

HP1 Membrane Module

Product Sheet

SANI Membranes Free Flow Plate™ Membrane Module (HP1) is a fully fused 2,5 m² membrane element mounted in a molded pressure channel housing. The HP1 modules are ready to use and can easily be built into larger filtration systems by “the Lego approach” vertically or horizontally. The HP1 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 HP1 module can be equipped with virtually any MF or UF membrane. The HP1 can be used in both Vibro™ and cross flow configurations.



The HP1 – Free Flow Plate™ Membrane Module



The HP1 build into a 7,5 m² Vibro™-I

- The HP1 has a very low cross flow resistance - this secures low energy consumption and optimal membrane flux in a very sanitary element.
- The HP1 has a uniform trans membrane pressure (TMP) - this ensures sharper membrane cut off.
- The HP1 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 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 HP1 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 HP1 operates at pH 0-14 and at temperatures up to 85°C, practically limited by the mounted membrane or filter material.
- The HP1 has a membrane area of 2,50 m² and can be fitted with virtually any commercially available membrane.
- The only material used in the HP1 is polypropylene, permeate outlets can also be delivered in stainless steel.
- The HP1 can be recycled - remolded or used as fossil fuel.
- The HP1 conforms to FDA materials and sanitary/GMP standards; No glues or bonding materials are used to assemble the HP1.

The HP1 is delivered with 1 or 2 permeate outlets from each module.

- Only one outlet is used for most applications where CIP cleaning is done by washing the permeate channels with cleaning solutions that has permeated the membrane.
- 2 outlets are needed either for applications with very high flux to reduce trans membrane pressure (TMP) or to CIP clean the permeate channels separately from the feed channels.

The HP1 is available in 3 different materials depending upon application.

- Sanitary standard modules are in Polypropylene Nature (off-white) 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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Free Flow Plate™ Materials

Code	Name	Material	Application	pH	Max-Temp.
S	Standard	Polypropylene Nature	Sanitary	0-14	75°C
W	Water	Polypropylene Gray	Water	0-14	65°C
H	High Temperature	Polypropylene HT	Sanitary	0-14	85°C

HP1 Data and Operating Conditions

Generic Design	Free Flow Plate™ membrane 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)	333 mm x 245 mm
Weight	10 kg
Viscosity Range, Apparent	1 to +1000 cP (e.g. Cream Cheese+)
Temperature Range	5-85°C
pH Range	0-14
Operating Pressure	0-4.0 bar standard, high pressure channels on request

HP1 Standard Membranes

Membrane type	Cut-off	Membrane Material
UF	5 kDa	PES
UF	5 kDa	PESH
UF	30 kDa	PESH
UF	100 kDa	PVDF
UF	300 kDa	PES
UF	400 kDa	PAN
MF	800 kDa / 0,08 µm	PVDF
MF	0,2 µm	PVDF
MF/Filter	1 µm	PET (Woven)
MF/Filter	5 µm	PET (Woven)
MF/Filter	10 µm	PET (Woven)

The HP1 can be equipped with your membrane of choice. SANI Membranes have a line of standard MF and UF membranes from Synder, Microdyn-Nadir and others on stock. Most commercially available membranes can however also be used with the HP1. Please, do not hesitate to contact us with your membrane wishes.

