PALL Life Sciences

AcroPak™ Product Family

AcroPak family of filters and capsules are designed for efficient, cost-effective filtration and high throughput of liquid volumes up to 150 liters.

- Capsules provide higher throughputs and faster flow rates than similar-size competitive devices.
- Low protein binding to minimize sample loss.
- Fusion-welded components eliminate the potential for release of extractables from sealing adhesives.
- Upstream air vent prevents vapor lock.
- 100% integrity tested to assure sterile filtrate.

AcroPak capsules with Supor® membrane:

- Exhibit very high flow rates.
- Ideal for solutions where low protein binding is required.
- Save money by increasing throughput with available built-in prefilter.
- Built-in prefilter extends filter life when viscous or particulate laden solutions, such as serum-containing media, are processed.
- Use AcroPak capsules with double layer 0.1 µm membrane to ensure sterile, mycoplasma free cell culture media.

AcroPak capsules with Fluorodyne® II (PVDF) membrane:

- Designed for scale-up and downstream processing applications.
- Provides compatibility with aqueous and many organic solvents.
- Use for high flow rates and low protein and preservative binding.

Applications

AcroPak capsules with Supor membrane

- Sterile filtration of media, buffers, and biological solutions.
- Point-of-use filtration for laboratory water.
- Small, medium, and large volume media preparation.
- Pilot scale manufacturing.
- Liquids requiring prefiltration, such as serum-containing media.

AcroPak capsules with Fluorodyne II membrane

- Designed for scale-up and downstream processing applications.
- Suitable for use with fluids containing dilute proteins, preservatives, or other critical components.
- Suited for biological, and sterilizing filtration requirements.

AcroPak 20 filters

- Sterile filtration of supplemented culture media and other difficult-to-filter liquids, buffers, water, and chemicals.
- Designed to add convenience to small- and mid-volume filtrations.
- Ideal for scale-up.

Description

The AcroPak™ family of capsules with either Fluorodyne® II or Supor® membrane is uniquely designed to provide efficient, cost-effective filtration of solutions up to 150 liters.

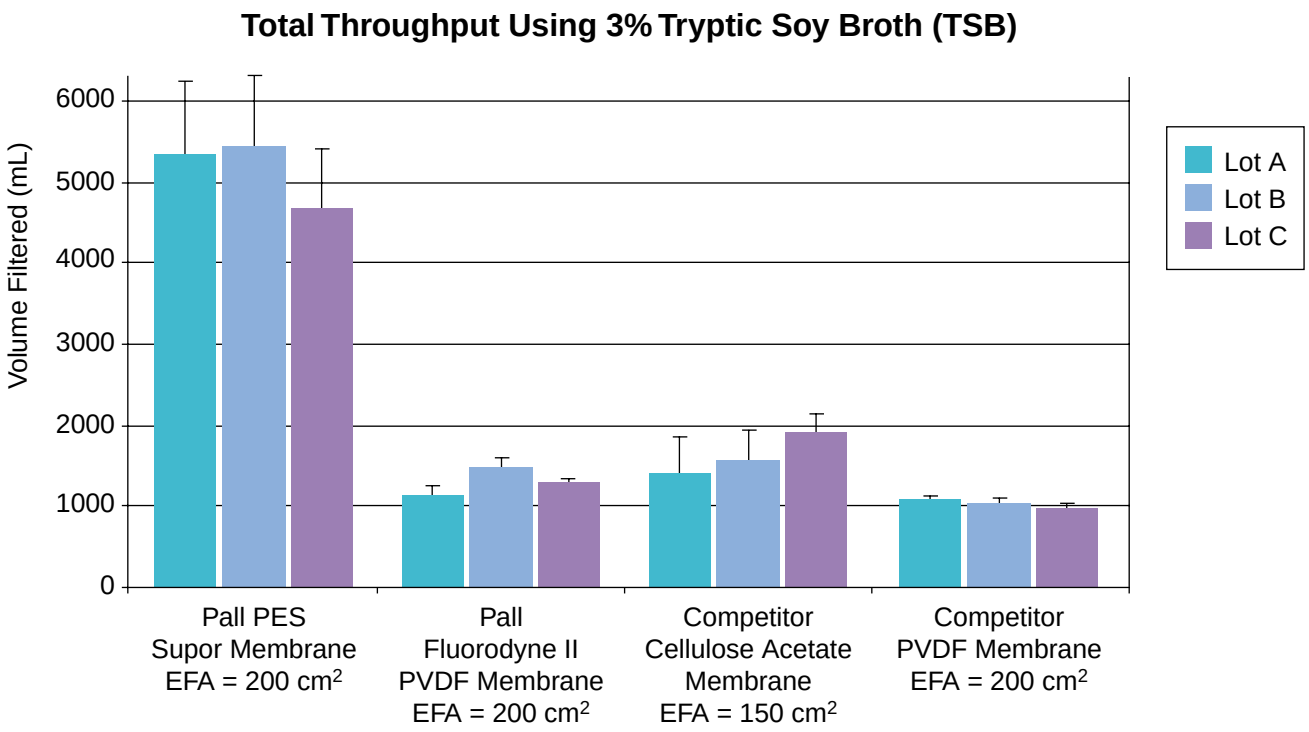
AcroPak capsules with Supor membrane quickly processes difficult-to-filter solutions, such as serum; serum supplemented culture media and viscous or particulate-laden solutions. Supor membrane has very high flow rates and consistently higher total solution throughputs because it has a higher porosity than most other membranes. Capsules with Supor membrane are ideal in situations where rapid filtration or short processing times are essential or where low protein binding is required.

