



# PRODUCT SPECIFICATION

## 8" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-TS83-UWAN	11,000 (41.0)	98.50	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO4, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft <sup>2</sup> (37.2 m <sup>2</sup> )
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	4.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 7.9 (200)    Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.028" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8.5" TS80 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8540-TS80-TSFA	10,800 (40.0)	99.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO<sub>4</sub>, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	ANM Aromatic Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	440 ft <sup>2</sup> (40.4 m <sup>2</sup> )
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	<0.1 ppm
Maximum Feed Flow.....	80 GPM (18 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 8.5 (215)    Permeate Tube (C) : 1.12 (28.6)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Filmtec Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



## TriSep XN45 Composite Nanofiltration Membrane Elements

The XN45 membranes are based on proprietary and patented technology developed by DuPont. The unique chemistry of this membrane allows it to have lower organic fouling than standard '344 type NF membranes. This membrane is not hydrolyzed or oxidized standard ACM type RO membranes, but rather is formulated to naturally have the flow and rejection properties of a NF membrane. This makes the XN45 more robust and have better chemical resistance than a NF membrane that is made by degrading a RO membrane. All XN45 elements are factory tested on MgSO<sub>4</sub> and water solutions.

The XN45 is typically used in process application where there is a desire to allow monovalent ions to pass through the membrane while rejecting divalent ions or low molecular weight organic molecules such as sugars. The XN45 has 20-30% rejection of NaCl and 95-96% rejection of MgSO<sub>4</sub>. NF is a membrane process which can be applied to the treatment of a variety of water supplies with many economic and process advantages.

2540-XN45-TSF	2.5" diameter by 40" long, 0.75" O.D. male permeate tube, protruding permeate tube
4040-XN45-TSF	4" diameter by 40" long, 0.75" O.D. male permeate tube, protruding permeate tube
8040-XN45-TSA	8" diameter by 40" long, 1.50" I.D. female permeate tube, flush cut
8040-XN45-TSFA	8" dia. by 40" long, 1.12" I.D. female permeate tube, flush cut, Filmtec replacement
8040-XN45-UWA	8" diameter by 40" long, 1.50" I.D. female permeate tube, flush cut, high area



# PRODUCT SPECIFICATION

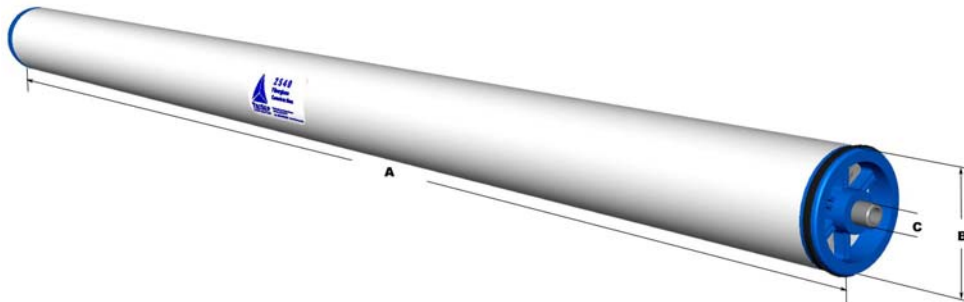
## 2.5" XN45 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
2540-XN45-TSF	600 (2.0)	95.00	92.50

Performance is based on the following test conditions: 2,000.0 ppm MgSO<sub>4</sub>, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	XN45 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	26 ft <sup>2</sup> (2.4 m <sup>2</sup> )
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	6 GPM (1.4 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.0 (1,016)      Diameter (B) : 2.5 (63)      Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Filmtec Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

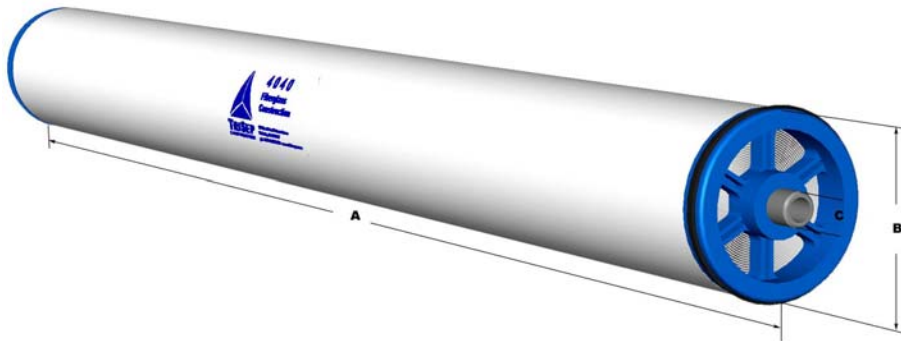
## 4" XN45 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-XN45-TSF	2,000 (7.0)	95.00	92.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO<sub>4</sub>, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	XN45 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	85 ft <sup>2</sup> (7.9 m <sup>2</sup> )
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	20 GPM (4.5 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 4.0 (101)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Filmtec Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8" XN45 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-XN45-TSA	9,500 (35.0)	95.00	92.00

