

BioLIFE™ Filter Cartridges and Capsules



BioLIFE™ cartridge and capsule filters are designed to provide clarification of biological fluids and to extend the throughput of downstream membranes. BioLIFE filters are constructed with an upstream polypropylene support layer, graded porosity glass microfiber filter media and a downstream polyester layer. All hardware compo-

nents are polypropylene. The BioLIFE filter provides high contaminant capacity and excellent membrane protection for the most demanding biological applications. For optimal system performance, BioLIFE filters can be selected for use with CUNO BioASSURE™ and SterASSURE® sterilizing grade membrane filters.

BioLIFE filters provide high contaminant capacity by use of a graded porosity microfiber glass layer¹ and CUNO patented² Advanced Pleat Technology™ (APT) design. The APT technology maximizes effective filtration area without restricting fluid flow path or contaminant capacity.

BioLIFE filters are designed for use in critical pharmaceutical and bioprocess applications where performance and quality are paramount. All materials of construction are 21CFR compliant, USP Class VI tested and a Drug Master File is registered with the FDA. For more information, please ask for BioLIFE Regulatory Support File (LITTDERSFBIOL).

Applications	
■ Cell culture media	■ Concentrated protein solutions
■ Cell culture biomass	■ Vaccine processing
■ Blood products	■ Biological fluids
■ Membrane prefiltration	

Feature	Benefit
■ Graded porosity glass microfiber filter media	■ Provides excellent clarification and capacity for difficult to filter fluids and for protection of downstream membranes
■ CUNO Advanced Pleat Technology™ Construction	■ Maximizes effective filtration area without restricting fluid flow or contaminant collection
■ Optimized for use with CUNO BioASSURE™ and SterASSURE® membrane filters	■ Provides higher throughputs than competitive filter systems
■ Full range of disposable capsule and cartridge configurations	■ Provides ease of use and scalability
■ 21CFR compliant materials, USP Biological Safety Test, Regulatory Support File and Drug Master File listing	■ Eases validation and regulatory submissions

¹ Patent pending. ² US Patent Number 6,315,130

Figure 1. Relative throughput of prefilter - final filter train with CHO cell biomass. Filters tested were equal area and throughput was measured at 10 psid terminal pressure. Final filters are PES.

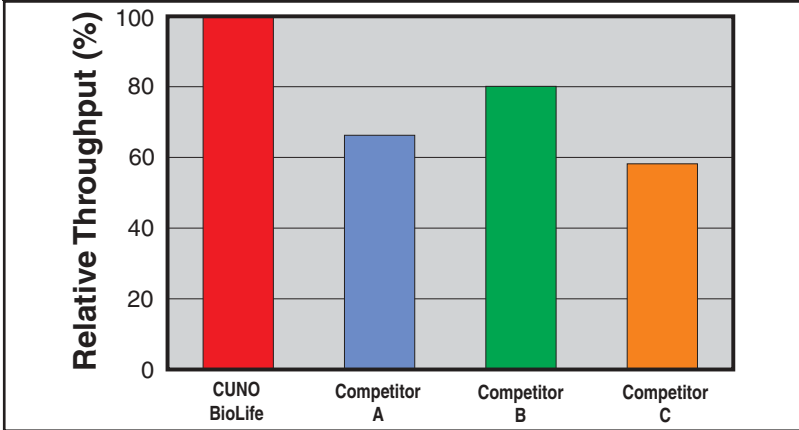


Figure 2. Relative throughput of prefilter - final filter train with Hi-Soy® nutrient cell growth media. Filters tested were equal area and throughput was measured at 20 psid terminal pressure. Final filters are PES.

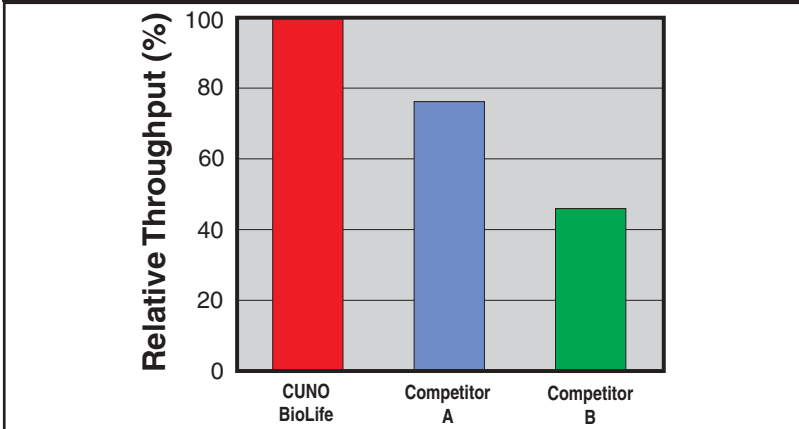
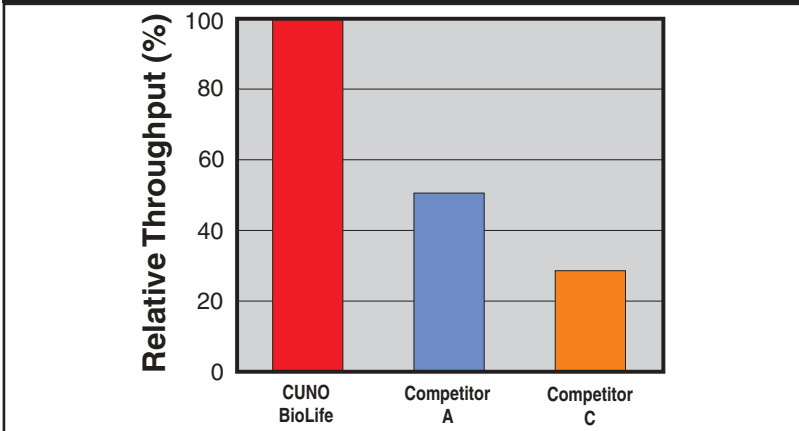


