

MEMBRANE ELEMENTS OF SANITARY DESIGN

Product catalogue



MaharFan

TABLE OF SELECTION OF THE NEAREST ANALOGUES ^{1, 2, 3,4}

Membranum	KOCH	Alfa Laval
Ultrafiltration		
SNUF/SNUF PP series		
SNUF 3838-XX-31	3838 HFK-131 NYV	GR70PE-3838/30
SNUF 3838-XX-46	3838 HFK-131 VYV	GR70PE-3838/48
SNUF 6338-XX-31	6338 HFK-131 NYV	GR70PE-6338/30
SNUF 6338-XX-46	6338 HFK-131 VYV	GR70PE-6338/48
SNUF 6438-XX-31	6438 HFK-131 NYV	
SNUF 6438-XX-46	6438 HFK-131 VYV	
SNUF 8038-XX-31	8038 HFK-131 NYV	
SNUF 8038-XX-46	8038 HFK-131 VYV	

Membranum	KOCH	Alfa Laval	Suez
Nanofiltration			
SNNF series			
SNNF 3838-31	3838 SR3D-NYV	NF-3838/30	DK3838C30
SNNF 3838-46	3838 SR3D-VYV	NF-3838/48	
SNNF 8038-31		NF-8038/30	DK8038C30
SNNF 8038-34	8038 SR3D-NYV		
SNNF 8038-46	8038 SR3D-VYV	NF-8038/48	DK8038C50

Membranum	KOCH	Alfa Laval	Suez
Reverse osmosis			
SNRO/SNRO PP series			
SNRO 3838-31	3838 HRX-NYV	RO99-3838/30	AF3838C30
SNRO 3838-46	3838 HRX-VYV	RO99-3838/48	AF3838C50
SNRO 8038-31		RO99-8038/30	AF8038C30
SNRO 8038-34	8038 HRX-NYV		AF8038C50
SNRO 8038-46	8038 HRX-VYV	RO99-8038/48	

Notes:

1 – Table data is relevant as of the date of the prospectus publication. Please specify the item size and scope of supply before making an order.

2 - membrane elements are manufactured and supplied using parameters similar to those of other manufacturers. Information is available upon request.

3 - O-rings are not included in the scope of supply of the membrane elements. O-rings shall be ordered separately.

4 - The design with 31, 34, 46, 65, 80 mil spacer mesh is possible.

5 - Membrane elements are supplied with molecular weight cut-off of 10, 20, 50 kDa.



membranum®

Nanofiltration membrane elements of sanitary design

SNNF series

PRODUCT DESCRIPTION

Membrane material
Molecular weight cut-off
Mesh material
Structure
Features

Poly(piperazine-amide)
200 Da
Polyethylene/polypropylene
Roll product with external mesh
Sanitary

SPECIFICATION

Grade	Area		Spacer (mesh)		Overall dimensions, mm			Maximum input flow, m ³ /h *
	m ²	ft ²	mm	mil	A	B	C	
3838-31	7.1	76	0.79	31	965	96	21.1	6.0
3838-34	6.8	73	0.86	34	965	96	21.1	6.5
3838-46	5.7	61	1.17	46	965	96	21.1	8.0
7838-31	34	366	0.79	31	965	196	28.6	18.5
7838-34	32.1	346	0.86	34	965	196	28.6	19.5
7838-46	24.5	264	1.17	46	965	196	28.6	24.0
8038-31	35	375	0.79	31	965	201	28.6	19.0
8038-34	33	360	0.86	34	965	201	28.6	19.0
8038-46	25	270	1.17	46	965	201	28.6	25.0

* the maximum input flow is given at the viscosity of separated medium of 1 cP at a temperature of 25°C

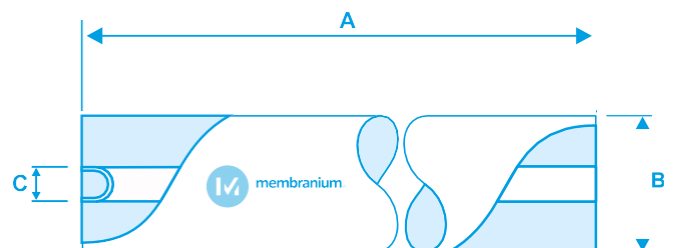
Designation of the SNNF 8038-31 membrane element

SNNF - membrane type

80 - outside diameter of the element, inches*10

38 - element length, inches

31 - feed spacer thickness, mil



9001:2015

Regulatory Status: Compliant with EC Reg. No. 1935/2004, and EU Reg. No. 10/2011.