Performance is based on the following test conditions: 2,000.0 ppm MgSO<sub>4</sub>, 110.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	XN45 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	365 ft <sup>2</sup> (33.5 m <sup>2</sup> )
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	80 GPM (18 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	2 NTU



Element Weight : 45 (20)  
 Length (A) : 40.0 (1,016)      Diameter (B) : 7.9 (200)      Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8" XN45 Nanofiltration Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-XN45-UWA	10,500 (39.0)	95.00	92.00

Performance is based on the following test conditions: 2,000.00 ppm MgSO<sub>4</sub>, 110.00 psi, 25°C, 15% recovery, pH 8.00, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	XN45 Polyamide Advanced Nanofiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	400 ft <sup>2</sup> (37.2 m <sup>2</sup> )
Recommended Applied Pressure.....	40 - 200 psi (3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	80 GPM (18 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	2 NTU



Element Weight : 45 (20)  
 Length (A) : 40.00 (1,016)    Diameter (B) : 7.9 (200)    Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.028" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



## TriSep Cellulose Acetate RO Membranes SB20, SB50, and SB90

Cellulose acetate (CA) membranes were the first commercialized RO membranes developed in the late 1960's. CA membranes offered a good combination of rejection, fouling resistance, and the ability to tolerate continuous chlorine up to 1.0 ppm. Some of the reasons they lost favor to the new polyamide membranes was the requirement for acidification (CA membranes should be operated at a pH of between 4-6 to minimize hydrolysis), lower rejection (98% versus 99.5%) and higher net drive pressure requirements (300 psi/20 bar versus 150 psi/10 bary).

But in many applications, CA membranes operate very well and give long and useful service lives. They have an advantage over the newer polyamide membranes for applications with high organic fouling, such as wastewaters, and waters where biological growth is an issue (easily addressed using chlorine). There is a large installed base of CA membranes in many different applications, and the SB series of membrane elements from TriSep can satisfy most retrofitting or new system applications.

The SB series of membrane elements from TriSep are available in 2.5", 4", 8", 8.3", and 8.5" diameters. There are three different membranes offered, the SB20, SB50, and SB90. The SB20 offers the highest rejection at 98%, while the SB50 offers 20% higher flow at 95% salt rejection. The SB90 is a nanofiltration (NF) membrane operating at about twice the flow of the SB20 at 85-90% rejection.

2540-SB20-TSF	2.5" diameter by 40" long, 0.75" male O.D. permeate tube
4040-SB20-TSA	4.0" diameter by 40" long, 0.75" male I.D. permeate tube
4040-SB50-TSA	4.0" diameter by 40" long, 0.75" male I.D. permeate tube.
4040-SB50-TSF	4.0" diameter by 40" long, 0.75" male O.D. permeate tube
8040-SB20-TSA	8.0" diameter by 40" long, 1.50" male I.D. permeate tube
8040-SB20-TSOA	8.0" diameter by 40" long, 1.14" male I.D. Osmo style permeate tube
8040-SB50-TSA	8.0" diameter by 40" long, 1.50" male I.D. permeate tube
8340-SB20-TSOA	8.3" diameter by 40" long, 1.14" male I.D. Osmo style permeate tube
8540-SB20-TSA	8.5" diameter by 40" long, 1.50" male I.D. permeate tube
8540-SB20-TSA	8.5" diameter by 40" long, 1.50" male I.D. permeate tube





# PRODUCT SPECIFICATION

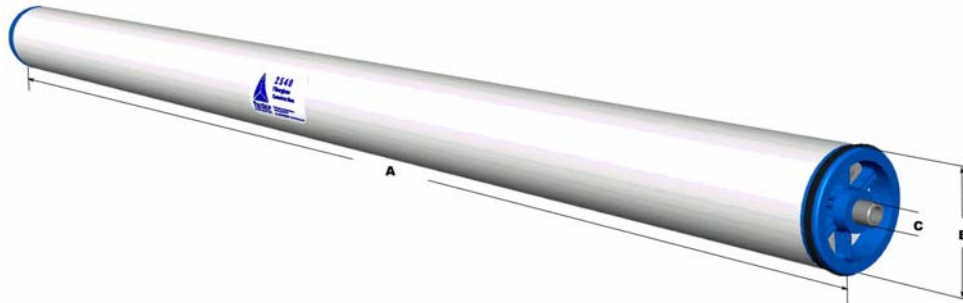
## 2.5" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
2540-SB20-TSF	500 (1.0)	98.00	97.00

