SANI Membranes

MORE FILTRATION, LESS ENERGY

Hollow Plate™ Module – HP1

The SANI Membranes Hollow Plate™ Module is a fully fused membrane/filter filtration module for cross flow filtration, supplied in a molded pressure channel housing. The Hollow Plate™ Modules are ready to use and can easily be built into larger filtration modules and systems by "the Lego approach" vertically or horizontally. The Hollow Plate™ Module is from start designed with sanitary applications in mind. The only material used is polypropylene and all bonding of plates and membranes are done with welding techniques, no glues or bonding materials are used. The Hollow Plate™ Module can be equipped with virtually any MF or UF membrane.

The HP1 – Hollow Plate™ Module

The HP1 build into a MF/UF plant

- The Hollow Plate™ Module has a very low cross flow resistance - this secures low energy consumption and optimal membrane flux in a very sanitary element.
- The Hollow Plate™ Module has a uniform trans membrane pressure (TMP) - this ensures sharper membrane cut off.
- The Hollow Plate™ Module can operate at very low and uniform trans membrane pressures (TMP) - this gives you the possibility of new applications.
- The membrane to membrane free flow distance is 1,7mm – this leads to unpreceded CIP efficiency and the ability to handle difficult feeds with high viscosity and high solids loading.
- No feed spacer is used to promote turbulent flow – this means no fouling promoted by feed spacers
- The Hollow Plate™ Module has an integrated and open permeate channel design - this means that the retentate as well as the permeate can be drained completely by gravity alone and leads to shorter CIP cycles, less water usage, and NO product loss (i.e. very little white water in dairy).
- The integrated design of the permeate channels gives you the possibility of CIP cleaning both the feed and permeate sides effectively.
- The Hollow Plate™ Module operates at pH 1-14 and at temperatures up to 85°C, practically limited by the mounted membrane or filter material.
- The Hollow Plate™ Module has a membrane area of 2.50 m^2 and can be fitted with virtually any commercially available membrane.
- The only material used in the Hollow Plate™ Module is polypropylene, permeate outlets can also be delivered in stainless steel.
- The Hollow Plate™ Module can be recycled – remolded or used as fossil fuel.
- The Hollow Plate™ Module conforms to FDA materials and sanitary standards; No glues or bonding materials are used to assemble the HP1.

The Hollow Plate™ Module is delivered with up to 4 permeate outlets for flexible use.

- Only one outlet is used for most applications where CIP cleaning is by flush of the feed / retentate side only.
- 2 to 4 outlets are needed either for filters with very high flux to reduce trans membrane pressure (TMP) or to also allow for CIP cleaning of the permeate channels.

The Hollow Plate™ Module is available in 3 different materials depending upon application.

- Sanitary standard modules are in Polypropylene Nature (off-whit) for process industry and sanitary applications with CIP below 75°C.
- Water and wastewater modules are in Gray Polypropylene for industrial applications with CIP below 65°C.
- High temperature modules are in Nature Polypropylene is for sanitary applications with high temperature CIP (up to 85°).

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Hollow Plate™ and Housing Materials

Code	Name	Material	Application	pH	Max-Temp.
S	Standard	Polypropylene Nature	Sanitary	1-14	75°C
W	Water	Polypropylene Gray	Water	1-14	65°C
H	High Temperature	Polypropylene HT	Sanitary	1-14	85°C

Module Data and Operating Conditions

Generic Design	Hollow Plate™ element in pressure withstanding channel module
Membrane Type	Most organic membranes (MF, UF, NF, RO) and other filter types (woven, sintered etc.)
Membrane Area	2,50 m^2
Dimensions (D x H)	333mm x 245mm
Viscosity Range, Apparent	1 to +1000 cP (e.g. Cream Cheese+)
Temperature Range	5-85°C *
pH Range	1-14 *
Cross Flow Velocity at Turbulent Flow	0.9 m/s, recommended CF: +1,3 m/s (water) max. 3 m/s
Operating Pressure	0-4.0 bar standard, high pressure channels on request
Free Chlorine	Membrane dependent

* Depending on membrane specifications

The HPP can be equipped with your membrane of choice. SANI Membranes have a line of standard MF and UF no-name membranes which are on limited stock. Most commercial available brand name membranes can however also be used with the HPP. Please, do not hesitate to contact us with your membrane wishes.

