

Nanofiltration TFC Spiral-Wound Element: **NFS (100-250Da)**

Synder Filtration's Nanofiltration membranes are engineered and designed to provide superior separation performance for various application needs. Known for its stable flux and high sulfate rejection, Synder's NFS membrane is ideal for applications such as seawater sulfate removal throughout the oil and gas industry.



MEMBRANE SPECS

Model	Polymer	Approx. Molecular Weight Cutoff	Typical Operating Flux	Avg Na ₂ SO ₄ Rejection ¹	Avg MgSO ₄ Rejection ²	Avg NaCl Rejection ³
NFS	Proprietary PA TFC	100-250Da	30-40 GFD	99.7%	99.5%	50-55%

¹Test Conditions: 2,000ppm Na₂SO₄ solution at 110psi (760kPa) operating pressure, 77°F (25°C)

²Test Conditions: 2,000ppm MgSO₄ solution at 110psi (760kPa) operating pressure, 77°F (25°C)

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

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	3-9.5
pH Range @ Ambient Temperature	3-10.5

Cleaning Parameters	
Maximum Temperature (Short term <30min)	50°C (122°F)
pH Range @ Max Temperature	2-11
pH Range @ Ambient Temperature	2-11

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

Chlorine Tolerance
500ppm hours, dechlorination recommended

NF SERIES BENEFITS

- 30% increase in efficiency versus leading competitors and potential reduction in NF footprint
- Excellent MgSO₄ and Na₂SO₄ rejection
- Operation 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

CONTACT US

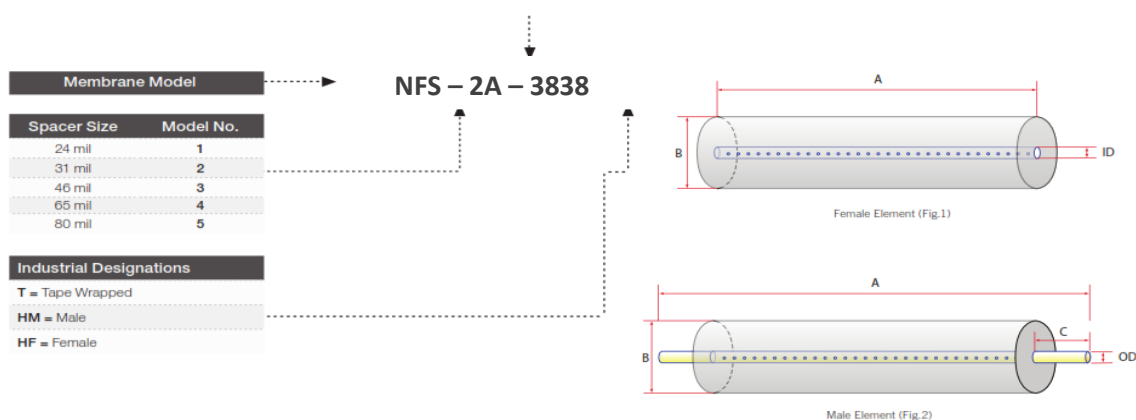


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All inquiries will be responded to by a Synder employee personally within 24 hours.

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"	1812TM	1.8" (4.6)	11.75" (29.8)	0.675" (1.71)	0.75" (1.90)	1.0 (0.9)
2.5"	2519HF	2.4" (6.1)	19.0" (48.3)	0.625" (1.59)	-	3.0 (1.4)
	2540TM	2.4" (6.1)	40.0" (101.6)	0.75" (1.90)	1.0" (2.54)	6.0 (2.7)
	2540HF	2.4" (6.1)	40.0" (101.6)	0.625" (1.59)	-	6.0 (2.7)
	2540HM	2.4" (6.1)	40.0" (101.6)	0.75" (1.90)	1.0" (2.54)	6.0 (2.7)
4"	4040TM	3.9" (9.9)	40.0" (101.6)	0.75" (1.90)	-	12.0 (5.5)
	4040HM	3.9" (9.9)	40.0" (101.6)	0.75" (1.90)	1.0" (2.54)	12.0 (5.5)
	4040HF	3.9" (9.9)	40.0" (101.6)	0.625" (1.59)	-	12.0 (5.5)
8"	8040HF	7.9" (20.1)	40.0" (101.6)	1.125" (2.86)	-	35.0 (15.9)



RECOMMENDED ELEMENT CROSS FLOW RATE

Element		Feed Spacer (in mils)				
		24	31	46	65	80
1.8"	m ³ /hr	0.4	0.5	0.6	0.6	0.6
	gpm	1.8	2.0	2.4	2.5	2.6
2.5"	m ³ /hr	1.2	1.4	1.6	1.8	2.1
	gpm	5	6	7	8	9
4"	m ³ /hr	2	4	5	5	6
	gpm	10	18	21	23	24
8"	m ³ /hr	10	11	13	14	15
	gpm	43	48	55	61	64

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
1812TM		4	3.4	2.6	2.0	1.6
2540HF		35	30	23	17	15
2540HM		33	28	21	16	14
4040HF		99	87	68	51	43
4040HM		96	82	64	50	42
8040HF		440	380	293	227	193

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.