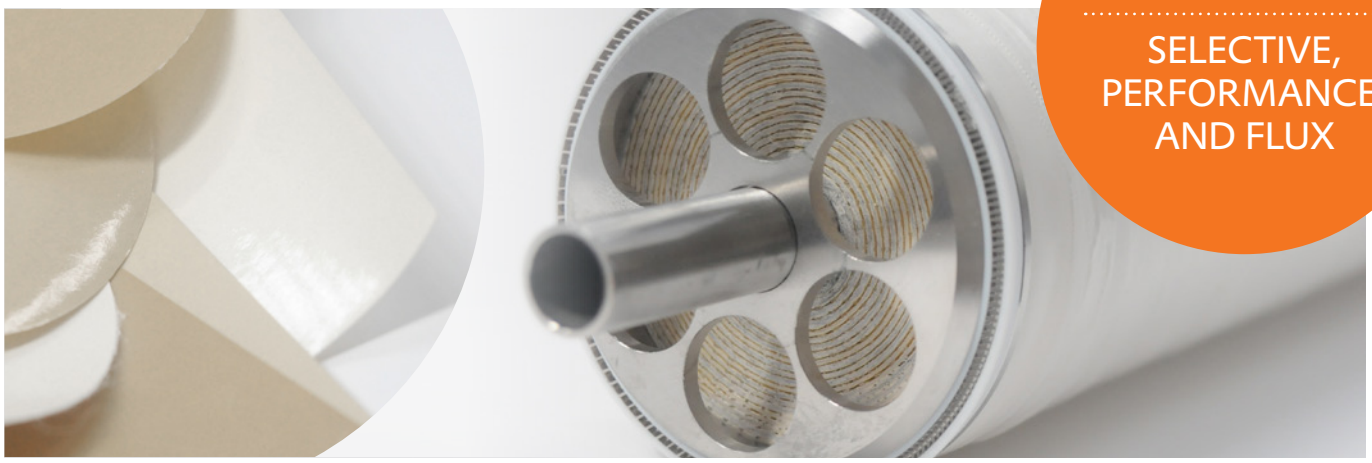
Technical Information

PURAMEM® OSN PRODUCTS

PURAMEM® OSN

SELECTIVE, PERFORMANCE, AND FLUX



PURAMEM® OSN Membranes

PURAMEM® OSN membranes are a family of flat-sheet membranes designed to be used in Organic Solvent Nano-filtration (OSN) applications. They are stable in a wide variety of organic solvents and perform best in non-polar to moderately polar solvents – for example hydrocarbons, esters and ketones.

Three PURAMEM® OSN membranes are available

1. **PURAMEM® Flux**
   highest permeate flux, lower rejection
2. **PURAMEM® Performance**
   intermediate flux, intermediate rejection
3. **PURAMEM® Selective**
   lowest flux, highest rejection

PURAMEM® products are usually used in flat sheet form for lab scale membrane screening tests and in spiral wound format for pilot and commercial processes.

Benefits

Typical uses	Main benefits
Solvent recycling	Sustainable separation technology
Impurity removal	Environmentally friendly, low carbon footptin technology
Product concentration and purification	Increased product value
Catalyst recovery and recycle	Non-thermal separations
Colour removal	Low-energy separation
Room temperature solvent exchange	Reduced operating cost
Monomer/dimer separation	Reduced processing time
Molecular fractionation	Non-thermal separations

Specifications PURAMEM® OSN Selective, Performance and flux

General

- Membrane Material: Silicone-coated PAN
- Flat Sheet: 210 x 297 mm
- Spiral-Wound Modules

Spiral-Wound Modules					
Type	**1812**	**2512**	**2540**	**4040**	**8040***
Nominal Size (Dia x L)	1.8″×12″	2.5″×12″	2.5″×40″	4.0″×40″	8.0″×40″
Membrane Area (m^2)[1]	0.2	0.3	2.3	6.8	33.2
Typical Feed Flow ($L.h^{-1}$)	300	800	800	2800	12500
Standard Feed Spacer (all)					30 mil (0.76 mm)

* Female modul type

Solvent stability

- PURAMEM® OSN membranes are stable in mild and non-polar solvents:
  - e.g. Alcohols (e.g. Methanol, Ethanol, 2-Propanol)
  - Aliphatic hydrocarbons (e.g. Hexane, Heptane)
  - Aromatic hydrocarbons (e.g. Toluene, Xylene)
  - Butyl Acetate, Ethyl Acetate
  - Methyl-Ethyl-Ketone
  - Methyl-tert-Butyl-Ether
- PURAMEM® OSN membranes are not recommended for use in aqueous or water mixtures.
  For aqueous or organic solvent mixtures, please contact us for membrane recommendations.

Use conditions

Conditions	
Typical Operating Pressure (bar)	20 - 40
Maximum Pressure (bar)	60
Maximum Temperature (°C)	50
Allowable pH	7

Performance

PURAMEM® Selective, Performance and Flux are composite membranes. Unlike porous membranes, molecular solubility (and not diffusion) of the solutes and solvent in the silicone separating layer dominates the mass transport of these compounds. This strongly influences the membrane separation performance. Therefore, the cut-off (MWCO) of the membrane is strongly dependent on the membrane-solvent-solute combination. For this type of membrane, MWCO obtained in a standard system is not necessarily indicative of actual membrane performance in a given application, and the most suitable membrane for an application should be chosen by experimental testing of the membranes in the real solution.

Solvent	Toluene
PURAMEM® Selective	20[3]
PURAMEM® Performance	30
PURAMEM® Flux	50

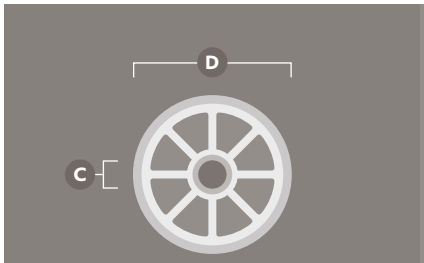
[1] Membrane area is a nominal value and depends on the spacer dimensions used in the module.

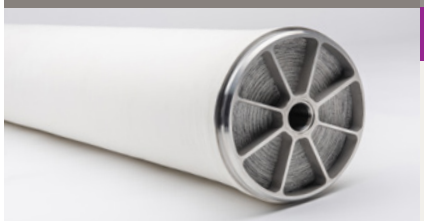
[2] Data referring to membrane sheets with pure solvents. If you intend to use a solvent not listed above please contact us for further advice.

[3] Nominal permeate flux, data are approximate and based on flat-sheet membrane. Test conditions: 30 bar and 30°C.

DIMENSIONS

Module	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
1812	305	200	52	19.05	53-55
2512	305	200	63	19.05	64-66
2540	1016	910	63	19.05	64-66
4040	1016	920	100	19.05	101-103





Modul	A (mm)	B (mm)	C (mm)	D (mm)
8040	1016	200	30,15	201-203

Evonik Operations GmbH

High Performance Polymers
45764 Marl
Germany

Contact: www.membrane-separation.com/en/contact

www.membrane-separation.com
www.evonik.com

Evonik Corporation

High Performance Polymers

2 Turner Place
Piscataway NJ 08854
United States

Evonik Specialty Chemicals (Shanghai) Co., Ltd.

55 Chundong Road
Xinzhuang Industry Park
Shanghai 201108

EVONIK
Leading Beyond Chemistry