Pall Corporation

CLARIS® Series Filter Cartridges

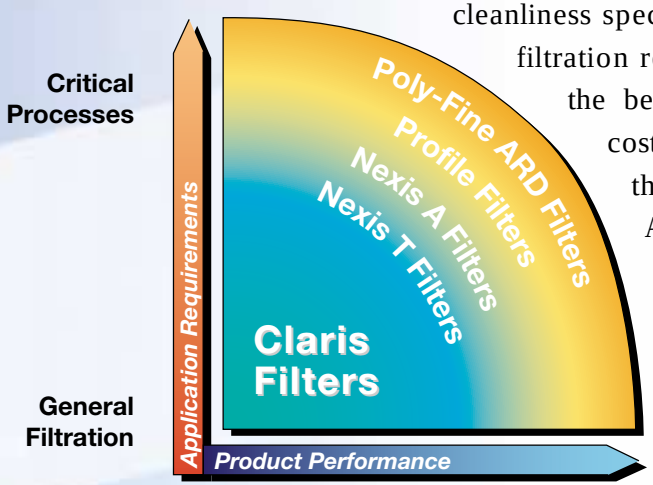
*Filtration. Separation. Solution.*SM

Claris Series Filter Cartridges

Pall Melt Blowing Expertise At Work

Pall offers the most advanced melt blown filter cartridges available in the market today. The innovative POLY-FINE® ARD Series filter with layers of precisely defined melt blown sheets, our PROFILE® filter with its continuously graded pore structure, or the NEXIS® filter product with proprietary CoLD fiber technology, deliver the optimum solution for unsurpassed fluid cleanliness. The unique technologies offered by Pall, prove that we are the technological leader in melt blown filter manufacturing. The proprietary production techniques and micro-processor controlled manufacturing equipment result in some of the finest, most consistent, and reliable filters on the market.

Recognizing that various applications have different cleanliness specifications, and therefore, different filtration requirements, Pall strives to provide the best solution at the lowest possible cost. For highly critical applications, the Poly-Fine ARD, Profile or Nexis A Series filters deliver the ultimate in depth filter retention coupled with long on stream life. For other less critical applications, the Nexis T Series filters offer consistent removal efficiencies with all the benefits of CoLD technology at a somewhat lower overall cost. However, for many applications, where general particle count reduction is desired at the lowest possible cost, the Claris filter delivers the most economical solution.



Choose the appropriate filter that provides the right performance level to meet your application's requirements.

The Case For Claris Filter Cartridges

Claris Series filters complete the Pall product spectrum of melt blown depth filter cartridges. Claris is a general purpose filter that delivers consistent, reliable filtration at the lowest possible cost.

Claris filters are constructed by collecting melt blown fibers of varying size on a unique proprietary extruded fibrous core (E-Core).

Purity of Construction

Claris filter cartridges are constructed of high purity polypropylene and are surfactant, binder and adhesive free. This chemically inert material permits their use in a wide array of corrosive and non-corrosive applications. In addition, the spent polypropylene cartridges can be readily incinerated to trace ash. Claris Series filter cartridges are extremely safe for use in most applications. Tests indicate that the cartridges impart negligible levels of extractables and meet USP Class VI plastics requirements. Claris filters are also certified under NSF standard 42 for material components. Finally, all materials used in the construction of Claris filter cartridges are listed for food and beverage contact by the US Food and Drug Administration.

Fiber Zones

Multiple fiber zones are created within the Claris filter to provide a graded pore structure throughout the depth of the filter. The different pore sizes allow for the efficient capture of various size particles throughout the entire depth of the filter medium. This results in maximum usage of the entire filter's depth, for higher dirt holding capacity and long on stream life. This feature gives the Claris filter a major competitive advantage over other melt blown filters with less gradient in their structure and over molded filters, which feature virtually no pore size gradient.

E-Core: Extruded Fibrous Core

The most unique feature of a Claris filter requires a closer look inside. There, you will see an innovative center support structure, known as the E-Core. This proprietary E-Core replaces the injection molded center core found on many depth filters. By extruding a fibrous center core as part of the filter manufacturing process, we are able to more efficiently manufacture, and therefore, pass the savings along to you.

Yet the E-Core offers no compromises. Unlike coreless melt blown filters, which use densely packed filtration fibers to create a support structure, the E-Core provides high porosity and no flow restriction. The E-Core also delivers high collapse strength thereby making it suitable for many applications. Finally, the E-Core does not reduce the amount of media depth in your filter cartridge. Occupying about the same thickness as an injection molded core, the E-Core allows for an equivalent thickness of media to be formed on top, with no negative impact on the filter's dirt holding capacity.

