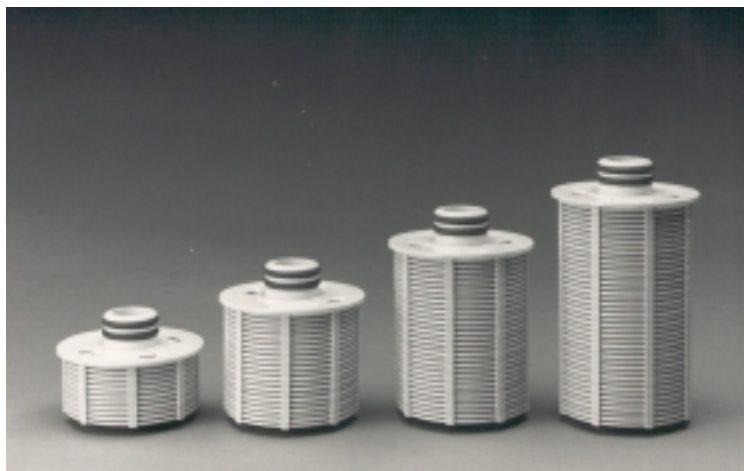


# Millidisk<sup>®</sup> Cartridge Filters

- For sterile filtration, clarification and prefiltration of aqueous and non-aqueous solutions and gasses.

Certificate of Quality for this product provided in every box.



Millidisk cartridge filters are stacked disc filters designed for the removal of particles and microorganisms from liquids and gases. The stacked disc design allows minimal holdup volume and particle shedding, making Millidisk filters ideally suited for high-value added applications. All Millidisk filters are made with Durapore<sup>®</sup> PVDF membranes, providing high flow rates and throughputs, low extractables, broad chemical compatibility and the lowest protein binding of any membrane available.

Millidisk filters are available in 0.1  $\mu\text{m}$ , 0.22  $\mu\text{m}$  (hydrophilic and hydrophobic), 0.45  $\mu\text{m}$  and 5.0  $\mu\text{m}$  pore sizes. Four available cartridge sizes allow optimum flexibility for easy scale up and system sizing. Millidisk filters are designed to be used with either Millidisk or Milligard<sup>®</sup> housings.

For traceability and easy identification, each Millidisk filter is labelled with its catalogue number, lot number and serial number. Millidisk 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. Each sterilizing-grade Millidisk filter includes a Certificate of Quality for documentation accuracy.

## Typical Applications

- Sterile filtration of parenterals, diagnostics and buffers
- Sterile filtration of media and biologicals
- Particle removal (clarification) of high value-added pharmaceuticals
- Sterile filtration of nonaqueous liquids and gases

## Specifications

### Materials

Hydrophilic or hydrophobic Durapore PVDF (polyvinylidene fluoride) membrane; polysulfone support discs and adapter; silicone 2-118 O-rings.

### Connections

Millidisk filters incorporate a double 2-118 (silicone) O-ring seal and are used with Millidisk or Millidisk/Milligard stainless steel housings.

### Pore Sizes

0.1 µm, 0.22 µm (hydrophilic and hydrophobic), 0.45 µm and 5.0 µm

### Filter Area

Millidisk 10: 500 cm<sup>2</sup> (0.54 ft<sup>2</sup>)  
Millidisk 20: 1000 cm<sup>2</sup> (1.08 ft<sup>2</sup>)  
Millidisk 30: 1500 cm<sup>2</sup> (1.61 ft<sup>2</sup>)  
Millidisk 40: 2000 cm<sup>2</sup> (2.15 ft<sup>2</sup>)

### Maximum Differential Pressure

Forward Pressure:  
4.14 bar (60 psid) at 25 °C  
1.72 bar (25 psid) at 80 °C  
345 mbar (5 psid) at 123 °C

Reverse Pressure:  
690 mbar (10 psid) at 25 °C

### Maximum Inlet Pressure

6.2 bar (90 psig) at 25 °C

### Bacterial Retention

Millidisk 0.1 µm and 0.22 µm units are qualified for quantitative retention of *Brevundimonas diminuta* (ATCC® 19146) at a minimum challenge level of 10<sup>7</sup>/cm<sup>2</sup> when tested following ASTM® F838-83 methodology.