Performance is based on the following test conditions: 2,000.00 ppm NaCl, 420.00 psi, 25°C, 15% recovery, pH 5.50, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	26 ft <sup>2</sup> (2.4 m <sup>2</sup> )
Recommended Applied Pressure.....	100 - 300 psi (7 - 21 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	6 GPM (1.4 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 7 (3.2)  
 Length (A) : 40.00 (1,016)    Diameter (B) : 2.5 (63)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Filmtec Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
SOLUTIONS



# PRODUCT SPECIFICATION

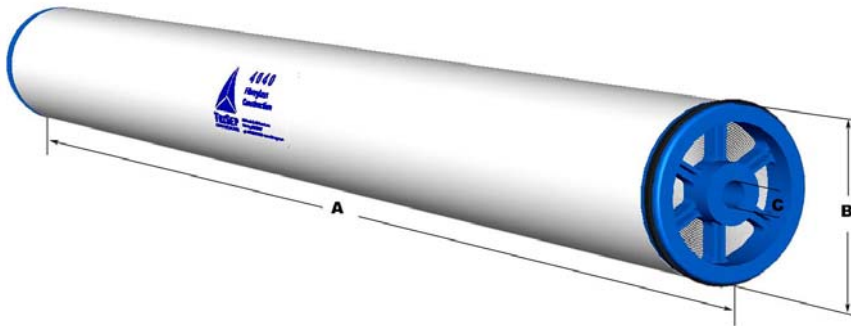
## 4" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-SB20-TSA	1,600 (6.0)	98.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 420.0 psi, 25°C, 15% recovery, pH 5.5, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	80 ft <sup>2</sup> (7.4 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	20 GPM (4.5m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.0 (1,016)      Diameter (B) : 4.0 (101)      Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

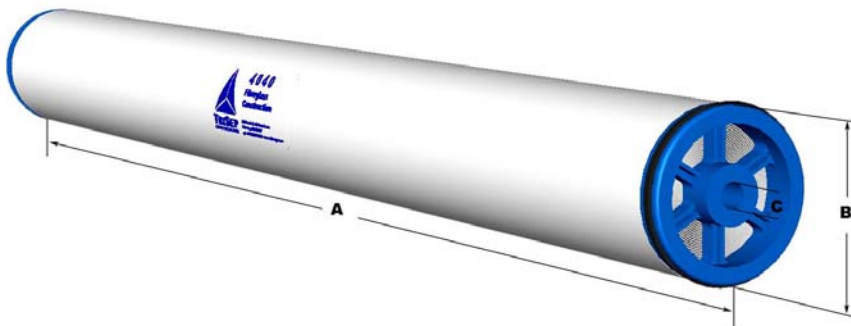
## 4" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-SB50-TSA	2,000 (7.0)	95.00	92.50

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 420.0 psi, 25°C, 15% recovery, pH 5.5, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	80 ft <sup>2</sup> (7.4 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	20 GPM (4.5 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 4.0 (101)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

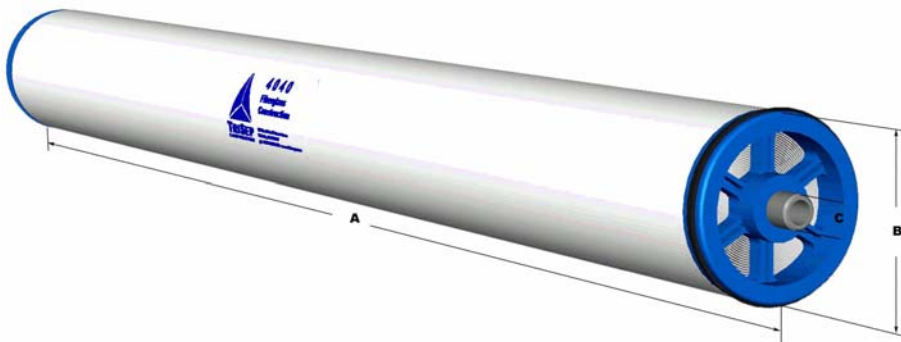
## 4" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
4040-SB50-TSF	1,900 (7.0)	95.00	92.50

