



Description

The **Membralox** SD module range offers a specific sanitary design, unique in the market, and the design conforms to 3-A sanitary standards. All material of construction meet FDA requirements.

The sanitary design ensures that all wetted components are fully accessible to cleaning chemicals. The Membralox ceramic membranes and the SD gasketing system provide exceptional compatibility to the harsh chemical sanitizing cycles applied in the food and pharmaceutical industries.

The efficiency and reliability of **Membralox** ceramic membranes have been proven in numerous industrial plants. Some of them are still being in operation for more than 20 years with the original membranes.

Cost Effective Separations

Combination of the SD design with the excellent characteristics of the Membralox ceramic membranes provides economical solutions in the processing of beverages, various food liquids, ingredients and additives, as well as pharmaceutical streams.

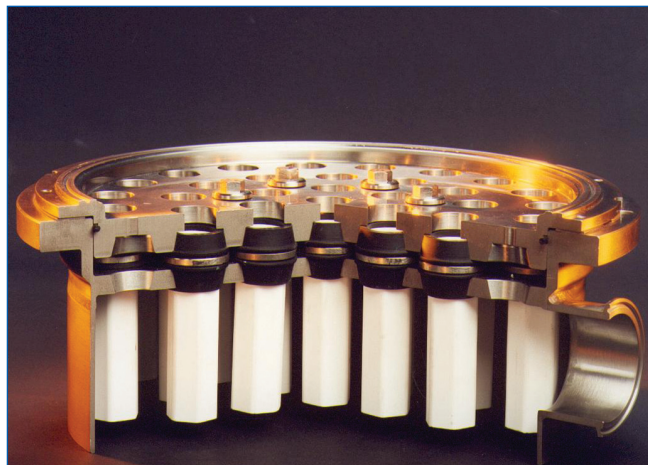
Membralox membrane modules can be backflushed, have rugged CIP and steam sterilization capabilities, feature ease of automation — all of which make them a simple but crucial element in process reliability.

Applications Examples

- ESL milk, milk fractionation, lactic curd concentration, etc.
- Sugar and sweeteners clarification
- Food ingredients processing
- Fermentation broth clarification
- Spirits, fruit juices clarification
- Pharmaceutical grade water production
- High value macromolecule processing

Membralox® SD Sanitary Module

A unique design complying with the most stringent standards



Membralox SD Modules

- Conform to 3-A sanitary standard, certificate No 1187
- All wetted parts fully accessible to cleaning chemicals
- All materials of construction meet FDA requirements
- Vertical operating position enables total drainage
- High performance sealing assembly with gasket leak detection, eliminates by-pass possibility between retentate and permeate side
- Modules and membrane components fully traceable, materials certificate available upon request

Membralox Ceramic Membranes

- High flux
- Proven long operational life
- Excellent resistance to corrosion
- Wide chemical and pH (0-14) compatibility
- Excellent thermal stability
- Sanitizable and sterilizable
- Element burst pressure > 50 bar**
- Ability to withstand high frequency backpulsing cycles
- Meet FDA requirements detailed in 21 CFR
- 100% bubble point integrity tested
- Customized membrane configurations can also be proposed for the most demanding applications

Membralox SD 3-A Sanitary Modules

SD Module Type	M-1P / M-3P / M-7P M-19P / M-37P	M-1P / M-3P / M-12P M-22P
Membrane type	EP3730 / EP1940	EP3740 / EP4840 EP1960 / EP2760
Number of Membranes	1-3-7-19-37	1-3-12-22
Filtration surface area	up to 13 m ²	up to 15,2 m ²
Retentate connection	J-clamps up to M-12P / M-19P or Bolts for M-22P / M-37P 3-A clamp gaskets	
Permeate connections	Tri-clamps with 3-A clamp gaskets	
Construction of wetted materials	SS316L, Ceramic, EPDM or FPM polymer	

Membralox Ceramic Membrane Type

Membrane Type	EP3730	EP1940	EP3740	EP4840	EP1960	EP2760
Channel diameter (mm)	3	4	4	4	6	6
Number of channels	37	19	37	48	19	27
Filtration area (m ²)	0.35	0.24	0.47	0.69	0.36	0.50
Length (mm)	1020	1020	1020	1020	1020	1020

The Membralox membrane **support** (12 µm pore size) and the membrane **end sealing** are made of sintered ultrapure alpha-Alumina.

Membralox Membrane Pore Sizes¹

Microfiltration	1,4* -0,8* -0,5 -0,2 -0,1* µm	alpha-alumina
Ultrafiltration	100* -50 -20 -10 nm	zirconia

¹ Some pore sizes are not available on all membrane geometries. Please check with your Pall representative for further information.

* Available in Membralox GP membrane type. 0,8 and 1,4 µm are available in double layer format.

Operating Limits in Aqueous Liquids²

Temperature	95 °C
Pressure	10 bar**

² Any liquids belonging to group II from PED 2014/68/EU art. 4 - §3

** 1 bar = 100kPa

Accessories and Complementary Services

- Backpulse devices
- Laboratory scale and benchtop pilot units
- Feasibility studies, on-site plant design, commissioning, tests, training courses

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



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Please contact Pall Corporation to verify that the product conforms to your national legislation and/or regional regulatory requirements for water and food contact use.

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