AcroPak capsules with Fluorodyne II membrane feature high flow rates, low adsorptive properties, and low extractables. Fluorodyne II membrane is ideal for scale-up and down stream processing applications for biopharmaceutical production. Fluorodyne II membrane is suitable for applications where customer protocol requires PVDF membrane. The double layer sterilizing membrane assures enhanced performance.

AcroPak 20 filters with hydorophilic sterilizing membranes are ideal for scale-up purposes. These filters are designed to add convenience when processing small volumes of chemical and biological fluids of up to five liters. AcroPak 20 filters are available sterile and non-sterile with different membrane choices for a broad range of chemical compatibility. Membrane choices include:

- Supor membrane has high flow rates and throughputs, and is ideal for solutions where low protein binding is required. Not recommended for use with some ketones.
- Fluorodyne II (PVDF) membrane provides compatability with aqueous and many organic solvents. Not recommended for use with some ethers.

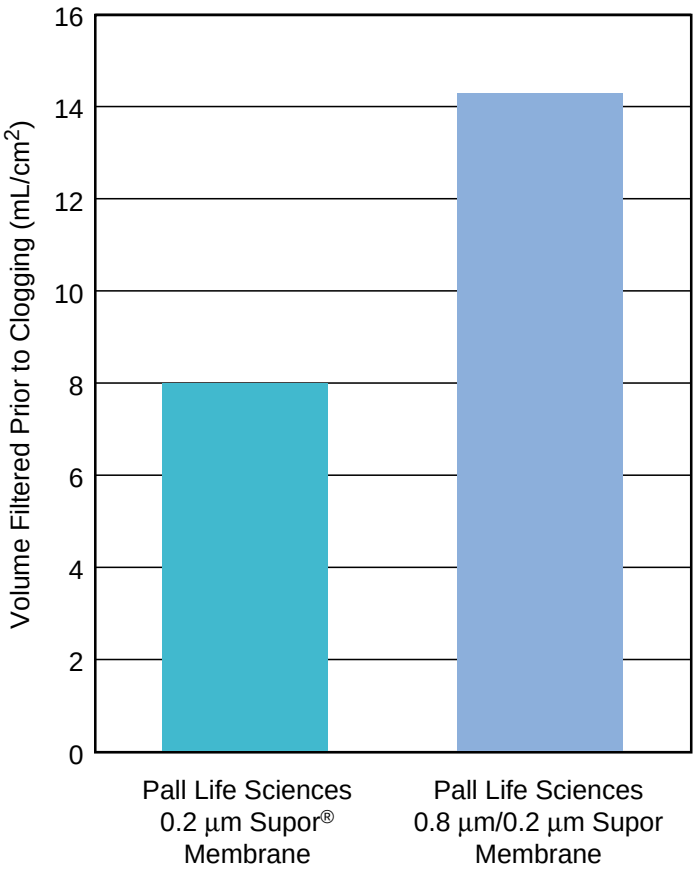
Performance



A 3% tryptic soy broth solution was filtered at 5 psi. Error bars indicate standard deviation for three samples tested within each lot.

