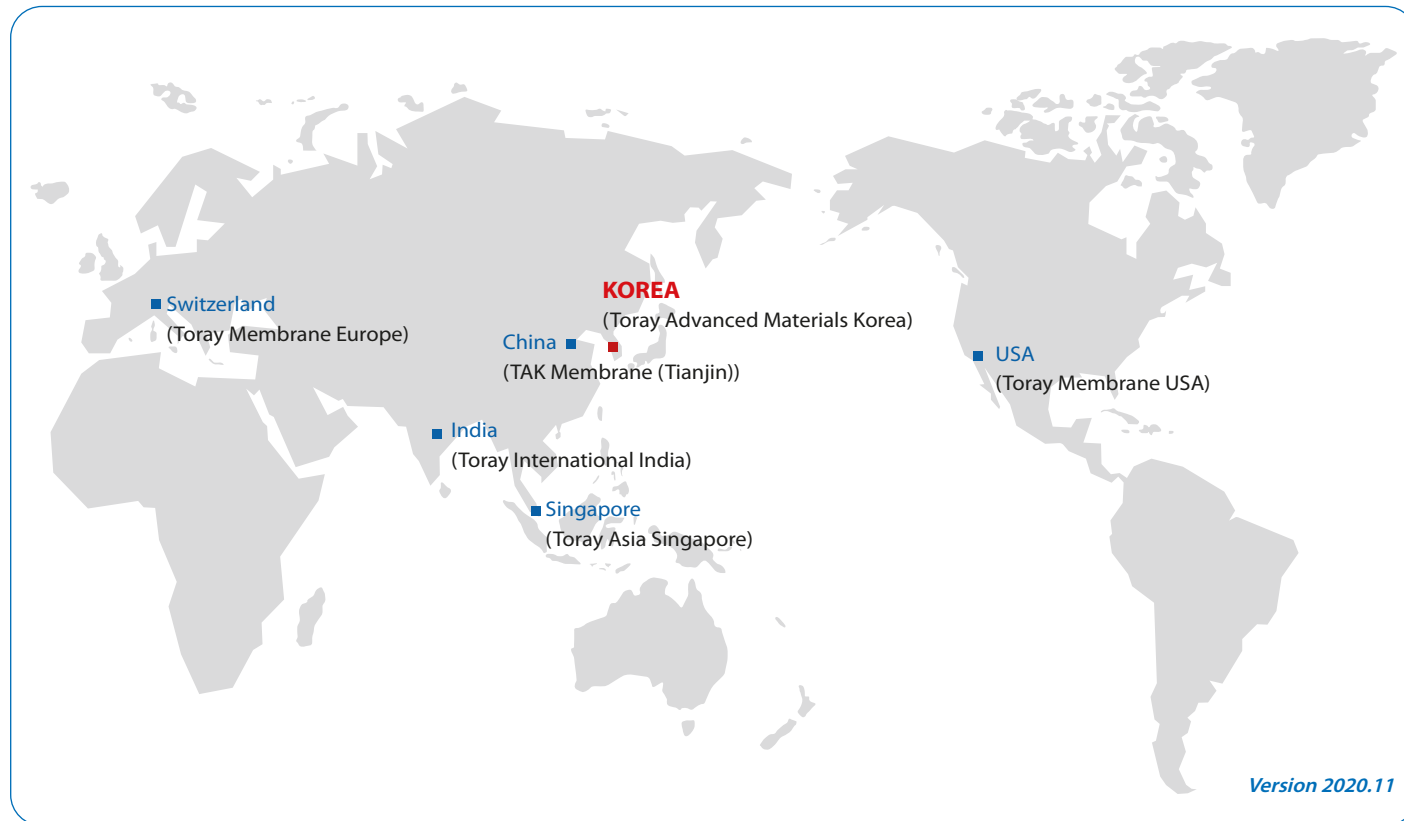


## CSM<sup>®</sup> GLOBAL NETWORK



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**CSM**<sup>®</sup>

Product Catalog for Industrial Membranes



## BWM - Brackish Water Membranes

### BE Series

Standard Brackish Water Elements

Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-BE440</b>	12,000	99.7	440	28
<b>RE8040-BE34</b>	11,000	99.7	400	34
<b>RE8040-BE</b>	11,000	99.7	400	32
<b>RE8040-BR400</b>	6,300	99.75	400	32
<b>RE8040-BR</b>	6,000	99.75	380	34

