NF MEMBRANE

2024

EDITION FOR SNOWATE DATA SHEET

Snowate

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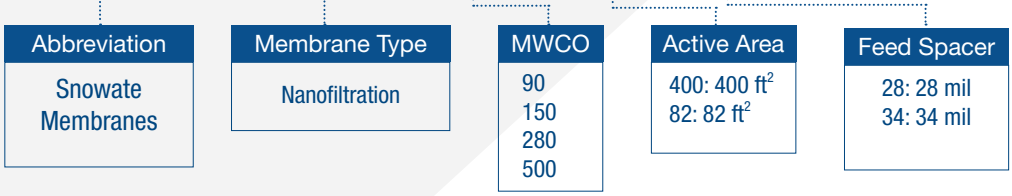
SM NF - 90 - 400 / 34



Nano Filtration Membrane Performance Specifications

Type	Membrane Model	Active Area ft^2 (m^2)	Flux gpd (m^3/d)	Stablized Rejection Rate (%)	Test Conditions		
					Pressure psi (MPa)	Solution NaCl (ppm)	Recovery (%)
90 Series	SM NF-90-8040-400	400 (37)	7,500 (28.4)	85-95	70 (0.48)	2,000ppm NaCl	15
			10,000 (38.0)	≥99		2,000ppm $MgSO_4$	
	SM NF-90-4040-82	82 (7.6)	1,400 (5.3)	85-95		2,000ppm NaCl	
			2,000 (7.6)	≥99		2,000ppm $MgSO_4$	
150 Series	SM NF-150-8040-400/34	400 (37)	8,250 (31.2)	50-70		2,000ppm NaCl	
			9,780 (36.8)	≥99		2,000ppm $MgSO_4$	
	SM NF-150-4040-82	82 (7.6)	1,610 (6.1)	50-70		2,000ppm NaCl	
			1,910 (7.2)	≥99		2,000ppm $MgSO_4$	
280 Series	SM NF-280-8040-400	400 (37)	14,700 (55.6)	40-60		500 ppm $CaCl_2$	
			12,500 (47.3)	≥97		2,000ppm $MgSO_4$	
	SM NF-280-4040-82	82 (7.6)	2,925 (11.1)	40-60		500 ppm $CaCl_2$	
			2,500 (9.4)	≥97		2,000ppm $MgSO_4$	
500 Series	SM NF-500-8040-400	400 (37)	13,200 (50.0)	≥90		2,000ppm $MgSO_4$	
	SM NF-500-4040-82	82 (7.6)	2,700 (10.2)	≥90		2,000ppm $MgSO_4$	
Commercial NF Series	SM NF-90-2540-28	28 (2.6)	750 (2.8)	50-70		500ppm NaCl	
			600 (2.3)	> 98		2,000ppm $MgSO_4$	
	SM NF-280-2540-28	28 (2.6)	850 (3.2)	30-50		500ppm $CaCl_2$	
			700 (2.6)	97		2,000ppm $MgSO_4$	

1. NF 90 SERIES-NF MEMBRANES

SM NF90 series NF membranes provide high flux and excellent performance of removing monovalent and divalent salts. It has high removal rate of organic compounds, such as pesticides, herbicides and THM precursor, etc, as well as high removal of natural organic compounds. In the water treatment process, it can not only reduce the hardness of the water, but also effectively remove the toxic and harmful substances in the water, remove turbidity, color and organic matter. In addition, it can also recover valuable multi-valent salts and small molecular organics. It requires low net driving pressure, and can effectively remove impurities or recover useful substances under very low operating pressure. The system runs with low energy consumption and cost.

Product Highlights

- Excellent monovalent salt selective passage and polyvalent salt removal performance
- Effective removal of pesticides, herbicides, TOC and THM precursors, etc.
- Separation, concentration and recovery of economically valuable salts, precious metals and small molecular organics
- Salt removal under ultra-low pressure and low energy consumption

Product Dimensions

	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)
SM NF-90-8040-400	40 (1,016)	/	1.125 (29)	7.9 (201)
SM NF-90- 4040-82	37.9 (963)	1.05 (26.7)	0.75 (19)	3.9 (99)

Product Specifications

	Effective Membrane Area, ft^2 (m^2)	Stablized Rejection Rate %	Flux gpd (m^3/d)
SM NF-90-8040-400	400 (37.2)	>98.5	8200 (31)
SM NF-90-4040-82	82 (7.6)	>98.5	1,580 (6)

Flux and rejection rate is based on the following standard test conditions: 0.48 MPa (70 psi) pressure, 77°F (25°C), 2,000 ppm $MgSO_4$ solution and pH 8 for feedwater, and 15% recovery.

