

70K Sanitary Ultrafiltration Elements

Sanitary Ultrafiltration Spiral Elements

PRODUCT DESCRIPTION

Membrane Chemistry:	Proprietary semi-permeable polyvinylidene difluoride (PVDF)
Membrane Type:	Ultrafiltration with Molecular Weight Cutoff of 70,000 daltons
Construction:	Sanitary spiral wound element with polysulfone permeate tube and net outer wrap
Regulatory Status:	Compliant with US FDA CFR Title 21

SPECIFICATIONS

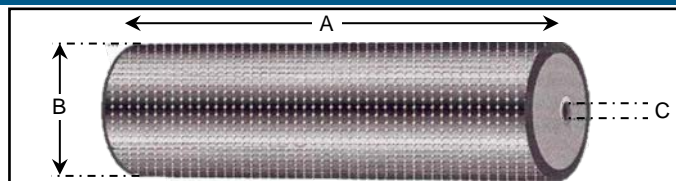
Part Number	Model	Feed Spacer mil (mm)	Active Membrane Area ft ² (m ²)
0754027	3838-70K-45	45 (1.1)	56 (5.2)
0754528	6338-70K-30-T	30 (0.8)	209 (19.5)
0754529	6338-70K-45-T	45 (1.1)	176 (16.3)
0754530	6438-70K-45	45 (1.1)	176 (16.3)
0754720	8038-70K-30	30 (0.8)	338 (31.4)
0754719	8038-70K-45	45 (1.1)	273 (25.4)
0754718	8338-70K-45-T	45 (1.1)	297 (27.6)

OPERATING AND DESIGN INFORMATION*

Typical Operating Pressure:	30 - 120 psi (2.1 - 8.3 bar)
Operating Temperature Range:	41 - 140°F (5 - 60°C)
Cleaning Temperature Range:	105 - 185°F (40 - 85°C)
Allowable pH - Continuous Operation:	2.0 - 10.0
Allowable pH - Clean-In-Place (CIP):	1.8 - 11.0
Design Pressure Drop below 140°F (60°C):	
Pressure Drop Per Element:	30-mil spacer: 12-15 psi (0.8-1.0 bar) 45-mil spacer: 15-20 psi (1.0-1.4 bar)
Pressure Drop Per Vessel (3 in series):	30-mil spacer: 36-45 psi (2.5-3.1 bar) 45-mil spacer: 45-60 psi (3.1-4.1 bar)
Pressure Drop Per Vessel (4 in series):	30-mil spacer: 48-60 psi (3.3-4.1 bar) 45-mil spacer: 60-68 psi (4.1-4.7 bar)
Maximum Pressure Drop above 140°F (60°C):	10 psi (0.7 bar) per element

*Consult KSS Process Technology Group for specific applications

NOMINAL DIMENSIONS



Model	A		B		C	
	inches	(mm)	inches	(mm)	inches	(mm)
3838 70K	38.0	(965)	3.8	(96)	0.831	(21.1)
6338 70K	38.0	(965)	6.3	(160)	1.138	(28.9)
6438 70K	38.0	(965)	6.4	(162)	1.138	(28.9)
8038 70K	38.0	(965)	7.9	(201)	1.138	(28.9)
8338 70K	38.0	(965)	8.3	(211)	1.138	(28.9)

Notes: Dimensions are provided for reference only and should not be interpreted as accurate specifications.

OPERATING GUIDELINES

Membrane Characteristics:

- The membrane used in these elements consists of a semipermeable polyvinylidene difluoride (PVDF) layer cast on backing material.
- Pure water flux is 2.0-4.0 gfd/psi (50-100 l/m²/h/bar) at 77°F (25°C).

Options:

- Diameter: 3.8", 6.3", 8.0" or 8.3"
- Feed Spacer: 30 mil or 45 mil
- Outer wrap: Controlled outer wrap or trimmable (-T)
- Permeate tube: Polysulfone

Operating Limits:

- **Operating Pressure:** Maximum operating pressure is 140 psi (9.7 bar).
- **Permeate Pressure:** Permeate pressure should not exceed baseline (concentrate) pressure at any time (including online, off-line and during transition). Reverse pressure will damage the membrane.
- **Differential Pressure:** The maximum differential pressure per element is listed in the front of this document, including design values for multi-element housings. Maximum differential pressure per element at temperature higher than 140°F (60°C) is 10 psi (0.7 bar) for all feed spacers.
- **Temperature:** Maximum operating temperature is 140°F (60°C); maximum cleaning temperature is 185°F (85°C).
- **pH:** Allowable range for continuous operation is 2.0 to 10.0. Allowable pH range for cleaning is 1.8 to 11.0.

Water Quality for Cleaning & Diafiltration:

- **Turbidity and SDI:** Maximum feed turbidity is 1 NTU. Maximum feed SDI is 5.0 (15-minute test).
- **Guidelines:** Please refer to the KSS "Water Quality Guidelines for CIP and Diafiltration" for more detailed information.

Chemical Exposure:

- Adherence to KSS cleaning and sanitizing procedures including chemical concentrations, pH, temperature, and exposure time is necessary to achieve maximum useful element life. Accurate records must be maintained.

- Residual chlorine concentration during cleaning cycle (CIP) should be 150 ppm @ pH 10.5-11.0. Chlorine concentration should never exceed 200 ppm.
- Chlorine should only be added to the cleaning solution after the pH has been adjusted to 10.5-11.0.
- Iron or other catalyzing metals in the presence of free chlorine or hydrogen peroxide will accelerate membrane degradation.
- Sanitizing should be done only after a complete cleaning cycle and with water of acceptable quality. Refer to cleaning instructions and feedwater quality technical bulletins

Cationic Polymers and Surfactants:

70K membranes may be irreversibly fouled if exposed to cationic (positively charged) polymers or surfactants. Exposure to these chemicals during operation or cleaning is not recommended and will void the warranty.

Lubricants:

For element installation, use only water or glycerin to lubricate seals. The use of petroleum or vegetable-based oils or solvents may damage the element and will void the warranty.

Supplemental Technical Bulletins:

- UF Element Cleaning Procedures
- Water Quality Guidelines for CIP and Diafiltration

Service and Ongoing Technical Support:

KSS has an experienced staff available to assist end-users and OEM's for optimization of existing systems and development of new applications. KSS also offers a complete line of KOCHKLEEN® membrane pretreatment, cleaning, and maintenance chemicals.

KSS Capability:

KSS is the leader in crossflow membrane technology, manufacturing reverse osmosis, nanofiltration, microfiltration, and ultrafiltration membranes and membrane systems. The industries we serve include food, dairy and beverage, semiconductor, automotive, water and wastewater, chemical and general manufacturing. KSS adds value by providing top quality membrane products and sharing our experience in the design and supply of thousands of crossflow membrane systems worldwide.

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