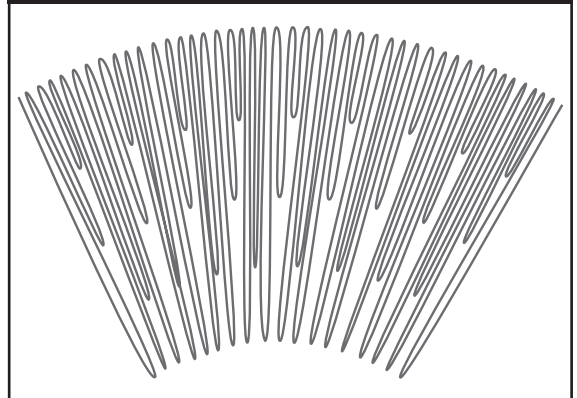
Figure 3. Relative prefilter protection of CUNO BioASSURE™ final filter. Throughput with Hi-Soy® nutrient cell growth media was measured for each equal area prefilter-final filter train at a terminal pressure of 20 psid.



Advanced Pleat Technology™ Design

BioLIFE™ filters also feature an innovative Advanced Pleat Technology (APT) design for extended service life. This design technology maximizes the useful surface area of the filter while maintaining open flow paths between media pleats (Figure 4). By employing APT design, the BioLIFE filter provides lower pressure drops, longer service life and lower overall filtration costs.

Figure 4. Advanced Pleat Technology Design



Quality and Reliability

BioLIFE™ filters are manufactured in compliance with an ISO 9001:2000 registered quality system. All materials of construction are 21 CFR compliant and cartridge and capsule filter components have been tested in accordance with United States Pharmacopoeia (USP) Class VI Biological Reactivity tests. All BioLIFE cartridge and capsule filters are shipped with a Certificate of Quality affirming compliance with rigid manufacturing quality specifications. Supporting Drug Master File (DMF) documentation is on file with the United States Food and Drug Administration (FDA). A complete BioLIFE Regulatory Support Guide is available upon request (LITTDERSFBIOL).

Hi-Soy® is a registered trademark of Kerry Bio-Science.

Performance Engineered Cartridge Design

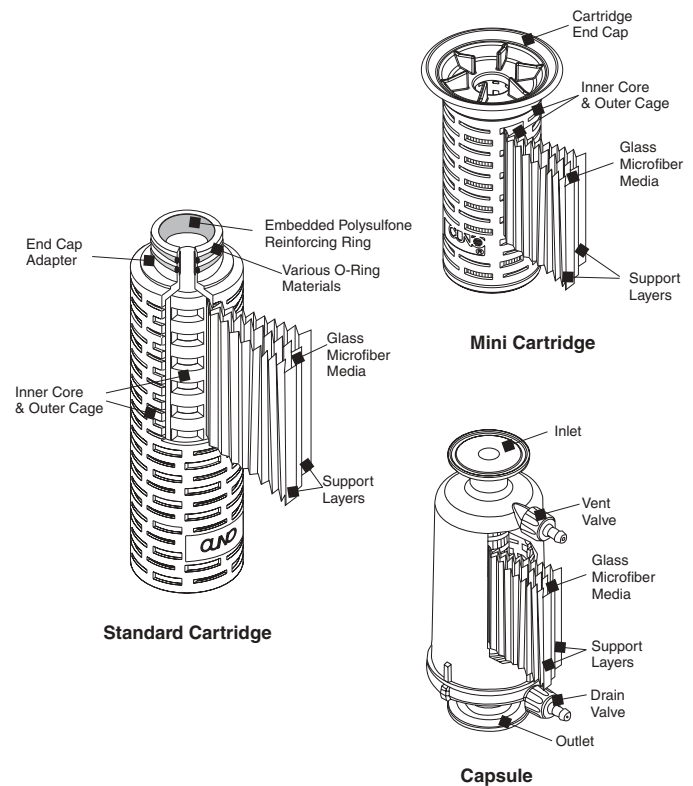
BioLIFE™ filter cartridges are available in 5, 10, 20, 30, and 40-inch lengths. All polypropylene structural components (end caps, adapters, inner core and outer cage) are used in the fabrication ensuring exceptional thermal and mechanical stability, broad chemical compatibility and low extractable levels. BioLIFE cartridge configurations are available to match dimension and sealing requirements of most currently available cartridge housings.