Standard Membranes*

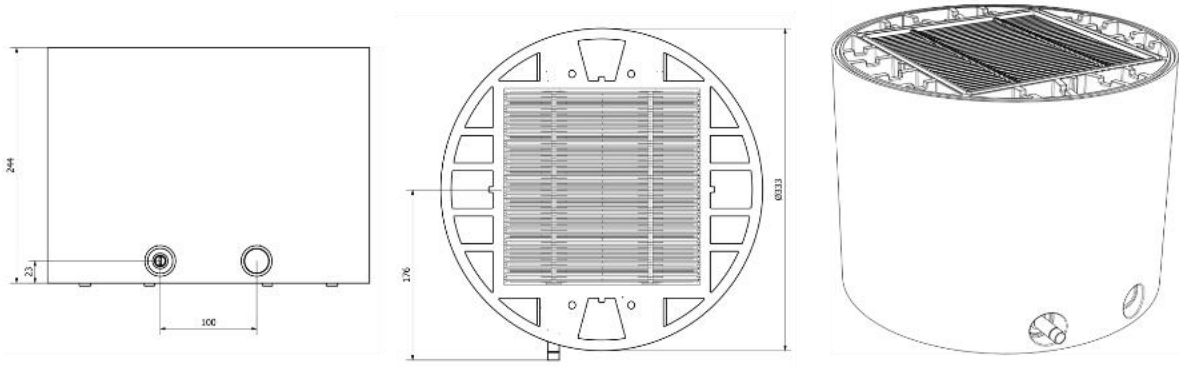
Code	Name	Producer	Type	MWCO/ Pore Size	Membrane Material	None-woven material	pH	Max-Temp.
	UF5KD	No Name	UF	5.000 Da	Polyethersulfone (PES)	Polypropylene (PP)	1-13	75°C
	UF10KD	No Name	UF	10.000 Da	Polysulfone (Hydrophilic PS)	Polypropylene (PP)	1-13	75°C
	UF25KD	No Name	UF	25.000 Da	Polysulfone (PS)	Polypropylene (PP)	1-13	75°C
	UF50KD	No Name	UF	50.000 Da	Polyvinylidene fluoride (PVDF)	Polyethylene (PE)	2-11	55°C
	UF300KD	No Name	UF	300.000 Da	Polyethersulfone (PES)	Polyethylene (PE)	2-11	55°C
	UF800KD	No Name	UF/MF	800.000 Da	Polyvinylidene fluoride (PVDF)	Polypropylene (PP)	2-11	55°C
	MF2	No Name	MF	0,2 µm	Fluoropolymer	Polypropylene (PP)	1-11	60°C
	MF5	No Name	MF	0,5 µm	Fluoropolymer	Polypropylene (PP)	1-11	60°C
	MF8	No Name	MF	0,8 µm	Fluoropolymer	Polypropylene (PP)	1-11	60°C

*Our standard 'no name' membranes are always on limited stock (Please ask if your preferred membrane specifications are not included on the list)

Brand Membranes*

Code	Name	Producer	Type	MWCO/ Pore Size	Membrane Material	None-woven material	pH	Max-Temp.
	Fr pht	Synder	UF/MF	800.000 Da	Polyvinylidene fluoride (PVDF)	Polypropylene (PP)	2-11	55°C
	LX	Synder	UF	300.000 Da	Polyethersulfone (PES)	Polyethylene (PE)	2-11	55°C
	BN	Synder	UF	50.000 Da	Polyvinylidene fluoride (PVDF)	Polyethylene (PE)	2-11	55°C
	BY	Synder	UF	100.000 Da	Polyvinylidene fluoride (PVDF)	Polyethylene (PE)	2-11	55°C

*Examples of brand membranes we can supply (Please ask if your preferred membrane is not included, most commercial available membranes can be supplied)



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