Pall Corporation

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Kleenpak™ Nova Capsules with Supor® EKV Membrane

Description

Pall filters with Supor grade EKV membrane are 0.2um rated filters, validated for the retention of *B.diminuta* (ATCC 19146) when challenged with a concentration 10^7 cfu per cm^2 membrane. Featuring dual polyethersulfone (PES) membrane layers, they achieve high flow rates for extended filter life and low filtration costs. The low protein and preservative binding properties of Supor allows for maximum transmission of active ingredients. With broad liquid compatibility, the filters are suitable for the sterile filtration of a wide range of low fouling fluids including buffers, biological fluids, tissue culture media and ophthalmic products amongst others.

Pall's range of Kleenpak Nova capsules are designed for use in medium to large scale production environments (~100 L to 1000s L), often selected by the end user following scaling studies using smaller Kleenpak capsule formats. With the 'AB-style' cartridge format at its core, this capsule filter style can be supplied with the most comprehensive range of filter media.

Key Features and Benefits

- Encapsulated format for higher flexibility, minimized cleaning and low installation costs
- Hydrophilic polyethersulfone membrane for low adsorption and wide chemical compatibility
- Patented laid-over pleat technology resulting in high-area for excellent capacity and high flow rates
- Built-in, asymmetric prefilter layer for high capacity and low filtration costs

Quality Standards

- Manufactured for use in conformance with cGMP
- All individual filters integrity tested during manufacture - test correlated to microbial retention
- ISO 9000 Certified Quality System
- Meets USP Biological Reactivity Test, in vivo, for Class VI-121 °C Plastics
- Certificate of Test provided includes:
  - Fabrication Integrity
  - Bacterial Retention
  - Materials of Construction
  - Effluent quality for cleanliness, TOC and Water Conductivity, pH and Pyrogens

Specifications

Materials of Construction

Filter Membrane	Hydrophilic PES
Support/Drainage	Polypropylene
Core/End Caps	Polypropylene
Cage	Polypropylene with TiO_2 (white colored)
O-rings	Silicone elastomer
Sealing Technology	Thermal bonding without adhesives
Housing Bowl	Polypropylene
Housing Head*	Polypropylene

*Formulated with TiO_2 whitener which does not contribute to organic extractables

Operating Parameters(1)

Maximum Temperature	40 °C
Maximum Operating Pressure	3 bar (44 psi) at 40 °C
Maximum Differential Pressure	3 bar (44 psi) at 40 °C

(1) In compatible fluids which do not soften, swell or adversely affect the filter or its materials of construction

Sterilization(2)

Autoclave	1 x 60 minutes at 125 °C
Gamma irradiation	Maximum of 50 kGy

(2) • Pre-sterilized Kleenpak Nova capsules must not be re-sterilized
• Kleenpak Nova capsules must not be sterilized in-situ by passing steam under pressure
• Water wet Supor EKV capsules prior to steaming to retain full water wettability for integrity testing

Typical Extractables in Water at 20 °C

< 25 mg after 4 hours extraction (per 254 mm module)

*Tested on elements without pre-flushing

Nominal Dimensions

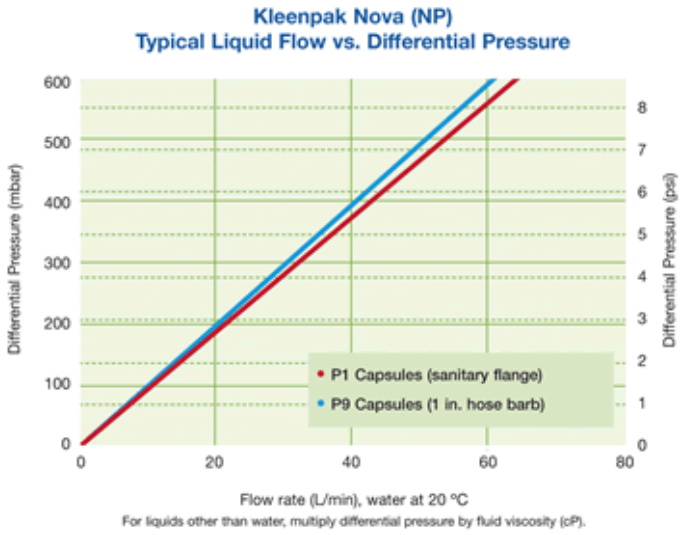
In Line	**NP5**	**NP6**	**NP7**	**NP8**
Maximum Diameter including valves	154 mm (6.1 in.)	154 mm (6.1 in.)	154 mm (6.1 in.)	154 mm (6.1 in.)
Length with hose barb inlet/outlet	275 mm (10.8 in.)	397 mm (15.6 in.)	644 mm (25.4 in.)	895 mm (35.2 in.)
Length with sanitary inlet/outlet	213 mm (8.4 in.)	335 mm (13.2 in.)	584 mm (23.0 in.)	834 mm (32.8 in.)
T Style	**NP5**	**NT6**	**NT7**	**NT8**
Maximum Diameter including valves	N/A	240 mm (9.5 in.)	240 mm (9.5 in.)	240 mm (9.5 in.)
Length	N/A	349 mm (13.7 in.)	598 mm (23.5 in.)	848 mm (33.4 in.)

