O	4
Filter Type	Pore Size	Sterilization Type	Connector		Packaging
S1:180cm^2	ESS:0.2	S: Gamma sterilized	FF/FO/OO		6:6pieces/box
S3: 300cm^2	ESDA:0.2/0.2	A:Autocavable, non sterilized	FF/FO/OO		4:4pieces/box
S6: 300cm^2	ESDB:0.45/0.2	D:Gamma-irradiatable,non sterilized	OO		4:4pieces/box
S5:550cm^2	ESDC:0.65/0.2		FF/FO/OO/TT/TH/HH		4:4pieces/box
L02:2″	EMD:0.2/0.1		FF/FO/OO/TT/TH/HH		4:4pieces/box
L04:4″	EBS:0.45		FF/FO/OO/TT/TH/HH		3:3pieces/box
L05:5″	EBDA:0.65/0.45		TT/TH/HH		1:1piece/box
	EBDB:1.0/0.45				
L10:10″	EBDC:1.0/0.65		TT/TH/HH		1:1piece/box
L20:20″			TT/TB/BB		1:1piece/box
L30:30″			TT/TB/BB		1:1piece/box

N: 1/4 - 1/2" Multi-barb Inlet/Outlet

F: 3/4" Sanitary TC Inlet/Outlet

O: 1/4 - 1/2" Multi-barb Inlet/Outlet

H: 1/2" Barb Inlet/Outlet

T: 1.5" Sanitary TC Inlet/Outlet

B: 3/4" Barb Inlet/Outlet

Ordering Information

Extreme™ Capsule (with Perfusion Bell)

L2A	ESDA	A	O	O	4
Filter Type	Pore Size	Sterilization Type	Connector		Packaging
S1A:180cm²	ESS:0.2	S: Gamma sterilized	O:1/4-1/2" Multiple stepped hose barb		4:4pieces / box
S6A:300cm²	ESDA:0.2/0.2	A:Autocavable, non sterilized			4:4pieces / box
S5A:550cm²	ESDB:0.45/0.2	D:Gamma-irradiatable,no n sterilized			4:4pieces / box
L02A:2"	ESDC:0.65/0.2				3: 3pieces /box
	EMD:0.2/0.1				
	EBS:0.45				
	EBDA:0.65/0.45				
	EBDB:1.0/0.45				
	EBDC:1.0/0.65				

Extreme™ Cartridge

G02	ESDA	5	S	1
Filter Type	Pore Size	Connector type	O-ring	Packaging
G02:2.5"	ESS:0.2	5-226/Flat	S:Silicone	1:1piece/box
G04:4"	ESDA:0.2/0.2	6-222/Flat	V-Fluorine	1:1piece/box
G05:5"	ESDB:0.45/0.2	7-226/Fin	Y-EPDM	1:1piece/box
G10:10"	ESDC:0.65/0.2	8-222/Fin	F-Nitrile butadiene rubber (NBR)	1:1piece/box
G20:20"	EMD:0.2/0.1			1:1piece/box
G30:30"	EBS:0.45		WV-Outer tetrafluoroet hylene rubber	
G40:40"	EBDA:0.65/0.45			
	EBDB:1.0/0.45			
	EBDC:1.0/0.65			

*Note:

1. Each letter and number in the article number represents a specific meaning. This coding rule is only for explanation and not all combinations can form a valid product model.
2. For additional product selection guidance, please consult our professional technical team.

www.lepurebiotech.com

LePure Biotech
Building 1-3, No.269, Rongxin Road, Songjiang District, Shanghai, China
Email: support@lepurebiotech.com

LePure Biotech LLC
2200 West Park Drive, Suite 300, Westborough, MA 01581, USA
Email: contacts@lepurebiotech.com

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Version: 202606