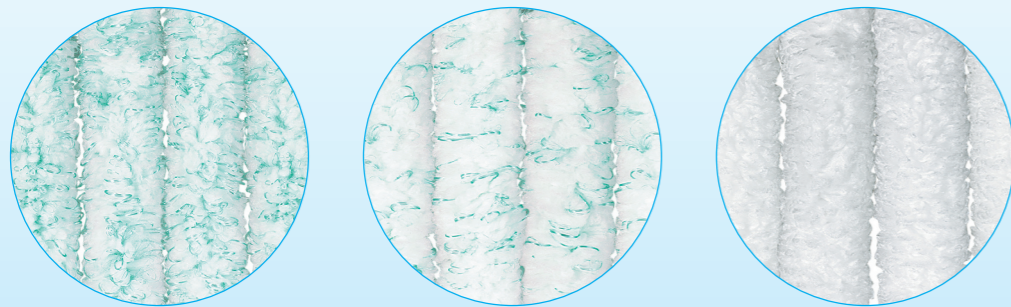


The type of Actifiber (AF)

Specification of pre-filter will be designed according to quality like turbidity of raw water. Please contact us to decide size and numbers of tank.

model	AFU-P300	AFU-P400	AFU-P500	AFU-P600
ID	ID300mm	ID400mm	ID500mm	ID600mm
Flow rate	1.4-3.5m ³ /hr	2.5-6.2m ³ /hr	3.9-9.8m ³ /hr	5.6-14m ³ /hr
Back wash rate ^(*)	0.5m ³ /hr	0.9m ³ /hr	1.4m ³ /hr	1.9m ³ /hr
Materials	Media : polypropylene Tank : G-FRP Pipe : polyvinyl chloride(PVC)(partly SGP)(option Stainless steel) Butterfly valve with Pneumatic actuator (ADC/SCS14/EPDM)			



(*1)This amount is in case back washing water is returned to raw water tank. It means re-use water.

VARIOUS TURBIDLY LOADED WATER

Super Micro-membrane Filtration system



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Agency

CT No.EX-06 201106UR50



この印刷物は環境にやさしい大豆油インキ及び一部
 クリーンエネルギーを使用して生産しております。

The main performer to control water quality

Super Micro-membrane Filtration Cassette

The water purification system for various loaded water contaminated by Turbidity, SS and iron. More safety and more beautiful water will be created with this compact system.

The advanced treatment for water is required in our life. The latest membrane technology can qualify better water quality than conventional sand filtration system. Such membrane system is suitable for advanced treatment, but not good for heavy loaded water.

KBE has developed "Fiber filtration" high level purification to heavy loaded water as a standard pre-filter in order to give full performance to the main membrane system.

Compact Cassette

- Hollow fiber membrane 3 modules/cassette
- Possible to arrange in series and/or parallel by combined cassettes