Performance is based on the following test conditions: 2,000.00 ppm NaCl, 420.00 psi, 25°C, 15% recovery, pH 5.50, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	80 ft <sup>2</sup> (7.4 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	20 GPM (4.5 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.00 (1,016)    Diameter (B) : 4.0 (101)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Filmtec Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-SB20-TSA	7,000 (26.0)	98.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 420.0 psi, 25°C, 15% recovery, pH 5.5, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	350 ft <sup>2</sup> (32.5 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	80 GPM (18 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 7.9 (200)    Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-SB20-TSOA	7,000 (26.0)	98.00	97.00

Performance is based on the following test conditions: 2,000.00 ppm NaCl, 420.00 psi, 25°C, 15% recovery, pH 5.50, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	350 ft <sup>2</sup> (32.5 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)  
 Length (A) : 40.00 (1,016)    Diameter (B) : 7.9 (200)    Permeate Tube (C) : 1.14 (29.0)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Osmo Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8040-SB50-TSA	8,500 (32.0)	95.00	92.50

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 420.0 psi, 25°C, 15% recovery, pH 5.5, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	350 ft <sup>2</sup> (32.5 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 7.9 (200)    Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8.3" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8340-SB20-TSOA	8,000 (30.0)	98.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 420.0 psi, 25°C, 15% recovery, pH 5.5, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	415 ft <sup>2</sup> (38.1 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	80 GPM (18 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 8.3 (210)    Permeate Tube (C) : 1.14 (29.0)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Osmo Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**





# PRODUCT SPECIFICATION

## 8.5" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8540-SB20-TSA	8,400 (31.0)	98.00	97.00

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 420.0 psi, 25°C, 15% recovery, pH 5.5, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	440 ft <sup>2</sup> (40.4 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)  
 Length (A) : 40.0 (1,016)      Diameter (B) : 8.5 (215)      Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8.5" CA RO Element Series

Model	Permeate flow GPD (m3/day)*	Average Salt Rejection (%)	Minimum Salt Rejection (%)
8540-SB50-TSA	10,000 (37.0)	95.00	92.50

Performance is based on the following test conditions: 2,000.0 ppm NaCl, 420.0 psi, 25°C, 15% recovery, pH 5.5, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	SB Cellulose Acetate Blend
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	440 ft <sup>2</sup> (40.4 m <sup>2</sup> )
Recommended Applied Pressure.....	200 - 500 psi (14 - 34 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	50 - 90°F (10 - 32°C)
Feedwater pH Range.....	5.5 nominal, 4 - 7
Chlorine Tolerance.....	0.5 ppm nominal, 1.0 ppm max
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 50 (23)  
 Length (A) : 40.0 (1,016)      Diameter (B) : 8.5 (215)      Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



## UE Ultrafiltration Membranes 100,000 MWCO

TriSep offers two conventional ultrafiltration (UF) membrane elements, the UE10 and the UE50. Both of these membranes are made from a polysulfone chemistry that offers high specific flux, uniform pore sizes, and excellent chemical resistance. The UE10 have a molecular weight cut off (MWCO) of 10,000 while the UE50 has a MWCO of 100,000.

UF membranes do not reject any dissolved salts, such as hardness, alkalinity, sodium, chloride, or sulphate. They do reject large organic molecules and are typically characterized by the molecular weight of a group of organic molecules where a minimum of 90% rejection is achieved. Rejection of organic molecules varies depending on the geometry of the molecule and the size and distribution of the membranes pore size.

TriSep characterizes the UE10 using a combination of proteins (Cytochrome C) and dextran molecules of varying molecular weight. The UE50 is tested on varying molecular weight dextran molecules. The UE10 has a clean water specific flux of around 1.3 gfd/psi (32 lmh/bar) while the UE50 has a specific flux of around 1.7 gfd/psi (42 lmh/bar).

The UE10 is typically used for applications where rejection of proteins is required such as for whey protein concentration in the dairy industry. The UE50 is used where removal of suspended solids are required such as for surface water treatment prior to an RO system or for removal of oocysts such as cryptosporidium or giardia.

The UE10 and UE50 have excellent resistance to a wide range of pH's (2-12), excellent tolerance to chlorine (up to 1,000 ppm) and other oxidants, and excellent thermal stability (with the proper element construction up to 140°F/60°C).

The UE10 and UE50 membranes are not back flushable membranes like the UB50 membrane used in the SpiraSep. For applications with high loadings of suspended solids, the SpiraSep should be used rather than the UE10 or the UE50.

