

Product Information

FILMTEC™ Membranes

FILMTEC NF90-400/34i Nanofiltration Element

Features

The DOW FILMTEC[™] NF90-400/34i nanofiltration element is a high area and high productivity element offering an industry wide unique combination of features:

- · High removal rate of salts, including nitrates and iron,
- High removal rate of organic compounds such as pesticides, herbicides, and THM precursors.
- A 34 mil feed spacer to lessen the impact of fouling on pressure drop across a vessel and to enhance cleaning effectiveness.

The DOW FILMTEC[™] NF90-400/34i is listed to ANSI/NSF61. For more information visit: <u>http://www.nsf.org/Certified/PwsComponents</u>



In addition, the DOW FILMTEC[™] NF90-400/34i includes the typical DOW FILMTEC product features:

- iLEC[™] interlocking end caps reduce system operating costs and the risk of o-ring leaks.
- The oxidative free membrane manufacturing process results in high membrane robustness and long term stable performance.
- The widest pH range for cleanings (pH1 to pH13) allows effective cleanings even in cases of severe fouling.
- The automated, precision fabrication gives a greater number of shorter membrane leaves thus reducing fouling while maximizing element efficiency.

Product Specifications

Product	Part number	Nominal Active Surface Area ft ² (m ²)	Product Water Flow Rate gpd (m³/d)	Stabilized salt rejection (%)
NF90-400/34i	11023067	400 (37)		
NaCl			7,500 (28.4)	85 – 95
MgSO₄			10,000 (37.9)	>97

1. Permeate flow and salt passage based on the following test conditions:

2,000 mg/l NaCl, 70 psi (0.48 MPa), 77°F (25°C) and 15% recovery.

2,000 mg/l MgSO4, 70 psi (0.48 MPa), 77°F (25°C) and 15% recovery.

2. Flow rates for individual elements may vary +/-15%.

3. The above specifications are benchmark values. Please be sure to operate according to our system design guidelines.

Figure 1	D DIA Feed	U-Cup Brine Seal	berglass Outer Wrap	End Cap Br	C DIA

	Single-Element	Dimensions – inches			
Product	Recovery	(mm) A	В	C	D
NF90-400/34i	15%	40 (1,016)	40.5 (1,029)	7.9 (201)	1.125 ID (29)

1. Refer to FilmTec Design Guidelines for multiple-element applications and recommended element recovery rates for various feed sources. 1 inch = 25.4 mm

2. Element to fit nominal 8.00-inch (203 mm) I.D. pressure vessel.

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Operating Limits	Memorane Type			
	Maximum Operating Pressure	113 F (43 C) 600 psig (41 bar)		
	nH Range, Continuous Operationa	3 - 10		
	nH Range, Short-Term Cleaning (30 min) ^b	1 - 13		
	Maximum Feed Flow	SDI 5		
	Free Chlorine Tolerance ^o	<0.1 nnm		
	a. Maximum temperature for continuous operation above pH 10 is 95°F (35°C).		
	b. Refer to Cleaning Guidelines in specification sheet 609-23010.	ing agante will access promotive membrane failure		
	c. Order certain conditions, the presence of nee choine and other oxida Since oxidation damage is not covered under warranty. FilmTec recom pretreatment prior to membrane exposure. Please refer to technical but	Ing agents will cause prematine field are allore. Imends removing residual free chlorine by Iletin 609-22010 for more information.		
Important	Proper start-up of reverse osmosis water treatment syster	everse osmosis water treatment systems is essential to prepare the		
Information	membranes for operating service and to prevent membrar	g service and to prevent membrane damage due to overfeeding or ing the proper start-up sequence also helps ensure that system operatin loging specifications so that system water quality and productivity goals		
	nydraulic shock. Following the proper start-up sequence a			
	can be achieved	in water quality and productivity goals		
	Before initiating system start-up procedures, membrane p elements, instrument calibration and other system checks	start-up procedures, membrane pretreatment, loading of the membrane ibration and other system checks should be completed.		
	Please refer to the application information literature entitle	d "Start-Up Sequence" (Form No. 609-		
	02077) for more information.			
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Oneration	Avoid any abrupt pressure or cross-flow variations on the	spiral elements during start-up		
Guidelines	shutdown, cleaning or other sequences to prevent possibl	e membrane damage. During start-up,		
	a gradual change from a standstill to operating state is rec	commended as follows:		
	Feed pressure should be increased gradually over a 3	30-60 second time frame.		
	Cross-flow velocity at set operating point should be ac Dermoste obtained from first hour of operation about	chieved gradually over 15-20 seconds.		
	Permeate obtained from first hour of operation should	be discarded.		
General Information	 Keep elements moist at all times after initial wetting. If operating limits and guidelines given in this bulleting. 	are not strictly followed the limited		
	warranty will be null and void	are not strictly followed, the inflited		
	 To prevent biological growth during prolonged system 	shutdowns, it is recommended that		
	membrane elements be immersed in a preservative se	olution.		
	The customer is fully responsible for the effects of inclu-	ompatible chemicals and lubricants on		
	elements.			
	 Maximum pressure drop across an entire pressure ve Avoid permeate side backpressure at all times 	ssel (nousing) is 50 psi (3.4 bar).		
	• Avoid permeate-side backpressure at all times.			
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Regualtory Note	I nese membranes may be subject to drinking water applic	cation restrictions in some countries:		
	Notice: The use of this product in and of itself does not necessarily quarant	tee the removal of overs and nathogens from water		
	Effective cyst and pathogen reduction is dependent on the complete system	design and on the operation and maintenance of		
	the system.			
	Notice: No freedom from any patent owned by Dow or others is to be inferre	ed. Because use conditions and applicable laws may		
	differ from one location to another and may change with time, Customer is re	esponsible for determining whether products and ensuring that Customer's workplace and disposal		
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Page 2 of 2

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Form No. 609-50106-0413