



## FILTRATION

### ▶ POREX® MacroFlow™ PTFE Cartridge Filter

Sintered Porous  
Polytetrafluoroethylene

Wide Range of  
High Efficiency Pore Sizes

High Flow Rates

Long Service Life

Classification Type Filtration

High Surface Area  
Pleated Geometry

Excellent Thermal and  
Chemical Resistance

Fits Standard Industrial and  
Commercial Filter Housings

Multiple Lengths and  
End Configurations Available

Minimal Construction  
Materials



**POREX**

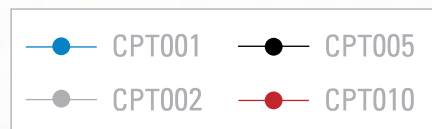
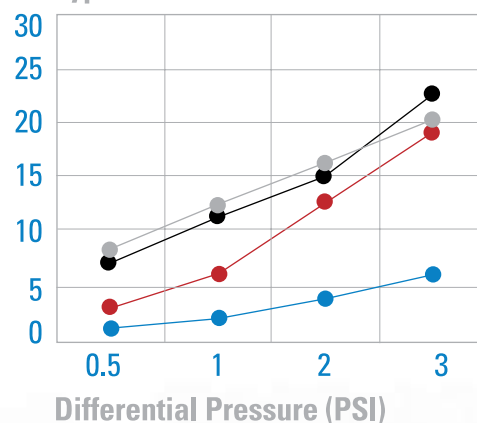
Solutions Through Material Science<sup>SM</sup>

## Flow vs Pressure Drop

The specific pressure drop values (psid/gpm) per 10" cartridge are provided for each filter grade. POREX MacroFlow PTFE Cartridges exhibit superior flow characteristics to other cartridges with comparable micron ratings. The benefits of lower pressure drop are longer cartridge life, higher throughput and lower operating cost.

POREX MacroFlow PTFE Cartridge Typical Flow Rates				
	Differential Pressure (PSID)			
	0.5	1	2	3
Cartridge Type	Flow Rate Per Cartridge (GPM)			
CPT001	1	2	4	6
CPT002	8	12	16	20
CPT005	7	11	15	22
CPT010	3	6	12	19

POREX MacroFlow PTFE Cartridge  
Typical Flow Rates



## Material Specifications

Parameter	Description
Membrane	Polytetrafluoroethylene (PTFE)
Filter Support	Polypropylene (PP)
Structural Components	Polypropylene (PP)
Length	5" to 40" [12.7 – 101.6 cm]
Inside Diameter	1.0" [2.5 cm]
Outside Diameter	2.69" [7.0 cm]
Maximum Operating Temperature	80°C (176°F)
Maximum Forward Pressure	60 psid [5.5 bar] @ ambient
Maximum Reverse Pressure	40 psid [2.7 bar] @ ambient
Effective Surface Area (minimum)	2.4 ft. 2 per 2.69" diameter by 10"

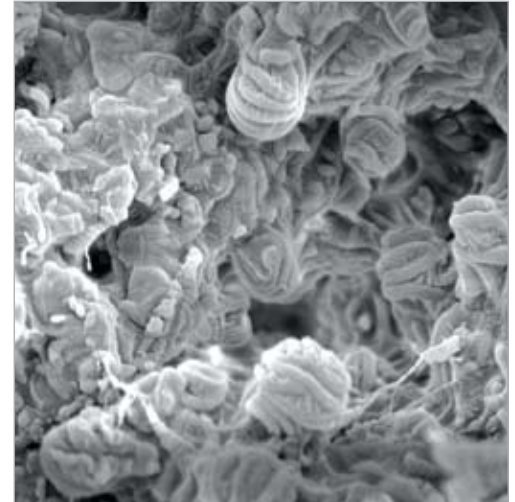
## Structural Membrane Media for Optimal Performance

POREX® MacroFlow™ PTFE Cartridge Filters are designed to fit standard filter housings. Manufactured of sintered PTFE, with removal ratings of 1, 2.5, 5 and 10 microns. The patented,\* sintered porous structure is excellent for filtration and offers membrane filter efficiency in a micron rated cartridge.

