Synder Filtration

Membranes that perform. People who deliver. ™

Sanitary Nanofiltration Spiral-Wound Element: NFW (300-500Da)

Synder Filtration's Nanofiltration membranes are engineered and designed to provide superior separation performance for various application needs. Known for its stable flux and wide range of rejection to monovalent and divalent ions, Synder's NF membranes have been developed specifically for specialty process applications.

MEMBRANE SPECS

Model	Polymer	Approx. Molecular Weight Cutoff	Typical Operating Flux	Min Lactose Rejection[1]	Min MgSO4 Rejection[2]	AverageNaCl Rejection[3]
NFW	Proprietary PA TFC	300-500Da	45-50 GFD	98.5%	97.0%	20.0%

[1]Test Conditions: 2,000ppm Lactose solution at 110psi (760kPa) operating pressure, 77°F (25°C)
[2]Test Conditions: 2,000ppm MgSO4 solution at 110psi (760kPa) operating pressure, 77°F (25°C)
[3]Test Conditions: 2,000ppm NaCl solution at 110psi (760kPa) operating pressure, 77°F (25°C)

COMMON APPLICATIONS

- *Demineralization & concentration of lactose*
- *Desalination of dyes and optical brighteners*
- *Seawater sulfate removal*

NF SERIES BENEFITS

- *Competitive flux as the current industry standard NF membranes*
- *Excellent MgSO4 and lactose rejection*
- *Operate at lower pressures than Reverse Osmosis membranes and still achieve excellent rejection of divalent and multivalent ions*
- *NF membranes greatly reduce levels of hardness, nitrates, sulfates, tannins, turbidity, color, TDS, and moderate levels of salt from feed water streams*

RECOMMENDED OPERATING PARAMETERS

Operating Parameters	
Maximum Operating Pressure	600psi (4,137kPa) if T <95°F (35°C) 435psi (3,000kPa) if T >95°F (35°C)
Maximum Temperature	50°C (122°F)
pH Range @ Max Temperature	4-9
pH Range @ Ambient Temperature	4-10

Cleaning Parameters	
Maximum Temperature (Short term <30min)	50°C (122°F)
pH Range @ Max Temperature	3-10
pH Range @ Ambient Temperature	3-10.5

Pressure Drop	PSI
Maximum per Element	15psi (103kPa)
Maximum per Housing	60psi (414kPa)

Chlorine Tolerance
500ppm hours, dechlorination recommended

CONTACT US

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All inquiries will be responded to by a Synder employee personally within 24 hours.

Synder Filtration ISO 9001:2008 CERTIFIED 10002403

ELEMENT DIMENSIONS & WEIGHT

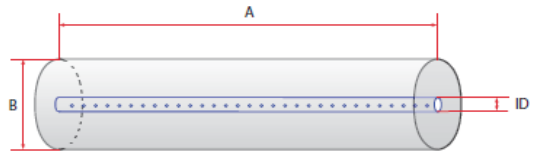
Element	Model Number	Diameter (B) in (cm)	Length (A) in (cm)	PWT ID/OD in (cm)	Tube Extension (C) in (cm)	Dry Weight lb (kg)
1.8”	1812F	1.8 (4.6)	12.0 (30.5)	0.63 (1.6)	-	1.0 (0.5)
2.5”	2540F	2.4 (6.1)	40.0 (101.6)	0.63 (1.6)	-	4.0 (1.8)
	2540M	2.4 (6.1)	40.0 (101.6)	-	1 (2.54) (Both Ends)	4.0 (1.8)
3.8”	3838	3.8 (9.7)	38.0 (96.5)	0.83 (2.1)	-	9.0 (4.1)
	3838.75	3.8 (9.7)	38.8 (98.4)	0.81 (2.1)	-	9.0 (4.1)
8”	8038	7.9 (20.1)	38.0 (96.5)	1.13 (2.9)	-	29.0 (13.2)
	8040	7.9 (20.1)	40.0 (101.6)	1.13 (2.9)	-	29.0 (13.2)

Membrane Model

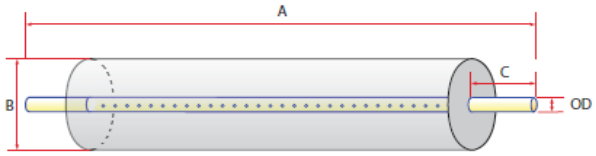
NFX - 2 A - 3838

Spacer Size	Model No.
24 mil	1
31 mil	2
46 mil	3
65 mil	4
80 mil	5

Outerwrap
A = Control Bypass with Tail
B = Control Bypass without Tail



Female Element (Fig.1)



Male Element (Fig.2)

RECOMMENDED ELEMENT CROSS FLOW RATE

Element		Feed Spacer (in mils) 24	31	46	65	80
1.8”	m³/hr	0.7	0.7	0.7	0.9	0.9
	gpm	3	3	3	4	4
2.5”	m³/hr	1.4	1.4	1.6	1.6	1.8
	gpm	6	6	7	7	8
3.8”	m³/hr	6	7	8	8	9
	gpm	26	29	33	36	38
8”	m³/hr	16	18	21	23	24
	gpm	68	76	89	98	103

The recommended cross flow rate will be subject to differential pressure limitations and specific applications.

NF MEMBRANE AREA (SQ. FT.)

Element	Feed Spacer (in mils) 24	31	46	65	80
1812F	6	5	4	3	3
1812M	5	4	3	3	2
2540F	44	38	30	24	20
2540M	42	36	28	23	19
3838	110	96	75	59	50
3838.75	112	98	77	60	51
8038	495	432	336	265	227
8040	522	456	355	280	239

TECHNICAL NOTES

For element sizes not listed, please call or email Synder Filtration for details. We can design an element to fit your exact needs – just specify the element outer diameter (OD) or vessel/housing inner diameter (ID), element inner diameter (ID), and length. Elements are also available with or without a controlled bypass tail. Additional feed spacers are also available.

Trials should be conducted to determine optimal application conditions.