

# TRISEP® PS Pharmaceutical UP010 Series



TRISEP® PS sanitary membrane elements for pharmaceutical applications have a long history of outstanding, stable field performance. NADIR® UP010 polyethersulfone (PES) membrane with a nominal 10,000 Da molecular weight cut-off offers excellent protein rejection and consistent flux rates. PS elements are available with a number of different feed spacers and in all sizes common in the industry.

## MEMBRANE CHARACTERISTICS

<b>Membrane</b>	NADIR® UP010
<b>Membrane Type</b>	Polyethersulfone (PES)
<b>Nominal M.W.C.O. (Da)</b>	10,000

## DESIGN INFORMATION

Model	Membrane Area m <sup>2</sup> (ft <sup>2</sup> )	Feed Spacer Thickness (mil) <sup>a</sup>
TRISEP® PS UP010 3838-31	7.0 (75)	31
TRISEP® PS UP010 3838-46	5.7 (61)	46
TRISEP® PS UP010 3838-80	4.0 (43)	80
TRISEP® PS UP010 4025-31	5.4 (58)	31
TRISEP® PS UP010 4025-46	4.2 (45)	46
TRISEP® PS UP010 4333-31	7.6 (82)	31
TRISEP® PS UP010 4333-46	6.3 (68)	46
TRISEP® PS UP010 4333-80	4.3 (46)	80
TRISEP® PS UP010 6338-31	20.5 (221)	31
TRISEP® PS UP010 6338-46	17.1 (184)	46
TRISEP® PS UP010 6338-80	11.5 (124)	80
TRISEP® PS UP010 8338-31	34.0 (366)	31
TRISEP® PS UP010 8338-46	27.5 (296)	46
TRISEP® PS UP010 8338-80	21.2 (228)	80

<sup>a</sup> All models on this sheet have a netting outer wrap and diamond shaped feed spacers.

## OPERATING PARAMETERS

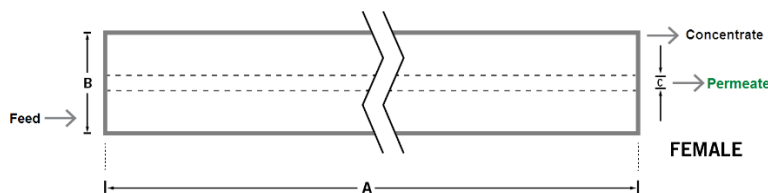
<b>Maximum Operating Pressure</b>	10 bar (145 psi)
<b>Maximum Operating Temperature</b>	55°C (131°F)
<b>Cleaning pH Range<sup>1</sup></b>	1.0 - 12.0
<b>Cleaning Chlorine Tolerance</b>	200 ppm for sanitization at pH ≥ 10.5
<b>Maximum Pressure Drop</b>	1 bar (15 psi) per element; 4 bar (60 psi) per housing

<sup>1</sup> Refer to temperature and pH limits in our Membrane Cleaning Guides.

**PHYSICAL DIMENSIONS**

Model	Element Weight kg (lb) <sup>b</sup>	Dim. A mm (inches)	Dim. B mm (inches)	Dim. C <sup>c</sup> mm (inches)	Permeate Tube
TRISEP® PS UP010 3838-31	4 (9)	965 (38.0)	96 (3.8)	21.1 (0.83)	Female
TRISEP® PS UP010 3838-46	4 (9)	965 (38.0)	96 (3.8)	21.1 (0.83)	Female
TRISEP® PS UP010 3838-80	4 (9)	965 (38.0)	96 (3.8)	21.1 (0.83)	Female
TRISEP® PS UP010 4025-31	4 (9)	636 (25.0)	101.5 (4.0)	16.0 (0.63)	Female
TRISEP® PS UP010 4025-46	4 (9)	636 (25.0)	101.5 (4.0)	16.0 (0.63)	Female
TRISEP® PS UP010 4333-31	4 (9)	838 (33.0)	109.5 (4.3)	21.1 (0.83)	Female
TRISEP® PS UP010 4333-46	4 (9)	838 (33.0)	109.5 (4.3)	21.1 (0.83)	Female
TRISEP® PS UP010 4333-80	4 (9)	838 (33.0)	109.5 (4.3)	21.1 (0.83)	Female
TRISEP® PS UP010 6338-31	11 (24)	965 (38.0)	162 (6.3)	28.9 (1.138)	Female
TRISEP® PS UP010 6338-46	11 (24)	965 (38.0)	162 (6.3)	28.9 (1.138)	Female
TRISEP® PS UP010 6338-80	11 (24)	965 (38.0)	162 (6.3)	28.9 (1.138)	Female
TRISEP® PS UP010 8338-31	18 (40)	965 (38.0)	211 (8.3)	28.9 (1.138)	Female
TRISEP® PS UP010 8338-46	18 (40)	965 (38.0)	211 (8.3)	28.9 (1.138)	Female
TRISEP® PS UP010 8338-80	18 (40)	965 (38.0)	211 (8.3)	28.9 (1.138)	Female

<sup>b</sup> Shipping weight is dependent on packaging material and quantity shipped.  
<sup>c</sup> Dimension "C" is the Inner Diameter.



**IMPORTANT INFORMATION**

- Start-up:** MANN+HUMMEL Water & Fluid Solutions recommends flushing elements for 30 minutes at low pressure and discarding permeate during the flush prior to operation. For a more detailed start-up procedure, please see Element Start-Up Guide – System Start-Up (TSG-O-005).
- Cleaning:** TRISEP® membrane elements must be cleaned periodically to ensure proper operation and to prevent membrane damage. Please see our Membrane Cleaning Guides.
- Storage:** TRISEP membrane elements must be stored appropriately to ensure proper operation and to prevent membrane damage. Please see Element Storage Guides (TSG-O-009 & TSG-O-010).
- Regulatory:** All models on this sheet conform to USDA 3A sanitary standard 45-03, use FDA (CFR Title 21) compliant materials, comply with EU regulation (EC) No. 1935/2004 and No. 10/2011, and have Halal and Kosher certifications.

**CUSTOMIZABLE SPECIALTY ELEMENTS**

MANN+HUMMEL Water & Fluid Solutions offers a full range of membranes and element designs for challenging water and process applications. Technologies include low-fouling RO, submerged UF, continuous high temperature, ultra-high pressure, unique sanitary designs and more. Contact us to customize a product that satisfies your specific requirements.

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