Operating and Cleaning Limits

- Maximum Operating Pressure: 41 bar (600 psi)
- Maximum Operating Temperature: 45°C (113°F)
- Maximum Element Pressure Drop: 1.0 bar (15 psi)
- pH Range Continuous Operation: 3–10
- pH Range Short-Term Cleaning: 1–13
- Maximum Feed SDI (SDI_{15}): 5.0
- Free Chlorine Tolerance: < 0.1 ppm

Notes

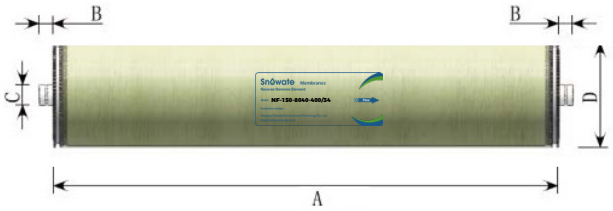
- Permeate flow for individual elements may vary ±15 percent from the value specifed.
- Active membrane area guaranteed ±4%.
- Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending uponfeedwater characteristics and operating conditions.

2. NF 150 SERIES-NF MEMBRANES

SM NF150 series NF membranes are manufactured by a unique formula and technology, which is specially developed for special solute concentration and separation process, with stable and reliable performance and superior fouling resistance. SM NF150 series fill the gap in the cut-off molecular weight range of the existing NF membranes. It is suitable for fine separation, as well as removal of TOC and THM precursor, separation of monovalent salt, decolorization, separation and concentration of small molecule organic matter, etc.

Product Highlights

- Fill the gap in the cut-off molecular weight range of the existing NF membranes
- Suitable for the separation of fine materials, decolorization, the separation of small molecular organic matter,monovalent and multivalent salts
- Superior chemical stability and fouling resistance



Product Dimensions

	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)
SM NF-150-8040-400/34	40 (1,016)	/	1.125 (29)	7.9 (201)
SM NF-150-4040-82	37.9 (963)	1.05 (26.7)	0.75 (19)	3.9 (99)

Product Specifications

	Effective Membrane Area, ft^2 (m^2)	Stablized Rejection Rate %	Flux gpd (m^3/d)
SM NF-150-8040-400/34	400 (37.2)	>98	8,950 (34)
SM NF-150-4040-82	82 (7.6)	>98	1850 (7)

Flux and rejection rate is based on the following standard test conditions: 0.48 MPa (70 psi) pressure, 77°F (25°C), 2,000 ppm $MgSO_4$ solution and pH 8 for feedwater, and 15% recovery.

Operating and Cleaning Limits

- Maximum Operating Pressure: 41 bar (600 psi)
- Maximum Operating Temperature: 45°C (113°F)
- Maximum Element Pressure Drop: 1.0 bar (15 psi)
- pH Range Continuous Operation: 3-10
- pH Range Short-Term Cleaning: 1-12
- Maximum Feed SDI (SDI_{15}): 5.0
- Free Chlorine Tolerance: < 0.1 ppm

Notes

- Permeate flow for individual elements may vary ±15 percent from the value specifed.
- Active membrane area guaranteed ±4%.
- Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending uponfeedwater characteristics and operating conditions.

3. NF 280 SERIES-NF MEMBRANES

SM NF 280 series NF membranes have ultra-high flux and are capable of removing TOC and THM (trihalides) precursor, at the meantime, NF 280 series offer some selectivity in the passing of divalent salts with moderate passing rate and other salts passing with higher passing rate. It is an ideal membrane element for removing organic matter from surface water and groundwater, softening, concentrating, separating or purifying inorganic salts, organic matters, natural drugs and fermentation broth. NF 280 series have high permeate flux rate, providing a wide range of water treatment, concentration and separation applications for industries. Suitable for removal of TOC, THM precursors, salts, low operating energy consumption systems under ultra-low pressure, as well as for material separation, municipal and industrial water treatment.

Product Highlights

- High flux
- High removal of TOC and THM precursors
- Excellent softening and decolorizing properties
- Ultra-low operating pressure and power consumption

Product Dimensions

	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)
SM NF-280-8040-400	40 (1,016)	/	1.125 (29)	7.9 (201)
SM NF-280-4040-82	37.9 (963)	1.05 (26.7)	0.75 (19)	3.9 (99)

Product Specifications

	Effective Membrane Area, ft^2 (m^2)	Stablized Rejection Rate %	Flux gpd (m^3/d)
SM NF-280-8040-400	400 (37.2)	>97	12,410 (47)
SM NF-280-4040-82	82 (7.6)	>97	2,430 (9.2)

Flux and rejection rate is based on the following standard test conditions: 0.48 MPa (70 psi) pressure, 77°F (25°C), 2,000 ppm $MgSO_4$ solution and pH 8 for feedwater, and 15% recovery.

Operating and Cleaning Limits

- Maximum Operating Pressure: 41 bar (600 psi)
- Maximum Operating Temperature: 45°C (113°F)
- Maximum Element Pressure Drop: 1.0 bar (15 psi)
- pH Range Continuous Operation: 3–10
- pH Range Short-Term Cleaning: 1-12
- Maximum Feed SDI (SDI_{15}): 5.0
- Free Chlorine Tolerance: < 0.1 ppm

Notes

- Permeate flow for individual elements may vary ±15 percent from the value specifed.
- Active membrane area guaranteed ±4%.
- Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending uponfeedwater characteristics and operating conditions.

