Millipore®
Preparation, Separation,
Filtration & Monitoring Products

Data Sheet

Polygard® CN Filters

Versatile pleated filters for the clarification and prefiltration of process fluids

Polygard® CN filters are nominally rated filters designed for particle removal applications in liquids and gases. The pleated structure of Polygard® CN filters minimizes pressure differentials during filtration while the polypropylene media offers low extractables and broad chemical compatibility. Downstream filter performance is enhanced due to efficient particle and microorganism reduction.

Benefits

- Nominal particle retention rating
- Low pressure drop
- Low extractables levels
- Broad range of micron ratings for multiple applications
- Designed for rigorous process conditions and broad chemical compatibility
- Scalable from bench top to full-scale manufacturing

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Quality Management System

Polygard® CN filters are designed, developed, and manufactured in accordance with a Quality Management System approved by an accredited registering body to an ISO 9001 Quality Systems Standard and are shipped with a Certificate of Quality. Each Opticap® XL capsule and cartridge filter is supported by a Validation Guide for compliance with regulatory requirements. For traceability and easy identification, each filter is marked with identifying characteristics.

Multiple Pore Sizes and Formats

Polygard® CN filters are available in seven pore sizes, three formats and multiple configurations that vary by filtration area and the type of inlet/outlet connection.

Polygard® CN (nominal)

- 0.3 µm
- 0.6 µm
- 1.2 µm
- 2.5 µm
- 5.0 µm
- 10.0 µm
- 30.0 µm

Filter Formats

- OptiScale® small-scale disposable capsule filters
- Opticap® XL disposable capsule filters
- Cartridge filters

OptiScale® Process Development Screening Tool

OptiScale® disposable capsule filters with Polygard® CN media provide a convenient small-volume option for process screening and scaling.

OptiScale® Filters

Opticap® XL Capsule Filters

Opticap® XL disposable capsule filters with Polygard® CN media are available in two filter sizes.

The capsule design allows unparalleled thermal and hydraulic stress resistance in a disposable filter.

Convenient and Easy to Use

Opticap® XL capsule filters eliminate the time and the expense associated with assembling, cleaning, and validating stainless steel housings. Adjustable, easy-to-turn, upstream vents and drain valves with O-ring seals and hose barb connections allow for easy process control. Other ease-of-use features include directional flow arrows and ribbed edges for easy gripping even with gloved hands.

Opticap® XL Capsule Filters

Cartridge Filters

Polygard® CN cartridge filters provide high throughput and minimal differential pressure. Cartridges are robust, strong, resilient and are designed to withstand multiple steam-in-place cycles. A full range of filter sizes is available to suit your application requirements. A variety of connection options are offered for easy adaptation to existing housings.

Cartridge Filters

Specifications

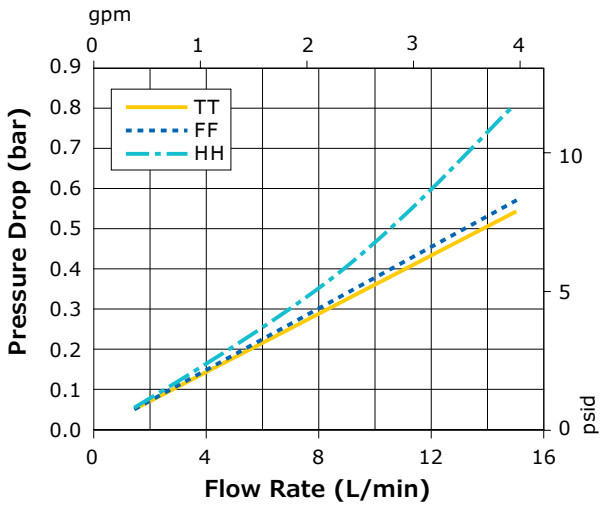
	OptiScale® 47		
Nominal Dimensions			
Inlet/outlet:	Flange/hose barb	Flange/flange	Hose barb/hose barb
Maximum length:	82 mm (3.24 in.)	74 mm (2.91 in.)	94 mm (3.70 in.)
Diameter:	69 mm (2.75 in.)	69 mm (2.75 in.)	69 mm (2.75 in.)
Weight:	2.3 oz (67 g)	2.3 oz (67 g)	2.3 oz (67 g)
Filtration Area	17.7 cm^2		
Materials of Construction			
Filter media:	Polypropylene		
Structural components:	Polycarbonate		
Vent cap:	Polyvinylidene fluoride (PVDF)		
Internal seal rings:	Fluoroelastomers		
Housing Vent	Adjustable vent with male luer and female Luer-Lok™ connections on inlet side of device.		
Maximum Inlet Pressure	5.5 bar (80 psi) at 25 °C		
Oxidizable Substances	Capsules meet the requirements of the USP Oxidizable Substance for Sterile Water for Filtration Test after a water flush of ≤100 mL.		
Sterilization by Autoclave	May be autoclaved for 3 cycles of 60 minutes at 126 °C.		
Component Material Toxicity	Component materials were tested and meet the criteria of the USP <88> Reactivity Test for Class VI Plastics. This product is non-toxic per the USP <88> Safety Test.		
Indirect Food Additive	All component materials meet the FDA Indirect Food Additive requirements cited in 21 CFR 177-182.		

