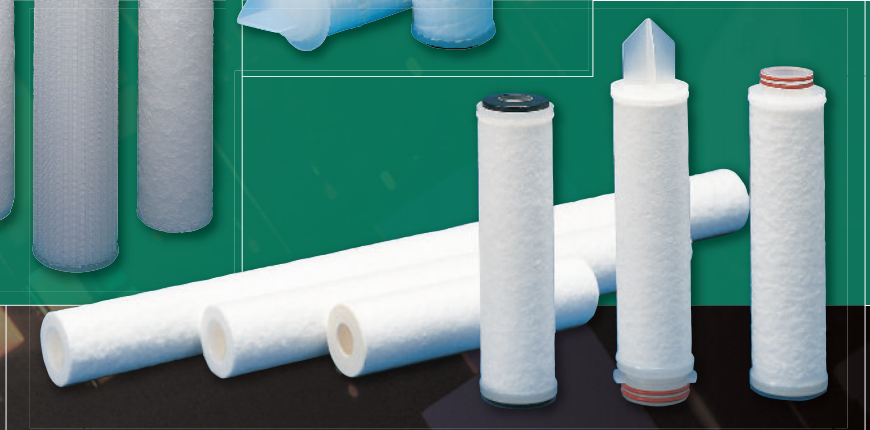
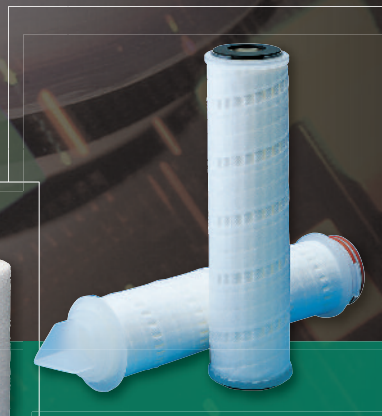
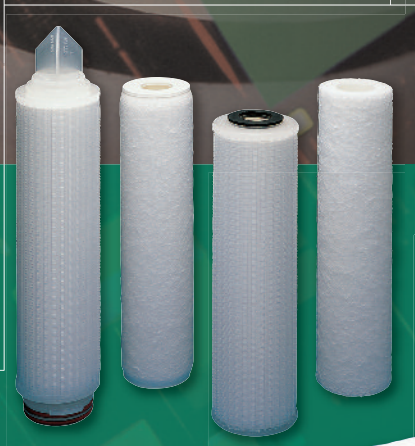




Microelectronics

Pall Polypropylene Filters

Selection Guide



Determining Operating Conditions

Selecting the appropriate filter requires knowledge of the application parameters.
The following information is required to guide the user.

1. Define the fluid

Type of fluid to be filtered: ☐ Gas ☐ Liquid (aqueous) ☐ Liquid (solvent)

Name of fluid to be filtered: _____

Name of solvent (if the fluid to be filtered is solvent-based) _____

Presence/absence of solid content: ☐ Suspension (e.g., slurry) ☐ Solution

Viscosity: _____ mPa·S

pH: _____

Temperature¹: _____ ☐ °C ☐ °F

Pressure²: _____ ☐ MPa ☐ kg/cm²

Note:

¹ The maximum operating temperature for polypropylene is 80°C /176°F. Contact Pall for higher temperature options.

² The temperature and pressure of the gas to be filtered is required to determine the standard volume.

2. Determine the required removal rating

Removal rating: ☐ Nominal _____ µm ☐ Absolute _____ µm

In-service filter: ☐ Existing ☐ N/A

Filter part no.: _____

Note:

Determine the need for an “absolute” or “nominal” rating. If the removal rating of the current filter or a filter used in a similar application is unknown, note the part number and contact Pall.

3. Determine the flow rate

Liquid flow rate: _____ ☐ L ☐ m³ / ☐ minute ☐ hour ☐ batch

For batch filtration, processing time: _____ ☐ minute ☐ hour

Select the appropriate medium from the selection chart below, using the type of fluid to be filtered (viscosity, solids concentration) and removal ratings as a guide. If the fluid to be filtered is not listed, select the filter medium and configuration recommended for a similar type of fluid.


