Biotech Elements

FACT SHEET

Small size spiral-wound elements for lab testing

The Biotech Test product family includes RO, NF and UF membranes. These small elements are used for trials when the amount of feed liquid available is limited.

The Biotech Test Elements are made with high temperature stable construction materials. The maximum recommended operating temperature is 50°C (122°F). Operation at temperature above 50°C (122°F) is possible however permeability will be reduced by irreversible compaction.

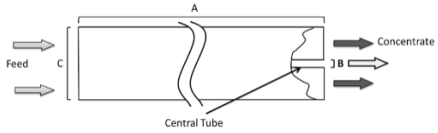

Figure 1: Element Dimensions Diagram – Female

Table 1: Dimensions and Weight (1)

Model	Dimensions, inches (cm)			Boxed Weight lbs (kg)
	A	B	C	
All 1812	12 (30.48)	0.625 (1.59)	1.85 (4.7)	0.15 (0.3)

Table 2: 1812 Element Specifications (1)

Spacer	35 mil (0.86mm)
Membrane Area	4.0 ft² (0.38 m²)
Outerwrap	Cage
Part Material	Polysulfone
Max Pressure Drop	Over an element 15psi (103 kPa)

Housing

Housings for 1812 elements are available upon request.

Figure 2: 1812 housing (HSG,SPR1812VC)

Table 3: Housing Specification

Model	Max pressure psi (bar)	Part Number
HSG,SPR1812TLC	200 psi (1,379 kPa)	3160341B
HSG,SPR1812VC	1000 psi (6,894 kPa)	3044533

Material	316SS
Feed/Concentrate Connections	TLC:2in tri Clamp VC: 2in Victaulic
Permeate Connections	½ in FNPT

Table 4: 1812 Element Performance (1)

Polyamide Membranes RO										
Model	Class	Part Number	Rejection Ave. (2)	Cut-Off	Typical flux	Max. Op. Pressure	Max. Temp. cont. & CIP	pH Range		Chlorine Tolerance (4)
			%	Dalton	GFD (LMH)	Psi (kPa)	°F (°C)	cont.	CIP (3)	ppm x hours
AG1812	RO	3051741	99.0% NaCl (5)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-11.0	1.0 – 13.0	500+
AK1812	RO	3051742	98.0% NaCl (6)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-11.0	1.0 – 13.0	500+
AP1812	RO	3148691	92.0% NaCl (6)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-11.0	1.0 – 13.0	500+

Proprietary Thin Film Membranes RO, NF										
Model	Class	Part Number	Rejection Ave. (2)	Cut-Off	Typical flux	Max. Op. Pressure	Max. Temp. cont. & CIP	pH Range		Chlorine Tolerance (4)
			%	Dalton	GFD (LMH)	Psi (kPa)	°F (°C)	cont.	CIP (3)	ppm x hours
SE1812	RO	3051750	97.5% NaCl (7)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-10.0	1.0 – 11.5	500+
DK1812	NF	1255117	98% $MgSO_4$ (8)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-10.0	2.0 – 11.0	500+
DL1812	NF	3051745	96% $MgSO_4$ (8)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-10.0	2.0 – 11.0	500+
HL1812	NF	3051747	98% $MgSO_4$ (8)	N/A	5-20 (8-34)	600 (4,137)	122 (50)	2.0-10.0	2.0 – 11.0	500+
DURACID NF1812	NF	3052540	98% $MgSO_4$ (8)	N/A	5-14 (9-24)	850 (5,860)	122 (50)	< 9.0	< 9.0	500+

Proprietary Thin Film Membranes UF										
Model	Class	Part Number	Rejection Ave.	Cut-Off	Typical flux	Max. Op. Pressure	Max. Temp. cont. & CIP	pH Range		Chlorine Tolerance (4)
			%	Dalton	GFD (LMH)	Psi (kPa)	°F (°C)	cont.	CIP (3)	ppm x hours
GE1812	UF	1255124	NA	1,000	5-20 (8-34)	400 (2,760)	122 (50)	2.0-10.0	1.0-13.0	20-50
GH1812	UF	1255123	NA	2,500	5-20 (8-34)	400 (2,760)	122 (50)	2.0-10.0	1.0-13.0	20-50
GK1812	UF	1255122	NA	3,500	5-20 (8-34)	400 (2,760)	122 (50)	2.0-10.0	1.0-13.0	20-50

Polyethersulfone / Polysulfone Membranes UF											
Model	**Class**	**Part Number**	**Rejection Ave.**	**Cut-Off**	**Typical flux**	**Max. Op. Pressure**	**Max Temperature**		**pH Range**		**Chlorine Tolerance**
			%	**Dalton**	**GFD (LMH)**	**Psi (kPa)**	**Cont.**	**CIP**	**cont.**	**CIP (3)**	**ppm x days**
PW1812	UF	3051749	N/A	20,000	5-20 (8-34)	200 (1,379)	122°F (50°C)	122°F (50°C)	2.0-10.0	1.0-13.0	5,000+

(1) Element properties and parameters are indicative numbers. Specific values by element may vary within normal element manufacturing tolerances.
(2) Average salt rejection after 24 hours operation.
(3) Refer to Cleaning Guidelines Technical Bulletin TB1194EN.
(4) Dechlorination recommended.
(5) Testing conditions: 2,000 ppm NaCl solution at 225 psi (1,551 kPa) operating pressure, 25°C (77°F), pH 7.5 and 15% recovery.
(6) Testing conditions: 500 ppm NaCl solution at 75 psi (520 kPa) operating pressure, 25°C (77°F), pH 7.5 and 15% recovery.
(7) Testing conditions: 2,000 ppm NaCl solution at 425 psi (2930 kPa) operating pressure, 25°C (77°F), pH 7.5 and 15% recovery.
(8) Testing conditions: 2,000 ppm $MgSO_4$ solution at 110 psi (760 kPa) operating pressure, 77°F, pH 7.5 and 15% recovery.

Veolia Water Technologies
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