The POREX MacroFlow PTFE Cartridge Filter has a number of performance attributes including:



- Sintered porous polytetrafluoroethylene
- Wide range of high efficiency pore sizes
- High flow rates
- Long service Life
- Classification type filtration
- High surface area pleated geometry
- Excellent thermal and chemical resistance
- Fits standard industrial and commercial filter housings
- Multiple diameters, lengths and end configurations available
- Minimal construction materials

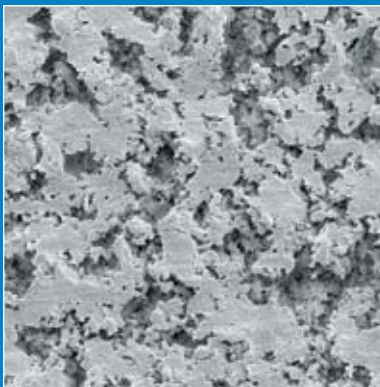


Membrane Pore Structure - Magnified 8500x

## Why Choose POREX MacroFlow PTFE Cartridge Filters?

- POREX MacroFlow PTFE Cartridge Filters are easy to handle and can be easily installed into existing filtration systems
- Porous PTFE membrane is pleated to provide high surface area required for many applications
- Sintered PTFE membrane provides high retention efficiency in large pore size
- Material complies with the Code of Federal Regulations, Title 21, Section 177.1520 Item 2.1, for food contact

\* US Patents 5,514,231 and 5,677,047



Membrane Surface - Magnified 500x

## Material Technology

Throughout each POREX MacroFlow PTFE membrane runs an intricate network of open-celled, omni-directional pores. These pores, made in average pore sizes down to one micron, give our media consistency throughout the cartridge providing a combination of filtering capability and structural strength. The microphotograph illustrates the uniform pore structure of POREX MacroFlow PTFE Cartridge.

## Chemical Resistance

POREX MacroFlow PTFE Cartridge Filters are made from commercially available thermoplastics. They are resistant to a broad spectrum of corrosive chemicals and reagents. The customer should perform appropriate tests to determine the performance of POREX Cartridge Filters under each specific operating condition. Porex does not guarantee the accuracy of information or the suitability of products in specific applications. Users should determine suitability of the product for their specific application.

## Feature: Rigid Omni-Directional Pore Structure

### High Efficiency

- **Advantage:** Consistent pore size minimizes performance changes caused by differential pressure
- **Benefit:** Reproducible filtration performance

### Narrow Pore Size Distribution

- **Advantage:** Highly effective surface filtration for particles larger than the filter pore size rating
- **Benefit:** Allows for effective classification of particulate

### Thermally Bonded

- **Advantage:** Sintered omni-directional pore structure
- **Benefit:** No media migration, bypass or unloading from 1 to 10 microns

### Excellent Chemical and Thermal Stability

- **Advantage:** High chemical residence of PTFE and high temperature stability of PTFE Membrane
- **Benefit:** No chemical degradation resulting in bypass or contamination of the process fluid and broad thermal processing window

## Feature: Pleated Geometry Design

### High Surface Area

- **Advantage:** Low pressure drop, increased life, higher flow rate or fewer filters
- **Benefit:** Lower filtration cost

### Single Layer Membrane Construction

- **Advantage:** Thermally-bonded membrane structure
- **Benefit:** Improves media stability under pressure

## Product Ordering Guide: POREX MacroFlow PTFE Cartridge Part Number Matrix

Type		Polymer		Pore Size (Microns)		Length		Diameter		Endcap	
CP	Cartridge Pleated	T	Polytetrafluoroethylene	001	1	0	5 in	2	2.69 in	A	DOE (Gasket / Gasket)
				002	2.5	1	10 in			B	SOE (Gasket / Flat)
				005	5	2	20 in			C	222 / Flat
				010	10	3	30 in			D	222 / Fin
						4	40 in			E	226 / Flat
						6	9.75 in			F	226 / Fin
						7	19.5 in			G	
						8	29.25 in				
						9	39 in				

## Filtration Efficiency

Filter performance is often expressed in terms of percent efficiency, defined as the ratio of upstream particle concentration compared to the downstream concentration that has passed through a filter body (multiplied by 100). POREX MacroFlow PTFE Cartridges exceed 95% efficiency at their rated pore size.