# Test Conditions NaCl 2,000 mg/L, Pressure 225 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%

### BL Series

Energy Saving High Flux Elements

Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-BLN440</b>	13,000	99.5	440	28
<b>RE8040-BLN</b>	12,000	99.5	400	32
<b>RE8040-BLR440</b>	11,000	99.6	440	28
<b>RE8040-BLR</b>	10,000	99.6	400	32

# Test Conditions NaCl 1,500 mg/L, Pressure 150 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%

### BLF Series

Ultra Low Pressure High Productivity Elements

Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-BLF440</b>	12,650	99.2	440	28
<b>RE8040-BLF</b>	11,500	99.2	400	32

# Test Conditions NaCl 500 mg/L, Pressure 100 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%

## FRM – Fouling Resistant Membranes

### FE Series

Industry Leading Fouling Resistant Elements

Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-FEN440</b>	12,000	99.7	440	28
<b>RE8040-FEN34</b>	11,000	99.7	400	34
<b>RE8040-FEN</b>	11,000	99.7	400	32

# Test Conditions NaCl 2,000 mg/L, Pressure 225 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%

### FL Series

Energy Saving Fouling Resistant Elements

Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-FLR440</b>	11,000	99.6	440	28
<b>RE8040-FLR34</b>	10,000	99.6	400	34
<b>RE8040-FLR</b>	10,000	99.6	400	32
<b>RE8040-FLF440</b>	11,000	99.6	440	28
<b>RE8040-FLF34</b>	12,000	99.6	400	34

# Test Conditions NaCl 1,500 mg/L, Pressure 150 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%

## SWM – Seawater Membranes

### SHN Series

High Rejection Seawater Elements

Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-SHN440</b>	7,140	99.75	440	28
<b>RE8040-SHN400</b>	6,500	99.75	400	32

# Test Conditions NaCl 32,000mg/L, Pressure 800psi, Temperature 25 °C, pH 6.5-7.0, Recovery 8%

### SHF Series

Ultra High Flux Seawater Elements

Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-SHF440</b>	9,900	99.7	440	28
<b>RE8040-SHF400</b>	9,000	99.7	400	32

# Test Conditions NaCl 32,000mg/L, Pressure 800psi, Temperature 25 °C, pH 6.5-7.0, Recovery 8%



Products that are certified to NSF/ANSI Standard 61 can be found through NSF official listing.

#### Operating Limits(8 inch BW & SW Elements)

· Max. Operating Pressure	· <b>BW-600 psi (4.14 MPa)</b> · <b>SW-1,200 psi (8.27 MPa)</b>	· Max. Operating Temperature	· 113°F (45 °C)
· Max. Pressure Drop / Element	· 15 psi (0.1 MPa)	· Operating pH Range	· 2.0-11.0
· Max. Pressure Drop / 240" Vessel	· 60 psi (0.41 MPa)	· CIP pH Range	· 1.0-13.0
· Max. Feed Flow Rate	· 75 gpm (17.0 m <sup>3</sup> /hr)	· Max. Turbidity	· 1.0 NTU
· Min. Concentrate Flow Rate	· 16 gpm (3.6 m <sup>3</sup> /hr)	· Max. SDI (15 min)	· 5.0
		· Max. Chlorine Concentration	· < 0.05 mg/L

#### Saturation Limits with Antiscalant or Scale Inhibitor

· LSI	· <+1.5	· SrSO <sub>4</sub>	· 800% saturation
· SDSI	· <+0.5	· BaSO <sub>4</sub>	· 6,000% saturation
· CaSO <sub>4</sub>	· 230% saturation	· SiO <sub>2</sub>	· 100% saturation

## UPWM – Ultrapure Water Membranes

The UPWM elements have high TOC rejection, low TOC extraction and low TOC rinse down time. These are critical parameters when treating water for the power generation, pharmaceutical and semiconductor industries.