The cartridges meet the definition of sterilizing-grade filters as described in the FDA "Guideline on Sterile Products Produced by Aseptic Processing" (1987).

### Bacterial Endotoxins

An aqueous extraction from a Millidisk filter contains < 0.5 EU/mL bacterial endotoxin as determined by the LAL test.

### Gravimetric Extractables

(Maximum in water at ambient temperature, following autoclaving)

Millidisk 10: 2.5 mg/unit  
Millidisk 20: 5 mg/unit  
Millidisk 30: 7.5 mg/unit  
Millidisk 40: 10 mg/unit

### Oxidizable Substances

(After steaming)

A Millidisk filter will meet the current USP WFI Oxidizable Substances requirements after a 200 mL flush with water per cartridge.

### Toxicity

Component materials meet the requirements of the USP Class VI Biological Test for Plastics. Millidisk filters also meet the requirements of the current USP General (Mouse) Safety Test.

### Integrity Test

Bubble Point (all values are at 23 °C):

0.1 µm units: ≥ 4830 mbar (70.0 psig) in water

0.22 µm hydrophilic units: ≥ 3450 mbar (50.0 psig) in water

0.45 µm units: ≥ 1800 mbar (26.0 psig) in water

5.0 µm units: ≥ 140 mbar (2.0 psig) in water

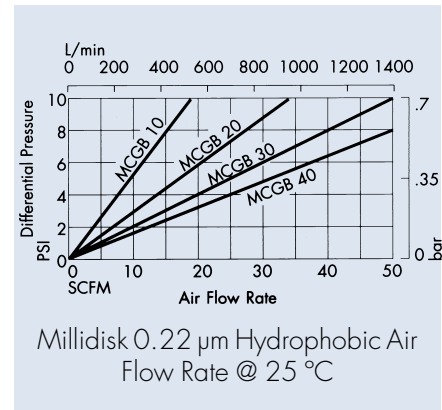
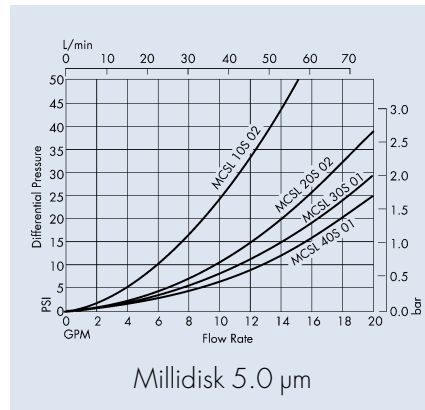
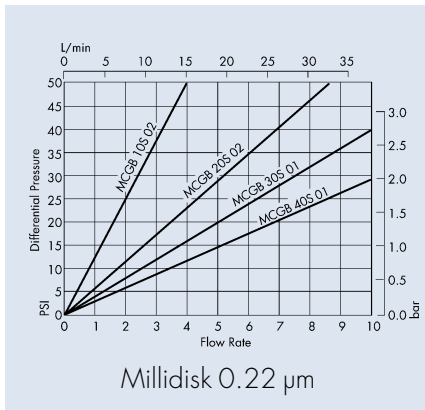
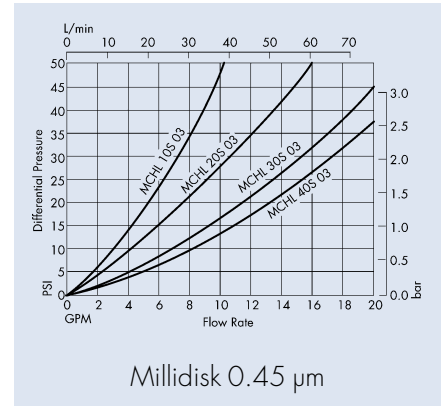
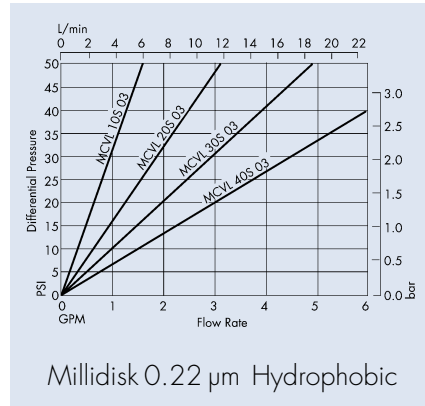
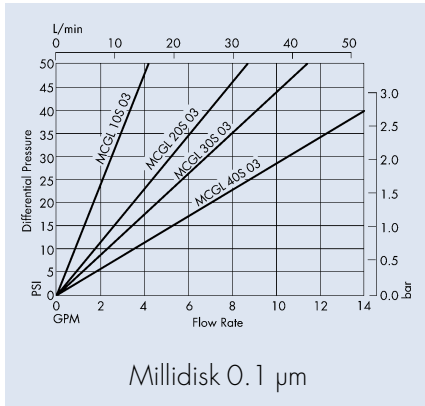
0.22 µm hydrophobic units: ≥ 1170 mbar (17.0 psig) in 70/30 IPA/water