Nominal Effective Filter Area (EFA)

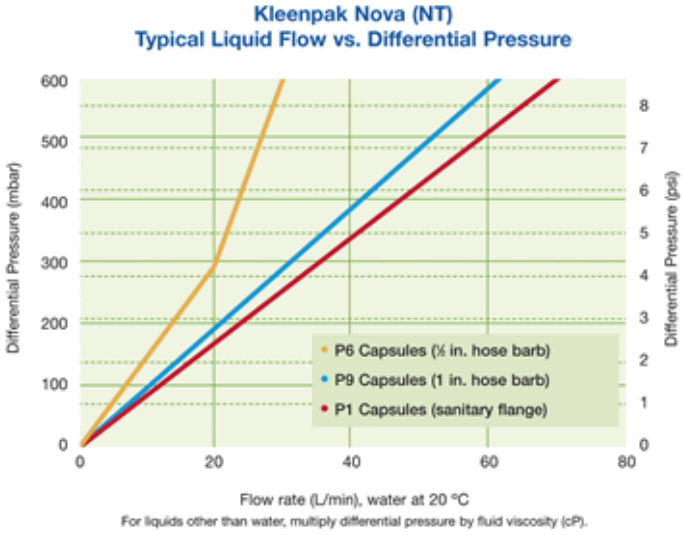
0.6 m^2 per 254 mm cartridge (6.5 ft^2 per 10 in subassembly used in NP/ NT 6 to 8 size Kleenpak Nova filter)
0.26 m^2 (2.8 ft^2) per 125 mm (5 in.) cartridge

Typical Flow Characteristics

In Line



T Style



Ordering Information

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Part Number: *(example: NP5LEKVP1G)*

N □ □ EKV P □ □ □

Code	Module Type
P	In-line
T	T-style

Code	Filter Size
5L[1]	125 mm (5 in.)
6	254 mm (10 in.)
7	508 mm (20 in.)
8	762 mm (30 in.)

Code	Shipping Format
G	Non-sterile gamma irradiatable/autoclavable
S	Pre-sterilized using gamma irradiation

Code	Vent/Drain
Blank	Stäubli* vent and stepped hose barb drain
A	Stäubli vent and drain

Code	Inlet/Outlet Connections
1	1 – 1½ in. sanitary flange inlet and outlet
9	1 in. (25 mm) single barb hose barb inlet and outlet
19	1 – 1½ in. sanitary flange inlet and 1 in. (25 mm) single barb hose barb outlet
6[2]	½ in. (13 mm) single barb hose barb inlet and outlet
16[2]	1 – 1½ in. sanitary flange inlet and ½ in. (13 mm) single barb hose barb outlet
1H[3]	1 – 1½ in. sanitary flange inlet and outlet, with ½ in. sanitary port on inlet
1H9[3]	1 – 1½ in. sanitary flange inlet and 1 in. (25 mm) single barb hose barb outlet with ½ in. sanitary port on inlet

[1] *Currently available only with in-line capsule format*
[2] *For In-line (code P) only*
[3] *For T-style (code T) only*
* *Stäubli is a trademark of Stäubli AG.*

Contact Information

Pall Office(s)

Pall Italia Srl
Via Emilia 26
20090 Buccinasco (MI)
Italy
Phone: +39024888701
Fax: +39024880014
Email:
info_italy@europe.pall.com

Distributor(s)

G Eitan Advanced Technology Ltd.
PO Box 2371
Rehovot 76123
Israel
Phone: +972 8 936 6776
Fax: +972 8 936 6773
Email: g-eitan@bezeqint.net
Contact: Mr. Eran Gertman