



# SeIRO™ MPS-36 pH STABLE ELEMENTS

## Nanofiltration Spiral Element Series - 8040

### PRODUCT DESCRIPTION

<b>Membrane Chemistry:</b>	Proprietary composite nanofiltration membrane
<b>Membrane Type:</b>	pH stable nanofiltration membrane
<b>Molecular Weight Cut-Off (MWCO)</b>	1000 Daltons
<b>Construction:</b>	Spiral wound element with hard overwrap and polysulfone permeate tube
<b>Major Applications:</b>	Acid and caustic recovery, product concentration
<b>Options:</b>	Feed channel spacers: 31 mil (N) and 57 mil (Z)

### SPECIFICATIONS\*

Model	Part Number	Rejection [%]		Permeate Flow gpd (m <sup>3</sup> /day)	Membrane Area ft <sup>2</sup> (m <sup>2</sup> )	Feed Spacer mil (mm)
		Glucose / Sucrose	NaCl			
8040 MPS-36-NYHN	0770257	30 / 50	10	36,250 (137)	308 (28.6)	31 (0.8)
8040 MPS-36-ZYHN	0770258	30 / 50	10	25,100 (95)	210 (19.5)	57 (1.4)

\*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.

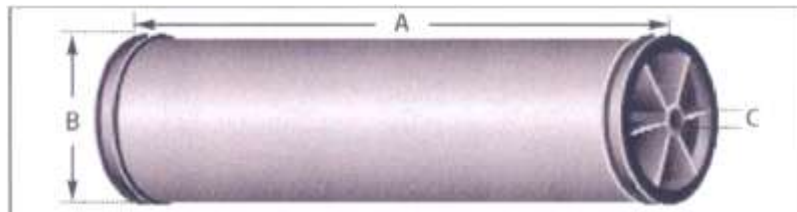
### OPERATING AND DESIGN INFORMATION\*

<b>Typical Operating Pressure:</b>	220-510 psi (15-35 bar)
<b>Maximum Temperature:</b>	158°F (70°C)**
<b>Allowable pH - Continuous Operation:</b>	1-13
<b>Allowable pH - Clean-In-Place (CIP):</b>	1-13
<b>Maximum Pressure Drop Per Element:</b>	10 psi (0.7 bar)
<b>Maximum Pressure Drop Per Vessel:</b>	50 psi (3.5 bar)

\* Consult Process Technology group for specific applications.

\*\* Refer to the Operating Envelope of the SeIRO 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-30-NYHN	40.0	(1016)	7.93	(202)	1.125	(28.6)	0030585	0035464
8040 MPS-30-ZYHN	40.0	(1016)	7.93	(202)	1.125	(28.6)	0030585	0035464

# SelRO™ MPS-36 pH STABLE ELEMENT

## Membrane Characteristics and Performance:

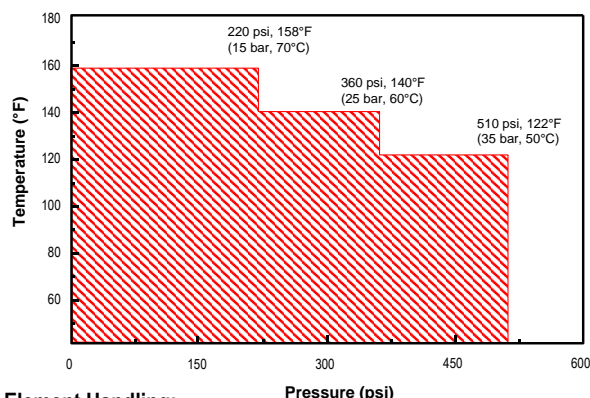
SelRO™ composite nanofiltration membrane in a spiral wound configuration, with superior pH and temperature stability. Performance specifications shown on the front side of this document are nominal values.

## 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 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 SelRO Elements:

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



## 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 KMS 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:** Should be made with:
  - Short Term (up to two weeks): 0.25 w/w sodium metabisulfite.
  - Long Term: 0.7% w/w benzalkonium chloride.
  - Glycerin should not be used for storage of SelRO elements.
  - The membrane element should not get dry. It should be stored in a sealed bag, in a temperature ranging from 36°F - 86°F (2°C - 30°C).

## Service and Ongoing Technical Support:

Koch Membrane Systems (KMS) 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. KMS also offers a complete line of KOCHKLEEN™ membrane pretreatment, cleaning, and maintenance chemicals.

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