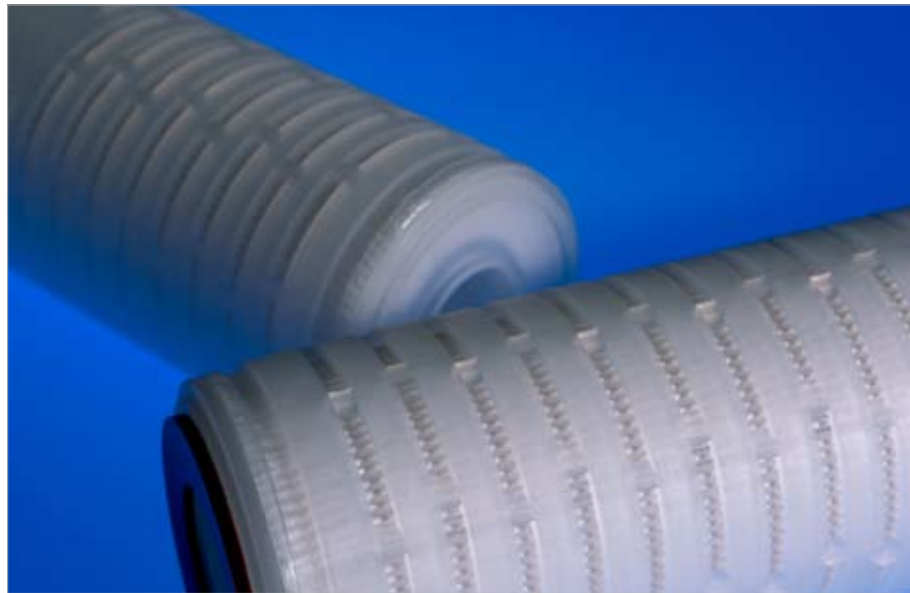
POREX MacroFlow PTFE Cartridge Filters are available in a range of pore sizes (from 1 to 10 microns) with retention efficiency. Multiple lengths and end configurations maximize performance capabilities. The Initial Retention Efficiency results per ASTM 795-88 are based on a single pass using a 2.69" diameter cartridge with 10" length at a flow rate of 1 GPM/ft<sup>2</sup> of water with ISO Fine or Coarse Test Dust.

## Typical Applications

- Chemical processing such as electroless nickel plating solutions
- Photochemical processing of resists and strippers
- Fine particle separation Chemical Mechanical Planarization slurries
- Solvent and fine chemical filtration of pharmaceutical intermediates
- Tank venting
- Ultrapure gas filtration

## POREX MacroFlow PTFE Cartridge Removal Ratings

Material	Filter Media	Micron Rating High Efficiency
CPT001	PTFE	1.0
CPT002	PTFE	2.5
CPT005	PTFE	5.0
CPT010	PTFE	10.0



Cage	Seal	Filler
Y   Yes	E   Ethylene Propylene S   Silicone V   Viton F   FEP Encapsulated B   Buna	N   None

### Porex Standard Warranty

Porex Corporation ("Porex") warrants its products will meet their applicable published specifications when used in accordance with their applicable instructions for a period of one year from shipment of the products. POREX MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty provided herein and the data, specifications and descriptions of Porex products appearing in Porex's published catalogues and product literature may not be altered except by express written agreement signed by an officer of Porex. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorized and if given, should not be relied upon.

