



MILLIPORE

Millipore Corporation Air Monitoring Products

by

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Product Manager

ADVANCING LIFE SCIENCE TOGETHER™
Research. Development. Production.

About Millipore

- Established in 1954 by Jack Bush
- Acquired Serologicals in 2006
- Revenue \$1.3 billion over 6000 employees

Product Applications:

Downstream Bioprocessing

Drug Discovery & Development

Lab Filtration

Lab Water

Life Sciences

Process Monitoring

Specialty Markets

Upstream Bioprocessing



Millipore Products

Air Monitoring Products

Animal Sera

Antibodies

Arrays

Bioburden Testing Products

Blood Typing Products

Blotting Membranes

Capsule Filters

Cartridge Filters

Cell Culture & Diagnostic Products

Cell Membrane preparation

Centrifugal Filter Units

Chromatography Media

Chromatography Membranes &

Columns

Chromatography Systems

Depth Filters

Environmental Monitoring Products

Filter Discs & Membranes

Filter Holders & Accessories

Filtration Devices

Filtration Systems

Flow Cytometry Equip & Supplies

Hazardous Waste Equipment

Immunodetection Equip &

Supplies

Incubators

Inhibitors

Lab Water Purification Systems

Luminex Instrumentation

Lysates

Magnetic Beads

Microbial Testing Products

Microbiological Culture Media

Multiwell Plates

Mycoplasma Testing Products

Plasmids

Prefilters

Process Development &

Validation Tools

Proteins & Enzymes

RNAi Products

Rapid Detection Systems

Reagents

Sampling Systems

Single-Use Disposable

Products

Sterility Testing Products

Sterilizing-Grade Filters

Stirred Cells

Syringe Filters

TFF Systems

Ultrafiltration Membrane &

Devices

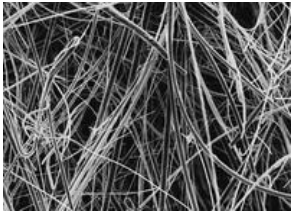
Viral Clearance Devices

Virus Purification Products

Filter 101

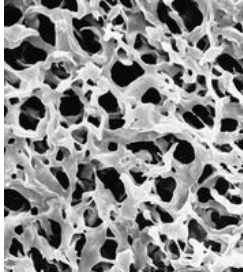
Depth Filters

Matrix of randomly oriented fibers pressed together to form flow channels
Nominally rated, no exact pore size
Large particle loading capacity, excellent flow rates
Glass fiber, polypropylene



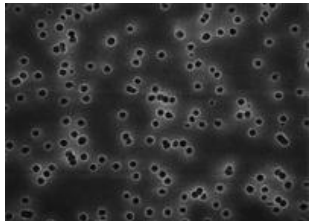
Screen Filters

“Absolute” pore size ratings, surface retention
Rigid, uniform mesh of material
PTFE, PVDF, MCE



Track Etched Filters

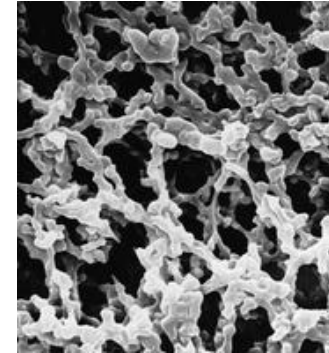
Pores are generated by the film exposure to a beam of accelerated Ar6+ ions, then placed in a bath of NaOH
Clean, cylindrical pores of a uniform diameter
Smooth surface



Filter 101

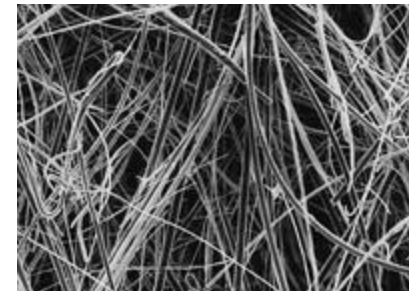
MF (mixed cellulose ester)

