

SelRO[®] MPS-36 pH Stable Elements

Nanofiltration Spiral Element Series - 8040

PRODUCT DESCRIPTION

Membrane Chemistry:	Proprietary composite nanofiltration membrane
Membrane Type:	pH stable nanofiltration membrane
Molecular Weight Cut-Off (MWCO):	1000 Daltons
Construction:	Spiral wound element with hard overwrap and polysulfone permeate tube
Major Applications:	Acid and caustic recovery, product concentration

SPECIFICATIONS

Part Number	Model	Rejection [%]		Permeate Flow gpd (m ³ /day)	Feed Spacer mil (mm)	Membrane Area ft ² (m ²)
		Glucose / Sucrose	NaCl			
0770257	8040 MPS-36-NYHN	30 / 50	10	36,250 (137)	31 (0.8)	308 (28.6)
0770258	8040 MPS-36-ZYHN	30 / 50	10	210 (19.5)	57 (1.4)	210 (19.5)

*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.

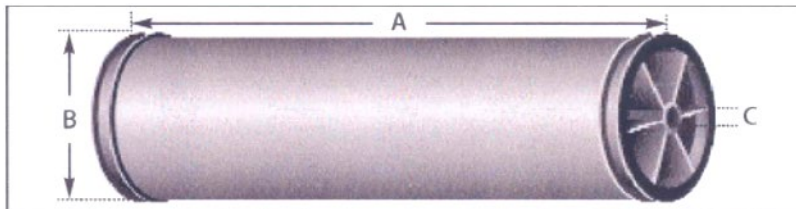
OPERATING AND DESIGN INFORMATION*

Typical Operating Pressure:	220-510 psi (15-35 bar)
Maximum Temperature:	158°F (70°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:	50 psi (3.5 bar)

*Consult KSS Process Technology Group for specific applications.

**Refer to the Operating Envelope of the SelRO[®] Elements when temperature is higher than 122°F (50°C).

NOMINAL DIMENSIONS



Model	A		B		C		Interconnector	O-Rings
	inches	(mm)	inches	(mm)	inches	(mm)		
8040 MPS-36-NYHN	40.0	(1016)	7.93	(202)	1.125	(28.6)	0030585	0035464
8040 MPS-36-ZYHN	40.0	(1016)	7.93	(202)	1.125	(28.6)	0030585	0035464

OPERATING GUIDELINES

Membrane Characteristics and Performance:

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

Performance specifications shown on the front side of this document are nominal values.

Options:

- Feed channel spacers: 31 mil (N) and 57 mil (Z)

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).
- Temperature:** Maximum operating temperature is 158°F (70°C). For guidelines of recommended temperature and pressure please refer to the "Operating Envelope SelRO® MPS-36 Elements" in this document.
- pH:** Allowable range for continuous operation is 1-13.

Water Quality for Cleaning and Diafiltration:

- Turbidity:** For best performance maximum feed turbidity is 1 NTU.

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.

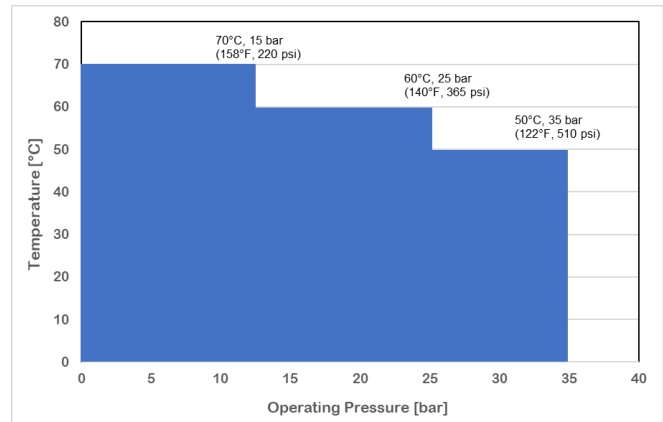
Feed Flow Rate:

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

- Min. 25 gpm (95 liter/min)
- Max. 75 gpm (285 liter/min)
- Actual feed flow rate is dependent upon system flux rate, feed characteristics, fouling tendency and system design.

Operating Envelope for MPS-36 SelRO® Elements:

It is important to follow the pressure - temperature relationship guidelines, in order to prevent irreversible performance deterioration. The following diagram should be used as a guideline to operating the MPS-36 spiral product:



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 Solution:**

Refer to KSS "Element Handling and Storage" bulletin.

Service and Ongoing Technical Support:

Koch Separation Solutions (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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