Pleated Type

- HDC® II
- Poly-Fine® II

Depth Type

- Profile® II
- Nexis® NXA
- Nexis® NXT
- Claris®

Gel removal from high-viscosity liquids
High-viscosity slurries and pastes

- 
- Profile® UP
 - Poly-Fine® XLD
 - Profile® Star

Removal Ratings

(μm)
nom.

1

10

100

Characteristics of Polypropylene Media and Applications

Depth Media

Depth filters are constructed by depositing fibrous material onto a rotating center core and forming a tapered pore structure. Four types of products are available.

■ Profile® II Filter

The Profile II filter cartridge is an absolute rated depth filter. This all-polypropylene filter has a continuously graded pore structure for built-in prefiltration and long service life.

Applications

These filters are the ideal choice for filtering polishing slurries used for the following applications; chemical mechanical planarization (CMP); hard disk drive (HDD) and bulk wafer polishing. Profile II filters are recommended for applications requiring the removal of particles below 5 microns.

■ Nexis® A Series Filter

The Nexis A filter cartridge is a more economical absolute rated depth filter. This all-polypropylene filter features proprietary CoLD (Co-located Large Diameter) fiber technology to enhance the filters' strength and minimize contaminant unloading. In addition, this filter has been optimized with a graded pore structure for outstanding dirt holding capacity and long service life.

Applications

These cartridges are suitable for filtering, slurries and high viscosity liquids such as coatings containing various suspended solids. Nexis A Series filters offer highly cost effective performance for applications requiring an absolute rated filter to remove particles 5 microns and larger.

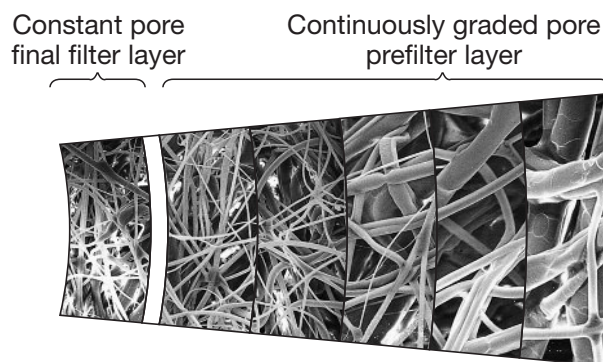
■ Nexis® T Series Filter

The Nexis T filter cartridge is a nominally rated depth filter. This all-polypropylene filter features proprietary CoLD (Co-located Large Diameter) Melt fiber technology to enhance the filters' strength and resist contaminant unloading. In addition, this filter has been optimized with a graded pore structure for outstanding dirt holding capacity and long service life. Nexis T filters are available in a wide range of nominal micron ratings from 0.5 micron to 200 microns.

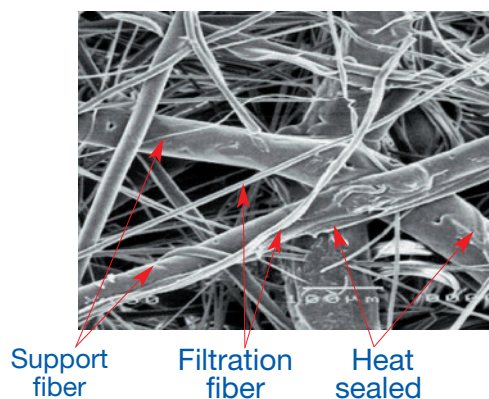
Applications

These filters are the ideal choice to replace string wound filters for improved and economical filtration. in high-viscosity fluids, cooling water and plating solutions.

■ Tapered Pore Structure



■ CoLD Melt™ Fiber Structure



■ Claris® Series Filter

The Claris filter cartridge is a nominally rated, depth filter that utilizes an extruded core made from very dense fibers. It is Pall's most economical, depth filtration product. Claris filters are available in a wide range of nominal ratings from 1 to 75 microns.

Applications

These filters are widely used for filtering large volumes of liquid such as water in swimming pools, non-critical process water and chemicals in the photovoltaic industry.

Pleated-Depth Media

Pleated depth filters are formed using a pleated cylinder made of thick filter media with a tapered pore structure. Three types of filters with different pleated cylinder structures are available.

