Pall Corporation

Pall® Membralox® GP

Ceramic Membranes with Longitudinal Permeability Gradient

Efficient control of microfiltration regime for higher performances

Description

The **Pall Membralox** GP membrane is designed for optimum soluble macromolecules transfer across the microfiltration membrane.

In conventional microfiltration conditions, the natural pressure drop creates asymmetric transmembrane pressure (TMP) from the inlet to the outlet of the flow channel.

To correct this TMP decrease, **Membralox** GP membranes have a longitudinal permeability gradient built into the support structure without modification of the filtration layer. This design ensure a stable microfiltration regime all along the membrane

Key Features

- Precisely calibrated flux
- Controlled selectivity all along the membrane
- Hydrodynamically optimized
- Proven long operational life
- Meet the requirements for food usage[1]
- Fitted in standard housings
- Uniflow directional membranes
- Customized membrane configurations can also be proposed for the most stringent applications

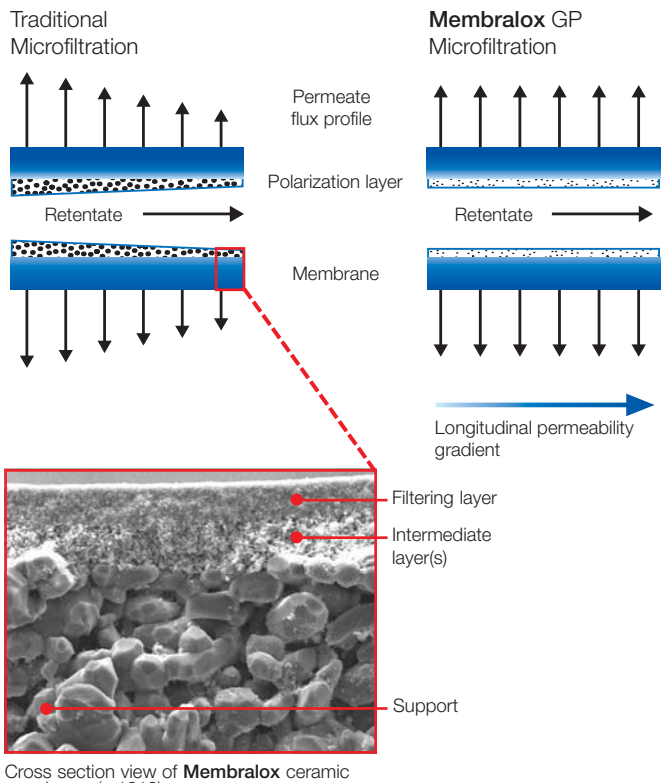
Applications

- Macromolecules fractionation, standardization and purification
- Microorganisms removal
- Clarification, defatting

Increased Productivity

- Significant increase in yield
- Extended shelf life of filtered solutions
- Selective separations between macromolecules
- Selective fractionation of complex products
- Reliable performances, longer service life, longer processing times

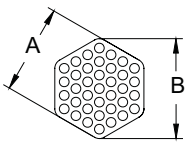
Comparison of flux profiles in standard crossflow microfiltration and Membralox GP crossflow microfiltration



Cross section view of **Membralox** ceramic membrane (x 1010)

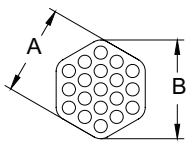
Technical Information

EP3730



A = 28 mm
B = 31 mm

EP1940



A = 28 mm
B = 31 mm

Membralox SD Modules

Membralox HCS Modules

Pall Membralox GP ceramic membranes configurations

GP Membrane Type	EP3730	EP1940
Channel Diameter (mm)	3	4
Number of channels	37	19
Filtration surface area ($m^{2)}$	0.35	0.24
Length (mm)	1020	1020

Membralox GP membranes pore sizes and calibration range

	Pore size	Calibration
Microfiltration	1.4 µm, 0.8 µm	500 l/h.m^2
	0.1 µm, 100 nm	100 l/h.m^2

Other pore sizes and calibration available on request.

[1] The membranes based on high purity alumina are certified for use in contact with food fluids by Commission Directive 2005/31/EC.
All membrane components are made from materials that our suppliers state meet the requirements for food contact use:
Alumina and titania are GRAS. Zirconia layers on alumina support are listed in 21 CFR Sect.177.2910.

Membralox SD 3-A modules

Module Type	No. of Membranes	Membrane Type	Surface Area (m^2)	Retentate Connections (RC) Permeate Connections (PC)
M-1P3730	1	EP3730	0.35	RC: Weldable collars/ 3-A gaskets
M-1P1940		EP1940	0.24	PC: Weldable ferrules/3-A gaskets
M-3P3730	3	EP3730	1.05	RC: Weldable collars/ 3-A gaskets
M-3P1940		EP1940	0.72	PC: Weldable ferrules/3-A gaskets
M-7P3730	7	EP3730	2.45	RC: Weldable collars/ 3-A gaskets
M-7P1940		EP1940	1.68	PC: Weldable ferrules/3-A gaskets
M-19P3730	19	EP3730	6.65	RC: Weldable collars/ 3-A gaskets
M-19P1940		EP1940	4.56	PC: Weldable ferrules/3-A gaskets
M-37P3730	37	EP3730	12.95	RC: Weldable flanges/3-A gaskets
M-37P1940		EP1940	8.88	PC: Weldable ferrules/3-A gaskets

Construction of wetted materials : 316L SS, ceramic, EPDM, FPM

Membralox HCS 3-A modules

Module Type	No. of Membranes	Membrane Type	Surface Area (m^2)	Retentate Connections (RC) Permeate Connections (PC)
M-60P3730	60	EP3730	21	RC: Weldable flanges/O-ring gaskets
M-60P1940		EP1940	14.40	PC: Weldable ferrules/3-A gaskets

Construction of wetted materials : 316L SS, ceramic, PTFE, FPM

The limits of use of **Membralox** modules are determined mainy by type of housing or gasket materials. Based on valuable pilot and test data, our Scientific and Laboratory Services can provide advice in selecting the best membrane and module configuration to match your process requirements.