- First filter to market
- Used extensively for microorganism collection
- Can be dissolved for analytical purposes
- Clean room/garment monitoring
- Microbiological monitoring
- Asbestos testing
- Metals



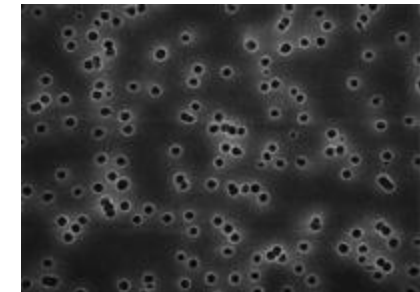
Glass fiber (borosilicate microfiber)

- Large particle load
- Able to be ashed for volatiles
- Carbon free



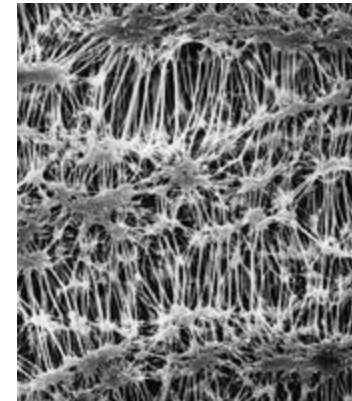
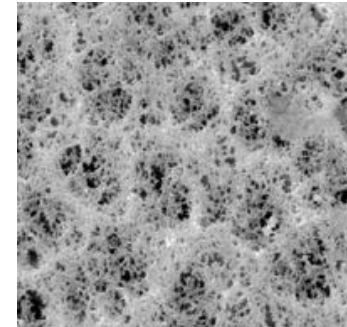
Polycarbonate

- Transparent filter for microscopy
- Smallest pore size distribution of any filter
- Track etched membrane



Filter 101

- **PVC**
 - Medical grade
 - Silica, carbon black, quartz
 - Zinc, lead, etc.
- **PTFE (Fluoropore, Mitex)**
 - Hydrophobic membrane
 - Very low extractables, inert
 - Alpha particle monitoring
 - Benzene, sulfides, alkalines
- **Other materials available: silver, nylon, PVC, quartz**
- **Millipore can also supply materials in rolls or special cut sizes**



Other Products for Air Monitoring



Millex-Syringe Filters

- **5 device configurations**
 - 33mm
 - 13mm
 - 13mm w/ Tube Outlet
 - 4mm w/ Stepped Outlet
- **5 membrane types**
 - Hydrophilic PTFE
 - PVDF
 - Nylon
 - PES
 - Hydrophobic PTFE

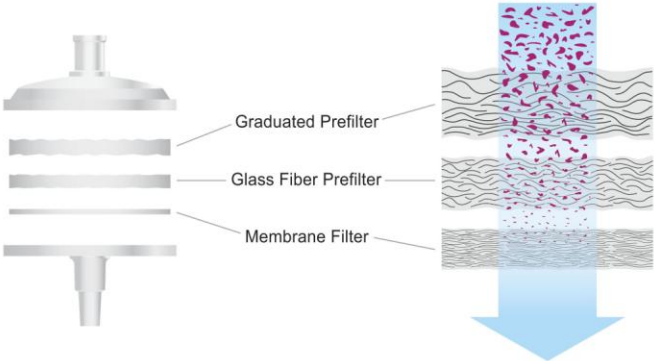
Sample Volume	Filter Size	Hold up Volume	Filtration Area
< 1 mL	4 mm	10 μ L	0.1 cm ²
1-10 mL	13 mm	25 μ L	0.65 cm ²
10-100 mL	25 mm	100 μ L	3.6 cm ²
10-100 mL	33 mm	80 μ L	4.5 cm ²

The right sized filter will improve throughput and recovery and reduce clogging.