4. NF 500 SERIES-NF MEMBRANES

SM NF 500 series NF membranes are characterized by extremely high flux and rejection rate, high retainment of divalent salt and excellent passing of monovalent salt. It offers moderate removal rate of organic matters while achieves high flux. It can effectively retain organic compounds with cut-off molecular weight within the range of 300~500D. It offers excellent decolorization as well. The SM NF500 series adopt the latest membrane manufacturing technology to minimize dead spots and bypasses during filtration process. It is suitable for waste water reuse, municipal water treatment, etc.

Product Highlights

- High flux
- Suitable for decolorization and COD removal

Product Dimensions

	A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)
SM NF-500-8040-400	40 (1,016)	/	1.125 (29)	7.9 (201)
SM NF-500-4040-82	37.9 (963)	1.05 (26.7)	0.75 (19)	3.9 (99)

Product Specifications

	Effective Membrane Area, ft^2 (m^2)	Stablized Rejection Rate %	Flux gpd (m^3/d)
SM NF-500-8040-400	400 (37.2)	>90	13,200 (50)
SM NF-500-4040-82	82 (7.6)	>90	2,900 (11)

Flux and rejection rate is based on the following standard test conditions: 0.48 MPa (70 psi) pressure, 77°F (25°C), 2,000 ppm $MgSO_4$ solution , pH 8 for feedwater, and 15% recovery.

Operating and Cleaning Limits

- Maximum Operating Pressure: 41 bar (600 psi)
- Maximum Operating Temperature: 45°C (113°F)
- Maximum Element Pressure Drop: 1.0 bar (15 psi)
- pH Range Continuous Operation: 3–10
- pH Range Short-Term Cleaning: 1–12
- Maximum Feed SDI (SDI_{15}): 5.0
- Free Chlorine Tolerance: < 0.1 ppm

Notes

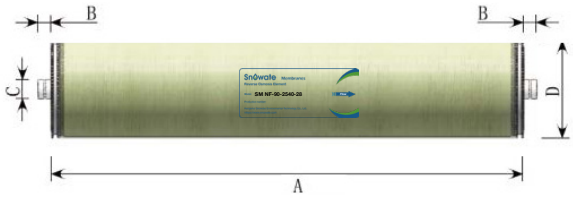
- Permeate flow for individual elements may vary ±15 percent from the value specifed.
- Active membrane area guaranteed ±4%.
- Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending uponfeedwater characteristics and operating conditions.

5. COMMERCIA NF MEMBRANES

Commercial NF membranes can highly remove TOC and THM precursors, provide high flux and removal of salt, iron and organic compounds such as pesticides, herbicides and THM precursors. UltraClean commercial NF membranes can purify water at lower operating pressures.

Product Highlights

- Suitable for high removal of TOC and THM precursors
- High flux and removal of salt, iron and organic compounds, etc.



Product Dimensions

	Inch A inch (mm)	B inch (mm)	C inch (mm)	D inch (mm)
SM NF-90-2540-28	37.62 (956)	1.19 (30.2)	0.75 (19)	2.4 (61)
SM NF-280-2540-28	37.62 (956)	1.19 (30.2)	0.75 (19)	2.4 (61)

Product Specifications

	Effective Membrane Area, ft^2 (m^2)	Stablized Rejection Rate %	Flux gpd (m^3/d)
SM NF-90-2540-28	28 (2.6)	50% – 70% (NaCl) >98% ($MgSO_4$)	750 (2.8) (NaCl) 600 (2.3) ($MgSO_4$)
SM NF-280-2540-28	28 (2.6)	30% – 50% ($CaCl_2$) 97% ($MgSO_4$)	850 (3.2) ($CaCl_2$) 700 (2.6) ($MgSO_4$)

Flux and rejection rate is based on the following standard test conditions: 0.48 MPa (70 psi) pressure, 77°F (25°C), 2,000 ppm $MgSO_4$ solution , pH 8 for feedwater, and 15% recovery.

Operating and Cleaning Limits

- Maximum Operating Pressure: 41 bar (600 psi)
- Maximum Operating Temperature: 45°C (113°F)
- Maximum Element Pressure Drop: 1.0 bar (15 psi)
- pH Range Continuous Operation: 3–10
- pH Range Short-Term Cleaning: 1-12
- Maximum Feed SDI (SDI_{15}): 5.0
- Free Chlorine Tolerance: < 0.1 ppm

Notes

- Permeate flow for individual elements may vary ±15 percent from the value specifed.
- Active membrane area guaranteed ±4%.
- Stabilized salt rejection is generally achieved within 24-48 hours of continuous use; depending uponfeedwater characteristics and operating conditions.

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