



# Hygienic Spiral Membranes for Nano - Filtration

## Alfa Laval NF PET Series

The elements are based on a unique construction on polyester (PET) support material in a hygienic full-fit design that provides optimum cleaning conditions.

They are available in different combinations of length, diameter, and feed spacer. All the materials used for the production of the membranes and membrane elements comply with EU and FDA regulations (CFR) Title 21.

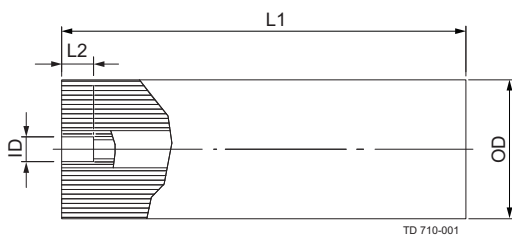
Designation	Characteristics	MgSO <sub>4</sub> Rejection
NF	Thin film composite	≥ 98%
NF99HF	Thin film composite	≥98%**

\* measured on 2000 ppm MgSO<sub>4</sub>, 9 bar, 25°C

\*\*measured on 1000 ppm MGSO<sub>4</sub>, 9 bar, 25 °C

### Spiral membrane design

Alfa Laval NF-8038/48		
Alfa Laval NF	=	Membrane type
80	=	Outer diameter of element (8.0")
38	=	Element length (38") without ATD
48	=	Feed spacer thickness



### Dimensions

OD = outer diameter of element

L1 = total length of element without ATD

ID = diameter of ATD socket

L2 = depth of ATD socket

For specific measurements of AL housings, please consult the product specification

Part No.	Element type	OD		L1		ID		L2		Area	
		mm	(")	mm	(")	mm	(")	mm	(")	m2	(sqft)
519769	NF-2517/30	64.0 - 65.0	(2.52 - 2.56)	432	(17.0)	21.0	(0.82)	26.0	-1.023	1.1	(11.5)
519770	NF-2517/48	64.0 - 65.0	(2.52 - 2.56)	432	(17.0)	21.0	(0.82)	26.0	-1.023	0.7	(7.5)
530979	NF-3838/30	95.0 - 96.5	(3.74 - 3.80)	965	(38.0)	21.1	(0.83)	50.0	(1.97)	7.4	(75)
522313	NF-3838/48	95.0 - 96.5	(3.74 - 3.80)	965	(38.0)	21.1	(0.83)	50.0	(1.97)	5.2	(55)
527936	NF-3838/65	95.0 - 96.5	(3.74 - 3.80)	965	(38.0)	21.1	(0.83)	50.0	(1.97)	4.3	(45)
522314	NF-8038/30	198.5 - 201.5	(7.81 - 7.93)	965	(38.0)	28.6	(1.125)	79.0	(3.110)	38.3	(406)
522315	NF-8038/48	198.5 - 201.5	(7.81 - 7.93)	965	(38.0)	28.6	(1.125)	79.0	(3.110)	27.6	(302)
522316	NF-8038/65	198.5 - 201.5	(7.81 - 7.93)	965	(38.0)	28.6	(1.125)	79.0	(3.110)	22.3	(240)
522310	NF99HF-2517/30	64.0 - 65.0	(2.52 - 2.56)	432	(17.0)	21.0	(0.82)	26.0	(1.023)	1.1	(11.5)
522311	NF99HF-2517/48	64.0 - 65.0	(2.52 - 2.56)	432	(17.0)	21.0	(0.82)	26.0	(1.023)	0.7	(7.5)
522292	NF99HF-3838/30	95.0 - 96.5	(3.74 - 3.80)	965	(38.0)	21.1	(0.83)	50.0	(1.97)	7.7	(77.5)
521681	NF99HF-3838/48	95.0 - 96.5	(3.74 - 3.80)	965	(38.0)	21.1	(0.83)	50.0	(1.97)	5.3	(57)
523483	NF99HF-3838/65	95.0 - 96.5	(3.74 - 3.80)	965	(38.0)	21.1	(0.83)	50.0	(1.97)	4.5	(47)
523488	NF99HF-8038/30	198.5 - 201.5	(7.81 - 7.93)	965	(38.0)	28.6	(1.125)	79.0	(3.110)	37.6	(396)
520048	NF99HF-8038/48	198.5 - 201.5	(7.81 - 7.93)	965	(38.0)	28.6	(1.125)	79.0	(3.110)	27.1	(299)
528043	NF99HF-8038/65	198.5 - 201.5	(7.81 - 7.93)	965	(38.0)	28.6	(1.125)	79.0	(3.110)	22.5	(237)

For sizes not mentioned in this table please contact Alfa Laval.

## Recommended operation limits

Production		
pH range	3 - 9	
Typical operating pressure	15 - 35 bar	(220 - 540 psig)
Maximum operating pressure	55 bar	(800 psig)
Temperature	5 - 50 °C	(40 - 120 °F)

Cleaning (3 hours per day)		
pH range	1.5 - 11.0	
Typical cleaning pressure	1 - 5 bar	(15 - 75 psig)
Temperature	30 - 50 °C	(85 - 120 °F)
NaOH	< 0.1 %	
Na-EDTA	< 0.2 %	
Mineral acids	< 0.2 %	
Citric acid	< 1.0 %	

Note: The use of oxidative cleaning agents and similar chemicals influences the actual membrane performance over time. Any contamination with chlorine has to be avoided. Please consult the Alfa Laval "Water Quality" PD leaflet 1603.

Sanitation (1 hour per week)		
Hydrogen peroxide	25 °C (75 °F)	< 1.000 ppm

### Important Information

New spiral elements must be cleaned prior to first use. The cleaning procedure should be in accordance with the instructions provided in AlfaLaval's cleaning description for the spiral element type concerned. The customer is fully responsible for the effects that any incompatible chemicals may have on the spiral elements.

- After initial wetting, the spiral elements must be kept moist at all times.
- 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 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 housing outlet end.
- Alfa Laval recommends that the inner diameter of the housing should be approx. 2 mm bigger than the outer diameter of the spiral element in question.

### Operation guidelines

Avoid any abrupt pressure or cross - flow changes on the spiral elements during start - up, shutdown, cleaning or other sequences, in order to prevent possible damage.

Alfa Laval recommends the following start - up procedure from stand still to operating condition:

- 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 the set operating point should be gradually achieved over a period of 15 - 20 seconds.
- Temperature changes should be implemented gradually over a period of 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.