



Millipak® Disposable Filter Units

For the sterile filtration of liquids in pharmaceutical applications

- ▶ *Unique stacked design allows minimal hold-up volume and particle shedding*
- ▶ *Constructed with Durapore PVDF membranes for high flow rates and throughputs*
- ▶ *Vent design for ease of use*
- ▶ *Five stack sizes for optimum flexibility*
- ▶ *Some units supplied sterile for added convenience*

Millipak sterile disposable filter units are stacked disc filters designed for the removal of particles and microorganisms from liquids and gases. The stacked disc design allows minimal hold-up volume and particle shedding, making Millipak units ideally suited for high value-added applications. All Millipak units are made with Durapore® PVDF membranes, providing high flow rates and throughputs, low extractables, broad chemical compatibility and the lowest protein binding of any membrane available.

Millipak units are available in 0.1 µm, 0.22 µm and 0.45 µm pore sizes and a variety of inlet and outlet connections. Five different stack sizes allow optimum flexibility for easy scale-up and system sizing. For added convenience, some Millipak units are supplied pre-sterilized.

For traceability and easy identification, each Millipak unit is labeled with its catalogue number, lot number, pore size and serial number. Millipak filters are designed, developed and manufactured in accordance with a Quality Management System approved by an accredited registering body to an ISO® 9000 Quality Systems

Standard. Each unit is 100% integrity tested during manufacturing to guarantee integrity. Each sterilizing-grade Millipak unit includes a Certificate of Quality for documentation accuracy.

Typical Applications:

- Sterile filtration of parenterals, diagnostics, and buffers
- Sterile filtration of media and biologicals
- Point-of-use filter for high purity water

Membrane Types

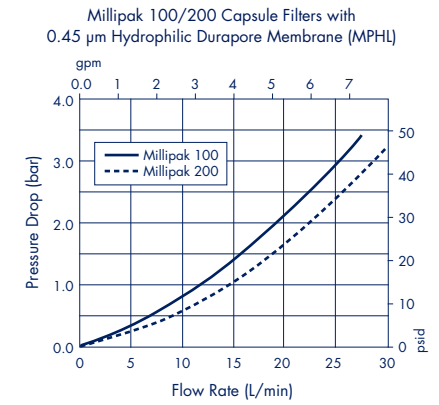
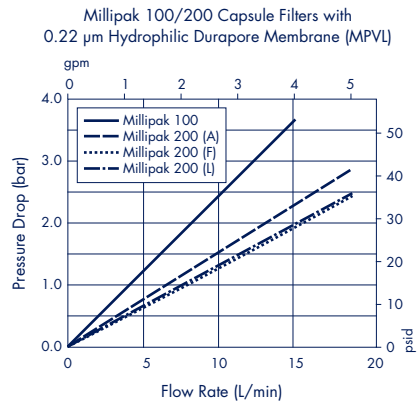
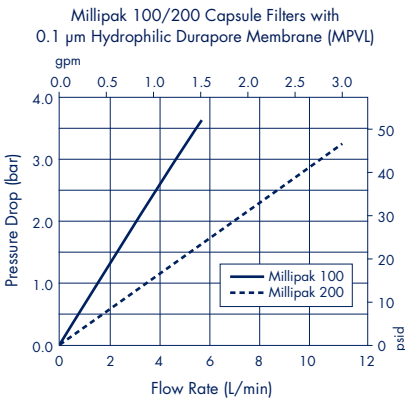
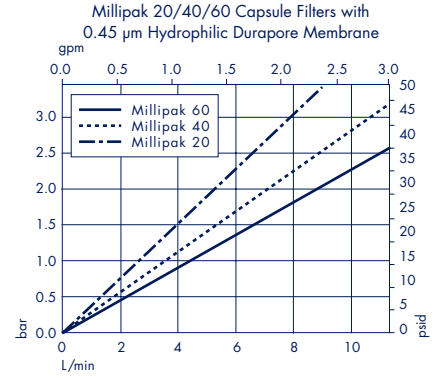
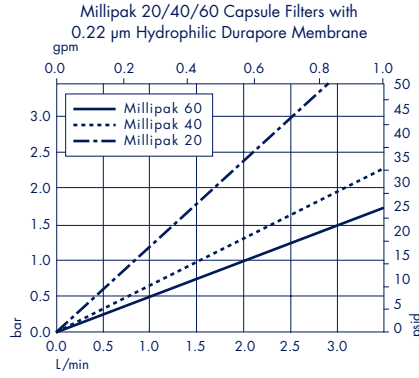
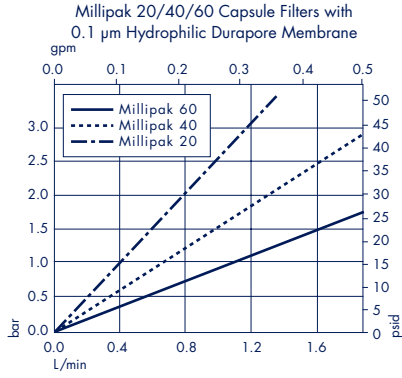
Durapore hydrophilic