Clearly the Proof is in the Performance

To truly appreciate what has been achieved in the creation of the Claris filter, requires putting it on trial in your application. The benefits of the Claris graded pore structure, the consistent performance and the support afforded by the E-Core will speak for themselves.

Claris Construction Clarified

Elastomer Gasket Seals

- Various choices in o-rings or elastomer gaskets
- Prevents fluid bypass

E-core

- Proprietary
- Innovative extruded fibrous core
- High strength
- Easier disposal than molded core products

Unique Melt Blown Media

- All polypropylene
- Graded pore structure
- Consistent performance
- High void volume for high dirt holding capacity

Micrograph of Claris Series Filter (magnification 35x)

End Caps

- Several optional configurations
- Thermally bonded to media
- No adhesives

Claris' Benefits Are Clear

Claris Filters	What It Does	What You Can Expect
C ***Consistency***	• Highly automated process produces a highly consistent product	• Consistent filtration performance batch to batch, month after month
L ***Long Life***	• High void volume media has high dirt holding capacity	• Long on stream life cycles • Economical operation • Fewer changeouts reduces labor costs
A ***Applications***	• High purity polypropylene has broad chemical compatibility and is widely applicable	• A product that performs in a wide range of applications • Product may be used in multiple applications, reducing inventory costs
R ***Rigid Fibrous Core***	• High collapse strength • Less material for disposal	• Filter maintains its integrity even with viscous fluids or high differential pressures • Lower disposal/incineration costs
I ***Integrity***	• Thermally bonded fibers maintain high void volume	• Consistent performance • No unloading of contaminants even at high differential pressures
S ***Savings***	• Long on stream life is cost-effective in a wide range of applications	• Economical filtration • Reduced total filtration costs

Product Specifications

Packaging

- All Claris filters are individually wrapped with a fin seal polypropylene wrapper.
- Product descriptions are printed on the wrapper for easy identification.
- Quantities per case are as follows (for DOE industrial, DOE capped and PE only):
  - 10" (25.4 cm) 36/case
  - 20" (50.8 cm) 24/case
  - 30" (76.2 cm) 12/case
  - 40" (101.6 cm) 12/case
  - 50" (127 cm).....10/case

For other end configurations, please consult factory.

Performance Specifications

Filter Grades

1, 3, 5, 10, 20, 30, 50, 75 µm

Maximum Operating Pressure/Temperature

50 psid (3.45 bar) @ ambient

25 psid (1.72 bar) @ 140˚F (60˚C)

Recommended Changeout Differential Pressure*

35 psid (2.41 bar)

FDA Listed Materials

All materials used in Claris filters are certified to meet the requirements of the Food and Drug Administration (FDA) Title 21 of the code of Federal Regulations 177.1520.

Toxicity

All polypropylene components meet USP, Class VI (121˚C/250˚F) toxicity criteria (gaskets/O-rings excluded).

NSF

Claris filter cartridges (DOE industrial style) are tested and certified by NSF International under ANSI/NSF standard 42 for materials only.

Product Specifications

Materials of Construction

Filter Media:	Polypropylene
End Caps**:	Polypropylene
Extruded Core:	Polypropylene
Extended Core**:	Stainless Steel
Gaskets/O-rings**:	Silicone Buna N Viton[1] A EPDM Polyethylene (PE)
Purity:	Claris Series filters are free of surfactants, lubricants anti-static agents, binders and adhesives.

Dimensions (nominal)

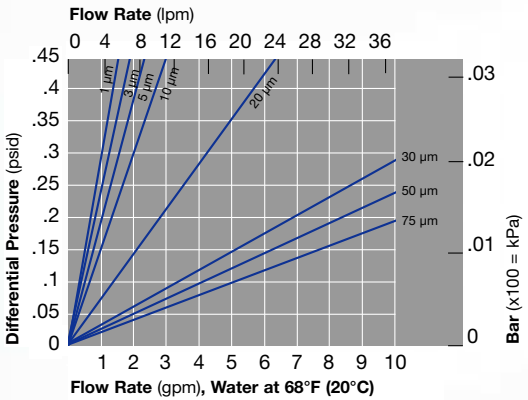
Outside Diameter:	2 ½" (6.4 cm)
Inside Diameter:	1" (2.5 cm)
Lengths:	9 ¾" to 50" (24.8 cm to 127 cm)

* *Provided that the maximum differential pressure is not exceeded based on temperature limits defined above.*

** *These components are not NSF certified.*

[1] - *Registered trademark of DuPont Dow.*

Typical Flow vs. Differential Pressure for Application Sizing



Flow rate is per 10" (25.4 cm) cartridge. For liquids other than water, multiply differential pressure by fluid viscosity (cps).