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Ultrafiltration membrane elements of sanitary design

SNUF series

PRODUCT DESCRIPTION

Membrane material	Polyethersulfone
Molecular weight cut-off	10,000 Da
Mesh material	Polyethylene/polypropylene
Substrate material	Polyester
Structure	Roll product with external mesh
Features	Sanitary

SPECIFICATION

Grade	Area		Spacer (mesh)		Overall dimensions, mm			Maximum input flow, m ³ /h *
	m ²	ft ²	mm	mil	A	B	C	
3838-10-31	6.7	72	0.79	31	965	96	21.1	6.0
3838-10-46	5.4	58	1.17	46	965	96	21.1	8.0
3838-10-65	4.2	45	1.65	65	965	96	21.1	10.0
3838-10-80	3.2	34	2.03	80	965	96	21.1	12.0
4336-10-31	8.8	95	0.79	31	902	109	21.1	9.0
4336-10-46	7.3	79	1.17	46	902	109	21.1	13.0
4336-10-65	5.5	59	1.65	65	902	109	21.1	17.0
4336-10-80	4.1	44	2.03	80	902	109	21.1	21.0
4338-10-31	9.5	102	0.79	31	965	109	21.1	9.0
4338-10-46	7.5	81	1.17	46	965	109	21.1	13.0
4338-10-65	5.1	55	1.65	65	965	109	21.1	17.0
4338-10-80	3.8	41	2.03	80	965	109	21.1	21.0
6338-10-31	21	226	0.79	31	965	160	28.9	17.0
6338-10-46	17	183	1.17	46	965	160	28.9	21.0
6338-10-65	12.7	137	1.65	65	965	160	28.9	25.0
6338-10-80	10.4	112	2.03	80	965	160	28.9	29.0
7836-10-31	31.3	337	0.79	31	965	196	28.9	18.6
7838-10-46	22.7	244	1.17	46	965	196	28.9	21.9
7838-10-65	14	151	1.65	65	965	196	28.9	26.2
7838-10-80	7.1	76	2.03	80	965	196	28.9	29.6
8038-10-31	33	355	0.79	31	965	201	28.9	19.0
8038-10-46	26	280	1.17	46	965	201	28.9	23.0
8038-10-65	15.7	169	1.65	65	965	201	28.9	27.0
8038-10-80	8.8	95	2.03	80	965	201	28.9	32.0
8338-10-46	28.6	308	1.17	46	965	210	28.9	26.0
8338-10-80	22.4	241	1.65	65	965	210	28.9	31.0

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membranium®

Ultrafiltration membrane elements of sanitary design

SNUF series

PRODUCT DESCRIPTION

Membrane material	Polyethersulfone
Molecular weight cut-off	20,000 Da
Mesh material	Polyethylene/polypropylene
Substrate material	Polyester
Structure	Roll product with external mesh
Features	Sanitary

