

SeIRO[®] MPS-36 - pH Stable Membrane

Nanofiltration Spiral Module Series – 2540, 4040

PRODUCT DESCRIPTION

Membrane Chemistry:	Proprietary composite nanofiltration membrane
Membrane Type:	pH stable nanofiltration membrane
Molecular Weight Cut-Off (MWCO):	1000 Dalton
Construction:	Spiral wound element
Major Applications:	Acid and caustic recovery, Product concentration
Permeate Tube Material:	CPVC

SPECIFICATIONS

Part Number	Model	Rejection [%]		Permeate Flow gpd (m ³ /day)	Feed Spacer mil (mm)	Membrane Area ft ² (m ²)
		Glucose / Sucrose	NaCl			
0770036	MPS-36 2540 A2X	30 / 50	10	2,535 (9.6)	30 (0.8)	17.2 (1.6)
0770194	MPS-36 4040 A2X	30 / 50	10	9,350 (35.4)	30 (0.8)	60.3 (5.6)

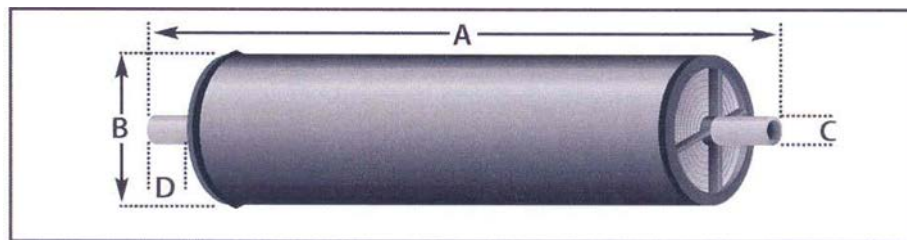
*Test Conditions: RO water at 440 psi (30 bar), 86°F (30°C). Feed solution for rejection tests is 3% glucose / 3% sucrose or 5% NaCl

OPERATING AND DESIGN INFORMATION*

Typical Operating Pressure:	220-510 psi (15-35 bar)
Maximum Temperature:	122°F (50°C)
Allowable pH - Continuous Operation:	1-13
Allowable pH - Clean-In-Place (CIP):	1-13
Maximum Pressure Drop Per Element:	10 psi (0.7 bar)
Maximum Pressure Drop Per Vessel (5 in Series):	50 psi (3.5 bar)

*Consult KSS Process Technology Group for specific applications.

NOMINAL DIMENSIONS



Model	A		B		C		D	
	inches	(mm)	inches	(mm)	inches	(mm)	inches	(mm)
MPS-36 2540	40.0	(1016)	2.4	(61)	0.75	(19.0)	1.0	(25.4)
MPS-36 4040	40.0	(1016)	3.9	(99)	0.75	(19.0)	1.0	(25.4)

OPERATING GUIDELINES

Membrane Characteristics:

SelRO® Composite nanofiltration membrane in a spiral wound configuration, with superior pH and temperature stability.

Operating Limits:

- **Operating Pressure:** Maximum operating pressure for SelRO® MPS-36 is 510 psi (35 bar). Actual operating pressure is dependent upon system flux rate, as well as feed, recovery and temperature conditions.
- **Permeate Pressure:** Maximum allowed permeate pressure is 3 psi (0.2 bar).
- **Differential Pressure:** Maximum differential pressure limit is 10 psi (0.7 bar) per element. Maximum differential pressure for any length vessel is 50 psi (3.5 bar).
- **Operating and Cleaning Temperature:** The operating and cleaning temperature is limited to 122°F (50°C) for A2 elements (CPVC permeate tube).
- **pH:** Allowable range for continuous operation is 1-13. When a stainless steel permeate tube is used, corrosive acids should be avoided.

Water Quality for Cleaning and Diafiltration:

- **Turbidity:** Maximum feed turbidity is 1 NTU.
- **Guidelines:** For more details please consult with KSS Process Technology Group.

Chlorine and Chemical Exposure:

- It is not recommended to expose the MPS-36 membrane to chlorine or other oxidants, as it may affect the membrane performance.
- Sodium metabisulfite (without catalysts such as cobalt) is the preferred chemical to eliminate free chlorine or other oxidizers in the feed.
- It is not recommended to expose the MPS-36 membrane to organic solvents, such as alcohol, acetone, etc.

Feed Flow Rate:

Maximum and minimum flow rate for the MPS-36 spiral module are as follows:

- **2540** Minimum 2 gpm (7.5 liter/min)
- **2540** Maximum 5 gpm (19 liter/min)
- **4040** Minimum 6 gpm (22 liter/min)
- **4040** Maximum 17 gpm (65 liter/min)

Actual feed flow rate is dependent upon system flux rate, feed characteristics, fouling tendency and system design.

Element Handling:

- **Recommended Cleaning Materials:** Depending on the nature of the feed, the following cleaning agents can be chosen:
 - 0.1-5% w/w sodium hydroxide at 122°F (50°C)
 - 0.2-1% w/w nitric or phosphoric acid at 122°F (50°C)
 - 0.1-0.5% w/w detergent mix KOCHKLEEN® KLD-III
 - 0.5% anionic surfactant (such as SDS) at 122°F (50°C)

Consult KSS regarding the use of other cleaning materials.

- **Lubricants:** For element installation, use only water or glycerin to lubricate seals. The use of petroleum or vegetable-based oils or solvents may damage the element and will void any warranty.

Storage:

Refer to KSS “Element Handling and Storage” bulletin.

Service and Ongoing Technical Support:

Koch Separation Solutions, Inc (KSS) has an experienced staff of professionals available to assist end-users and OEM's for optimization of existing systems and support with the development of new applications. KSS also offers a complete line of KOCHKLEEN® membrane pretreatment, cleaning, and maintenance chemicals.

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Koch Separation Solutions, Inc. 850 Main Street, Wilmington, MA 01887-3388
 Main: +1-978-694-7000 • Fax: +1-978-657-5208 • Toll Free: +1-888-677-5624

For complete contact information and listing of our global locations, visit www.kochseparation.com

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