



MicroVantage™ MA Series - Beverage Grade

*Polyethersulfone, Polypropylene and Nylon
Membrane Filter Elements*

Shelco's new MicroVantage™ pleated membrane cartridges are designed to meet the high standards of the beverage industry. These cartridges are manufactured to the most stringent production standards making them the new benchmark of the industry. Manufactured in an ISO 9002 environment, each beverage grade cartridge has its own lot code for traceability and comes with a certificate of quality assurance. Each operation including assembly, testing, cleaning, drying and packaging is done in an appropriately rated and certified clean room.

Features

- The MicroVantage™ Beverage Grade Series is available in a wide range of pore sizes.
- Each cartridge is rinsed with a 17+ megohm water to flush away any remaining manufacturing debris and any extractables that may effect performance, taste, foaming or brightness.
- All Beverage Grade cartridges are validated using modified HIMA protocols at a challenge level of 10^6 organisms per cm^2 of filter media. (0.22 μm challenged with *Brevundimonas diminuta*) (0.45 challenged with *Serratia marscecens*) (0.65 challenged with *Saccharomyces cerevisiae*)
- All materials of construction meet requirements of the FDA Title 21 of The Code of Federal Regulations.
- Cartridges are designed for maximum throughput and particle retention at the lowest pressure drop.
- Polyethersulfone, Nylon, and Polypropylene construction offers a wide range of compatability.
- Each cartridge is individually tested for integrity and is absolute at the rated pore size.
- Each cartridge is validated to pass USP class 6 Toxicology extractable tests for plastics.



Applications

Bottled Water
Wine
Beer
Soft Drinks
Juices
Biological Filtration
Tank Ventilation



Media Definitions

PES Asymmetric polyethersulfone membrane is designed for the food and beverage industry. **PES** is low protein binding and has excellent flow rates, therefore a good choice for fermented beverage filtration. The beverage grade is available with a pre-layer of poly depth media to extend the life of the cartridge in some applications. **Sanitization:** Industry standard concentrations of hydrogen peroxide, paracetic acid, sodium hypochlorite and other selected chemicals are designed to extend the life of the cartridge. Each cartridge module is integrity tested then wrapped and individually boxed. Excellent for final and prefiltration.

NYLON Nylon is particularly suited for water and syrup filtration. Fermented beverages and high protein liquids are better filtered with other polymers. Nylon does not tolerate heavy concentrations of common sanitization agents. Consult factory to determine if your chemical sanitization protocol can be used.

POLY Polypropylene membrane cartridges can be used in place of PTFE for vent filters when the CFM of air is in the proper range. Ideal for fermentation air, tank ventilation and gases. Consult factory for proper sizing. (Hydrophobic membrane)

Airflow: 0.1 = (22 SCFM/psid/10 inch cartridge length) **0.2** = (32 SCFM/psid/10 inch cartridge length)

Product Specifications

Pore Size Retention Ratings

Polyethersulfone available in 0.03, 0.1, 0.22, 0.45, 0.65, 0.8, 1.0, 1.2 Microns

Polypropylene available in 0.1 and 0.22 pore sizes only

Nylon available in 0.03, 0.1, 0.22, 0.45, 0.65 micron

†All cartridges are available with a pre-layer of poly depth media to maximize cartridge life. Consult factory for pricing and part number.

Materials of Construction

Filtration Media:	Polyethersulfone	Nylon	Polypropylene
Filtration Media Support:	Polypropylene	Polypropylene	Polypropylene
End Caps:	Polypropylene	Polypropylene	Polypropylene
Center Core:	Polypropylene	Polypropylene	Polypropylene
Outer Support Cage:	Polypropylene	Polypropylene	Polypropylene
Method of Construction:	Thermally Bonded	Thermally Bonded	Thermally Bonded
Gaskets and O-Rings:	Buna, Viton, Silicone, Ethylene Propylene, Teflon Encapsulated Viton		

Sterilization: MAS & MAN ONLY

Filtered Hot Water: 90°C

Autoclave: 127°C, 30 min, multiple cycles

In-Line Steam: 135°C, 30 min, multiple cycles

Chemical Sanitation protocols designed to extend the useful life of the cartridge are available from the factory.