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# FILTRATION



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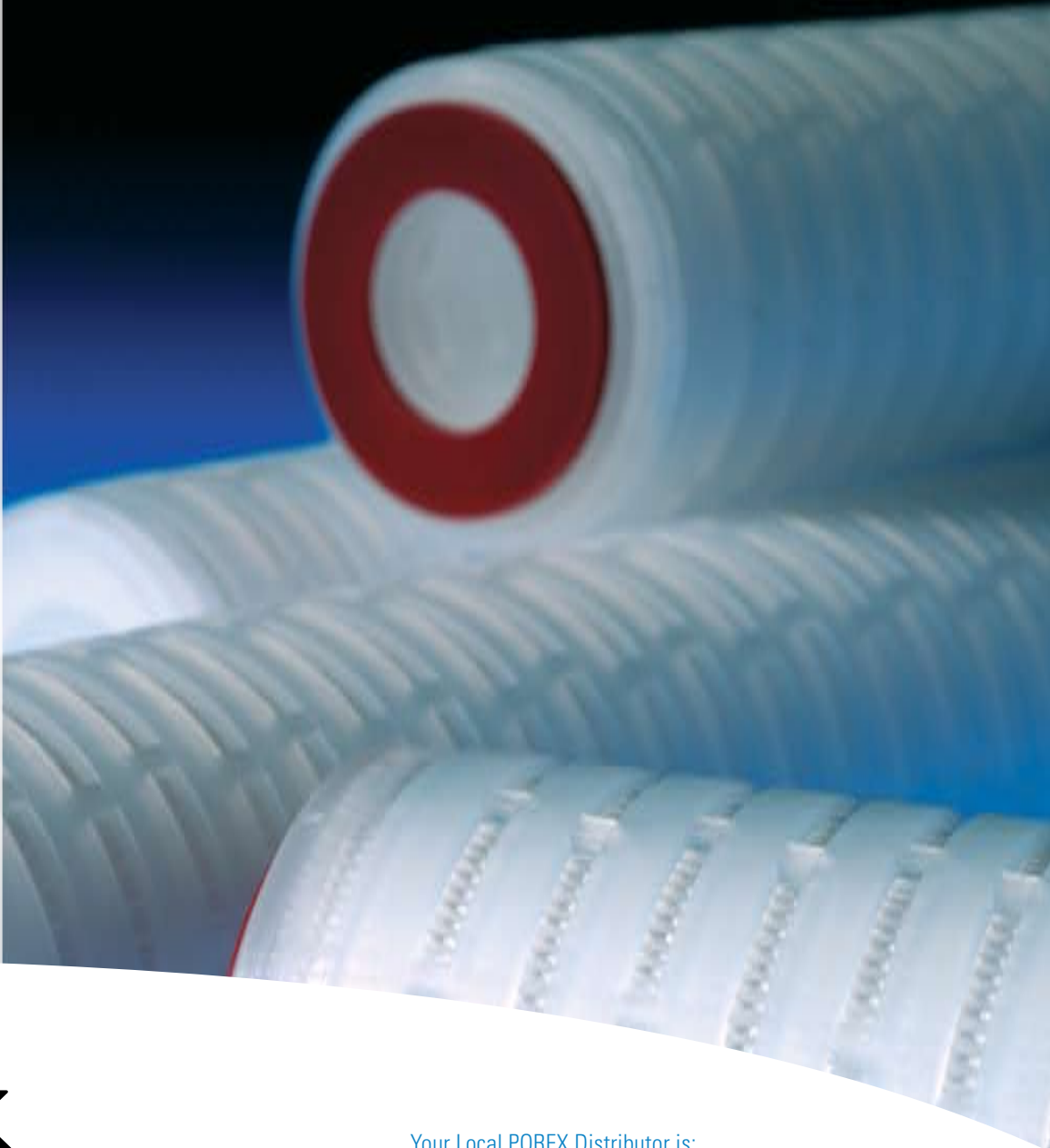
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[www.porexfiltration.com](http://www.porexfiltration.com)

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