Model Name	Flow Rate(GPD)	Salt Rejection(%)	IPA Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-UL440</b>	11,000	99.5	95.0	440	28
<b>RE8040-UL</b>	10,000	99.5	95.0	400	32
<b>RE8040-HUE440</b>	10,000	99.5	96.0	440	28
<b>RE8040-HUE</b>	9,000	99.5	96.0	400	32

# Test Conditions NaCl 2,000 mg/L, Pressure 225 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%  
IPA 1,000 mg/L, Pressure 225 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 8%

## CRM – Chlorine Resistant Membranes

The CRM elements have a special chlorine resistant coat to help reduce the need for dechlorination and thereby extending the lifetime of the membrane. Ideal uses are for feed water with high levels of microorganisms.

Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(mil)
<b>RE8040-CE</b>	12,000	99.0	400	32
<b>RE4040-CE</b>	2,280	99.0	85	32

# Test Conditions NaCl 2,000 mg/L, Pressure 225 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%

## NF – Nanofiltration Membranes

NF elements are unique in the industry due to the selective rejection ranging from 40-95% for monovalent ions. This property gives a competitive edge for the membranes to be used for both extraction and concentration applications.

Model Name	Flow Rate(GPD)	NaCl Rejection(%)	MgSO <sub>4</sub> Rejection(%)	Effective Area(ft <sup>2</sup> )
<b>NE8040-40</b>	12,000	20-40	98.0	400
<b>NE8040-70</b>	7,000	40-70	98.0	400
<b>NE8040-90</b>	8,000	85-97	98.0	400
<b>NE8040-HRM</b>	11,000		98.0	400
<b>NE8040-ARM</b>	7,000		98.0	400
<b>NE8040-SRM</b>	7,500		(Sulfate ion) 99.5	400

# Test Conditions NaCl 2,000 mg/L, Pressure 75 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%  
MgSO<sub>4</sub> 2,000 mg/L, Pressure 75 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%

## Additional specifications

Size	Model Name	Flow Rate(GPD)	Salt Rejection(%)	Effective Area(ft <sup>2</sup> )	Feed Spacer(Mil)	Test Cond.	
<b>16inch</b>	<b>RE16040-BE</b>	43,000	99.7	1,600	28	<b>01</b>	
	<b>RE16040-FEN</b>	41,000	99.7	1,600	28		
	<b>RE16040-BLR</b>	40,000	99.6	1,600	32		<b>02</b>
	<b>RE16040-FLR</b>	40,000	99.6	1,600	32		
	<b>RE16040-BLF</b>	46,000	99.2	1,600	32		<b>03</b>
	<b>RE16040-SHF</b>	36,000	99.7	1,600	28		
	<b>RE16040-SHN</b>	24,400	99.75	1,600	28		
<b>4inch</b>	<b>RE4040-BE</b>	2,400	99.7	85	32	<b>01</b>	
	<b>RE4040-FEN</b>	2,400	99.7	85	32		
	<b>RE4040-BLN</b>	2,600	99.4	85	32	<b>02</b>	
	<b>RE4040-BLR</b>	2,100	99.6	85	32		
	<b>RE4040-FLR</b>	2,100	99.6	85	32		
	<b>RE4040-BLF</b>	2,500	99.2	85	32	<b>03</b>	
	<b>RE4040-SHN</b>	1,200	99.75	85	32		
	<b>RE4040-SHF</b>	1,900	99.7	85	32	<b>04</b>	
	<b>RE2540-BE</b>	1,000	99.5	27	28		<b>01</b>
	<b>RE2540-FEN</b>	1,000	99.5	27	28		
<b>2.5Inch</b>	<b>RE2540-BLN</b>	930	99.2	27	28	<b>02</b>	
	<b>RE2540-BLR</b>	740	99.6	27	28		
	<b>RE2540-BLF</b>	930	99.2	27	28	<b>03</b>	
	<b>RE2540-SHN</b>	500	99.75	27	28		
	<b>RE2540-SHF</b>	700	99.4	27	28	<b>04</b>	

Test Conditions

<b>01</b> 40" BW Standard	NaCl 2,000 mg/L, Pressure 225 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%
<b>02</b> 40" LP Standard	NaCl 1,500 mg/L, Pressure 150 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%
<b>03</b> 40" LP High Flux	NaCl 500 mg/L, Pressure 100 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 15%
<b>04</b> 40" SW Standard	NaCl 32,000 mg/L, Pressure 800 psi, Temperature 25 °C, pH 6.5-7.0, Recovery 8%

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