Specifications (continued)

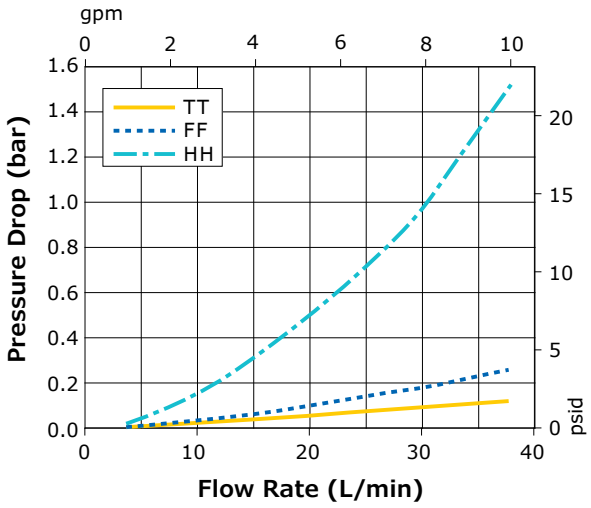
	Opticap® XL 5	Opticap® XL 10	Cartridge Filters 4-inch	Per 10-inch
Nominal Dimensions				
Maximum length:	21.6 cm (8.5 in.)	33.5 cm (13.2 in.)	—	—
Diameter:	10.7 cm (4.2 in.)	10.7 cm (4.2 in.)	71 mm (2.75 in.)	70 mm (2.75 in.)
Filtration Area	0.18 m^2 (1.9 ft^2)	0.42 m^2 (4.5 ft^2)	0.18 m^2 (1.9 ft^2)	0.42 m^2 (4.5 ft^2)
Materials of Construction				
Filter media:	Polypropylene		Polypropylene	
Supports:	Polypropylene		Polypropylene	
Structural components:	Polypropylene		Polypropylene	
Vent o-rings:	Silicone		—	
O-rings:	—		Ethylene Propylene (Std)	
Vent/Drain	$^1/_4$ in. hose barb with double o-ring seal		—	
Maximum Inlet Pressure	5.5 bar (80 psi) at 25 °C		—	
	2.8 bar (40 psi) at 60 °C		—	
	1.0 bar (15 psi) at 80 °C		—	
Maximum Operating Temperature	—		80 °C continuous	
Maximum Differential Pressure				
Forward:	4.8 bar (70 psid) at 20 °C			
NVR Gravimetric Extractables	After autoclaving and a 24 hour soak in ASTM® Type 1 reagent grade water at controlled room temperature:			
	≤25 mg	≤55 mg	—	≤50 mg
Bacterial Endotoxin	Aqueous extraction contains <0.5 EU/mL as determined by the Limulus Amebocyte Lysate (LAL) Test.			
Oxidizable Substances	Capsules meet the requirements of the USP Oxidizable Substances Test after a water flush of:			
	≤2,000 mL	≤5,000 mL	—	5,000 mL
Sterilization by Autoclave	May be autoclaved for 3 cycles of 30 minutes at 126 °C. (Cannot be steam sterilized in-line)		May be autoclaved for 10 cycles of 30 minutes at 126 °C or steam sterilized for 10 cycles for 30 minutes at 126 °C or hot water sanitized at 80 °C maximum for 30 minutes.	
Component Material Toxicity	Component materials were tested and meet the criteria of the USP <88> Reactivity Test for Class VI Plastics. Polygard® CN filters meet the requirements of the USP <88> Safety Test utilizing a 0.9% sodium chloride extraction.			
Indirect Food Additive	All component materials meet the FDA Indirect Food Additive requirements cited in 21 CFR 177-182.			
European Pressure Equipment Directive	This product complies with the European Pressure Equipment Directive, 2014/68/EU of 15 May 2014. This product has been classified under article 4 § 3 of the Pressure Vessel Directive. It has been designed and manufactured in accordance with sound engineering practice to ensure safe use. In compliance with Article 4 § 3 of the Directive, 2014/68/EU, this product does not bear the CE mark.		—	—