Claris Clarifies Your Fluid Applications

Claris Series Filter Chemical Compatibility

Classification	Excellent	Good	Suggested Testing
Organic Acids	■		
Inorganic Acids		■	
Solvents		■	
Alkalies	■		
Oils		■	
Water (Ambient)	■		
Oxidants			■
Brine Solution		■	
Potable Liquids, Water	■		
Steam Sterilization		■	
Micro-Organism Resistance	■		

This data is for general guidance only. Our Technical Service Department can provide more specific data. Trial compatibility tests are recommended to optimize results.

Part Numbers/Ordering Information

CLR ■ – ● ▼ ◆ (e.g. CLR 3–20DOES)

Code ■	Filter Grades *
1	1 µm
3	3 µm
5	5 µm
10	10 µm
20	20 µm
30	30 µm
50	50 µm
75	75 µm

Code ●	Cartridge Lengths (nominal)
9.75	9.75" (24.8 cm)
9.875	9.875" (25.1 cm)
10	10" (25.4 cm)
19.5	19.5" (49.5 cm)
19.8	19.8" (50.3 cm)
20	20" (50.8 cm)
29.25	29.25" (74.3 cm)
29.5	29.5" (74.9 cm)
29.75	29.75" (75.6 cm)
30	30" (76.2 cm)
39	39" (99.1 cm)
40	40" (101.6 cm)
50	50" (127 cm)

Code ▼	End Configurations
Blank	DOE industrial (no end caps)
DOE	DOE with elastomer gasket seal and end caps
PE	DOE, polyethylene gasket seal
1X	DOE industrial, 1" (2.54 cm) stainless steel extended core
M3	SOE flat closed end, external 222 O-rings (retrofits other manufacturers' Code 0)**
M8	SOE fin end, external 222 O-rings (retrofits other manufacturers' Code 5)**
M18	SOE flat closed end, external 222 O-ring

Code ◆	Gasket/O-ring Materials
S	Silicone
N	Buna N
E	EPDM
V	Viton A

* *Based on typical application usage.*

***For details, contact Pall Corporation.*

Applications

Beverage

- Bottled Water, Wine, Beer, Fruit Juice, Soft Drinks

Chemical Manufacturing

- Acrylates, Alcohols, Bleach, Alkalis, Strong Acids

Cosmetics

- Water, Mineral Oils, Mouthwash, Lotions, Soaps

Electronics

- DI Water

Food

- Vinegar, Water

Laboratory

- Pretreatment Water Systems

Metal Finishing

- Machine Coolants, Plating Solutions, Anodizing, Cleaning & Plating Chemicals, Stripping Solutions, Clean Hydraulic Press Oil, Parts Washing

Petrochemical

- Completion Fluids, Water Floods, Deep Well Injection

Pharm/Chemical

- Diagnostic Labs (Prefilters), RO Prefilters

Photographic

- Film Processing, Hot/Cold Water, DI Water, Developer, Fixer, X-Ray Printing

Plastics Manufacturing

- Recirculated Quench Water, Cooling Tower Water, Additive Streams

Potable Water

- RO and DI Prefiltration, Desalination, POU Drinking Water

Power Generation

- Uranium Mining, Nuclear & Fossil Fuel Plants, DI Water for Boiler Feed

Pulp and Paper

- Squirter Lines, Waste Treatment

PALL FILTRATION & SEPARATIONS GROUP INC. REGISTERED NO. A2041

ISO 9001

PALL FILTRATION & SEPARATIONS GROUP INC. REGISTERED NO. JQA-QM0209

PALL FILTRATION & SEPARATIONS GROUP INC. REGISTERED NO. FM23897

NSF COMPONENT

This Claris Series filter cartridge is tested and Certified by NSF International under ANSI/NSF Standard 42 for materials only.

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Pall Corporation has offices and plants throughout the world in locations including: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, France, Germany, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Korea, Malaysia, Mexico, the Netherlands, New Zealand, Norway, Poland, Puerto Rico, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, United Kingdom, United States, and Venezuela. Distributors are located in all major industrial areas of the world.

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