



# Sanitary Spiral Membranes for Ultrafiltration

## UF-PE Series

The elements for ultrafiltration are tailor-made for a range of processes, i.e. dairy, food, chemical, and pharmaceutical applications.

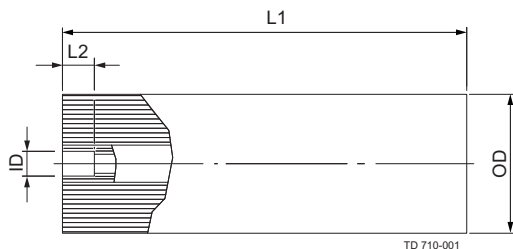
The elements are manufactured with polyester (PE) backing materials in a sanitary full-fit design offering optimum cleaning conditions. They are available in different combinations of length, diameter, spacer size and molecular weight cut-off value.

UF-PE series	MWCO	Characteristics
GR60PE	25,000	Polysulphone/ polyethersulphone on polyester
GR61PE	20,000	
GR70PE	20,000	

### Spiral membrane designation

Alfa Laval GR61PE-6338/48		
Alfa Laval GR61PE	=	Membrane type
63	=	Outer diameter of element (6.3")
38	=	Element length (38")
48	=	Feed spacer thickness

All materials comply with EU Commission Directive 2002/72/EC and FDA regulations (CFR), Title 21.



OD = outer diameter of element  
 HD = nominal inner diameter of housing\*  
 L1 = total length of element without ATD  
 ID = diameter of ATD socket  
 L2 = depth of ATD socket

\* For specific measurements of Alfa Laval housings, please consult the product description

### Dimensions

Element size	OD mm	HD mm	L 1 mm	ID mm	L 2 mm
2517	64.0-65.0	66.00	432	21.00	26.0
3833	95.0-96.5	97.55	838	21.00	26.0
3838	95.0-96.5	97.55	965	21.00	26.0
3938	98.5-99.0	100.00	965	21.00	26.0
4333	108.5-109.5	110.30	838	21.00	26.0
4336	108.5-109.5	110.30	910	21.00	26.0
4338	108.5-109.5	110.30	965	21.00	26.0
5838	146.5-148.5	150.00	965	28.90	50.0
6338	160.0-162.0	163.10	965	28.90	50.0
8038	198.5-201.5	204.14	965	31.15	50.0
8438	211.5-214.0	215.10	965	31.15	50.0

Other element sizes may be available - please contact Alfa Laval.

### Element configuration

<b>Outer diameter</b>	2.5"	3.8"	3.8"	3.9"	4.3"	4.3"	4.3"	5.8"	6.3"	8.0"	8.4"
<b>Length</b>	17"	33"	38"	38"	33"	36"	38"	38"	38"	38"	38"
<b>Spacer size (mil)</b>	30	30	30	30	30	30	30	30	30	30	30
	48	48	48	48	48	48	48	48	48	48	48
	-	80	80	80	80	80	80	80	80	80	80

### Typical cross-flow m<sup>3</sup>/h\* and max. pressure drop bar at cP 1

Outer diameter Feed spacer thickness	2.5"		3.8"		3.9"		4.3"	
	m <sup>3</sup> /h	bar	m <sup>3</sup> /h	bar	m <sup>3</sup> /h	bar	m <sup>3</sup> /h	bar
30 mil	0.9-1.1	0.5	6	1.1	6	1.1	7	1.1
48 mil	1.3-1.8	0.6	8	1.1	8	1.1	9	1.1
80 mil	-	-	11	1.1	11	1.1	12	1.1

Outer diameter Feed spacer thickness	5.8"		6.3"		8.0"		8.4"	
	m <sup>3</sup> /h	bar	m <sup>3</sup> /h	bar	m <sup>3</sup> /h	bar	m <sup>3</sup> /h	bar
30 mil	15	1.1	17	1.1	18	0.9	25	0.8
48 mil	20	1.1	23	1.1**	25	0.9	30	1.0
65 mil	-	-	25	1.1**	-	-	-	-
80 mil	28	1.1	30	1.1**	30	1.1	35	1.1

\* Calculated at tight fit of spiral element and housing and by use of standard ATD system.

\*\* During production at max 50°C: 48 mil, 65 mil and 80 mil: 1.3 bar.

### Recommended operation limits

	pH range	Pressure, bar	Temperature, °C
Production	3-9	1-10	0-50
Cleaning*	1-11.5	1-4	0-55

\* Please consult Alfa Laval's cleaning description

### Cleaning limitations

Caustic/chlorine

GR61PE: 200 ppm at 50°C , pH 10.5-11.0, Max. ½ h/day

GR60PE/GR70PE: 200 ppm at 50°C , pH 10.5-11.0, Max. exposure: ppm x Hours < 25000 ppmHours

### Sanitation

Treated hot water: 80°C, only feed pump at 1 bar

### **Important Information**

New spiral elements must be cleaned prior to first use. The cleaning procedure should be in accordance with the instructions of Alfa Laval's cleaning description for the spiral element type concerned. The customer is fully responsible for the effects of incompatible chemicals on spiral elements.

- Keep spiral elements moist at all times after initial wetting.
- If the operating specifications given in this product description are not strictly followed, the limited warranty will be null and void.
- To prevent biological growth during system shutdowns, Alfa Laval recommends that the spiral elements should be immersed in a protective solution.
- Avoid permeate-side back pressure at all times.
- Alfa Laval recommends using a rigid stainless steel ATD end device at the element housing outlet end, when housing pressure drop exceeds 3 bars
- It is recommended that the inner diameter of the element housing should be approx. 2 mm bigger than the outer diameter of actual spiral element.

### **Operation guidelines**

Avoid any abrupt pressure or cross-flow variations on the spiral elements during startup, shutdown, cleaning or other sequences to prevent possible damages.

A start-up procedure from standstill to operational condition is recommended as follows:

- The unpressurized plant should be refilled with water.
- Feed pressure should be gradually increased over a 30-60 second time scale.
- Before initiating cross-flow at high permeate flux conditions (e.g. start-up with high temperature water), the set feed pressure should be maintained for 5-10 minutes.
- Cross-flow velocity at set operating point should be gradually achieved over 15-20 seconds.
- Temperature variations should be gradually controlled over 3-5 minutes.

Alfa Laval reserves the right to change specifications without prior notification. ALFA LAVAL is a trademark registered and owned by Alfa Laval Corporate AB.

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**How to contact Alfa Laval**

Contact details for all countries are continually updated on our website. Please visit [www.alfalaval.com](http://www.alfalaval.com) to access the information direct.