Typical Clean Water Flow Rates

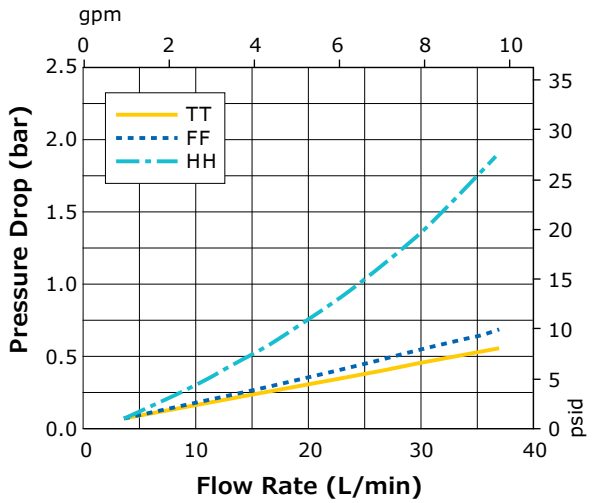
Opticap® XL 5 Capsule with Polygard® CN Media —0.3 µm Nominal (KN03)



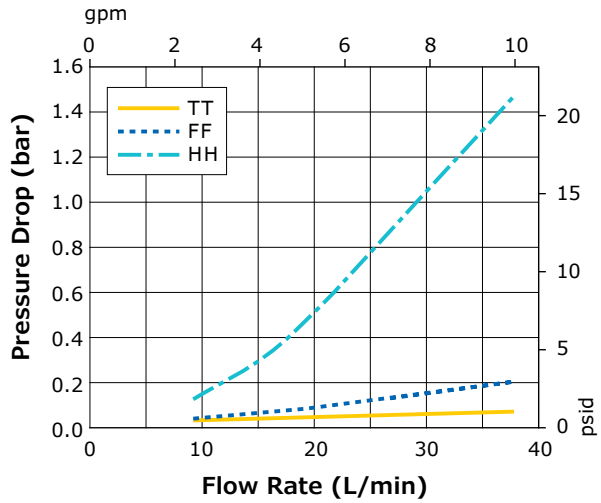
Opticap® XL 5 Capsule with Polygard® CN Media —5.0 µm Nominal (KN50)



Opticap® XL 10 Capsule with Polygard® CN Media —0.3 µm Nominal (KN03)



Opticap® XL 10 Capsule with Polygard® CN Media —5.0 µm Nominal (KN50)