■ Profile® Star Filter

The Profile Star filter is an all-polypropylene, pleated-depth filter that combines the exceptional dirt-holding capacity of depth filters with the high flow rates of pleated filters. While the Profile Star filter has a pressure drop and flow capability comparable to many competitive, pleated, non-depth polypropylene filters, it excels in the removal of such contaminants as gels and agglomerates.

Applications

These filters are the ideal choice for filtering both high-concentration slurries and high-viscosity pastes, where fine dispersion classification and gel removal are required. A highly successful application for Profile Star series, is filtering color resists used in the manufacture of LCD color filters.

■ Profile® UP Filter

The Profile UP filter is an innovative combination of depth and pleated filtration technologies. This all-polypropylene product consists of a pleated, depth medium using the Ultiplet® filter geometry for high effective filtration area. The result is a filter having superior flow rates with very low differential pressures.

Applications

Because of their pleated depth structure and very high flow capabilities, Profile UP filters are recommended for a wide range of fluids, with varying viscosities and solids concentrations.

■ Poly-Fine® XLD Filter

The Poly-Fine XLD filter combines the best attributes of depth and pleated filtration technologies. This all-polypropylene product combines the high flow capacity and low pressure drop of pleated filters, with the gel retention capability and long life of a depth filter. The multi-layer media structure has been developed for fine dispersion classification and gel retention.

Applications

These filters are the ideal choice for the filtration of high-viscosity and high-concentration slurries where a more cost effective solution is required.



Pleated Media

Pleated filters are formed using a pleated cylinder made of polypropylene filter media. Two types of products made with different filter media are available.

■ HDC® II Filter

The HDC II filter cartridge is a high filtration area, all-polypropylene pleated cartridge exhibiting very low differential pressures. Unlike other polypropylene pleated filters, the HDC cartridge utilizes a proprietary medium construction composed of a continuously varying fiber diameter to produce a pore size distribution from coarse (upstream) to fine (downstream). This unique construction permits more contaminants to be trapped in the outer layers of the medium, thus substantially increasing dirt-holding capacity.

Applications

These filters are the ideal choice for process water and air where very high flow rates are required. HDC II filters are especially recommended for the removal of liquid particles below 5 micron or airborne particles below 0.1 micron.

■ Poly-Fine® II Filter

The Poly-Fine II filter cartridge has a pleated construction, providing for very low pressure drops and high flow rates. This most economical pleated, polypropylene product comes in a range of removal ratings from 0.45 to 200 microns.

Applications

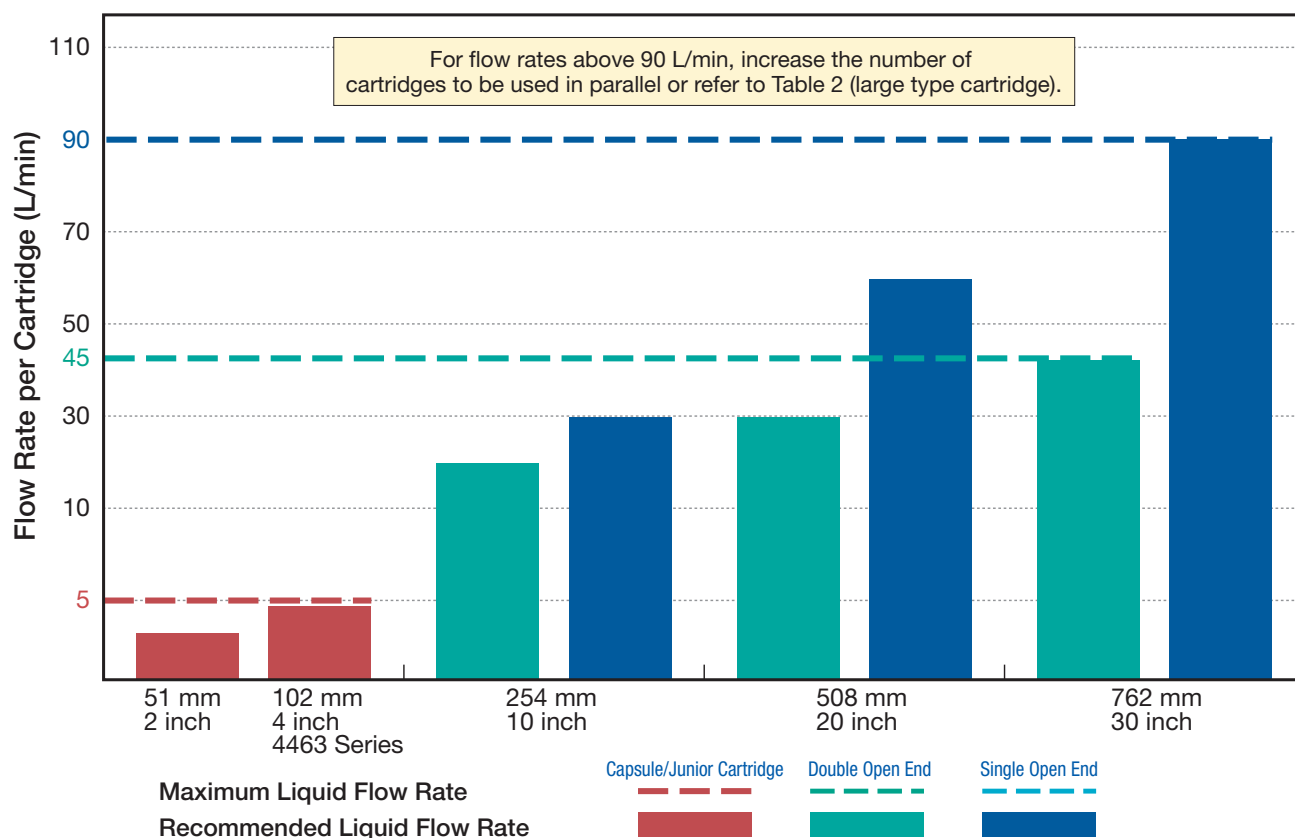
These filters are the ideal choice for process water and air when a more cost effective solution is required.

