GREEN TECH
To improve the quality of life

MITSUBISHI RAYON

STERAPORE™5000 SERIES FOR WASTE WATER TREATMENT

6m² 15m² 25m²

STERAPORE™ 5600, 5700 SERIES FOR WATER & WASTE WATER TREATMENT

5m² 40m² Module

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STERAPORE™ 5000 Series

Hollow-fiber membrane element and module for industrial/municipal wastewater treatment

In recent years, the membrane separation activated sludge process (Membrane Bio-Reactor) has been gaining attention as a new technology for water recycling that can protect the Earth's limited water resources and the environment.
Countless MBR systems are being used to not only lower environmental impact by improving wastewater treatment water quality, but also to reclaim wastewater for reuse. The recycling of wastewater by MBR is prevalent all over the world as a means for dealing with serious water shortages.
Mitsubishi Rayon's Sterapore™ 5000 Series offers high permeability, excellent chemical resistance, strong hollow fiber membranes, and easy maintenance. In addition, it is now adoptable with wastewater treatment facilities of all sizes (from several tens of m3/day to several hundreds of thousands of m^3/day).
As the leading company in MBR, Mitsubishi Rayon will continue its efforts in the ever-intensifying water recycling business.

Features of Sterapore™ 5000 Series

(1) High permeability

Our high-flux PVDF hollow-fiber membrane delivers high permeability.

(2) Excellent chemical resistance

The membrane elements utilize PVDF resin, enabling long-term usage thanks to high chemical resistance and low chemical degradation.

(3) Strong hollow fiber membranes

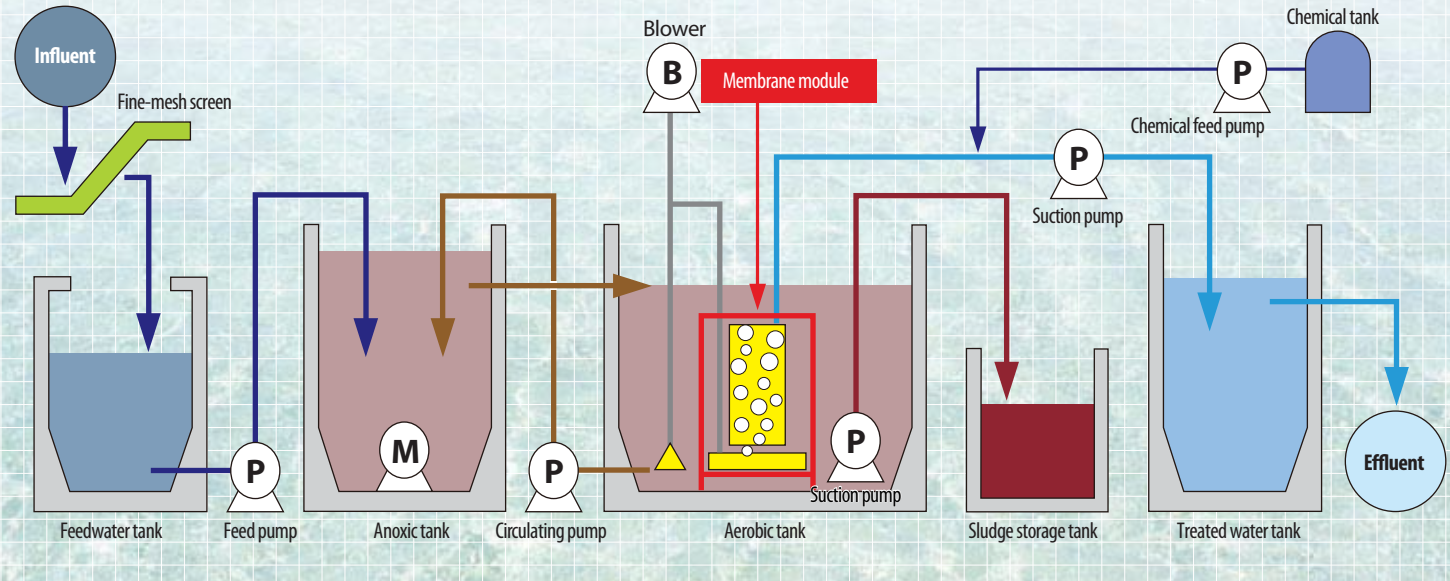
High mechanical strength results in a structure with low membrane failure, making it difficult for pollutants (such as SS) to escape into treated water.