Opticap® XL Legends Refer to Connection Type

TT = 38 mm ($1^1/_2$ in.) Sanitary Flange Inlet and Outlet

FF = 19 mm ($^3/_4$ in.) Sanitary Flange Inlet and Outlet

HH = 14 mm ($^9/_{16}$ in.) Hose Barb Inlet and Outlet

Cartridge Legend Refers to Pore Size

CN03 = 0.3 µm

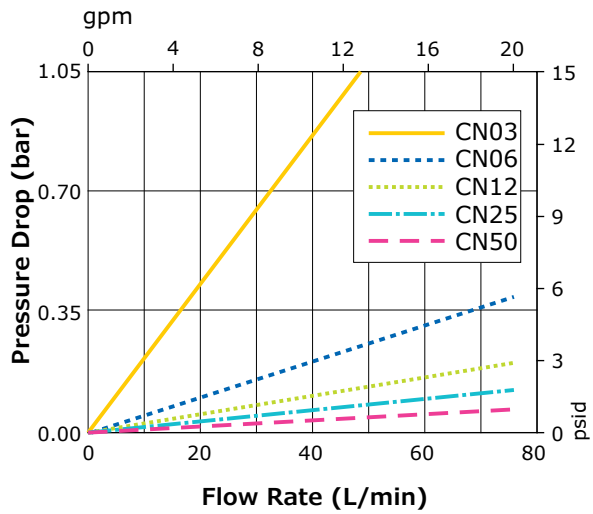
CN06 = 0.6 µm

CN12 = 1.2 µm

CN25 = 2.5 µm

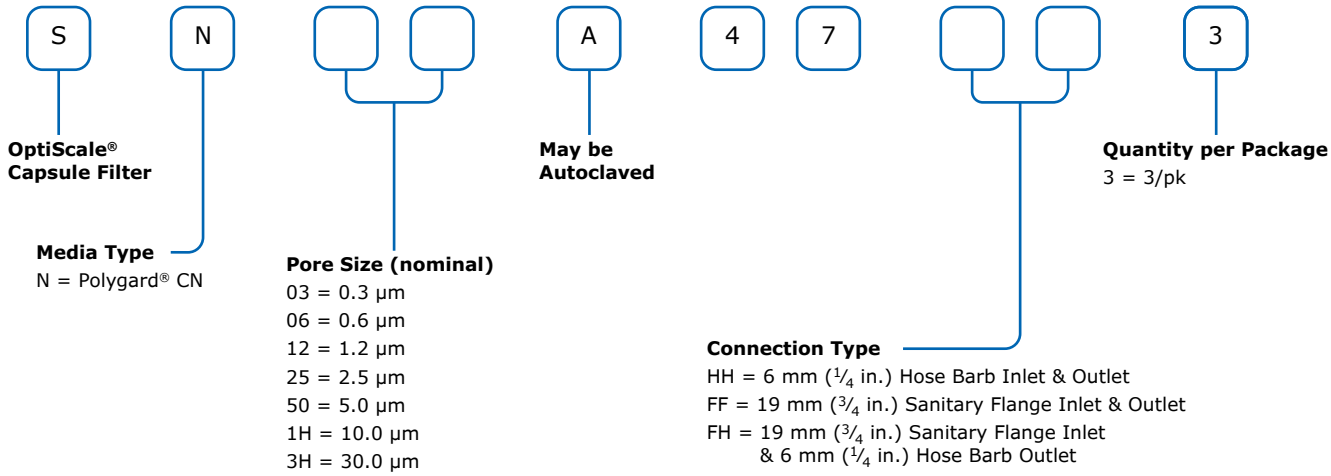
CN50 = 5.0 µm