SPECIFICATION

Grade	Area		Spacer (mesh)		Overall dimensions, mm			Maximum input flow, m ³ /h *
	m ²	ft ²	mm	mil	A	B	C	
3838-20-31	6.7	72	0.79	31	965	96	21.1	6.0
3838-20-46	5.4	58	1.17	46	965	96	21.1	8.0
3838-20-65	4.2	45	1.65	65	965	96	21.1	10.0
3838-20-80	3.2	34	2.03	80	965	96	21.1	12.0
6338-20-31	21	226	0.79	31	965	160	28.9	17.0
6338-20-46	17	183	1.17	46	965	160	28.9	21.0
6338-20-65	12.7	137	1.65	65	965	160	28.9	25.0
6338-20-80	10.4	112	2.03	80	965	160	28.9	29.0
6438-20-31	21	226	0.79	31	965	162	28.9	17.0
6438-20-46	17	183	1.17	46	965	162	28.9	21.0
6438-20-65	12.7	137	1.65	65	965	162	28.9	25.0
6438-20-80	10.4	112	2.03	80	965	162	28.9	29.0
7838-20-31	31.3	337	0.79	31	965	196	28.9	18.6
7838-20-46	22.7	244	1.17	46	965	196	28.9	21.9
7838-20-65	14	151	1.65	65	965	196	28.9	26.2
7838-20-80	7.1	76	2.03	80	965	196	28.9	29.6
8038-20-31	33	355	0.79	31	965	201	28.9	19.0
8038-20-46	26	280	1.17	46	965	201	28.9	23.0
8038-20-65	125.7	169	1.65	65	965	201	28.9	27.0
8038-20-80	8.8	95	2.03	80	965	201	28.9	32.0

Designation of the membrane element: SNUF 8038-20-31

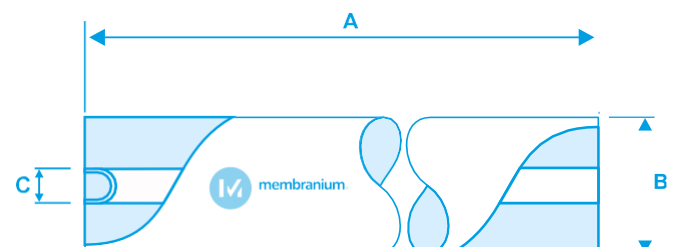
SNUF - membrane type

80 - outside diameter of the element, inches*10

38 - element length, inches

20 - molecular weight cut-off (MWCO) threshold, kDa

31 - feed spacer thickness, mil



9001:2015

Regulatory Status: Compliant with EC Reg. No. 1935/2004, and EU Reg. No. 10/2011.

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SNUF series

PRODUCT DESCRIPTION

Membrane material	Polyethersulfone
Molecular weight cut-off	50,000 Da
Mesh material	Polyethylene/polypropylene
Substrate material	Polyester
Structure	Roll product with external mesh
Features	Sanitary

SPECIFICATION

Grade	Area		Spacer (mesh)		Overall dimensions, mm			Maximum input flow, m ³ /h *
	m ²	ft ²	mm	mil	A	B	C	
3838-50-31	6.7	72	0.79	31	965	96	21.1	6.0
3838-50-46	5.4	58	1.17	46	965	96	21.1	8.0
3838-50-65	4.2	45	1.65	65	965	96	21.1	10.0
3838-50-80	3.2	34	2.03	80	965	96	21.1	12.0
6338-50-31	21	226	0.79	31	965	160	28.9	17.0
6338-50-46	17	183	1.17	46	965	160	28.9	21.0
6338-50-65	12.7	137	1.65	65	965	160	28.9	25.0
6338-50-80	10.4	112	2.03	80	965	160	28.9	29.0
6438-50-31	21	226	0.79	31	965	162	28.9	17.0
6438-50-46	17	183	1.17	46	965	162	28.9	21.0
6438-50-65	12.7	137	1.65	65	965	162	28.9	25.0
6438-50-80	10.4	112	2.03	80	965	162	28.9	29.0
7838-50-31	31.3	337	0.79	31	965	196	28.9	18.6
7838-50-46	22.7	244	1.17	46	965	196	28.9	21.9
7838-50-65	14	151	1.65	65	965	196	28.9	26.2
7838-50-80	7.1	76	2.03	80	965	196	28.9	29.6
8038-50-31	33	355	0.79	31	965	201	28.9	19.0
8038-50-46	26	280	1.17	46	965	201	28.9	23.0
8038-50-65	15.7	169	1.65	65	965	201	28.9	27.0
8038-50-80	8.8	95	2.03	80	965	201	28.9	32.0