(4) Easy maintenance

The use of PVDF resin, which has excellent chemical resistance, achieves a cleansing effect adequate for maintenance cleaning and recovery cleaning.

MBR Flowchart Example

Circulating nitrification-denitrification process & Membrane Bio-Reactor



This flowchart is an example of wastewater treatment using a Sterapore™ 5000 Series.

Standard Element Specifications

Model No		50E0006SM	50E0015SA	50E0025SA
Nominal pore size (μm)		0.4		
Membrane external diameter(mm)		2.8		
Element dimensions (mm)		1,015×600×30	1,300×1,250×30	2,000×1,250×30
Dry weight (kg)		5	11	15
Effective membrane area (m^2)		6	15	25
Material	Hollow-fiber membrane	PVDF		
	Permeate	ABS resin		
	Seal material	Polyurethane resin		
	Supports	SUS304		
Regular differential pressure		Initial differential pressure + 15 kPa or less		
Minimum applicable water depth (m)		2	3	3.5
Regular use temperature (℃)		0～40(no freezing, no condensation)		

Standard Module Specifications

Model no	50M0048SS	50M0300SP	50M0500SP
Dimensions (D x W x H mm)	750×660×1,890	1,610×1,560×2,430	1,610×1,560×3,130
Number of elements	50E0006SM×8	50E0015SA×20	50E0025SA×20
Dry weight (kg)	about 120	about 700	about 850
Effective membrane area (m^2)	48	300	500
Standard treatment volume (m3/day)*	10～35	60～240	100～400
Applicable water depth (m)	2	3	3.5
Header material	SUS304, ABS resin		
Frame material	SUS304		
Notes	Includes sealing sleeve-type aeration tube	Includes single tube-type aeration tube	

*The actual value for standard treatment volume depends on the type of raw water, water temperature, facility operating policies, and other factors.not guaranteed values.
A part of module specifications can be customized. For more information, please contact us at e-mail address/phone#.

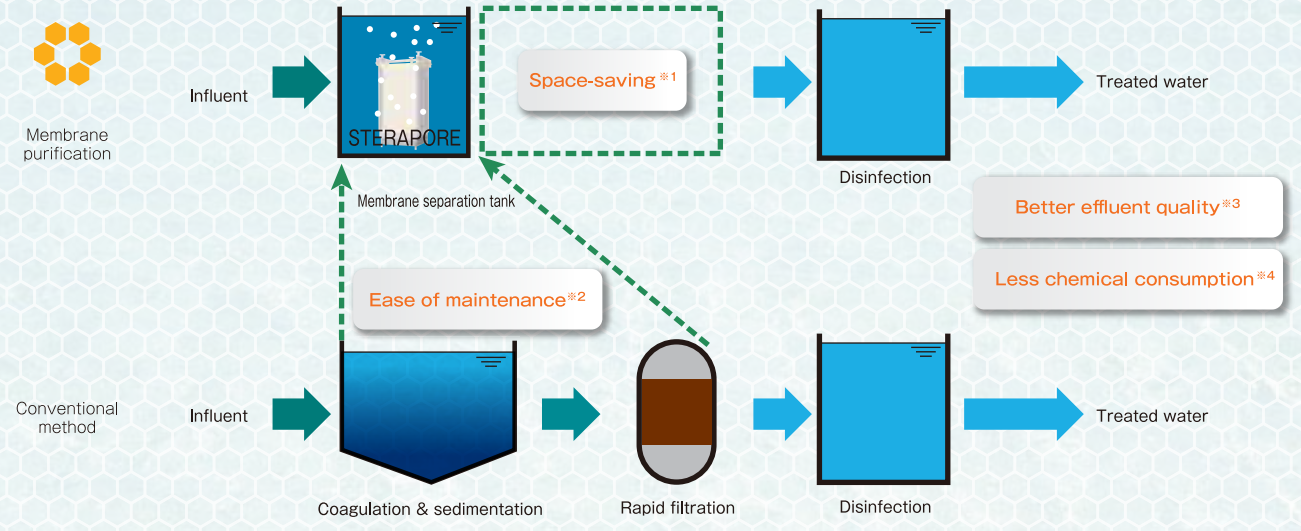
Sterapore™ 5000, equipment, and technical data may be subject to regulations such as the Export Trade Control Order.
When exporting items that are subject to regulations, your company is responsible for following prescribed procedures, including application for export permits.
In addition, when re-exporting such items, your company must follow the procedures prescribed by the laws of the country from which they will be re-exported