Performance, continued.

Built-in Prefilter Enhances Liquid Throughput



Membrane Type: 47 mm disc
Throughput determined using 2.5% Tryptic Soy Broth (TSB).

Pall's UpScale℠ Program

From drug discovery and basic research, through process development and production, Pall Corporation is the single source for all of your filtration and separation needs. Our UpScale program provides you with the scaleable filtration products and support you need to bring new products to market faster. The concept is simple – use the same materials of construction in devices that fit all phases of the drug development process, from R&D to pilot to full-scale production. Pall's AcroPak™ capsules and filters are scaleable lab products. For information on our process-scale products, visit our Web site at www.pall.com/upscale or contact your local Pall Life Sciences office.

Specifications

AcroPak 20 Filters with Hydrophilic Sterilizing Membrane

Materials of Construction	
Filter Media:	Fluorodyne® II membrane (hydrophilic PVDF), Supor membrane (hydrophilic polyethersulfone
Housing, Vent Plug and Support Material:	Polypropylene
Sealing Technology:	Thermal bonding
Filling Bell:	Polycarbonate
Pore Size	0.1, 0.2, and 0.8/0.2 µm
Effective Filtration Area	20 cm^2
Nominal Dimensions Housing Diameter:	6.7 cm (2.7 in.)
Housing Length:	8.3 cm (3.3 in.)
Inlet/Outlet Connections	6.4 – 12.7 mm (1/4 – 1/2 in.) diameter stepped hosebarb with female luer slip interior and filling bell on outlet
Typical Hold-up Volume	≤ 2.5 mL
Maximum Operating Temperature and Pressure	60 °C (140 °F) at 1.0 bar (100 kPa, 15 psi) 4.1 bar (410 kPa, 60 psi) at ambient temperatu
Recommended Integrity Test (Water)	Minimum Bubble Point **(Water)**: Fluorodyne II membrane, 0.2 µm: 3.2 bar (320 kPa, 46 psi) Supor membrane: 3.5 bar (350 kPa, 51 psi)
Recommended Integrity Test 60% IPA/40% H_2O (v:v)	Minimum Bubble Point **(60% IPA/40% H_2O (v** Fluorodyne II membrane, 0.1 µm: 1.8 bar (180 kPa, 26 psi)
Typical Water Flow Rate mL/min at 0.1 bar (mL/min/psi)	Fluorodyne II membrane, 0.1 µm: 13 (9) Fluorodyne II membrane, 0.2 µm: 26 (18) Supor membrane: 40 (28)
Bacterial Retention	Lot Samples retain a minimum of 10^7 cfu/cm^2 of *B. diminuta* per modified ASTM F838-83
Endotoxin Level	< 0.25 EU/mL using Limulus Amoebocyte Lysate (LAL) test
Biological Safety	Passes United States Pharmacopeia (USP) Biological Reactivity Test, In Vivo <88>
Sterilization	Sterilized by gamma irradiation or sold non-ste if desired, autoclave once prior to use at 131 ° for 30 minutes