SNUF PP series

PRODUCT DESCRIPTION

Membrane material	Polyethersulfone
Molecular weight cut-off	10,000 Da
Mesh material	Polyethylene/polypropylene
Substrate material	Polypropylene
Structure	Roll product with external mesh
Features	Sanitary

SPECIFICATION

Grade	Area		Spacer (mesh)		Overall dimensions, mm			Maximum input flow, m ³ /h *
	m ²	ft ²	mm	mil	A	B	C	
3838-10-31 PP	6.7	72	0.79	31	965	96	21.1	6.0
3838-10-46 PP	5.4	58	1.17	46	965	96	21.1	8.0
3838-10-65 PP	4.2	45	1.65	65	965	96	21.1	10.0
3838-10-80 PP	3.2	34	2.03	80	965	96	21.1	12.0
3838-10-31 PP	6.7	72	0.79	31	965	96	21.1	6.0
4336-10-31 PP	8.8	95	0.79	31	902	109	21.1	9.0
4336-10-46 PP	7.3	79	1.17	46	902	109	21.1	13.0
4336-10-65 PP	5.5	59	1.65	65	902	109	21.1	17.0
4336-10-80 PP	4.1	44	2.03	80	902	109	21.1	21.0
4338-10-31 PP	9.5	102	0.79	31	965	109	21.1	9.0
4338-10-46 PP	7.5	81	1.17	46	965	109	21.1	13.0
4338-10-65 PP	5.1	55	1.65	65	965	109	21.1	17.0
4338-10-80 PP	3.8	41	2.03	80	965	109	21.1	21.0
6338-10-31 PP	21	226	0.79	31	965	160	28.9	17.0
6338-10-46 PP	17	183	1.17	46	965	160	28.9	21.0
6338-10-65 PP	12.7	137	1.65	65	965	160	28.9	25.0
6338-10-80 PP	10.4	112	2.03	80	965	160	28.9	29.0
6438-10-31 PP	21	226	0.79	31	965	162	28.9	17.0
6438-10-46 PP	17	183	1.17	46	965	162	28.9	21.0
6438-10-65 PP	12.7	137	1.65	65	965	132	28.9	21.0
6438-10-80 PP	10.4	112	2.03	80	965	162	28.9	29.0
7838-10-31 PP	31.3	337	0.79	31	965	196	28.9	18.6
7838-10-46 PP	22.7	244	1.17	46	965	196	28.9	21.9
7838-10-65 PP	14	151	1.65	65	965	196	28.9	26.2
7838-10-80 PP	7.1	76	2.03	80	965	196	28.9	29.6
8038-10-31PP	33	355	0.79	31	965	201	28.9	19.0
8038-10-46 PP	26	280	1.17	46	965	201	28.9	23.0
8038-10-65 PP	15.7	169	1.65	65	965	201	28.9	27.0
8038-10-80 PP	8.8	95	2.03	80	965	201	28.9	32.0
8338-10-46 PP	28.6	308	1.17	46	965	210	28.9	26.0
8338-10-65 PP	22.4	241	1.65	65	965	210	28.9	31.0

SNRO PP series

PRODUCT DESCRIPTION

Membrane material
Selectivity to simulated
solution
Mesh material
Substrate material
Structure
Features

Composite polyamide

More than 99.0%
Polyethylene/polypropylene
Polypropylene
Roll product with external mesh
Sanitary

SPECIFICATION

Grade	Area		Spacer (mesh)		Overall dimensions, mm			Maximum input flow, m ³ /h *
	m ²	ft ²	mm	mil	A	B	C	
3838-31 PP	7.1	76	0.79	31	965	96	21.1	6.0
3838-34 PP	6.8	73	0.86	34	965	96	21.1	6.5
3838-46 PP	5.7	61	1.17	46	965	96	21.1	8.0
7838-31 PP	34	366	0.79	31	965	196	28.6	18.5
7838-34 PP	32.1	346	0.86	34	965	196	28.6	19.5
7838-46 PP	24.5	264	1.17	46	965	196	28.6	24.0
8038-31 PP	37	398	0.79	31	965	201	28.9	19.0
8038-34 PP	35	377	0.86	34	965	201	28.9	20.0
8038-46 PP	27	291	1.17	46	965	201	28.9	25.0