Caution
Please read the instruction manual carefully before using this product.
We reserve the right to modify the product's configuration, specifications, or other aspects without prior notice.

STERAPORE™ 5600 & 5700 Series

UF membrane element and module for water and wastewater treatment

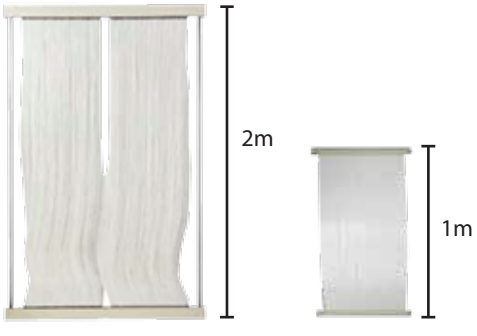
Drinking Water Treatment with STERAPORE™



※1 : Coagulation, sedimentation and rapid filtration processes are not necessary.
※2 : The simple process features less maintenance.
※3 : Disinfectant resistance protozoan parasites can be removed by membrane filtration.
※4 : Suspended solids free permeate needs less hypochlorite.

Standard Element Specifications

Model no	56E0040SA	57E0005SM
Nominal pore size (μm)	0.05	0.05
Membrane type	UF	UF
Material	PVDF	PVDF
Membrane Element surface area (m^2/ element)	40	5
Element dry weight (kg)	15	5
Element dimensions (mm)	2,000 x 1,250 x 30	1,000 x 594 x 13 (18)
Water collecting pipe material	ABS	ABS



40m² **5m²**

Standard Module Specifications

STERAPORE™ 5600 Series

Model No	No. of element	Membrane Element surface area (m^2/ element)	*Treatment Capacity (m^3/d)	Dimensions (mm)			Minimum water depth (mm)	Dry weight (kg)
				Height	Depth	Width		
56M0400FF	10	400	~ 320	2,800	1,530	940	3,000	400
56M0800FF	20	800	~ 640	2,800	1,530	1,390		600
56M1200FF	30	1,200	~ 960	2,800	1,530	1,870		850
56M1600FF	40	1,600	~ 1,280	2,800	1,530	2,320		1,100
56M2400FF	60	2,400	~ 1,920	2,800	1,530	3,420		1,700

STERAPORE™ 5700 Series

Model No	No. of element	Membrane Element surface area (m^2/ element)	*Treatment Capacity (m^3/d)	Dimensions (mm)			Minimum water depth (mm)	Dry weight (kg)
				Height	Depth	Width		
57M0050FF	1 ~ 10	5 ~ 50	~ 40	1,600	668	675	1,650	80
57M0100FF	11 ~ 20	55 ~ 100	~ 80	1,602	668	970		110
57M0150FF	21 ~ 30	105 ~ 150	~ 120	1,632	670	1,240		145
57M0200FF	31 ~ 40	155 ~ 200	~ 160	1,632	670	1,520		175

***Treatment capacity is calculated by Flux 0.8 m/d**
Flux ($m^3/m^2 \cdot d$) : Treated water volume(m^3) / Membrane surface area(m^2) · Time(day)
Note: As the appropriate value of Flux differs by the type of raw water, water temperature, and facility management policy, should be examine these well in advance.

