

# DEPTH-CLEAR™ P & LE Series

Depth Filter Modules for Biopharmaceutical Applications



## Description

DEPTH-CLEAR P Series depth filter modules are specifically formulated to meet the performance demands of biopharmaceutical and biotech applications. The filter media utilize mechanical and electrokinetic adsorptive capture mechanisms to remove particles, microorganisms, colloids, and pyrogen from critical process streams. Purolator, a leader in depth media development, has invested years of research and development to create a range of filter grades to meet stringent application requirements.

The DEPTH-CLEAR proprietary formulation process produces filter media with exceptionally high, effective filtration area that provides superior particle retention, high contaminant holding capacity, and long on-stream filter life. Manufacturing by means of an advanced, highly automated production process results in very consistent product quality and filtration performance. Purolator can provide technical assistance to validate the performance of DEPTH-CLEAR filters in new processes and applications.

DEPTH-CLEAR Pharmaceutical Grade (P Series) filter modules are manufactured to procedures described in a Drug Master File (DMF) on record at the National Center for Drugs and Biologics. The filter media is non-toxic in accordance with systemic injection testing. A special low extractable (LE Series) grade is available for susceptible processes and high purity applications. The DEPTH-CLEAR P & LE grades have complete product control and traceability, as set forth in the Drug Master File.

## Benefits

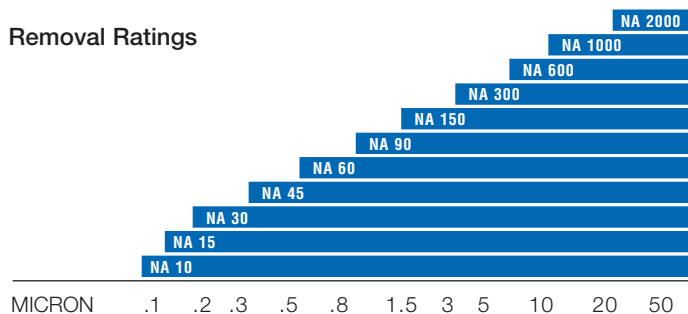
- High surface area filter modules provide superior filtration performance and long on-stream life cycles.
- Proprietary formulation process results in depth media with exceptional particle retention via mechanical and electrokinetic capture.
- The advanced manufacturing process control results in very uniform filtration media and consistent lot-to-lot performance.
- Non toxic – Meets the requirements of USP XXIII Class VI Biological Tests for Plastics.
- Special low extractable formulation (LE Series) available for sensitive applications.
- Special formulations available for high temperature applications (>140°F).
- Filter modules available in a wide variety of dimensions and configurations to fit most standard housings.

## Applications

- Antibiotics
- Blood Products
- Intravenous Solutions
- Cell Separation
- Cough Syrups
- Chromatography Column Protection
- Post Fermentation Clarification
- Small and Large Volume Parentals

## Performance Specifications

### Removal Ratings



**Differential Pressure** to 35 psid (2.5 bar) @ 140° F (60° C)

**Maximum Operating Temperature**  
 R Grade: 140° F (60° C)  
 K Grade: 185° F (85° C)

**Recommended Flow Rate**  
 0.5 to 1 GPM/1ft<sup>2</sup>  
 20 to 40 LPM/1m<sup>2</sup>

**FDA Conformity** All materials conform to FDA standards regarding material contact during food and beverage processing.

**Toxicity** DEPTH-CLEAR Series filter components comply with USP XXIII standards for Class VI-121 plastics.

## Materials of Construction

**Media** Cellulose Fibers with Inorganic Filter Aids

**End Caps** Polypropylene

**Cartridge Straps** Stainless Steel

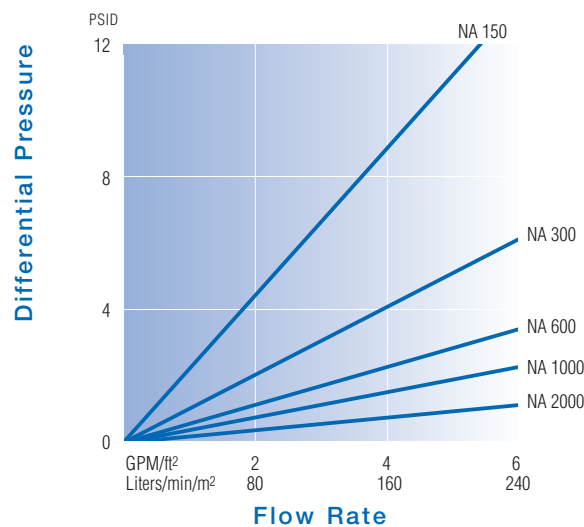
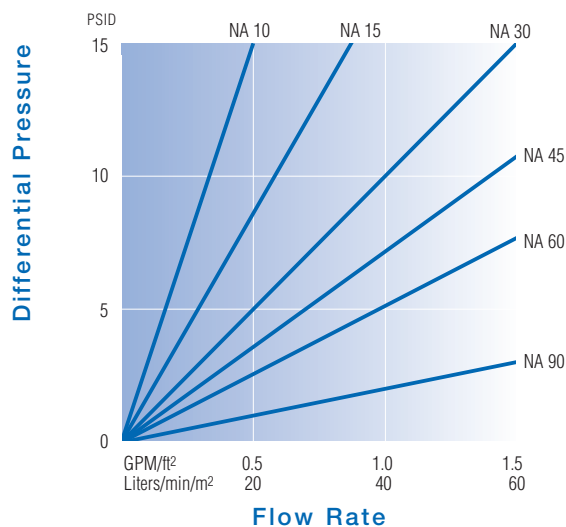
**Gaskets/O-Rings** Ethylene Propylene, Silicone, Neoprene, Nitrile, Viton®, Teflon®

### Dimensions (nominal)

Grade Dimensions	NAXXXXC9-XX	NAXXXXC16-XX	NAXXXXD14-XX
<b>DIAMETER</b>			
inches	11 1/8	11 1/8	16 3/4
cm	28.3	28.3	42.5
<b>HEIGHT</b>			
inches	7 11/16	10 7/8	10 7/8
cm	19.5	27.6	27.6
<b>FILTER AREA</b>			
ft <sup>2</sup>	11	19	38
m <sup>2</sup>	1.0	1.8	3.5
<b># CELLS</b>	9	16	14

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## Flow Rate vs Differential Pressure



The above graphs indicate pressure drop versus flow rate of the various grades of Depth-Clear filter media in water. Adjustments may be required for other fluids. Please check with your Purolator representative for assistance in sizing.

## Cartridge Ordering Information

Media Type	Grade Designation	Formulation	Series	Handles	# of Cells	Gasket Material
NA	10	K	P	05	C9	-01
Non-Asbestos	10, 15, 30, 45, 60, 90, 150, 300, 600, 1000, 2000	R Grade K Grade	P = Pharmaceutical LE = Low Extractables	05 = Handles No Symbol = No Handles	C9 C16 D14	EPR -01 Neoprene -02 Silicone -03 Nitrile -04 Viton -08 Teflon -09

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