Designation of the membrane element: SNRO 8038-31 PP

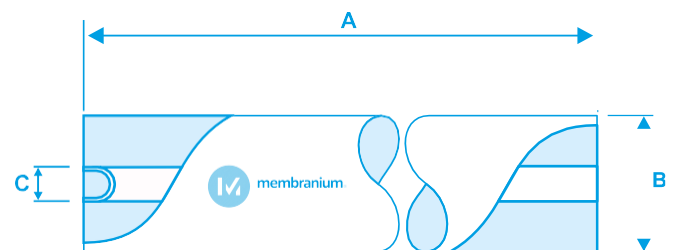
SNRO - membrane type

80 - outside diameter of the element, inches*10 (B)

38 - element length, inches (A)

31 - feed spacer thickness, mil

PP - substrate material - polypropylene



OPERATING CONDITIONS

RECOMMENDED OPERATING LIMITS

pH range, pH units

Operating pressure, MPa

Maximum operating pressure, MPa

Temperature, °C

Maximum pressure differential on one element (feed spacer thickness, mil), MPa

31 mil

34 mil

46 mil

65 mil

80 mil

SNUF PP series	SNUF series	SNNF series	SNRO PP series
2.0-10.0	2.0-10.0	4.0-10.0	4.0-10.0
0.2-0.8	0.2-0.8	1.3-3.2	2.0-4.1
1.0	1.0	5.5	5.5
5.0-60.0	5.0-50.0	5.0-50.0	5.0-60.0
0.1	0.1	0.1	0.1
		0.11	0.11
0.13	0.13	0.11	0.11
0.13	0.13	0.11	0.11
0.13	0.13	0.11	0.11

RECOMMENDED LIMITS FOR CIP CLEANING

pH range, pH units

Pressure, MPa

Temperature, °C

Hydrogen peroxide concentration in a chemical wash
(30 minutes, 25°C), mg/l

Free chlorine concentration in a chemical wash
(30 minutes, 25°C, pH 10.5), mg/l

SNUF PP series	SNUF series	SNNF series	SNRO PP series
1.8-12.0	1.8-11.0	1.8-11.0	1.8-12.0
0.1-0.5	0.1-0.5	0.1-0.5	0.1-0.5
30.0-60.0	30.0-50.0	30.0-50.0	30.0-60.0
1000	1000	500	200
200	200	1	0.1

REQUIREMENTS FOR WATER QUALITY FOR DIAFILTRATION AND PREPARATION OF SOLUTIONS FOR CHEMICAL WASHING OF MEMBRANE ELEMENTS.

PARAMETER

Turbidity, FTU

Suspended matter, mg/l

Oxidability, mg O₂/l

Calcium, mg/l

Hardness, mg*equ/l

Iron, mg/l

Zinc, mg/l

Copper, mg/l

Manganese, mg/l

Aluminum, mg/l

Silicon (SiO₂), mg/l

Total bacterial count, cfu/ml

E. coli, number per 100 ml

Free chlorine, mg/l

Fat, oil, petroleum products, mg/l

pH, pH units

Limit value		
SNUF/SNUF PP series	SNN series	SNRO PP series
1.0	1.0	1.0
5.0	1.0	1.0
5.0	5.0	5.0
10.0	5.0	5.0
1.0	0.5	0.5
0.05	0.05	0.05
0.3	0.05	0.05
0.1	0.05	0.05
0.05	0.02	0.02
0.05	0.05	0.05
1.0	0.1	0.1
50	50	50
0	0	0
1.0	0	0
0	0	0
6.0-8.0	6.0-8.0	6.0-8.0



9001:2015

Regulatory Status: Compliant with EC Reg. No. 1935/2004, and EU Reg. No. 10/2011.