HPF Millex Syringe Filters

- **Eliminating the effects of particulates**
- **Advantages:**
 - Higher throughput**
 - Less syringe pressure needed**
 - More reproducible analyses**
 - Reduced column fouling and instrument down time**

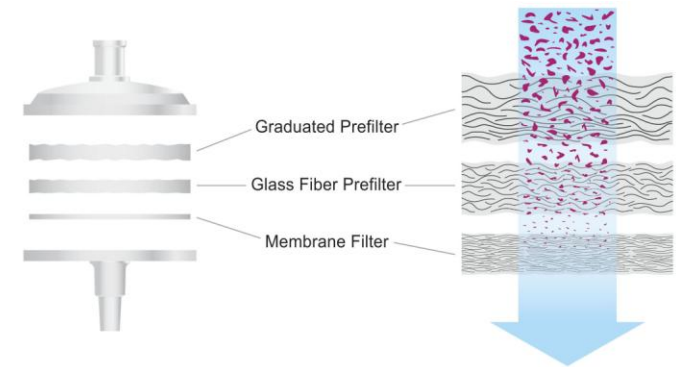


New Products

0.2 μm & 0.45 μm hydrophilic PTFE
and 0.2 μm Nylon for fine filtration of
organic/aqueous solutions

HPF Millex Syringe Filters

- A multi-layer filter improves throughput of high particulate samples
- Graduated glass fiber prefilter removes large particles and 0.2 μm or 0.45 μm membrane filter for fine particle filtration
- Typical Applications/Sample Types:
 - Food and beverage
 - Wine
 - Environmental
 - Dissolution



New Products

0.2 μm & 0.45 μm hydrophilic PTFE
and 0.2 μm Nylon for fine filtration of
organic/aqueous solutions

Laboratory Filtration Catalog



Environmental Monitoring Product Guide



Support Materials

MILLIPORE

The screenshot shows a Microsoft Internet Explorer browser window displaying the Millipore Membrane and Filter Resource Center website. The browser's address bar shows the URL <http://www.millipore.com/membrane/mrc3/membranehome>. The website header includes the Millipore logo, navigation links (HOME, PRODUCTS, SERVICES, LEARNING CENTER, TECH LIBRARY, SUPPORT, COMPANY), and a search bar. The main content area is titled "Membrane Resource Center" and features a large graphic with the text "Membrane resources for researchers and decision makers". Below this graphic, there is a paragraph of introductory text and a bulleted list of key points. The right sidebar contains sections for "Featured Destinations" and "Podcasts". The Windows taskbar at the bottom shows the Start button, several open applications, and the system clock displaying 1:06 PM.

Millipore - Millipore Membrane and Filter Resource Center - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites

Address <http://www.millipore.com/membrane/mrc3/membranehome> Go

Links @Millipore iLearning Millipore NOW! Millipore.com MIS Oracle11 Pathfinder RTS Self Service Login Sametime 1 Sametime 2 Webmail Millipore Connectra Portal (US) - Sign In

Login | Register | My Account | Shopping Cart | Help

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SEARCH Entire site GO

HOME PRODUCTS SERVICES LEARNING CENTER TECH LIBRARY SUPPORT COMPANY

Your Cart 0 Items Favorites 0 Items

Last Item Added: 0 Items

Membrane Resource Center

Membrane resources for researchers and decision makers

Since its creation in 1954 Millipore has become an industry leader in the development and manufacture of membrane-based filtering devices and systems used by life sciences researchers, medical schools, hospitals, dialysis centers, and many industries, to separate molecular components of fluid samples.

In this learning center, we share information and methodologies gleaned from decades of research and development so that you can use it as a technically rich destination for membrane and separation resource information.

- Companies can learn about membrane specifications and compatibilities that support decision-making about devices and techniques to use in research, engineering and production.
- All life science professionals, including researchers, process engineers, and chemists, can refer to this resource for answers to their most frequently asked questions about membrane filtration technologies
- Students can find expertise on membranes and separation technology and reference technical or materials information, specifications and techniques.

Please contact **Technical Support** with your specific application questions.