4040-UE10-QSF	4.0" diameter by 40" long, 0.75" male O.D. permeate tube.
4040-UE50-QSF	4.0" diameter by 40" long, 0.75" male O.D. permeate tube.
8040-UE50-QSA	8.0" diameter by 40" long, 1.50" male O.D. permeate tube.



# PRODUCT SPECIFICATION

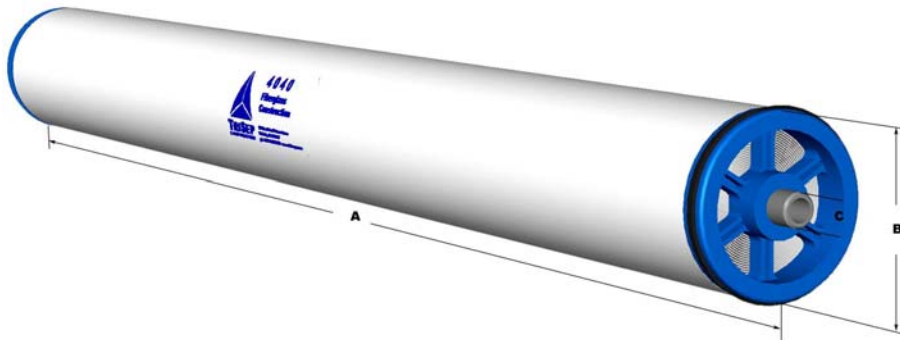
## 4" AUM Ultrafiltration Element Series

Model	Permeate flow GPD (m3/day)*	M.W.C.O.
4040-UE50-QSF	4,400 (16.0)	100,000

Performance is based on the following test conditions: 500.0 ppm Dextran, 30.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	80 ft <sup>2</sup> (7.3 m <sup>2</sup> )
Recommended Applied Pressure.....	20 - 200 psi (1.4 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	20 GPM (4.5 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 4.0 (101)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Filmtec Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



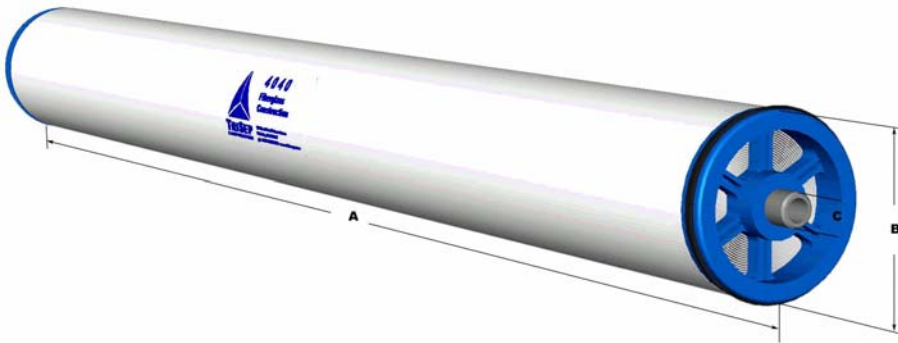
# PRODUCT SPECIFICATION

## 4" AUM Ultrafiltration Element Series

Model	M.W.C.O.
4040-UE10-QSF	10,000

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	85 ft <sup>2</sup> (7.9 m <sup>2</sup> )
Recommended Applied Pressure.....	20 - 200 psi (1.4 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	20 GPM (4.5 m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.00 (1,016)    Diameter (B) : 4.0 (101)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Filmtec Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer



**Engineered Membrane**  


---

**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8" AUM Ultrafiltration Element Series

Model	Permeate flow GPD (m3/day)*	M.W.C.O.
8040-UE50-QSA	20,000 (75.0)	100,000

Performance is based on the following test conditions: 500.0 ppm Dextran, 30.0 psi, 25°C, 15% recovery, pH 8.0, 30 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	AUM Advanced Ultrafiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	360 ft <sup>2</sup> (33.4 m <sup>2</sup> )
Recommended Applied Pressure.....	20 - 200 psi (1.4 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	80 GPM (18 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 7.9 (200)    Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



## TM10 PVDF Microfiltration Elements

The TM10 microfiltration membrane from TriSep is a 0.2 micron nominal pore size membrane made from polyvinylidene fluoride (PVDF). This membrane offers very high specific flux rates (5 gfd/psi (120lmh/bar)) with a uniform pore distribution. This membrane is characterized using a particle counter and bubble point testing.