Filter Configurations Selection and Sizing Guide

(Standard Cartridges and Capsules) - Table 1

After selecting the most suitable filter medium, determine the size and number of filters required based on the configurations and sizing selection chart below. For pressure drop values, refer to the relevant data sheet. The recommended flow rate indicated below is provided as a guideline to optimize filter life.

Table 1



Cartridge



Capsule



DFA™ Filter Assembly
(HDC II, Profile Star)



PDF Filter Assembly
(Poly-Fine II, Nexus A, Nexus T)

- Junior style 4463 Series (102 mm / 4 inch)
- Double Open End, Gasket Type
- Single Open End, O-Ring Type

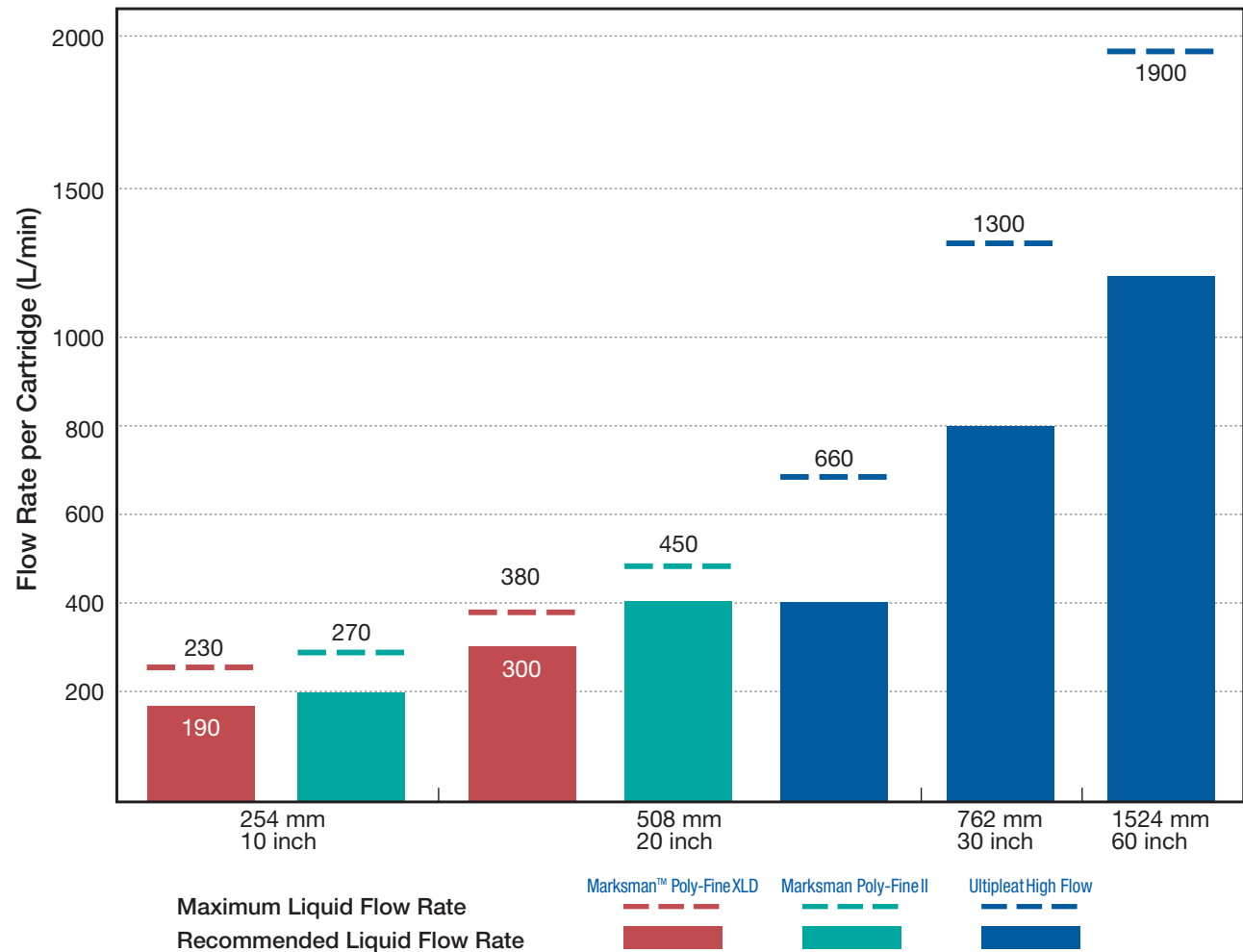