Sterilization: MAP ONLY

Filtered Hot Water: 90°C

Maximum Differential Pressures

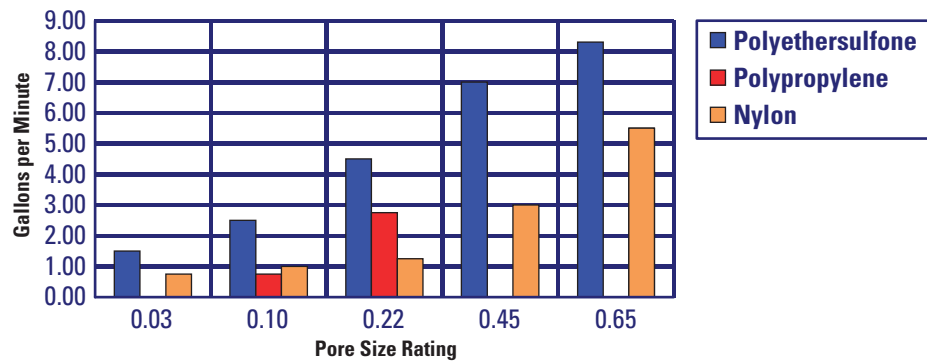
Forward: 50 psi (3.4 bar) at 20°C

Reverse: 40 psi (2.7 bar) at 20°C

Integrity Testing: B Grade

Pore Size	Air Diffusion Rate
0.03µm	≤ 30 cc/min @ 60 PSI
0.1µm	≤ 30 cc/min @ 48 PSI
0.1µm MAP	≤ 30 cc/min @ 40 PSI
0.22µm	≤ 30 cc/min @ 35 PSI
0.45µm	≤ 30 cc/min @ 20 PSI
0.65µm	≤ 30 cc/min @ 15 PSI
0.8µm	≤ 30 cc/min @ 12 PSI
1.0µm	≤ 30 cc/min @ 8 PSI
1.2µm	≤ 30 cc/min @ 7 PSI

Per 10" Length - Water Wetted Membrane



This chart represents typical water flow @ 1 PSID per 10" cartridge length. The test fluid is water at ambient temperature. Extrapolation for multiple elements tends to be linear, but as flows increase the ΔP of the housing becomes more apparent.

†Deduct 15% of the flow rate when using a pre-layer of poly depth media.

ORDERING GUIDE

MAS	0.22 - 10	S1	E	B	S	
Product Code	Pore Size	Length	End Cap Configuration	Gasket/O-Ring	Grade	Insert
MAN = Nylon	0.03	5 = 4 7/8"	S1 = DOE w/ Flat Gaskets	B = Buna	Blank = General	Blank = None
MAP = Polypropylene	0.1	975 = 9 3/4"	S3 = 222 w/Fin End	E = EPR	B = Beverage	S = Stainless Steel
MAS = Polyethersulfone	0.22	10 = 9 7/8"	S4 = 222 w/Flat End	S = Silicone	E = Electronic	
	0.45	20 = 20"	S5 = 226 w/Fin End	V = Viton	P = Pharmaceutical	
	0.65	30 = 30"	S6 = 226 w/Flat End	T = Teflon		
	0.8	40 = 40"	S7 = *Internal O-Ring w/Recessed Plug	Encapsulated Viton		
	1.0		S9 = *Internal O-Ring Both Ends			
	1.2		S10 = 222 w/Recessed Plug			
			S11 = SOE Flat w/Recessed Plug			
			S13 = 020 O-Ring			
			S20 = 223/Flat End			

*Choose O-Ring Size: 119, 120 or 213 available. Please add to end of part number. Example: MAS0.2-10S7S-213



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SHELCO FILTERS

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