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AREAS OF APPLICATION OF MEMBRANE PROCESSES

DAIRY INDUSTRY

- Ultrafiltration of skimmed milk
- Ultrafiltration of standardized milk
- Nanofiltration of sweet whey
- Nanofiltration of acid whey
- Milk concentration
- Whey protein concentrate production
- Obtaining minor proteins from milk and milk whey

FOOD INDUSTRY

- Production of pectin from secondary plant raw materials
- Egg protein concentration
- Gelatin production
- Complex processing of soy
- Processing of starch-containing raw materials
- Production of glucose-fructose syrups
- Post-alcohol distillery waste processing
- Obtaining proteins from plant raw materials
- Sugar fractions concentration from plant raw materials

CHEMICAL INDUSTRY

- Salt concentration
- Polymer production
- Dye recovery
- Manufacture of semi-finished products
- Separation of synthesis products
- Metal oxides concentration
- Process water recovery
- Manufacture of special-purpose chemical products
- Preparation of chemicals for chemical synthesis
- Separation of complex systems

WASTEWATER TREATMENT

- Coolant processing
- Cleaning solution regeneration
- Wastewater treatment of milk processing facilities
- Wastewater treatment for food production facilities
- Wastewater treatment of starch and treacle production facilities
- Process water recovery
- Recovery of special-purpose solutions
- Regeneration of industrial products from wastewater

Ratio of the pore diameter to the molecular weight of the detained substances

Nominal pore diameter, nm	Molecular weight cut-off, Da	Process
1.400	---	MICROFILTRATION
1.000	---	
800	---	
500	---	
200	400.000	
100	200.000	ULTRAFILTRATION
50	100.000	
20	50.000	
6.36	15.000	
5.18	10.000	
3.64	5.000	NANOFILTRATION
2.82	3.000	
1.96	1.500	
1.22	600	
0.68	200	

Recommended permissible dry matter concentration for roll elements

Product	Feed spacer thickness, mil			
	31	46	65	80
Sweet whey	15	25	28	30
Cottage cheese whey	15	24	26	28
Skimmed milk	14	24	26	28
Standardized milk	15	30	33	35

JSC "RM NANOTECH" IS THE SUPPLIER OF MEMBRANE FABRIC AND ROLL MEMBRANE ELEMENTS



JSC "RM Nanotech" (MEMBRANIUM trademark) is a unique Russian manufacturer of membrane fabric and roll elements for reverse osmosis, nanofiltration and ultrafiltration. JSC "RM Nanotech" is one of RUSNANO's projects, the only Russian company among the world's leading manufacturers of membrane products that produces nanostructured membrane fabric.

The company's products ensure the elimination of import dependence in the field of membrane materials for water treatment systems; ensure deep processing of dairy and other agricultural raw materials; eliminate pollution of the environment with production waste.

JSC "RM Nanotech" production capacity is 2,000,000 (two million) square meters of membrane fabric per year and 50,000 (fifty thousand) membrane elements (expressed in terms of the standard size of 8040). Unique equipment of the company embodies all the latest process developments for the production of ultrafiltration membrane fabric, composite nanofiltration and reverse-osmosis membrane fabric; manual and automatic winding of roll elements of any size - from household 1812 to industrial 8040/8338.



Membrane filtration is now widely used in the food industry, and, in particular, in the dairy industry. Membrane filtration is used at many dairy enterprises for milk and whey condensing, salt solution cleaning, separating products into fractions, and separating protein components; it is an increasingly popular alternative to traditional processing methods. MEMBRANIUM elements are successfully replacing imported analogues at an increasing number of plants.

ADVANTAGES

TECHNICAL SUPPORT



SPECIAL-PURPOSE EQUIPMENT



SOFTWARE



HIGH QUALITY



TESTING OF ELEMENTS



KNOW HOW



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