Instruction for use

PURAMEM® OSN
SELECTIVE, PERFORMANCE, FLUX - MODULES
1.8″x12″, 2.5″x40″ and 4″x40″

Specifications PURAMEM® OSN Selective, Performance, and Flux

General

- Membrane Material: Silicone-coated polyacrylonitrile (PAN)
- 1.8″x12″, 2.5″x12″, 2.5″x40″ and 4″x40″ spiral-wound modules are of "Male" type.

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

[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.

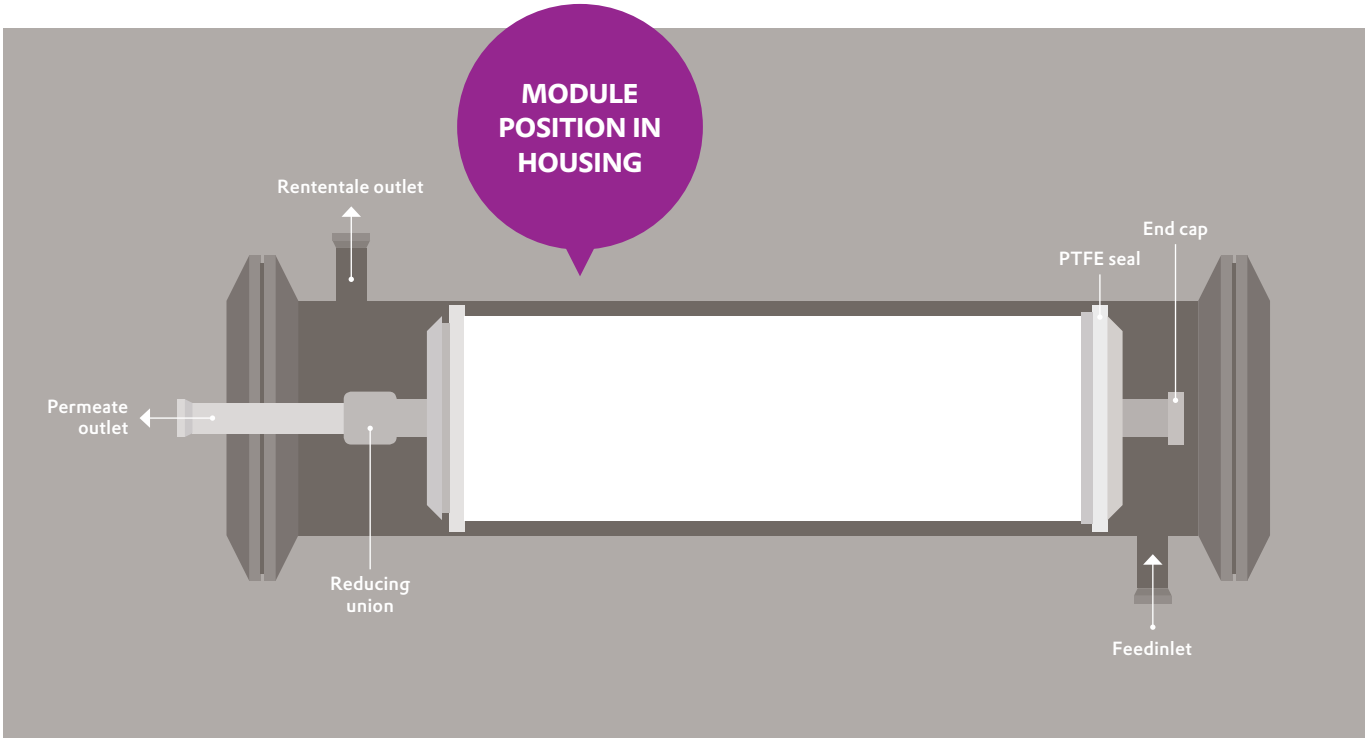
[3] Minimal permeate flux, data are approximate and based on flat-sheet membrane. Test conditions: 30 bar and 30°C

Solvent stability

- PURAMEM® OSN membranes are stable in mild and non-polar solvents[2]:
  - 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.

Permeate flux[2,3]

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



Module installation procedures

1. The membrane module should be installed inside the housing so that the PTFE seal is facing the feed inlet. Depending on the feed inlet orientation is may be necessary to insert the module into the housing and push it through far enough that Steps (2) through (4) can be carried out.
2. Close or block one side of the permeate tube of the membrane module, using a dedicated end cap or a ¾" plug compression fitting.
3. Connect the permeate collection tube of the housing flange to the membrane module permeate tube, using either a dedicated fitting on the permeate collection tube or a union compression fitting. Please make sure that the tubes are kept straight when making the connections, and if using compression fittings do not apply excess force onto the tubes while tightening the nuts.
4. Hold the permeate housing flange plus module assembly horizontally and insert the membrane module inside the housing slowly. Please keep the assembly straight and do not bend the module or tube, and do not force the module into the housing.
5. Attach the permeate tube flange onto the housing using the provided clamps or bolts.
6. Attach the second (blank) flange to the other end of the housing using the provided clamps or bolts.

Reconditioning of membrane modules

PURAMEM® Selective, Performance and Flux membranes do not require preconditioning. However, it is advisable to circulate and permeate a small volume of solvent to clean the module prior to first use. Ideally the cleaning solvent should be the same as the process solvent. Stable membrane performance is achieved after 2-3 hours of filtration.

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.

Use conditions

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

Storage of used modules

Once installed and preconditioned, the membrane module should not be removed from the module housing. If the module will not be used for prolonged periods, the module housing should be filled with an appropriate organic solvent and the module stored in situ. The module should be flushed again with clean solvent prior to re-use. Please contact us if you have any questions.

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