BEVPOR PH Filter Cartridges

- liquid filters
- polyethersulphone

Minimising the cost of microbiological stabilisation per unit volume whilst maintaining quality and product characteristics is a key requirement within beverage production.

BEVPOR PH is an advanced membrane filter cartridge designed for the beverage industry to meet and surpass these criteria.

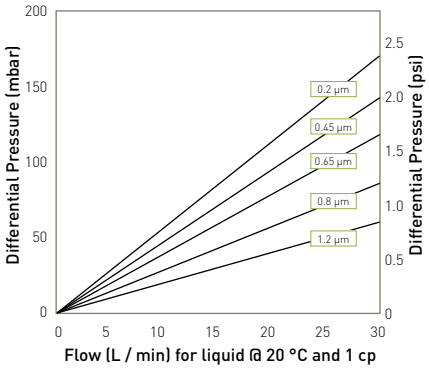
Specifically developed as a beverage grade cartridge, BEVPOR PH utilises an advanced polyethersulphone membrane and integral prefilter layer to give high flow rates, long life and improved throughput. The combination of prefilter and the asymmetrical pore structure of the membrane provides graded filtration through the depth of the media, resulting in increased capacity to hold contaminants. Componentry has been selected to withstand repeated chemical cleaning and steam sterilisation.

Note: BEVPOR is a registered trademark of Parker domnick hunter

Features and Benefits

- Removal ratings from 0.2 to 1.2 micron
- Integral prefilter layer and high surface area combine to maximise service life
- Repeatedly integrity testable
- Cartridge can be regenerated and sanitised for extended service life
- Low adsorption of protein, colour and flavour components
- Asymmetrical membrane pore structure provides high contaminant loading capacity

Performance Characteristics



For K size for a given flow rate multiply 10¨ size differential pressure by 2

10¨ Size (250 mm) Cartridge

Specifications

Materials of Construction

- Filtration Membrane: Polyethersulphone
- Prefilter Layer: Polyester
- Upstream Support: Polyester
- Downstream Support: Polyester
- Inner Support Core: Polypropylene
- Outer Protection Cage: Polypropylene
- End Caps: Nylon
- End Cap Insert (if applicable): 316L Stainless Steel
- Standard o-rings/gaskets: Silicone / EPDM
- Capsule Body: Nylon
- Capsule Vent Seals: Silicone

Food and Biological Safety

Materials conform to the relevant requirements of 21CFR Part 177, EC1935 / 2004 and current USP Plastics Class VI - 121 °C and ISO10993 equivalents.

Recommended Operating Conditions

Up to 70 °C (158 °F) continuous operating temperature and higher short-term temperatures during CIP to the following limits:

Temperature °C	Temperature °F	Max. Forward dP (bar)	Max. Forward dP (psi)
20	68	5.0	72.5
40	104	4.0	58.0
60	140	3.0	43.5
80	176	2.0	29.0
90	194	1.0	14.5
>100 (steam)	>212 (steam)	0.3	4.0

Capsules may be operated up to a temperature of 40 °C (104 °F) at line pressures up to 5.0 barg (72.51 psig) for liquids and 4.0 barg (58.01 psig) in air / gas.

Effective Filtration Area (EFA)

10" (250 mm) 0.8 m^2 (8.61 ft^2)

Cleaning and Sterilisation

BEVPOR PH cartridges can be repeatedly steam sterilised in situ or autoclaved at up to 130 °C (266 °F). They can be sanitised with hot water at up to 90 °C (194 °F) and are compatible with a wide range of chemicals. Capsules can be repeatedly autoclaved up to 130 °C (266 °F).

For detailed operational procedures and advice on cleaning and sterilisation, please contact the Technical Support Group through your usual Parker domnick hunter contact.

Retention Characteristics

The retention characteristics of BEVPOR PH have been determined by a combination of controlled laboratory tests and in-use monitoring for a number of organisms. Bacterial challenge testing is carried out to methods specified in ASTM F838-05.