	 **AcroPak™ 200 Sterile Capsules with Fluorodyne® II & Supor® Membranes**	 **AcroPak 400 and 800 Sterile Capsules with Fluorodyne II Membrane**	 **AcroPak 500, 1000, & 1500 Sterile Capsules with Supor Membrane**
	Fluorodyne II membrane (hydrophilic PVDF), Supor membrane (hydrophilic polyethersulfone)	Fluorodyne II membrane (hydrophilic PVDF)	Supor membrane (hydrophilic polyethersulfone)
	Polypropylene Thermal bonding Polycarbonate	Polypropylene Thermal bonding Polycarbonate	Polypropylene Thermal bonding Polycarbonate
	0.2 and 0.8/0.2 µm	0.1 and 0.2 µm	0.1/0.1, 0.2/0.2, 0.8/0.2 and 0.8/0.45 µm
	200 cm^2	Acropak 400 capsules: 400 cm^2 Acropak 800 capsules: 800 cm^2	Acropak 500 capsules: 500 cm^2 AcroPak 1000 capsules: 1000 cm^2 AcroPak 1500 capsules: 1500 cm^2
	Housing diameter with vent: 6.7 cm (2.6 in.) without vent: 5.3 cm (2.1 in.) Housing length 10.5 cm (4.1 in.)	6.1 cm (2.4 in.) **Approximate length with Filling Bell:** 400: 19 cm (7.5 in.) 800: 22.5 cm (8.9 in.)	6.9 cm (2.7 in.) **Overall Length (without Filling Bell):** 500: 14.5 cm (5.7 in.) 1000: 19.3 cm (7.6 in.) 1500: 22.9 cm (9.0 in.)
d	6.4 – 12.7 mm (1/4 – _ in.) stepped hose barb with filling bell on outlet	0.2 µm: 6.4 - 12.7 mm (1/4 -1/2 in.) stepped hose barb with filling bell on oulet 0.1 µm: 14 mm (9/16 in.) hose barb with filling bell on outlet	500, 1000: 6.4 - 12/7 mm (1/4 - 1/2 in.) stepped hose barb with filling bell on outlet 1500:12.7 mm (1/2 in.) straight hose barb, without filling bell on outlet
	≤ 6 mL	N/A	500 series: ≤ 30 mL 1000 series: ≤ 45 mL
ure	60 °C (140 °F) at 2.1 bar (210 kPa, 30 psi) 4.1 bar (410 kPa, 60 psi) at ambient temperature	5.2 bar (520 kPa, 75 psi) to 40 °C (100 °F)	60 °C (144 °F) at 2.1 bar (210 kPa, 30 psi) Continuous: 4.1 bar (410 kPa, 60 psi) at ambient temperature
	Minimum Bubble Point **(Water)**: Fluorodyne II membrane, 0.2 µm : 3.2 bar (320 kPa, 46 psi) Supor membrane, 0.8/0.2 µm: 3.5 bar (350 kPa, 51 psi)	Minimum Bubble Point **(Water)**: 0.2 µm: 3.2 bar (320 kPa, 46 psi)	Minimum Bubble Point **(Water)**: 0.2 µm: 3.5 bar (350 kPa, 51 psi) 0.45 µm: 1.7 bar (170 kPa, 24 psi)
:v))	N/A	Minimum Bubble Point **(60% IPA/40% H_2O (v:v)):** 0.1 µm: 1.8 bar (180 kPa, 26 psi)	Minimum Bubble Point **(60% IPA/40% H_2O (v:v)):** 0.1 µm: 2.4 bar (240 kPa, 35 psi)
	Fluorodyne II membrane, 0.2 µm: 240 (170) Supor membrane, 0.8/0.2 µm: 300 (207)	400 series / 800 series 0.1 µm: 0.3 (0.2) 0.6 (0.4) 0.2 µm 0.5 (0.3) 0.9 (0.6)	500 series / 1000 series / 1500 series 0.1/0.1 µm: 0.2 (0.2) 0.4 (0.32) - 0.2/0.2 µm: 0.6 (0.4) 1.1 (0.8) 1.6 (1.1) 0.8/0.2 µm: 1.1 (0.8) 1.6 (1.1) 2.2 (1.5) 0.8/0.45 µm: 1.3 (0.9) 2.5 (1.7) -
	Lot Samples retain a minimum of 10^7 cfu/cm^2 of *B. diminuta* per modified ASTM F838-83	Lot Samples retain a minimum of 10^7 cfu/cm^2 of *B. diminuta* per modified ASTM F838-83	0.1/0.1 µm capsules: Lot Samples retain a minimum of 10^7 cfu/cm^2 of *A. laidlawii* per modified ASTM F838-83
	< 0.25 EU/mL using Limulus Amoebocyte Lysate (LAL) test	< 0.25 EU/mL using Limulus Amoebocyte Lysate (LAL) test	< 0.25 EU/mL using Limulus Amoebocyte Lysate (LAL) test
	Passes United States Pharmacopeia (USP) Biological Reactivity Test, In Vivo <88>	Passes United States Pharmacopeia (USP) Biological Reactivity Test, In Vivo <88>	Passes United States Pharmacopeia (USP) Biological Reactivity Test, In Vivo <88>
erile; °C	Sterilized by gamma irradiation	Sterilized by gamma irradiation	Sterilized by gamma irradiation; if desired, autoclave once only prior to use at 121 - 123 °C (250 - 253 °F) for a maximum of 20 minutes