This membrane is excellent for removal of suspended solids. Dissolved inorganic and organic materials are not rejected by this membrane. Typical applications include removal of oocysts such as giardia and cryptosporidium from drinking water, pretreatment of surface or wastewaters prior to an RO system, or clarification of process and food streams.

The PVDF chemistry of the TM10 membrane has excellent thermal and chemical properties. The membrane, with the appropriate element construction, can operate at temperatures of up to 165°F (75°C) and over a wide range of pH's (2-12). The membrane is resistant to a wide range of oxidants and can tolerate up to 1,000 ppm of chlorine.

The TM10 membranes are not back flushable membranes like the UB50 membrane used in the SpiraSep. For applications with high loadings of suspended solids, the SpiraSep should be used rather than the TM10.

4040-TM10-QSA	4.0" diameter by 40" long, 0.75" male I.D. permeate tube.
4040-TM10-QXA	4.0" diameter by 40" long, 0.75" male I.D. permeate tube, 47 mil parallel spacer.
4040-TM10-QXF	4.0" diameter by 40" long, 0.75" male O.D. permeate tube, 47 mil parallel spacer.
8040-TM10-QXA	8.0" diameter by 40" long, 1.50" male I.D. permeate tube, 47 mil parallel spacer.



# PRODUCT SPECIFICATION

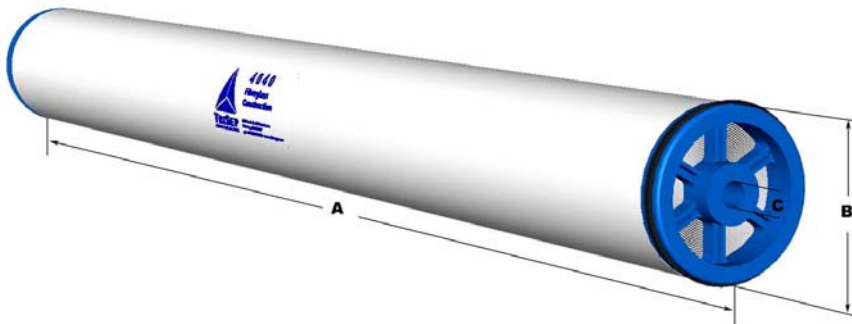
## 4" AMM Microfiltration Element Series

Model	Pore Size
4040-TM10-QSA	0.2 microns

Permeate flow is based on the clean water flux at the following test conditions: 10.00 psi, 25°C, pH 8.00, 15% recovery, 15 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	AMM Advanced Microfiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	80 ft <sup>2</sup> (7.4 m <sup>2</sup> )
Recommended Applied Pressure.....	5 - 200 psi (0.3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	20 GPM (4.5m <sup>3</sup> /hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.00 (1,016)    Diameter (B) : 4.0 (101)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.031" thick diamond spacer



**Engineered Membrane**  
**SOLUTIONS**





# PRODUCT SPECIFICATION

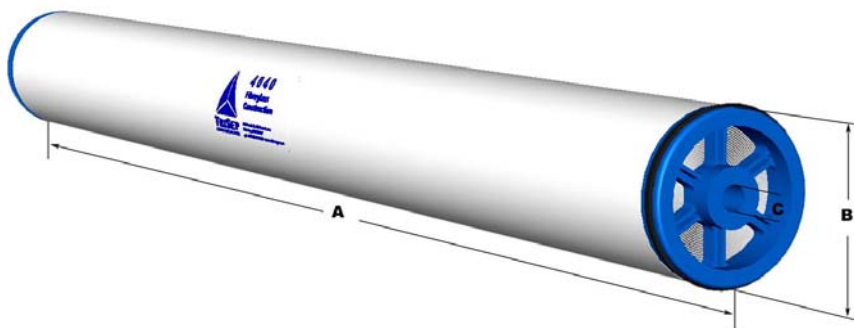
## 4" AMM Microfiltration Element Series

Model	Permeate flow GPD (m3/day)*	Pore Size
4040-TM10-QXA	2,600 (9.0)	0.2 microns

Permeate flow is based on the clean water flux at the following test conditions: 10.0 psi, 25°C, pH 8.0, 15% recovery, 15 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	AMM Advanced Microfiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	65 ft <sup>2</sup> (6.0 m <sup>2</sup> )
Recommended Applied Pressure.....	5 - 200 psi (0.3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	25 GPM (5.6 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 15 (7)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 4.0 (101)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.047" thick parallel spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