- 0.1 µm
- 0.22 µm
- 0.45 µm

Specifications

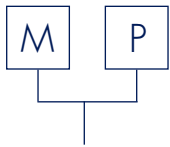
	Millipak 20	Millipak 40	Millipak 60	Millipak 100	Millipak 200
Nominal Dimensions					
Nominal length:	8.4 cm (3.3 in.)	8.9 cm (3.5 in.)	9.4 cm (3.7 in.)	11.0 cm (4.2 in.)	13.0 cm (5.1 in.)
Nominal diameter:	76 mm (3.0 in.)	76 mm (3.0 in.)	76 mm (3.0 in.)	76 mm (3.0 in.)	76 mm (3.0 in.)
Filtration Area	100 cm ² (0.11 ft ²)	200 cm ² (0.22 ft ²)	300 cm ² (0.32 ft ²)	500 cm ² (0.54 ft ²)	1000 cm ² (1.08 ft ²)
Pore Sizes	0.1 µm, 0.22 µm and 0.45 µm				
Materials of Construction	Filter membrane: Durapore PVDF Structural components: Polycarbonate Vent caps: PVDF vent caps Bell cap: Polyethylene (Bellcaps on Millipak 20, 40 and 60 only)				
Housing Vent	Adjustable vent with male luer and female Luer-Lok™ connections on inlet side of device.				
Maximum Inlet Pressure	5.2 bar (75 psi) at 25 °C				
Maximum Differential Pressure	Forward: 4.1 bar (60 psid) at 25 °C, 1.7 bar (25 psid) at 80 °C, 345 mbar (5 psid) at 123 °C Reverse: 690 mbar (10 psid) at 25 °C				
Bubble Point at 23 °C	0.1 µm: ≥ 4800 mbar (70.0 psig) air with water 0.22 µm: ≥ 3450 mbar (50.0 psig) air with water 0.45 µm: ≥ 1790 mbar (26.0 psig) air with water				
Connections	6 mm (1/4 in.) stepped hose barbs and filling bell on outlet			6 mm (1/4 in.) NPTM connections 19 mm (3/4 in.) sanitary flanges 38 mm (1 1/2 in.) sanitary flanges 14 mm (9/16 in.) hose barbs	
NVR Gravimetric Extractables	Maximum values after 200 mL flush and a 24 hour soak in ASTM® Type 1 reagent grade water at controlled room temperature: 1.0 mg 1.5 mg 2.0 mg 2.5 mg 5.0 mg				
Oxidizable Substances	Meets the requirements of the USP WFI Oxidizable Substance requirements after a water flush of 200 mL				
Bacterial Endotoxin	Aqueous extraction contains < 0.5 EU/mL as determined by the Limulus Amebocyte Lysate(LAL) Test.				
Bacterial Retention	Quantitative retention of 10 ⁷ CFU/cm ² <i>Brevundimonas diminuta</i> ATCC® 19146 when tested following ASTM F838-83 methodology.				
Sterilization	May be autoclaved for 3 cycles of 90 minutes at 123 °C. Capable of 45 kilogray (4.5 Megarad) gamma exposure. (Cannot be steam sterilized in-line.)				
Component Material Toxicity	Component materials meet the requirements of the USP Class VI Biological Test for Plastics. Sterilizing-grade Durapore Filters meet the requirements of the current USP General (Mouse) Safety Test and USP Elution Test for Cytotoxicity.				

Typical Clean Water Flow Rates

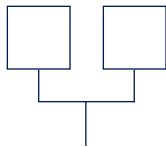


Ordering Information

Millipak Filters

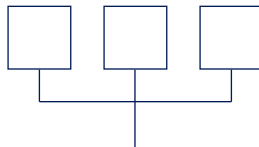


Millipak Filter



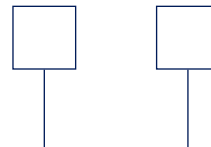
Nominal Pore Size

VL = 0.1 μm
GL = 0.22 μm
HL = 0.45 μm



Millipak Series

02G = Millipak 20, Sterilized by gamma radiation
04G = Millipak 40, Sterilized by gamma radiation
06G = Millipak 60, Sterilized by gamma radiation
10C = Millipak 100, Non-sterile
1GC = Millipak 100, Sterilized by gamma radiation
20C = Millipak 200, Non-sterile
2GC = Millipak 200, Sterilized by gamma radiation



Package Quantity

2 = 2 per package (Millipak 20, 40, 60)
3 = 3 per package (Millipak 100, 200)

Connection Type

A = 14 mm ($\frac{9}{16}$ in.) sanitary flange inlet and outlet (Millipak 100 & 200)
B = 6 mm ($\frac{1}{4}$ in.) NPTM inlet and outlet (Millipak 100 & 200; 0.22 & 0.45 μm)
F = 19 mm ($\frac{3}{4}$ in.) sanitary flange inlet and outlet
H = 6 mm ($\frac{1}{4}$ in.) stepped hose barb inlet and outlet with bell, vent (Millipak 20, 40 & 60)
L = 38 mm ($\frac{1}{2}$ in.) sanitary flange inlet and outlet (Millipak 100 & 200)

Example: MPVL 04G H2 would be identified as a sterile Millipak 40 filter with 0.1 μm Durapore membrane. This filter has 6 mm ($\frac{1}{4}$ in.) hose barb inlet and outlet fittings and comes in a package of 2.

Note: Millipak filters can be manufactured with other inlet and outlet connection configurations. Please contact Millipore Technical Service with your custom requirements.

To Place an Order or Receive Technical Assistance

For additional information call your nearest Millipore office:

In the U.S. and Canada, call toll-free **1-800-MILLIPORE (1-800-645-5476)**

In the U.S., Canada and Puerto Rico, fax orders to **1-800-MILLIFX (1-800-645-5439)**

Outside of North America contact your local office.

To find the office nearest you visit www.millipore.com/offices.

Internet: www.millipore.com

Technical Service: www.millipore.com/techservice

Millipore, Durapore and Millipak are registered trademarks of Millipore Corporation.

ATCC is a trademark of American Type Culture Collection.

ASTM is a trademark of American Society for Testing and Materials.

ISO is a registered trademark of the International Organization for Standardization.

Lit. No. PF1508EN00 Printed in U.S.A. Rev. A 7/04 04-040

© 2004 Millipore Corporation, Billerica, MA 01821 U.S.A. All rights reserved.

MILLIPORE