

Data Sheet

# Brewpore<sup>®</sup> Caustic-Resistant 0.55 µm Cartridge Filters

Superior filters for the microbiological stabilization of beer



- Supports very demanding in-use conditions
- Resistant to repeated exposure to hot water and caustics
- Superior microbial performance with brewer's bacteria
- Robust cartridge construction for high pressure and pulsing applications

Constructed with Millipore's high quality, patented, Durapore<sup>®</sup> polyvinylidene fluoride (PVDF) membrane and polypropylene components, Brewpore cartridge filters offer broad chemical compatibility with commonly used sanitizing agents. Brewpore cartridges provide high microbial performance with brewer's bacteria, including *Saccharomyces cerevisiae*, *Pediococcus damnosus*, and *Lactobacillus brevis*. Brewpore cartridges are robust and are resistant to repeated exposure to hot water at 80 °C and up to 2% NaOH at 65 °C. Brewpore filters are resistant to thermal stress and may be in-line steam sterilized.

Brewpore cartridges are designed and built to support very demanding process conditions. Their robustness is qualified and verified using a high-pressure forward and reverse pulse test.

## Regulatory Compliance

Brewpore cartridge filters are designed, developed, and manufactured in accordance with a Quality Management System approved by an accredited registering body to an ISO<sup>®</sup> 9000 Quality Systems Standard. Each cartridge filter is integrity tested during manufacturing. For traceability and easy identification, each cartridge is marked with the product name, lot number, serial number, and pore size. Each cartridge filter is shipped with a Certificate of Quality.



## Specifications (per 10-inch cartridge)

<b>Nominal Dimensions</b>	
<b>Outside diameter:</b>	6.9 cm (2.7 in.)
<b>Filtration Area</b>	0.75 m <sup>2</sup> (8.1 ft <sup>2</sup> )
<b>Materials of Construction</b>	
Filter membrane	Hydrophobic PVDF
Film edge	Polypropylene
Supports	Polypropylene
Structural components	Polypropylene
O-rings	Silicone
<b>Maximum Differential Pressure</b>	
Forward	5.5 bar (80 psid) at 25 °C; 1.75 bar (25 psid) at 80 °C; 0.34 bar (5 psid) at 121 °C
Reverse	3.4 bar (50 psid) intermittent at 25 °C; 0.34 bar (5 psid) at 121 °C
<b>Maximum Operating Temperature</b>	80 °C
<b>Bubble Point at 23 °C</b>	≥ 965 mbar (14 psig) air with water
<b>Air Diffusion at 23 °C</b>	Through a water wet membrane at 827 mbar (12 psig): ≤ 7.5 mL/min per 10-inch cartridge
<b>Typical Water Flow Rate</b>	20 L/min (5.3 gpm) at 330 mbar (4.7 psi) differential pressure, at 23 °C
<b>Sterilization/Sanitization</b>	May be in-line steam sterilized 100 times for 30 minutes, up to 109 °C, or hot water sanitized 50 times for 30 minutes, up to 80 °C
<b>Cleaning</b>	Filter may be regenerated by the use of NaOH, up to 2% for up to 30 minutes, 25 times at 65 °C
<b>Microbiological Performance</b>	Microbial titer reduction was greater than 10 <sup>11</sup> colony forming units per cartridge when challenged with <i>Saccharomyces cerevisiae</i> Microbial titer reduction was greater than 10 <sup>7</sup> colony forming units per cartridge when challenged with <i>Pediococcus damnosus</i> Microbial titer reduction was greater than 10 <sup>6</sup> colony forming units per cartridge when challenged with <i>Lactobacillus brevis</i>
<b>Cleanliness</b>	Cartridge effluent meets the requirements for USP sterile water after a water flush of 1 L per 10-inch autoclaved cartridge
<b>Component Material Toxicity</b>	Cartridge materials were tested and meet the criteria of the USP <88> Reactivity Test for Class VI plastics.
<b>Food Contact Compliance</b>	The Durapore membrane used in this filter meets the FDA Indirect Food Additive requirements cited in 21 CFR 177.2910. All other component materials also meet the FDA Indirect Food Additive requirements cited in 21 CFR 177-182. All component materials used in these products meet the requirements of the EU framework regulation (1935/2004/EC) regarding materials and articles intended to contact food.
<b>Non-Fiber Releasing</b>	Durapore membrane meets the criteria for a "non-fiber releasing" filter as defined in 21CFR 210.3(b)(6)

## Ordering Information

Filter Pore Size	Cartridge Length	Code 0	Code 5	Code 7
		(2-222 O-rings)	(2-222 O-rings with spear)	(2-226 O-rings bayonet with spear)
0.55 µm	10-inch	CVBH 01P K1	CVBH 51P K1	CVBH 71P K1
0.55 µm	20-inch	CVBH 02P K1	CVBH 52P K1	CVBH 72P K1
0.55 µm	30-inch	CVBH 03P K1	CVBH 53P K1	CVBH 73P K1
0.55 µm	40-inch	CVBH 04P K1	CVBH 54P K1	CVBH 74P K1



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