Cartridge Filter with Polygard® CN Media —10-inch

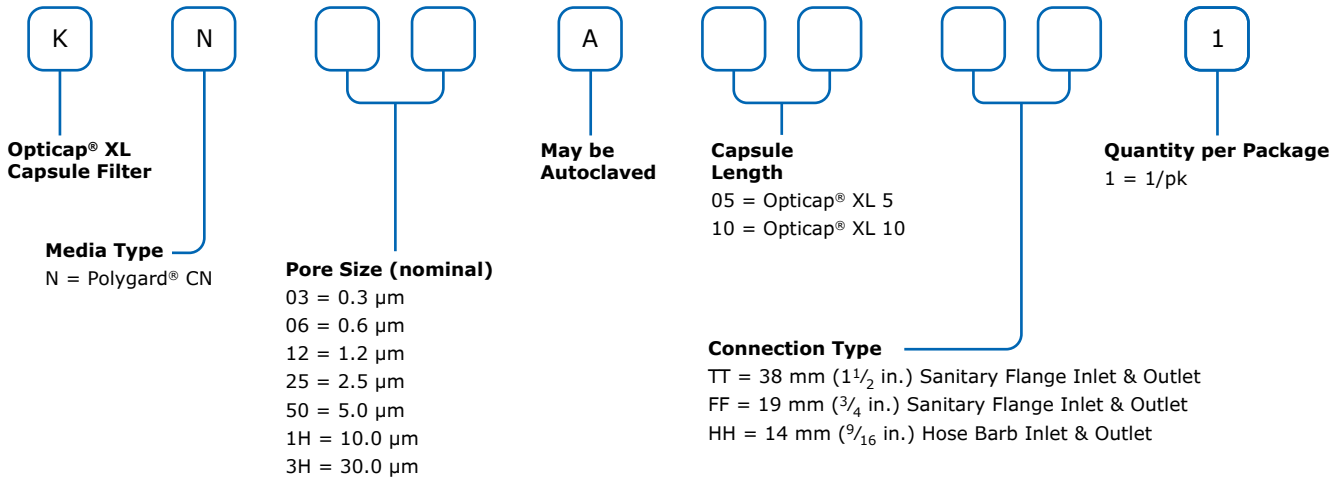


Ordering Information

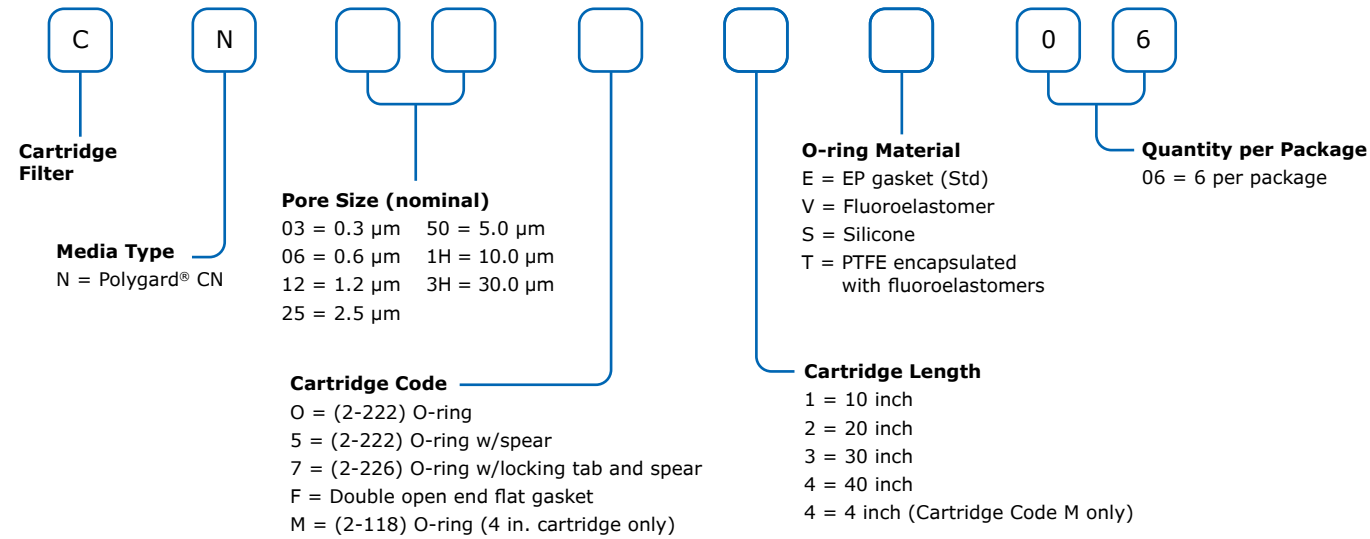
OptiScale® Capsule Filters



Opticap® XL Capsule Filters



Cartridge Filters



Merck KGaA
Frankfurter Strasse 250
64293 Darmstadt, Germany

For additional information,
please visit **SigmaAldrich.com**

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