Superior washing performance

- Effective cleaning by water and pressured air scrubbing

Filtration accuracy

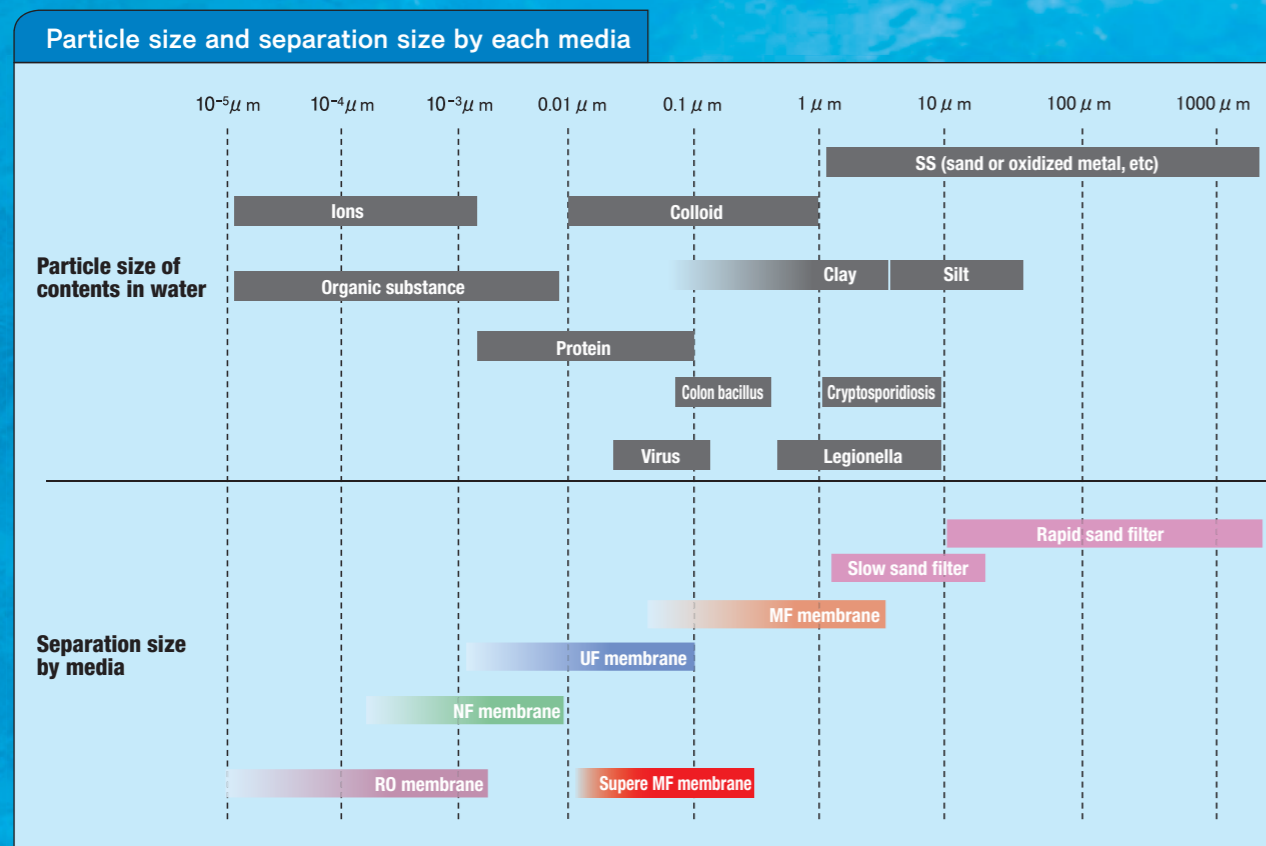
- <0.1µm
- To remove Cryptosporidiosis and Giardia, pollutant of drinking water.
- To remove Legionella pollutant in hot spa and cooling tower.
- Best pre-filter of RO system



Cryptosporidium



Cryptosporidium



Item	Name/figures
Filtration pressure and direction	Pressured water to be fed from outside
Figure	3 modules/cassette
Membrane type	Hollow fiber membrane
Membrane area	5m ² /cassette
Pore size	0.1µm
Dimensions	H×L×W 430 x 355 x 90 mm
Filtration	Quantity 210L/hr·cassette(0.05MPa)
	Pressure ~0.25MPa
(Back) washing	Water >6L/min·cassette (by treated water)
	Air >10NL/min·cassette
Operating condition	Temperature 5-40℃
	pH 3-12
Material	Membrane Polysulfone, (PS)
	Housing Polycarbonate
Weight	DRY/WET 4.2kg / 8.0kg

Cryptosporidium

Also known as crypto is a parasitic disease caused by Cryptosporidium, a protozoan parasite in the phylum Apicomplexa. It is spread through the fecal-oral route, often through contaminated water. It causes a diarrheal illness called cryptosporidiosis. In case of outbreak, it would cause group infection and human decease. Cryptosporidium would not be removed by conventional filtration technologies involves a series of processes, coagulation, flocculation, sedimentation, and filtration and highly resistant to chlorine disinfection. Membrane filtration is the best solution to remove Cryptosporidiosis .

Legionella

Legionella is a pathogenic Gram negative bacterium, including species that cause legionellosis or Legionnaires' disease, most notably L. pneumophila. Legionella live within amoebae in the natural environment. Legionella transmission is via aerosols-the inhalation of mist droplets containing the bacteria. Common sources include cooling towers, swimming pools, domestic hot-water systems, fountains, and similar disseminators that tap into a public water supply. Membrane filtration is the best solution to remove Legionella .

Pre-Filter

Actifiber Unit

The Best Pre-filter to give full performance to the membrane system!