### Sterilization

Autoclave: 126 °C, 60 minutes, up to 5 times

Steam-in-place: 135 °C, 60 minutes, up to 5 times

## Water Flow Rates at 25 °C



## Ordering Information

Description	Packaging	Catalogue Number	Description	Packaging	Catalogue Number
<b>Millidisk Hydrophilic Cartridges, 0.1 µm Durapore Membrane</b>			<b>Millidisk Hydrophilic Cartridges, 0.45 µm Durapore Membrane</b>		
Millidisk 40-stack	3/pk	MCVL40S03	Millidisk 40-stack	3/pk	MCHL40S03
Millidisk 30-stack	3/pk	MCVL30S03	Millidisk 30-stack	3/pk	MCHL30S03
Millidisk 20-stack	3/pk	MCVL20S03	Millidisk 20-stack	3/pk	MCHL20S03
Millidisk 10-stack	3/pk	MCVL10S03	Millidisk 10-stack	3/pk	MCHL10S03
<b>Millidisk Hydrophilic Cartridges, 0.22 µm Durapore Membrane</b>			<b>Millidisk Hydrophilic Cartridges, 5.0 µm (Nominal) Durapore Membrane</b>		
Millidisk 40-stack	3/pk	MCGL40S03	Millidisk 40-stack	1/pk	MCSL40S01
Millidisk 30-stack	3/pk	MCGL30S03	Millidisk 30-stack	1/pk	MCSL30S01
Millidisk 20-stack	3/pk	MCGL20S03	Millidisk 20-stack	2/pk	MCSL20S02
Millidisk 10-stack	3/pk	MCGL10S03	Millidisk 10-stack	2/pk	MCSL10S02
<b>Millidisk Hydrophobic Cartridges, 0.22 µm Durapore Membrane</b>			<b>Millidisk Hydrophobic Cartridges, 0.22 µm Durapore Membrane</b>		
Millidisk 40-stack	1/pk	MCGB40S01	Millidisk 40-stack	1/pk	MCGB40S01
Millidisk 30-stack	1/pk	MCGB30S01	Millidisk 30-stack	1/pk	MCGB30S01
Millidisk 20-stack	2/pk	MCGB20S02	Millidisk 20-stack	2/pk	MCGB20S02
Millidisk 10-stack	2/pk	MCGB10S02	Millidisk 10-stack	2/pk	MCGB10S02

## 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 toll-free 1-800-MILLIFX (1-800-645-5439)

On the Internet [www.millipore.com](http://www.millipore.com)

E-mail: [tech\\_service@millipore.com](mailto:tech_service@millipore.com)

