



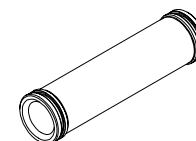
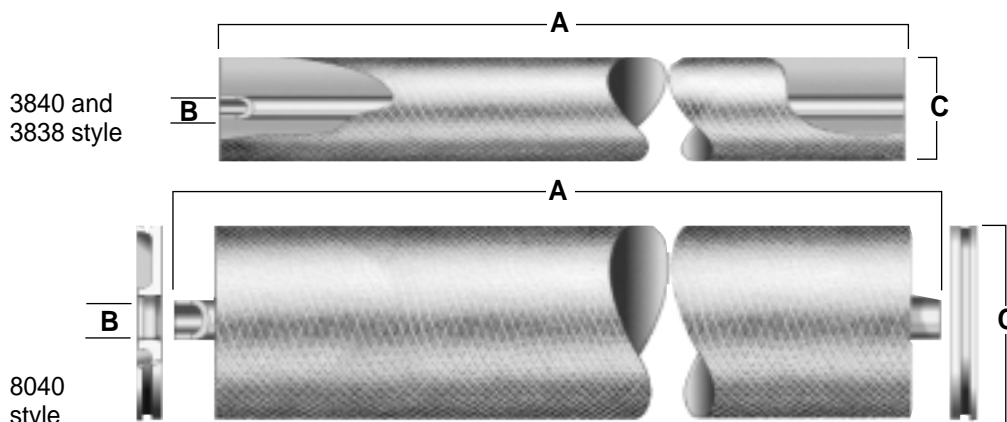
# FILMTEC Membranes

## Desalting Nanofiltration Elements for Food Processing

FILMTEC™ NF elements contain a new nanofiltration membrane with improved organic rejection. NF is a durable membrane designed to reject organics with a molecular weight above 200 while passing monovalent salts. New NF membrane elements replace NF45 elements used by food and dairy processors for a variety of desalting, purification and other separations. The full-fit configuration is optimal for cleaning and minimizing “dead spaces.” All components comply with FDA standards and are suitable for use in food processing applications.

### Product Specifications

Product	Part Number	Active Area – ft <sup>2</sup> (m <sup>2</sup> )
NF-3840/30-FF	146073	81 (7.5)
NF-3838/30-FF	146071	80 (7.4)
NF-3838/48-FF	146072	60 (5.6)
NF-390-FF (8040 style)	146074	390 (36.2)
NF-8040/48-FF	146075	300 (27.9)
NF-8040/64-FF	146076	240 (22.3)



FilmTec supplies two end caps (part number 113199) and one coupler (part number 103968) with each element. Each coupler includes four 2-119 EPR o-rings (part number 89256).

Product Type	Dimensions – Inches (mm)		
	A	B	C
NF-3840	38.75 (984.3)	0.83 (21.1)	3.8 (96)
NF-3838	38.00 (965.0)	0.83 (21.1)	3.8 (96)
NF-8040	40.00 (1016)	1.125 (28.58)	7.9 (200)

1 inch = 25.4 mm

### Operating Limits

Maximum Operating Pressure.....800 psi (54.8 bar)  
 Maximum Operating Temperature .....122°F (50°C)  
 pH Range, Continuous Operation<sup>a</sup> .....3–10  
 pH Range, Short-Term Cleaning<sup>b</sup> (Max. @ 50°C) .....1–11.5  
 Free Chlorine Concentration<sup>c</sup> .....< 0.1 ppm  
 Hydrogen Peroxide:  
     Continuous Operation (@ 77°F/25°C maximum).....20 ppm  
     Short-Term Cleaning (@ 77°F/25°C maximum).....1000 ppm

<sup>a</sup> Maximum temperature for continuous operation above pH 10 is 95°F (35°C).  
<sup>b</sup> Refer to Cleaning Guidelines in specification sheet 609-00077/CH 172-131-E.  
<sup>c</sup> Under certain conditions, the presence of free chlorine and other oxidizing agents will cause premature membrane failure. Since oxidation damage is not covered under warranty, FilmTec recommends removing residual free chlorine by pretreatment prior to membrane exposure. Please refer to technical bulletin 609-22010/CH 172-144-E for more information.

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# FILMTEC Membranes

For more information about FILMTEC membranes, call the Dow Liquid Separations business:

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Europe . . . . . (+32) 3-450-2240  
Japan . . . . . (+81) 3-5460-2100  
Australia . . . . . (+61) 2-9776-3226  
<http://www.filmtec.com>

## Design Guidelines

Product	Max. Recirculation Cross-Flow gpm (m <sup>3</sup> /h)	Max. Element $\Delta P^*$ psi (bar)
NF-3840/30-FF	30 (6.8)	15 (1.0)
NF-3838/30-FF	30 (6.8)	15 (1.0)
NF-3838/48-FF	40 (9.1)	15 (1.0)
NF-390-FF	80 (18.2)	13 (0.9)
NF-8040/48-FF	100 (22.7)	13 (0.9)
NF-8040/64-FF	100 (22.7)	13 (0.9)

\*Maximum pressure drop across entire vessel is 60 psi (4.1 bar).

### Important Information

New NF spiral elements should be cleaned prior to initial use. The cleaning procedure should be based on the application for which the elements are to be used. If cleaning with formulated agents is not available, an alkaline wash with wetting agent is recommended prior to initial use.

An appropriate alkaline wash consists of the following:

- Flushing with water (ensure water quality meets guidelines found in bulletin 609-00077/CH 172-131-E).
- Heating water to 45°C (113°F) in recirculation mode.
- Adding 0.2% Na-EDTA and NaOH to pH 11 and recirculating for 30 minutes.
- Flushing with water until neutral pH is obtained.

### Operation Guidelines

Avoid any abrupt pressure or cross-flow variations on the spiral elements during start-up, shutdown, cleaning or other sequences to prevent possible membrane damage. During start-up, a gradual change from a standstill to operating state is recommended as follows:

- Feed pressure should be increased gradually over a 30-60 second time frame.
- Before initiating cross-flow at high permeate flux conditions (e.g., start-up with high-temperature water), the set operating pressure should be maintained for 5-10 minutes.
- Cross-flow velocity at set operating point should be achieved gradually over 15-20 seconds.

### General Information

- Keep elements moist at all times after initial wetting.
- If operating specifications given in this Product Information bulletin are not strictly followed, the limited warranty will be null and void.
- To prevent biological growth during system shutdowns, it is recommended that membrane elements be immersed in a preservative solution.
- The customer is fully responsible for the effects of incompatible chemicals and lubricants on elements.
- Maximum pressure drop across an entire pressure vessel (housing) is 60 psi (4.1 bar).
- Avoid permeate-side backpressure at all times.

**Notice:** The use of this product in and of itself does not necessarily guarantee the removal of cysts and pathogens from water. Effective cyst and pathogen reduction is dependent on the complete system design and on the operation and maintenance of the system.

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Published April 2002.