Compact (in comparison with conventional sand filtration)

- Not only saving a space but also lowering a height for installation.
- Faster filtration velocity and much capture rate of turbidity.
- 1/8 of washing water volume and 1/4 of installation area.

Suitable for high turbidity

- Possible to treat maximum 100 NTU turbidity of raw water with the standard unit.
- Possible to operate continuously in combination even a case of 400NTU of turbidity.

Light weight

- FRP body.
- No need to put media into tank at user's place.

No tank for backwashing

- No need of tank and pump for backwashing by use of treated water of another Actifiber filter for backwashing.

Save cost

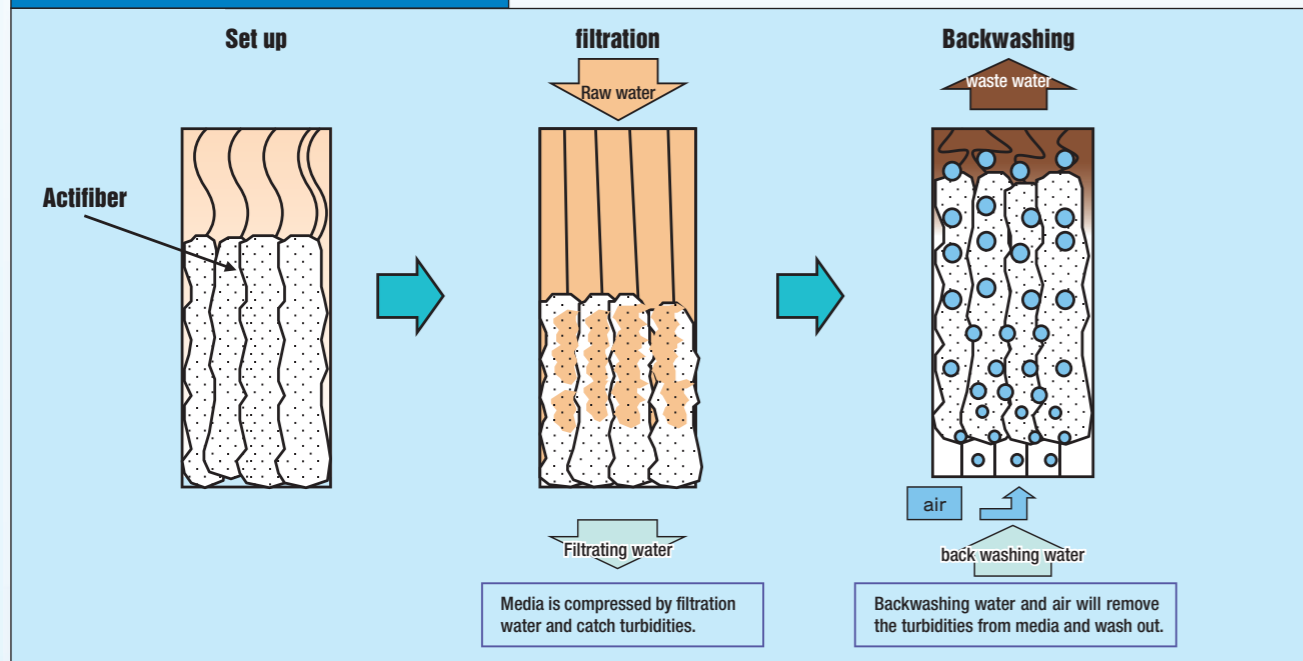
- Less backwash water required in comparison with conventional sand filter.
- Less waste of backwash water.

Standard back washing specification

- Time : 23min / time / tank
- Frequency : every 4 hours / tank
- Quantity : 500L / tank / time (PW-100)
1400L / tank / time (PW-300)



Filtration and backwashing (IMAGE)



Main filter

Super Micro-membrane filtration UNIT

Superior filtration and washing with this UNIT to give full performance to the Super Micro-membrane Filter

Compact Designed

- Super MF cassettes combined
- Strong and solid
- Smart and simple design

Washing theory

- Membrane filtrated water and air being used for washing.
- Programmable washing process.

