

## MEMBRALOX® SD Sanitary Module

A unique design complying with the most stringent standards

### Description

The **Membralox** SD module range offers a specific sanitary design, unique in the market. 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 10 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

- Bacteria removal from milk, milk protein concentration and/or fractionation
- Sugar and sweeteners clarification
- Food ingredients processing
- Cell harvesting
- Spirits, fruit juices clarification
- Pharmaceutical grade water production
- High value macromolecule processing

## Membralox ceramic membranes

Membrane type	EP3730*	EP3740	EP1940*	EP1960
Channel diameter (mm)	3	4	4	6
Number of channels	37	37	19	19
Filtration surface area (m <sup>2</sup> )	0.35	0.47	0.24	0.36
Length (mm)	1020	1020	1020	1020

The **Membralox** standard membranes support is made of ultrapure  $\alpha$ -alumina with pore size of 12  $\mu$ m.

## Membralox membrane pore sizes <sup>1</sup>

Microfiltration	1.4*, 0.8*, 0.5, 0.2, 0.1* $\mu$ m A	$\alpha$ -alumina
Ultrafiltration	100*, 50, 20 nm Z	zirconia

<sup>1</sup> Other pore sizes and surface modifications on request. Some pore sizes are not available on all support geometries, please check with Pall Exekia.

## 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

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 advice in selecting the best membrane and module configuration to match your process requirements.

## Membralox SD 3-A sanitary modules

SD Modules type	M-1P / M-3P M-12P / M-22 P	M-1P / M-3P / M-7P M-19P / M-37 P
Membrane type	EP1960 / EP3740	EP1940 / EP3730
Number of membranes	1 - 3 - 12 - 22	1 - 3 - 7 - 19 - 37
Filtration surface area (m <sup>2</sup> )	up to 10.2	up to 13
Retentate connections	j-clamps (bolt flanges with 22P/37P) / 3-A gaskets	
Permeate connections	tri-clamps/ 3-A gaskets	
Construction of wetted materials	316L SS, ceramic, EPDM or FPM	

## Operating limits in aqueous liquids <sup>2</sup>

Temperature	95°C
Pressure	10 bar **

<sup>2</sup> Any liquids belonging to group II from PED 97/23/EC art 9 - § 2.2

## 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

## Accessories and Complementary Services

- Backpulse devices
- Permeate flow regulators
- Laboratory scale and benchtop pilot units
- In-house feasibility studies, on-site plant design, commissioning, tests, training courses

\* Available in **Membralox GP** membrane version .  
0.8 and 1.4  $\mu$ m are available in double layer version.

\*\* 1 bar = 100 kPa



### Pall Exekia

B.P. 1 - 65460 Bazet - France  
+33 (0)5 62 38 95 95 phone  
+33 (0)5 62 38 95 50 fax  
info.exekia@europe.pall.com e-mail  
www.exekia.fr  
www.pall.com

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