## Millipore Worldwide

### AUSTRALIA

Tel. 1 800 222 111 (toll free) or (02) 9888 8999  
Fax (02) 9878 0788

### AUSTRIA, CENTRAL EUROPE, C.I.S., AFRICA, MIDDLE EAST AND GULF

Tel. (43) 1 877-8926  
Fax (43) 1 877-1654

### BALTIC COUNTRIES

Tel. 358-9-804 5110  
Fax 358-9-256 5660

### BELGIUM AND LUXEMBOURG

Tel. (02) 726 88 40  
Fax (02) 726 98 84

### BRAZIL

Tel. (011) 548-7011  
Fax (011) 548-7923

### CANADA

Tel. 1-800-645-5476  
Fax 1-800-645-5439

### CHINA, PEOPLE'S REPUBLIC OF

Beijing  
Tel. (8610) 6500-8063  
Fax (8610) 6500-7372  
Guangzhou  
Tel. (8620) 8755-4021  
Fax (8620) 8755-4350

### Hong Kong

Tel. (852) 2803-9111  
Fax (852) 2513-0313  
Shanghai  
Tel. (8621) 5306-9100  
Fax (8621) 5306-0838

### CZECH REPUBLIC

Tel. 02-205 138 41  
02-205 138 42  
Fax 02-205 142 94

### DENMARK

Tel. 70 10 00 23  
Fax 70 10 13 14

### FINLAND

Tel. (09) 804 5110  
Fax (09) 256 5660

### FRANCE

Tel. (01) 30.12.70.00  
Fax (01) 30.12.71.80

### GERMANY

Tel. (06196) 494-0  
Fax (06196) 43901

### HUNGARY

Tel. 1-205 9784  
Fax 1-205 9792

### INDIA

Tel. (91) 80-839 46 57  
Fax (91) 80-839 63 45

### ITALY

Tel. (02) 25.07.81  
Fax (02) 26.50.324  
Tel. (06) 52.03.600  
Fax (06) 52.95.735

### JAPAN

Tel. (03) 5442-9711  
Fax (03) 5442-9737

### KOREA

Tel. (822) 551-0990  
Fax (822) 551-0228

### MALAYSIA

Tel. 603-7571322  
Fax 603-7571711

### MEXICO

Tel. (525) 576-9688  
Fax (525) 576-8706

### THE NETHERLANDS

Tel. 076-5022000  
Fax 076-5022436

### NORWAY

Tel. 22 67 82 53  
Fax 22 66 04 60

### POLAND

Tel. 22-669 12 25  
22-663 70 31  
Fax 22-663 70 33

### PUERTO RICO

Tel. (787) 273-8495  
Fax (787) 747-6553

### SINGAPORE

Tel. (65) 842 1822  
Fax (65) 842 4988

### SPAIN AND PORTUGAL

Madrid  
Tel. 917 283 960  
Fax 917 292 909  
Barcelona  
Tel. 934 525 530  
Fax 934 516 048

### SWEDEN

Tel. 08-628 69 60  
Fax 08-628 64 57

### SWITZERLAND

Volketswil  
Tel. (01) 908-30-60  
Fax (01) 908-30-80  
Lausanne  
Tel. (021) 648 51 18  
Fax (021) 648 51 37

### TAIWAN

Taipei  
Tel. (886-2) 700-1742  
Fax (886-2) 755-3267  
Hsin Chu City  
Tel. (886-3) 571-0178  
Fax (886-3) 572-9520

### U.K. AND IRELAND

Tel. (01923) 816375  
Fax (01923) 818297

### U.S.A.

Tel. (781) 533-6000  
Fax (781) 533-3110

### IN ALL OTHER COUNTRIES

Millipore Intertech  
Tel. +1 (781) 533-8622  
Fax +1 (781) 533-8630

# MILLIPORE

Millipore, Millidisk and Durapore are registered trademarks of Millipore Corporation or an affiliated company. ATCC is a trademark of American Type Culture Collection. ASTM is a trademark of American Society for Testing and Materials. Lit. No. P1510EN00 rev - 6/00 Printed in U.S.A. © 2000 Millipore Corporation or an affiliated company. All rights reserved.