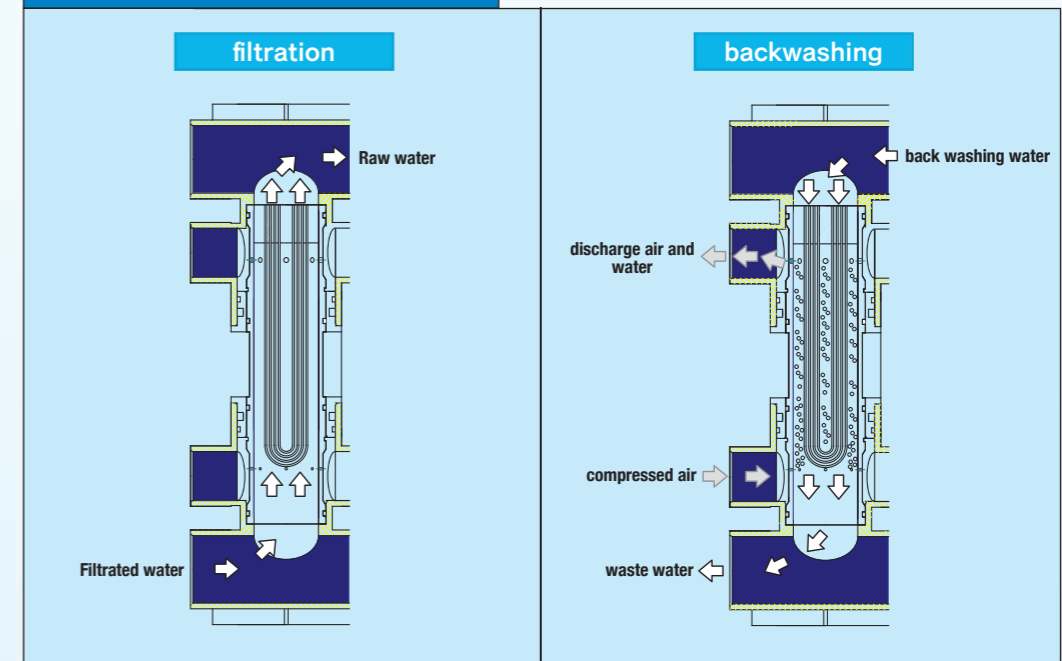
Standard specification of back wash

- Simultaneous backwash for all cassettes.
- Time : 1 minute
 - Frequency : every 30 minutes
 - Quantity : 170L / time (PW-100)
500L / time (PE-300)
 - Washing water : membrane filtrated water
 - Recovery rate : appr.94%
(re-use membrane back washing water. Depend on water quality)



Hybrid System
Com bine

Filtration and backwash (IMAGE)



For high turbidity

Super Micro-membrane filtration system

Super Micro-membrane filtration system can be used for various purposes.

- Safety** → For Drinking water
- Environment** → waste water treatment
- Economy** → more filtering water and less waste water
- Recycle** → recycling water system / material recovery system of worth contents
- Long Life** → for lengthening life of RO membrane