Mini Cartridges

For critical small volume applications, BioLIFE filters are available in 2.5" and 5" Mini Cartridges. Installed in a CUNO 2.5" or 5" Mini Cartridge housing, or in existing Pall Sealkleen™ housings, BioLIFE Mini Cartridges offer low hold-up volume and economical small volume filtration.

Disposable Filter Capsules

For critical applications where convenience and ease of use are desired, BioLIFE filters are available in 2.5, 5, 10, 20 and 30" disposable capsules. BioLIFE capsules are supplied with sanitary vent and drain ports, as well as a choice of 1.5" sanitary flange connections or ½" (13mm) hose barb inlet/outlet connections. Vent and drain o-rings are offered in silicone, fluorocarbon, and EPR.



BioLIFE Filter Specifications								
Material of Construction	Cartridges	Mini Cartridges		Capsules				
		2.5" Length	5" Length	2.5"	5"	10"	20"	30"
Media	Glass Microfiber							
Cage, Core, End Caps, Capsule Shell, and Upstream Support Layers	Polypropylene							
Downstream Trap & Support Layers	Polyester							
Adapter Support Ring	Polysulfone	NA						
Filtration Surface Area m ² (ft ²)	0.53 (5.7)*	0.07 (0.8)	0.15 (1.7)	0.07 (0.8)	0.15 (1.7)	0.53 (5.7)	1.05 (11.3)	1.58 (17.0)
Operating Parameters								
Maximum Operation Temperature	80°C (176°F)			40°C (104°F)				
Maximum Differential Pressure	Forward: 5.5 bar (80 psid) @ 25°C (77°F) 1.7 bar (25 psid) @ 80°C (176°F)			4.5 bar (65 psid) @ 40°C (104°F)				
	Reverse: 3.4 bar (50 psid) @ 25°C (77°F)							
Typical Water Flow lpm/100 mbar (gpm/psid)	26.5 (4.8)	4.1 (0.7)	6.6 (1.2)	4.1 (0.7)	5.3 (1.0)	26.5 (4.8)	47.7 (8.6)	63.6 (11.5)
Steam Sterilization	Up to 135°C (275°F)			Do Not <i>in situ</i> steam				
Autoclave Sterilization	Up to 126°C (259°F)							
* Per 10" Element								

Sealkleen™ is a trademark of Pall Corporation

BioLIFE™ Cartridge Ordering Guide

Grade Designation	Configuration	Height (Inches)	End Modification	O-Ring Material
PGE050	F	01 - 10 02 - 20 03 - 30 04 - 40 50 - 5	B - 226 O-ring & Spear C - 222 O-ring & Spear F - 222 O-ring & Flat Cap J - 226 O-ring & Flat Cap	A - Silicone B - Fluorocarbon C - EPR

BioLIFE Mini Cartridge Ordering Guide

Grade Designation	Configuration	Height (Inches)	End Modification	Package Quantity
PGE050	M	01 - 2.5 02 - 5.0	AN	01 - 1 Pack

BioLIFE Capsule Ordering Guide

Grade Designation	Configuration	Height (Inches)	End Modification	Vent O-Ring Option	Package Quantity
PGE050	C - Small Capsules	01 - 2.5 02 - 5	A - 1.5" Sanitary Fitting B - ½" Hose Barb	A - Silicone B - Fluorocarbon C - EPR	N1 - 1 Pack
	J - Large Capsules	01 - 10 02 - 20 03 - 30	A - 1.5" Sanitary Fitting		

WARRANTY

Seller warrants its equipment against defects in workmanship and material for a period of 12 months from date of shipment from the factory under normal use and service and otherwise when such equipment is used in accordance with instructions furnished by Seller and for purposes disclosed in writing at the time of purchase, if any. Any unauthorized alteration or modification of the equipment by Buyer will void this warranty. Seller's liability under this warranty shall be limited to the replacement or repair, F.O.B. point of manufacture, of any defective equipment or part which, having been returned to the factory, transportation charges prepaid, has been inspected and determined by the Seller to be defective. THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR USE, OR ANY OTHER MATTER. Under no circumstances shall Seller be liable to Buyer or any third party for any loss of profits or other direct or indirect costs, expenses, losses or consequential damages arising out of or as a result of any defects in or failure of its products or any part or parts thereof or arising out of or as a result of parts or components incorporated in Seller's equipment but not supplied by the Seller.



a 3M company

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