DuPont™ FilmTec™ elements

DUPONT™

Product Data Sheet | Nanofiltration

FilmTec™ HTNF-8040/34 and FilmTec™ HTNF-4040/34 Elements

High Temperature Nanofiltration Elements for Food & Beverage and Chemical Processing

Key Features

- Operating temperatures up to 70°C enabling reduced OPEX and CAPEX by requiring smaller or no cooling and heating systems.
- Robust FilmTec™ Nanofiltration Membrane sheet.
- 34 mil feed spacer to maximize active membrane surface area while reducing the impact of fouling on the pressure drop.

Key Applications

- Waste brine recycling from sugar decolorization
- Sulfate removal in Chlor-alkali process stream

Operating Temperature and Pressure Limits

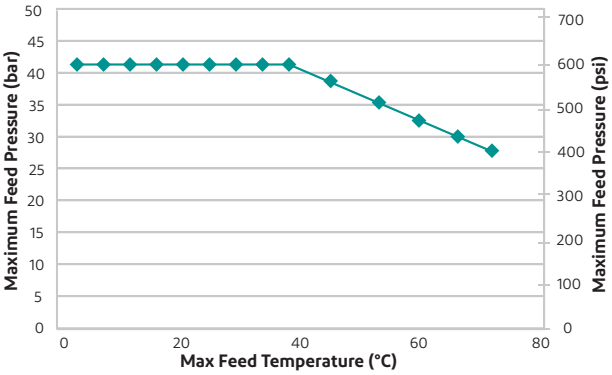


Figure 1: Maximum allowed temperature and pressure for FilmTec™ HTNF-8040/34 and FilmTec™ HTNF-4040/34

Maximum Feed Temperature		Maximum Feed Pressure	
(°C)	(°F)	(bar)	(psi)
5	41	41	600
10	50	41	600
15	59	41	600
20	68	41	600
25	77	41	600
30	88	41	600
35	95	41	600
40	104	41	600
45	113	41	600
50	122	38	551
55	131	35	508
60	140	32	464
65	149	30	435
70	158	28	406

Typical Properties

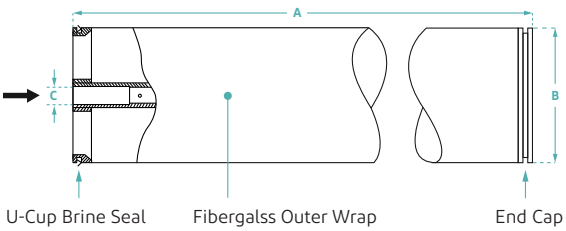
Product	Active Area ft² (m²)	Feed Spacer Thickness (mil)
FilmTec™ HTNF-8040/34 element	320 (30)	34
FilmTec™ HTNF-4040/34 element	70 (6)	34

Dimensions – inches (mm)		
	FilmTec™ HTNF-8040/34	FilmTec™ HTNF-4040/34
A	40 (1,016)	40 (1,016)
B	7.9 (201)	3.9 (99)
C	1.125 ID (29)	0.75 OD (19)
D		1.03 (26)

ID = Inner Diameter
OD = Outer Diameter
1 inch = 25.4 mm

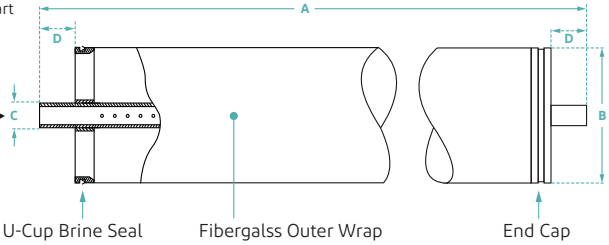
Element Dimensions

Model HTNF-8040/34



FilmTec™ supplies coupler part number 255289 with each element. Each coupler includes two 3-912 EPR O-rings (part number 151705).

Model HTNF-4040/34



FilmTec™ coupler part number 89048 is ordered separately for each element. Each coupler includes two 2-210 EPR O-rings (part number 89255).

1. For element weight information refer to What is the weight of FilmTec™ elements as delivered? (Form No. 45-D04811-en)
2. For element packaging and shipping information refer to How are FilmTec™ elements packaged and shipped? (Form No. 45-D04811-en)

Form No. 45-D01734-en, Rev. 4
January 2025

Suggested Operating and Cleaning Conditions

Maximum Operating Temperature[1]	pH 4 – 8 at ≤ 70°C (158°F) pH 3 – 10 at ≤ 50°C (122°F) pH 3 – 11 at ≤ 35°C (95°F)
Maximum Operating Pressure	600 psi (41.4 bar) at ≤ 45°C / 406 psi (28 bar) at ≤ 70 °C
Maximum Pressure Drop	
Per Element	13 psi (0.9 bar) at < 50°C / 0.7 psi (0.5 bar) at < 70°C
Per Pressure Vessel	60 psi (4.1 bar) at < 50°C / 30 psi (2 bar) at < 70°C
Operating pH Range	3 - 11
Hydrogen peroxide usage limit[2]	
Continuous Operation	20 ppm
Short-Term Cleaning (77°F/25°C maximum)	1,000 ppm
Free Chlorine Tolerance[3]	Below Detectable Limits
CIP pH Range[4]	pH 1.8 – 11 at 45 – 50°C pH 1.8 – 11.2 at < 45°C

1. See Figure 1, maximum allowed temperature and pressure for HTNF-8040/34 and HTNF-4040/34
2. Refer to Sanitizing RO&NF Membrane System (Form No. 45-D01630-en).
3. Oxidation damage is not covered under warranty, DuPont recommends removing residual free chlorine by pretreatment prior to membrane exposure. Please refer to Dechlorinating Feedwater (Form No. 45-D01569-en) for more information.
4. Refer to Food Processing and Sanitary Elements Cleaning Guide (Form No. 45-D01686-en). And to Temperature and pH best practices in preparation of Cleaning Solutions (Form No. 45-D04358-en).

Important General Information

- Keep elements moist at all times after initial wetting.
- For successful operation of Reverse Osmosis (RO) and Nanofiltration (NF) membrane systems, the operation must follow the guidelines provided in the FilmTec™ Reverse Osmosis / Nanofiltration Elements Operation Excellence and Limiting Conditions Tech Fact (Form No. 45-D04388-en).
- To prevent biological growth during prolonged 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.
- Avoid static permeate-side backpressure at all times.
- Permeate obtained from the first hour of operation should be discarded.
- 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.

Please consider good operating practices for the optimal performance of the Nanofiltration membrane elements to assure damage free operation:

1. Loading of Pressure Vessels – Preparation & Element Loading (Form No. 45-D01602-en)
2. System Operation, including plant Start-Up Sequence (Form No. 45-D01609-en) and RO & NF Systems Shutdown (Form No. 45-D01613-en)
3. Handling, Preservation, and Storage (Form No. 45-D03716-en)

Full information of plant design, system operation, and troubleshooting is given in the FilmTec™ Reverse Osmosis Membranes Technical Manual (Form No. 45-D01504-en).

Regulatory Note

This product may be subject to drinking water application restrictions in some countries; please check the application status before use and sale.

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Have a question? Contact us at:
dupont.com/water/contact-us

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