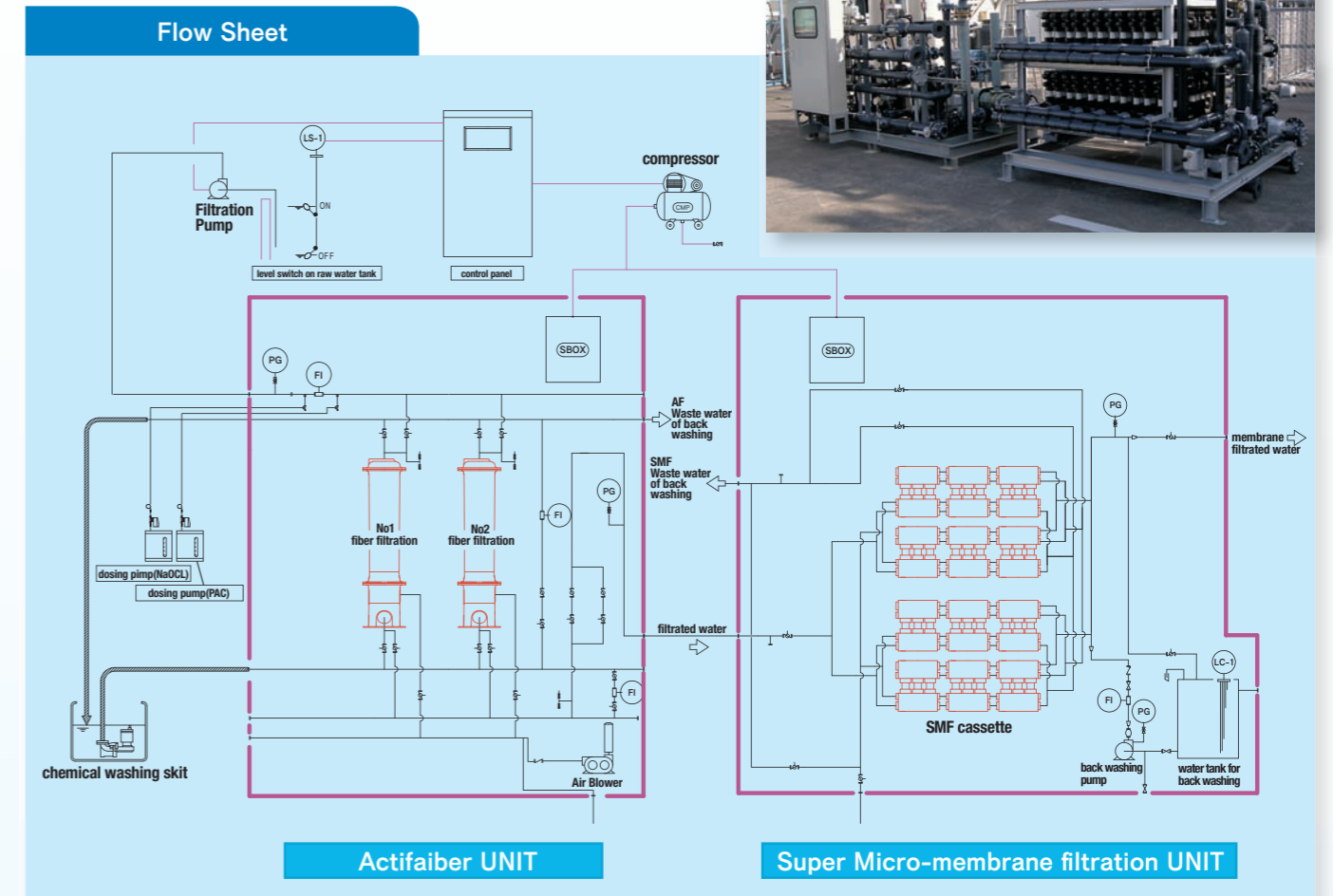
Super MF system can be used for various applications due to collaboration of Actifiber pre-filtration unit.



Applications

- Making pure water system in case of Emergency : produce drinking water from river, lakes and pool water.
- Safety Water treatment system : remove Cryptosporidiosis and Giardia. Less than 0.1NTU would produced.
- Spa and cooling tower : remove Legionella pollutant in hot spa and coolong tower.
- Waste water treatment and re-use water
- Recovery worth substance from waste water
- Pre-filtration system for RO system

Collaboration of superior pre-filter and Super Micro-membrane filter AF + SuperMF



Standard Specification

			Pre-filtration [Acti fiber unit]			Main filter [SMF filter unit]		
model	quantity	waste water (*1)	Size and number of tank	dimensions	Back washing water quantity (*2)	numbers	dimensions	Back washing water quantity (*2)
PW-100	100m ³ /day 4.3m ³ /hr	6m ³ /day	ID300mm*2	W : 2000 L : 1100 H : 2400	500L/time/tank (every 4 hours)	24 cassettes	W : 2000 L : 1300 H : 2200	170L/time/tank (every 30 mins)
PW-300	100m ³ /day 4.3m ³ /hr	17m ³ /day	ID500mm*2	W : 2700 L : 1700 H : 2700	1400L/time/tank (every 4 hours)	72cassettes	W : 2500 L : 1800 H : 3300	500L/time/tank (every 30 mins)
	material	Tank : G-FRP Media : polypropylene Pipe : polyvinyl chloride(PVC) (partly SGP) (option Stainless steel)			Housing : Poly carbonate Membrane : polysulfone(PS) Pipe : polyvinyl chloride(PVC)			
	valve	Butterfly valve with Pneumatic actuator (ADC/SCS14/EPDM)						

(*1)This amount is in case back washing water is returned to raw water tank. It means re-use water.

(*2)This amount, quantity and time are depending on quality of raw water and other conditions.