WHAT IS FILTRATION

- > History of Membranes
- > Types of filtration
- > Depth Filters
- > Membrane Filters
- > Microporous Filters

FILTER PROPERTIES

- > Pore Rating or NMWL
- > Porosity and Bed Volume
- > Flow Rate
- > Wettability Characterization
- > Chemical Compatibility

Featured Destinations

- Particle Monitoring Guide
- Microporous Membranes for Microfiltration and Venting Applications
- Ultrafiltration Application and Product Guide
- Filtration Selection Guide
- Hydrophilic DURAPORE Cartridges and Capsules

Podcasts

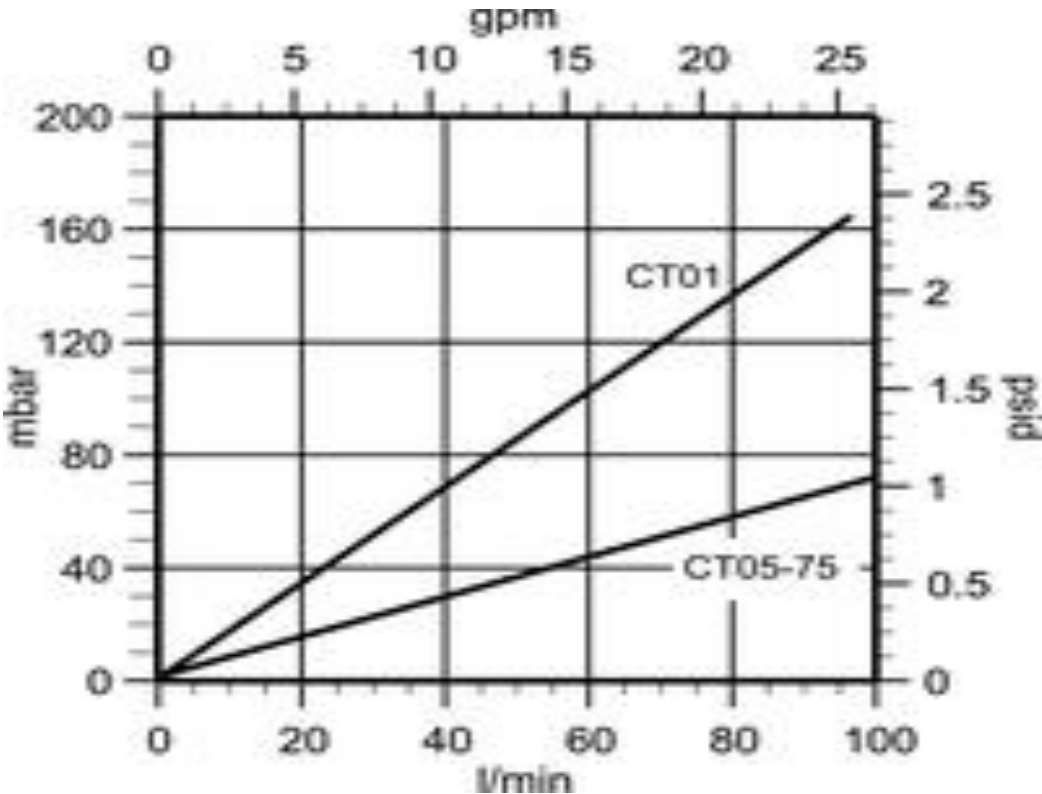
- What is a Membrane?
- How Do You Make a Membrane?
- What is Bubble Point?
- Absorption vs Adsorption
- Lateral Flow Membrane vs. Filtration Membrane
- Protein Binding to Lateral Flow Membrane
- Top 5 Steps to Troubleshooting Your Rapid Test
- Most Common Test Strip Defects
- Test Strip Stability
- Flow Uniformity

Done

Start Hsiao-Lan Chan... 2 Internet E... projects AMUG 2009.ppt Air monitoring c... Trusted sites 1:06 PM

Coming Soon...

- **Pressure Drop Data**



Thank you

- **Call Technical Support for any questions you may have. We can find your local rep info for you as well.**
- **1-800-645-5476 (1-800-MILLIPORE)**