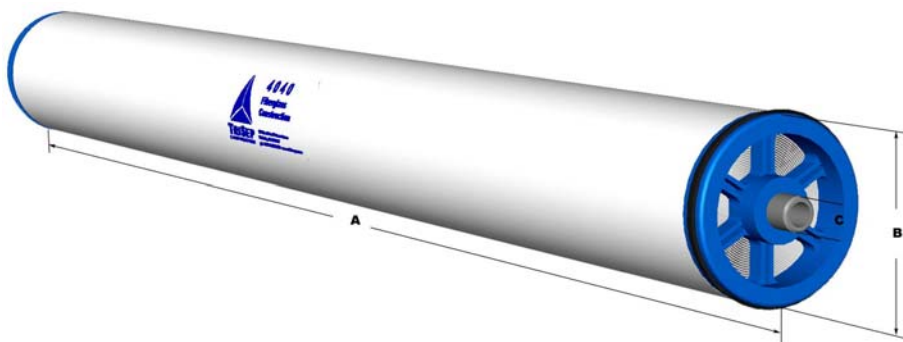
## 4" AMM Microfiltration Element Series

Model	Permeate flow GPD (m3/day)*	Pore Size
4040-TM10-QXF	2,500 (9.0)	0.2 microns

Permeate flow is based on the clean water flux at the following test conditions: 10.0 psi, 25°C, pH 8.0, 15% recovery, 15 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	AMM Advanced Microfiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	62 ft <sup>2</sup> (5.7 m <sup>2</sup> )
Recommended Applied Pressure.....	5 - 200 psi (0.3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	25 GPM (5.6 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 12 (5.4)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 4.0 (101)    Permeate Tube (C) : 0.75 (19.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: Filmtec Style Core Tube  
 Feed Spacer: 0.047" thick parallel spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



# PRODUCT SPECIFICATION

## 8" AMM Microfiltration Element Series

Model	Permeate flow GPD (m3/day)*	Pore Size
8040-TM10-QXA	10,800 (40.0)	0.2 microns

Permeate flow is based on the clean water flux at the following test conditions: 10.0 psi, 25°C, pH 8.0, 15% recovery, 15 minutes operation.

### OPERATIONAL AND DESIGN DATA

Membrane Type.....	AMM Advanced Microfiltration Membrane
Configuration.....	Spiral Wound, Fiberglass Outer Wrap
Active Membrane Area.....	270 ft <sup>2</sup> (24.8 m <sup>2</sup> )
Recommended Applied Pressure.....	5 - 200 psi (0.3 - 14 bar)
Maximum Applied Pressure.....	600 psi (41 bar)
Recommended Operating Temperature.....	35 - 113°F (2 - 45°C)
Feedwater pH Range.....	2 - 11 continuous
Chlorine Tolerance.....	10.0 ppm
Maximum Feed Flow.....	95 GPM (22 m3/hr)
Minimum Brine Flow/Permeate Flow Ratio....	5:1
Maximum SDI ( 15 minutes) .....	5.0
Maximum Turbidity.....	1 NTU



Element Weight : 45 (20)  
 Length (A) : 40.0 (1,016)    Diameter (B) : 7.9 (200)    Permeate Tube (C) : 1.50 (38.1)  
 Units in pounds and inches, units in paranthesis in kilograms and millimetres.  
 Mechanical Configuration: TriSep Style Core Tube  
 Feed Spacer: 0.047" thick parallel spacer

\* Permeate flow is clean water flux at standard conditions above. Not applicable for all feedwater conditions. Individual element's permeate flow may vary +/- 15%.



**Engineered Membrane**  
**SOLUTIONS**



## Certified Products NSF Standard 60 and 61 KIWA ATA



Historically, drinking water systems, membranes, and chemicals were not covered by any governing agency in the United States, and in most foreign countries. The FDA and USDA in the United States, regulated the food, dairy, beverage, bottled water, and pharmaceutical markets, but did not have jurisdiction over drinking water. With the increasing focus on water purity, this is rapidly changing. Many states in the US now require NSF approved membrane elements and antiscalants. Many European countries have their own governmental approval agency such as KIWA in the Netherlands.

NSF International, The Public Health and Safety Company™, a not-for-profit, non-governmental organization, is the world leader in standards development, product certification, education, and risk-management for public health and safety. For 60 years, NSF has been committed to public health, safety, and protection of the environment. While focusing on food, water, indoor air, and the environment, NSF develops national standards, provides learning opportunities through its Center for Public Health Education, and provides third-party conformity assessment services while representing the interests of all stakeholders. The primary stakeholder groups include industry, the regulatory community, and the public at large. Listings can be checked on the NSF website at [www.nsf.org](http://www.nsf.org).

