

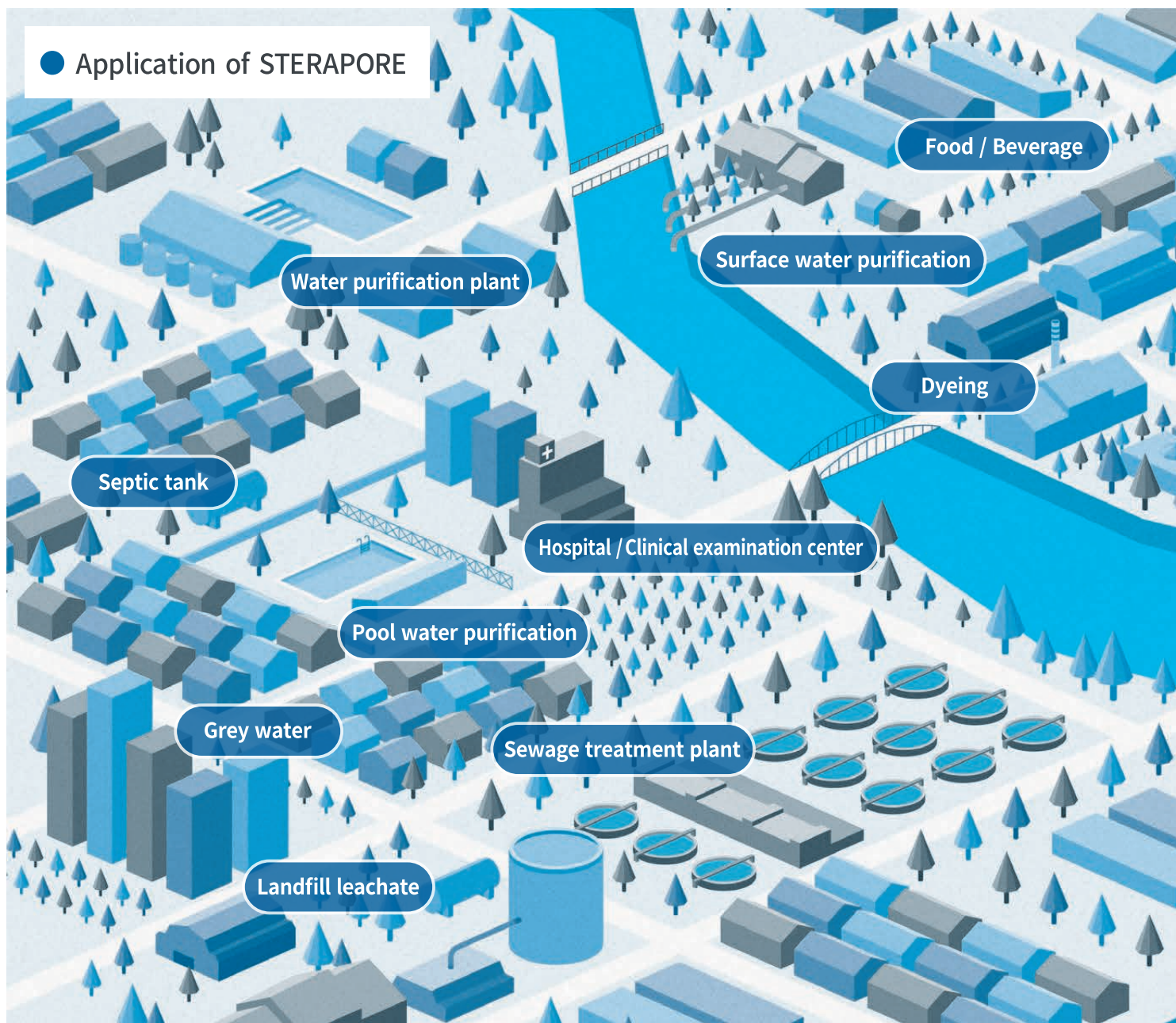


STERAPORE™

The Mitsubishi Chemical Group* provides advanced membrane filtration technologies for a wide range of applications.

STERAPORE is a group of hollow fiber membrane products created from the Mitsubishi Chemical Group's* cutting-edge synthetic fiber spinning technology. STERAPORE is available in two configurations: PVDF membrane and PE membrane. STERAPORE is offering a wide range of filtration applications for separation, purification and concentration.

*Mitsubishi Chemical Group refers to Mitsubishi Chemical Group Co., Ltd. and its group companies.