Organism	Approx. Cell Size* (diameter x length µm)
Brevundimonas diminuta°	0.3 x 0.6 - 0.8
Serratia marcescens	0.5 - 0.8 x 0.9 - 2.0
Escherichia coli	1.1 - 1.5 x 2.0 - 6.0
Lactobacillus brevis	0.5 - 1.2 x 1.0 - 10.0
Saccharomyces cerevisiae	1.0 (Spherical Buds)
*Brettanomyces*ˢ	1.5 - 3.5 x 2.0 - 19.0

Organism	0.2 LRV	0.2 Titre	0.45 LRV	0.45 Titre	0.65 LRV	0.65 Titre	0.8 LRV	0.8 Titre	1.2 LRV	1.2 Titre
Brevundimonas diminuta	6	10^6	-	-	-	-	-	-	-	-
Serratia marcescens	9	10^7	8	10^7	6*	10^{6*}	-	-	-	-
Escherichia coli	>9	$>10^7$	>9	$>10^7$	6	10^6	2	10^2	1	10^1
Lactobacillus brevis	>9	$>10^7$	>9	$>10^7$	5	10^5	-	-	-	-
Saccharomyces cerevisiae	>7	$>10^3$	>7	$>10^3$	-	-	-	-	-	-
Brettanomyces	>6	$>10^6$	>6	$>10^6$	4	10^4	2	10^2	1	10^1

** Results based on BEVPOR PT*

Integrity Test Data

All filters are flushed with pharmaceutical grade purified water prior to despatch. They are integrity tested to the following limits:

Micron Rating		0.2	0.45	0.65	0.8	1.2
Diffusional Flow	(barg)	1.7	1.4	1.0	0.8	0.6
Test Pressure	(psig)	25.0	20.0	15.0	12.0	9.0
Max. Diffusional Flow (10")		21.0	21.0	21.0	21.0	21.0
(ml / min)	(K)	9.8	9.8	9.8	9.8	9.8
	(A)	8.0	8.0	8.0	8.0	8.0
	(B)	3.9	3.9	3.9	3.9	3.9
	(E)	1.8	1.8	1.8	1.8	1.8

Recommended Rinse Volume

Prior to use - 5 litres per 10" (250 mm) filter cartridge.

Ordering Information

Cartridges

BPH - [ ] [ ] - [ ] [ ] [ ]

Code	Length (Nominal)	
B	2.5"	(65 mm)
A	5"	(125 mm)
K	5"	(125 mm)
1	10"	(250 mm)
2	20"	(500 mm)
3	30"	(750 mm)
4	40"	(1000 mm)

Code	Micron
02	0.2 µm
04	0.45 µm
06	0.65 µm
08	0.8 µm
12	1.2 µm

Code	Endcap (10")
B	dh DOE
C	BF / 226 Bayonet
G	Recess / 222
R	BF / 222 Bayonet

Code	Endcap (Demi)
T	TRUESEAL
Y	Demi Stub
Z	Demi A & B Std

Code	Format
A	10" Modular
D	Demi

Code	O-rings
E	EPDM
S	Silicone

Capsules

BPH - [ ] [ ] N - [ ] [ ] - [ ]

Code	Length (Nominal)	
E	4.4"	(113 mm)
B	5.5"	(140 mm)
A	7.9"	(200 mm)

Code	Micron
02	0.2 µm
04	0.45 µm
06	0.65 µm
08	0.8 µm
12	1.2 µm

Code	Inlet Connection
T	1" Tri-Clamp
N	1/2" NPT Male
H	1/2" Hosebarb
G	Stepped Hosebarb
M	1/4" NPT Male

Code	Outlet Connection
T	1" Tri-Clamp
N	1/2" NPT Male
H	1/2" Hosebarb
G	Stepped Hosebarb
M	1/4" NPT Male

Code	Vent / Drain Seals
S	Silicone

** Approx. values as in "Holt, J.G., Krieg, N.R., Sneath, P.H.A., Staley, J.T., Williams, S.T., 1994. Bergey's Manual of Determinative Bacteriology, Ninth Edition, Williams & Wilkins".*
ˢ Kurzmann, C.P., Fell, J.W., 1998 The Yeasts. A Taxonomic Study. Elsevier Science Publisher BV, Amsterdam, The Netherlands.
° PDA Technical Report 26, Sterilizing Filtration of Liquids

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