



# 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	Membrane Area	Feed Spacer
		Glucose	NaCl	gpd (m <sup>3</sup> /day)	ft <sup>2</sup> (m <sup>2</sup> )	mil (mm)
		/ Sucrose				
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.

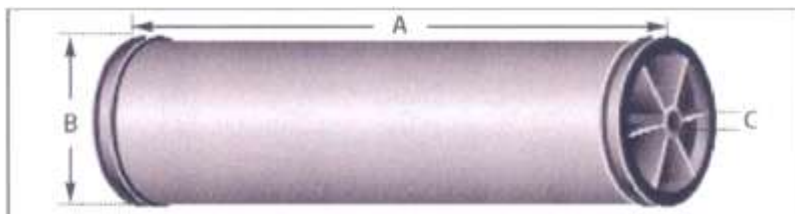
### OPERATING AND DESIGN INFORMATION\*

<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:

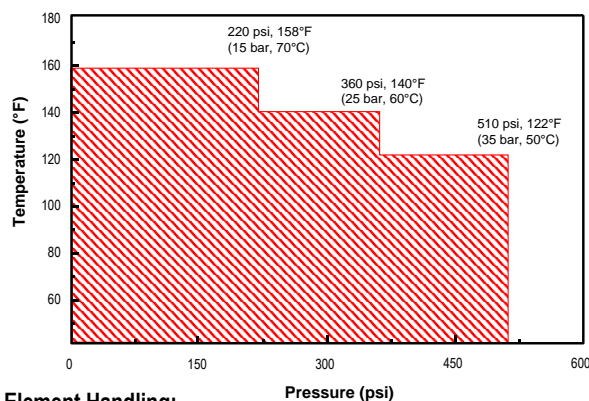
Min. 25 gpm (95 liter/min)

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.

*The information contained in this publication is believed to be accurate and reliable, but is not to be construed as implying any warranty or guarantee of performance. We assume no responsibility, obligation or liability for results obtained or damages incurred through the application of the information contained herein. Refer to Standard Terms and Conditions of Sale and Performance Warranty documentation for additional information.*

Koch Membrane Systems, Inc., [www.kochmembrane.com](http://www.kochmembrane.com)

**Corporate Headquarters:** 850 Main Street, Wilmington, Massachusetts 01887-3388, US, Tel. Toll Free: 1-888-677-5624, Telephone: 1-978-694-7000, Fax: 1-978-657-5208  
**European Headquarters:** Koch Chemical Technology Group Ltd., Units 3-6, Frank Foley Way, Stafford ST16 2ST, GB, Telephone: +44-178-527-2500, Fax: +44-178-522-3149

• Aachen DE • Lyon FR • Madrid ES • Milan IT • Wijnegem BE • Beijing & Shanghai CN • Mumbai & Chennai IN • Melbourne & Sydney AU • SG • Sao Paulo BR • Manama BH •

The FLOW LINES DESIGN and KochKLEEN are trademarks of Koch Membrane Systems, Inc.

The STYLIZED K is a trademark of Koch Industries, Inc.

SelRO is a trademark of Membrane Products Kiryat Weizmann, Ltd.

Koch Membrane Systems, Inc. is a Koch Chemical Technology Group, LLC company.

© 2013 Koch Membrane Systems, Inc. All rights reserved worldwide.

02/13 Rev 13-2