Two standards from NSF apply to TriSep products. NSF standard 60 is used to test and approve various chemicals that may be added to drinking water for toxicological effects on humans. A maximum dose rate is established based on the toxicity and use of the chemicals. Two TriSep products have NSF 60 certification, the TriPol 8510 and TriPol 9010 antiscalants. These can be used as an antiscalant to an RO system at a concentration up to 4 ppm and 10 ppm respectively.

A number of TriSep membrane elements have been approved under NSF Standard 61. This is a relatively new development as in the past NSF would not certify membrane elements as stand alone devices. This standard does not validate the performance of the element, but tests for any toxicological concerns regarding the leaching any residual chemicals into the permeate water.

The Netherlands has a governmental agency, KIWA, that is owned by the local water municipalities. This organization tests many items used in the purification and distribution of water. The 8040-TS82-TSA membrane element from TriSep is KIWA ATA approved for use in producing drinking water by nanofiltration.



## TriSep NSF Standard 61 Element Listing

### NSF/ANSI STANDARD 61 Drinking Water System Components - Health Effects

**NOTE:** Unless otherwise indicated for Materials, Certification is only for the Water Contact Material shown in the Listing. [Click here for a list of Abbreviations used in these Listings.](#)

#### TRISEP CORPORATION

93 SOUTH LA PATERA  
GOLETA, CA 93117  
805-964-8003

**Facility :** GOLETA, CA

#### Mechanical Devices

Trade Designation	Size	Water Contact Temp	Water Contact Material
Reverse Osmosis Element			
8040-ACM2-TSAN[1] [2]	NA	CLD 23	MLTPL
8040-ACM2-UWAN[1] [2]	NA	CLD 23	MLTPL
8040-ACM3-TSAN	NA	CLD 23	MLTPL
8040-ACM3-UWAN	NA	CLD 23	MLTPL
8040-ACM4-TSAN[1] [2]	NA	CLD 23	MLTPL
8040-ACM4-UWAN[1] [2]	NA	CLD 23	MLTPL
8040-ACM5-TSAN	NA	CLD 23	MLTPL
8040-ACM5-UWAN	NA	CLD 23	MLTPL
8040-TS80-TSAN[1] [2]	NA	CLD 23	MLTPL
8040-TS80-UWAN[1] [2]	NA	CLD 23	MLTPL
8040-TS83-TSAN	NA	CLD 23	MLTPL
8040-TS83-UWAN	NA	CLD 23	MLTPL
8040-X201-TSAN[1] [2]	NA	CLD 23	MLTPL
8040-X201-UWAN[1] [2]	NA	CLD 23	MLTPL
8040-X20LP-TSAN	NA	CLD 23	MLTPL
8040-X20LP-UWAN	NA	CLD 23	MLTPL

[1] Certified for a minimum flow of 1,100 gallons per day. Product requires a 1 hour conditioning flush with potable water prior to use.

[2] Serial number 191709 and greater.



# TriSep NSF Standard 60 Chemical Listing

---

## ANSI/NSF STANDARD 60 Drinking Water Treatment Chemicals - Health Effects

---

### TRISEP CORPORATION

93 SOUTH LA PATERA LANE  
GOLETA, CA 93117  
805-964-8003

#### Plant at: GOLETA, CA

##### Miscellaneous Water Supply Products

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
TriPol 8500	Reverse Osmosis Antiscalant	4 mg/L
TriPol 8510	Reverse Osmosis Antiscalant	4 mg/L
TriPol 9000	Reverse Osmosis Antiscalant	10 mg/L
TriPol 9005	Reverse Osmosis Antiscalant	10mg/L
TriPol 9010	Reverse Osmosis Antiscalant	10 mg/L
TriPol 9013	Reverse Osmosis Antiscalant	10mg/L

#### Plant at: ROANOKE, VA

##### Miscellaneous Water Supply Products

<i>Trade Designation</i>	<i>Product Function</i>	<i>Max Use</i>
TriPol 9010	Reverse Osmosis Antiscalant	10mg/L
TriPol 9000	Reverse Osmosis Antiscalant	10mg/L
TriPol 8510	Reverse Osmosis Antiscalant	4mg/L
TriPol 8500	Reverse Osmosis Antiscalant	4mg/L
TriPol 9005	Reverse Osmosis Antiscalant	10mg/L
TriPol 9013	Reverse Osmosis Antiscalant	10mg/L