Water Treatment (240m³/d, River water)

Tank / Pump / Air blower

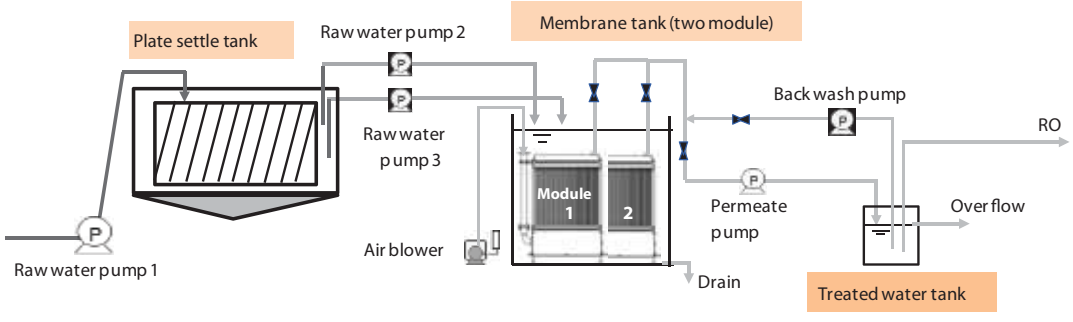
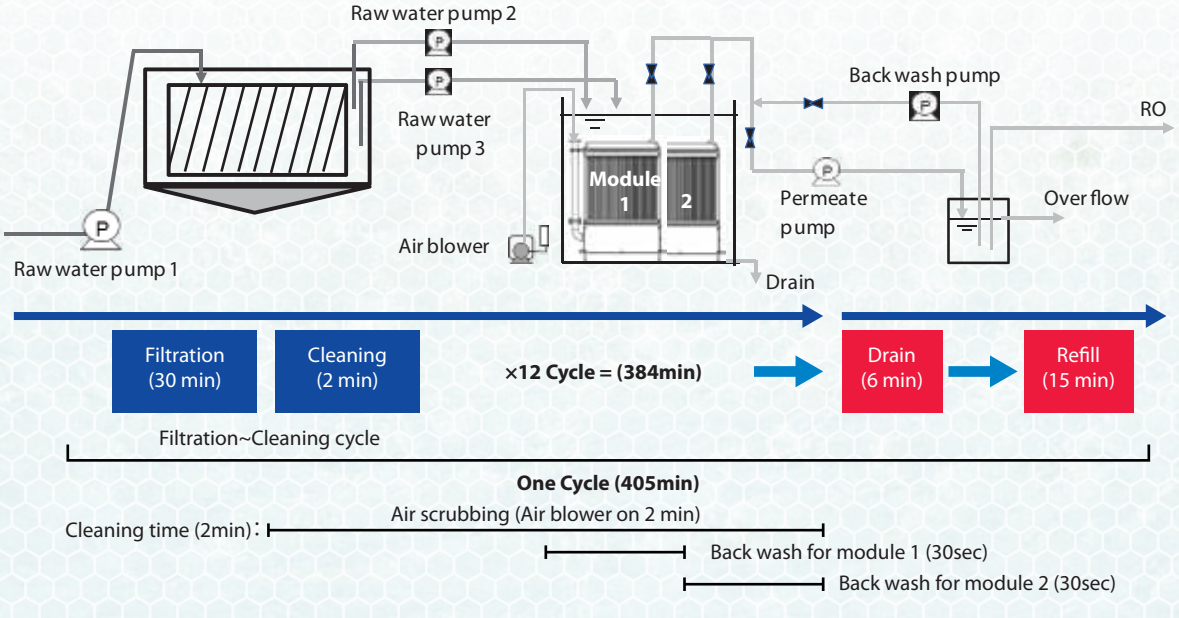


