

MBR wastewater treatment  
PVDF MF braid membrane technology

# Megaflux-MBR

Submersible module for MBR process

High performance submersible module  
for membrane bioreactor process

**PHILOS**



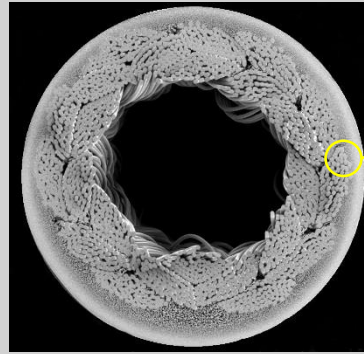
# PVDF MF braid membrane & module

## RCM MF

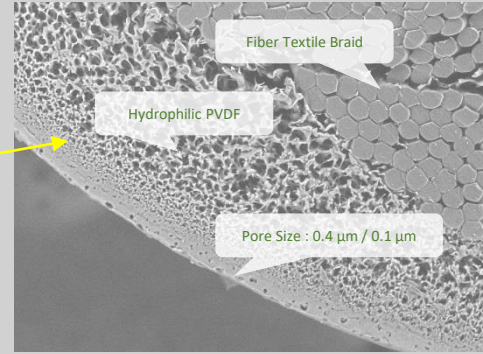
(Reinforced Capillary Membrane MF)

쉴로스 RCM MF는 MBR공정에 최적화된 Membrane으로써, 장기간 폭기상태에서 단사가 없는 탁월한 내구성을 자랑하며 안정적인 여과수질을 보장합니다. 또한 Braid에 친수화 처리한 PVDF를 함침코팅하는 방식으로 제조한 RCM은 내압성 및 신축성이 우수한 막 구조를 가짐으로써 운전시 성능복원력이 뛰어난 Membrane 입니다.

RCM MF of PHILOS is optimized for MBR process and displays high durability and stable filtered water quality even after long hours of aeration without breakage of membranes. RCM is produced by impregnate coating hydrophilic PVDF on braid and by having high pressure resistance and elasticity, displays high performance recovery.



Membrane Cross Section



Membrane Cross Section Expansion



RCM MF Specification

Membrane Material	Hydrophilic PVDF
Support Material	Polyester
Pore Size	0.1 μm / 0.03 μm
Designed Flux	5~40 LMH
Tensile Strength	151 N / fiber

## Membrane filtration, Water quality, CAPEX/OPEX



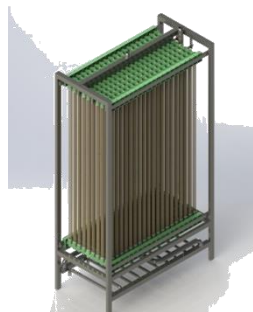
3가지 길이의 Element  
Elements of 3 length choices



Block 조합 단위 Module  
Block type module



처리용량에 맞는 Module 배열  
Arrangement of module according to treatment capacity



Megaflux-MBR 침지식 프레임  
Megaflux-MBR submerged frame

## Megaflux-MBR module

- MBR 현장 증고에 따라 3가지 길이의 Element 적용
- Element의 Block 조합으로 Module 제작
- 단위 Module을 배열하여 처리용량에 맞는 침지식 Frame 제작
- 현장 맞춤형 제작 가능(타사 침지막 교체 가능)

- Application of suitable element according to site conditions
- Module production by combining element blocks
- Submerged frame production by arranging block type modules according to treatment capacity
- Custom production (Can replace any conventional submerged membranes)

# Megaflux-MBR features



- 현장 맞춤이 용이하며, 분해 조립이 간단한 블록형 구조
- Convenient customization according to sites and simple assembly and disassembly with block structure

- 불소수지의 braid 보강 membrane 적용
- Application of fluororesin braid reinforced membrane

- 친수화 소재의 최적 스폰지 구조의 membrane 적용
- Membrane with optimal sponge structure of hydrophilic material

- 효율적 aeration을 위한 element 구조
- Element structure for effective aeration

- 슬러지 배출형 산기관 구조
- Sludge discharging diffuser structure

## Expandability, Custom made, Diverse Application

Frame specification		# of element (ea)	Capacity (m <sup>3</sup> /d)	Frame dimension (WxLxH, mm)	Weight (Dry, kg)
Cassette Frame	Megaflux-MBR 10	35	10	593x508x1,340	45
	Megaflux-MBR 30	98	30	593x1,066x1,340	105
	Megaflux-MBR 50	171	50	719x1,376x1,340	155
	Megaflux-MBR 70	162	70	719x1,314x1,750	185
	Megaflux-MBR 100	162	100	719x1,314x2,350	200
Operating Condition	Max. TMP	< 400 mmHg			
	Normal pressure	50 ~ 200 mmHg(normal)			
	Max. temp.	40 °C			
	pH range	2 ~ 10			
	Filtration cycle	5 ~ 7 min. on, 1 ~ 5 min. off			
	Chemical cleaning	Maintenance Cleaning : NaOCl 300 ~ 500 ppm (once / week) Recovery Cleaning : NaOCl 3,000 ppm (once / 1~3 month) CIP : NaOCl 3000 ppm(organic), Citric acid 2%(inorganic)			

## Applications

- 오폐수 처리 MBR
- 신설 오폐수 처리장
- 기존 오폐수 처리장 개조
- 중수 처리 및 물 재이용
- 산업폐수 처리
- 고부가 유효물질 농축 (나노 입자, 효소 등)
- Wastewater treatment MBR
- Newly established wastewater treatment plant
- Modification of existing wastewater treatment plant
- Grey water treatment and water reuse
- Industrial wastewater treatment
- High value added material concentration (Nano particles, enzyme etc.)



## Benefits

- Braid MF membrane
  - Chemically resistant PVDF
  - Optimal sponge like structure
- Efficient cleaning
  - High performance recovery after cleaning
- Outstanding expandability
  - Flexible element size selection
  - Convenient replacement
  - Block type structure
- Versatility
  - For wastewater, greywater, sewage treatment