*Single open end/Double open end and 254-762 mm / 10-30 inch size are available in all filter media.
 Junior style 4463 series is available in HDC II only.

Filter Configuration Selection and Sizing Guide

(Large Flow Cartridges) - Table 2

Pall large flow cartridges are designed to be very cost effective for flow rates greater than 90 L/min. The recommended flow rate indicated below is provided as a guideline to optimize filter life.

Table 2



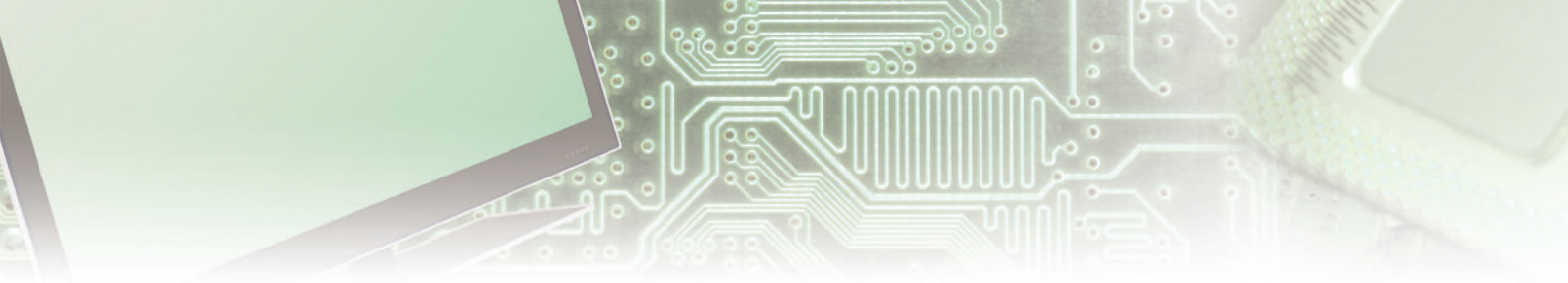
■ Large Flow Cartridge



Marksman™
(Poly-Fine XLD, Poly-Fine II)



Ultiplex High Flow
(Profile UP, HDC II)



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