Plate settle tank size *(MWEP)*	**Raw water pump 1** *(MWEP)*	**Air blower (for 2 module)** *1.8 Nm³/min*
Membrane tank size (MWEP) *(L 2.0×W 1.5×H 2.4m)* **Effective water depth: 2.0** 6.0 m³	**Raw water pump 2** *0.22 m³/ min*	**Back wash pump (for 1 module)** *0.20 m³/ min*
	Raw water pump 3 *0.20 m³/ min*	Drain φ : 50mm(0.002m²)
Treated water tank size *(MWEP)*	**Permeate pump (for 2 module)** *0.20 m³/ min*	

Running cycle



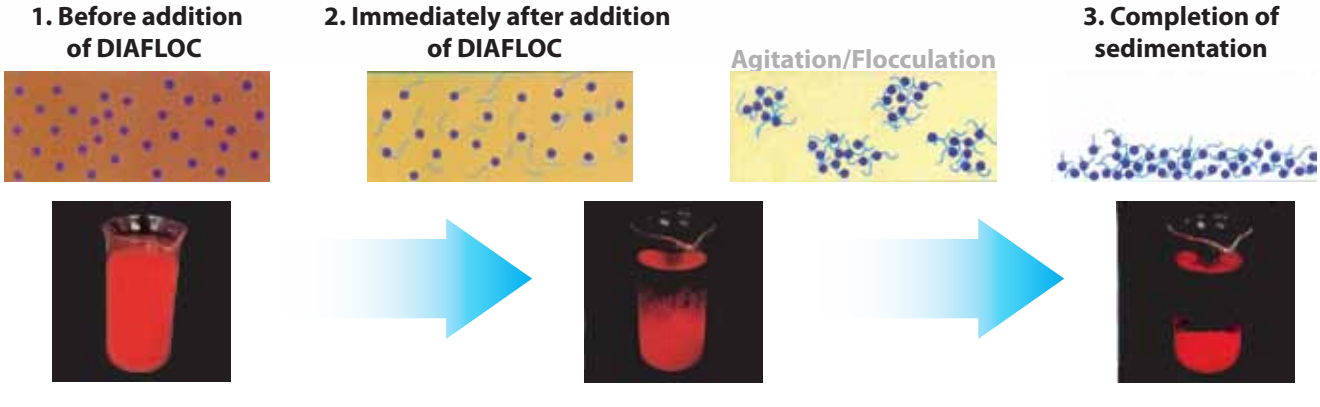
DIAION™ ion-exchange resins

DIAION™ products are high quality ion-exchange resins, chelating resins, and synthetic adsorbents produced by Mitsubishi Chemical Corporation and its subsidiary producers

Applications of IER

Grade name	SK1B Strongly acidic cation exchange resin	SA12A Strongly basic anion exchange resin type I	HPA516 Strongly basic anion exchangeresin type I
IER Type	Gel type	Gel type	Highly porous
Ionic form	Na - form	Cl - form	Cl - form
Whole bed count	90 min	90 min	90 min
Water content	43 – 50 %	48 – 55%	48 – 55%
Salt splitting capacity	2.0 meq/ml(min)	1.3 meq/ml(min)	1.3 meq/ml(min)
Particle size	on 1,180µm 5% max through 300µm 1% max	on 1,180µm 5% max through 300µm 1% max	on 1,180µm 5% max through 300µm 1% max
Effective size	0.4 mm (min)	0.4 mm (min)	0.4 mm (min)
Uniformity Coefficient	1.6 max	1.6 max	1.6 max
Operating temperature	120°C max	80°C max	80°C max
Application	Industrial scale softening and demineralization	To treatment of surface waters with troublesomeorganic content	Enzyme purification as enzyme carriers for water treatment of bio – pharmaceutical substances, and treatment of feed solutions of high color value
Origin	Japan	Japan	Japan

Polymer flocculants DIAFLOC™



Product type	Molecular weight ($x10^6$)	Major component	Solution viscosity		0.3% aqueous solution pH	Recommended concentration (%)	Principal use
			0.1%	0.3%			
KP206BH2 Cationic type	14	Acrylamide – Acrylic acid ester copolymer	180	640	2.5	0.1 ~ 0.3	+ Wastewater + Pulp and paper + Inorganic chemical and other kinds of industrial sludge + Solid liquid separation + Dewatering of sludge