Ordering Information

AcroPak™ 20 Filters with Filling Bell

Product No.	Description	Packaging
12209	Fluorodyne® II membrane, 0.1 µm, sterile	3/pkg
12208	Fluorodyne II membrane, 0.1 µm, non-sterile	3/pkg
12201	Fluorodyne II membrane, 0.2 µm, sterile	3/pkg
12200	Fluorodyne II membrane, 0.2 µm, non-sterile	3/pkg
12203	Supor® membrane, 0.8/0.2 µm, sterile	3/pkg
12202	Supor membrane, 0.8/0.2 µm, non-sterile	3/pkg

AcroPak 200 Sterile Capsules with Filling Bell

Product No.	Description	Packaging
12069	Fluorodyne II membrane, 0.2 µm	3/pkg
12941	Supor membrane, 0.8/0.2 µm	3/pkg

AcroPak 400 Sterile Capsules with Filling Bell

Product No.	Description	Packaging
12472	Fluorodyne II membrane, 0.1 µm	1/pkg
12478	Supor membrane, 0.2 µm	1/pkg

AcroPak 500 Sterile Capsules with Filling Bell

Product No.	Description	Packaging
12991	Supor membrane, 0.8/0.2 µm	1/pkg
12993	Supor membrane, 0.8/0.45 µm	1/pkg
12997	Supor membrane, 0.1/0.1 µm	1/pkg
12995	Supor membrane, 0.2/0.2 µm	1/pkg

AcroPak 800 Sterile Capsules with Filling Bell

Product No.	Description	Packaging
12473	Fluorodyne II membrane, 0.1 µm	1/pkg
12471	Fluorodyne II membrane, 0.2 µm	1/pkg

AcroPak 1000 Sterile Capsules with Filling Bell

Product No.	Description	Packaging
12992	Supor membrane, 0.8/0.2 µm	1/pkg
12994	Supor membrane, 0.8/0.45 µm	1/pkg
12999	Supor membrane, 0.1/0.1 µm	1/pkg
12996	Supor membrane, 0.2/0.2 µm	1/pkg

AcroPak 1500 Sterile Capsules without Filling Bell

Product No.	Description	Packaging
12675	Supor membrane, 0.8/0.2 µm	1/pkg
12686	Supor membrane, 0.2/0.2 µm	1/pkg

Complementary Products

Sterile Acrodisc® Syringe Filters with Polypropylene Housing for Scale-up

Product No.	Description	Packaging
4905	Supor® membrane, 0.8/0.2 µm, 25 mm	50/pkg
4906	Ultipor® membrane, 0.2 µm, 25 mm	50/pkg
4907	Fluorodyne® II membrane, 0.2 µm, 25 mm	50/pkg
4908	Posidyne® membrane, 0.2 µm, 25 mm	50/pkg

Sterile Acrodisc Syringe Filters with Modified Acrylic Housing

Product No.	Description	Packaging
4611	Supor membrane, 0.1 µm, 25 mm	50/pkg
4612	Supor membrane, 0.2 µm, 25 mm	50/pkg
4614	Supor membrane, 0.45 µm, 25 mm	50/pkg
4618	Supor membrane, 0.8 µm, 25 mm	50/pkg
4187	Supor membrane, 0.8/0.2 µm, 25 mm	50/pkg
4651	Supor membrane, 0.1 µm, 32 mm	50/pkg
4652	Supor membrane, 0.2 µm, 32 mm	50/pkg
4654	Supor membrane, 0.45 µm, 32 mm	50/pkg
4656	Supor membrane, 1.2 µm, 32 mm	50/pkg
4650	Supor membrane, 5 µm, 32 mm	50/pkg
4658	Supor membrane, 0.8/0.2 µm, 32 mm	50/pkg

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