● PVDF Membrane (Polyvinylidene Fluoride)

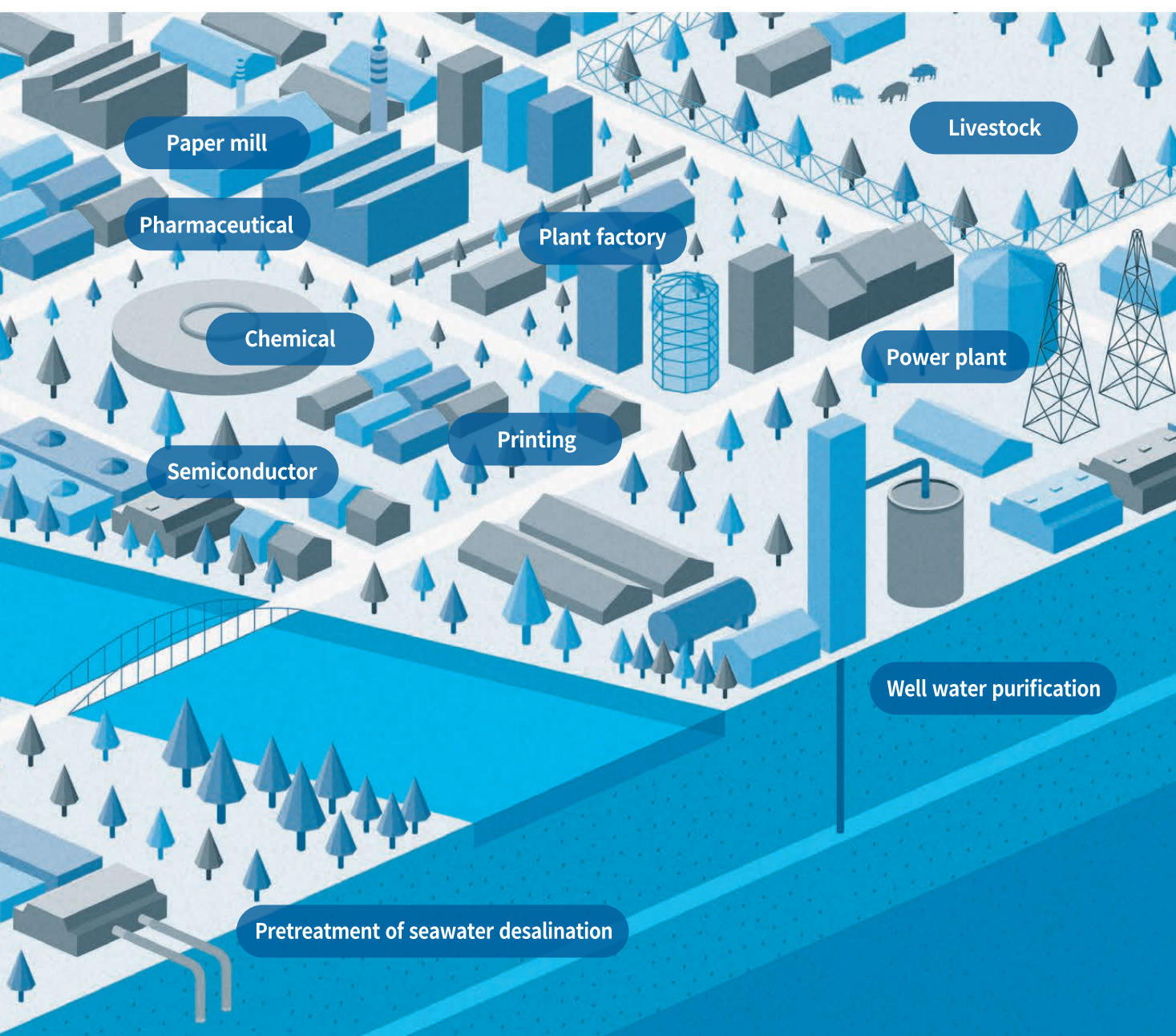
3 — 6 page

PVDF membranes deliver energy saving, long service life and enhanced solid-liquid separation performance.

● PE Membrane (Polyethylene)

7 — 8 page

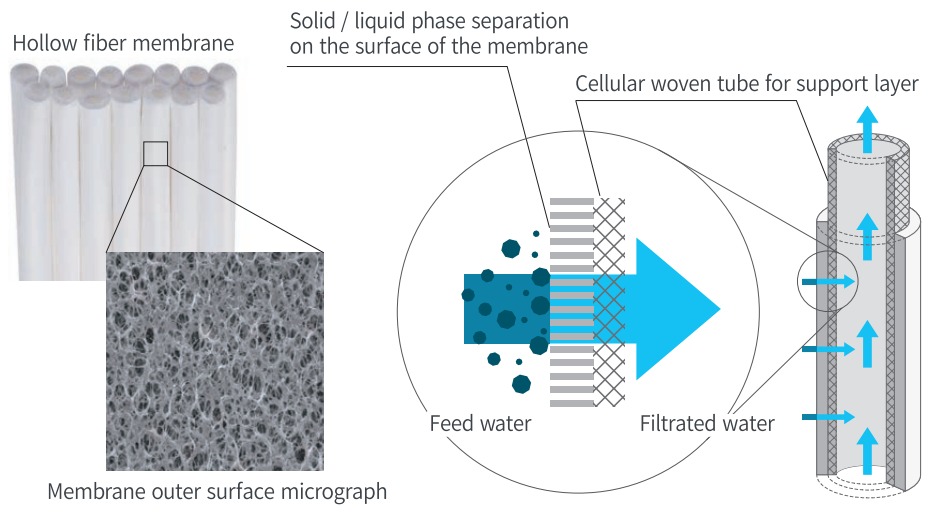
PE membranes deliver environmentally-friendly and high chemical resistance to acid and alkali.



● PVDF Membrane (Polyvinylidene Fluoride)

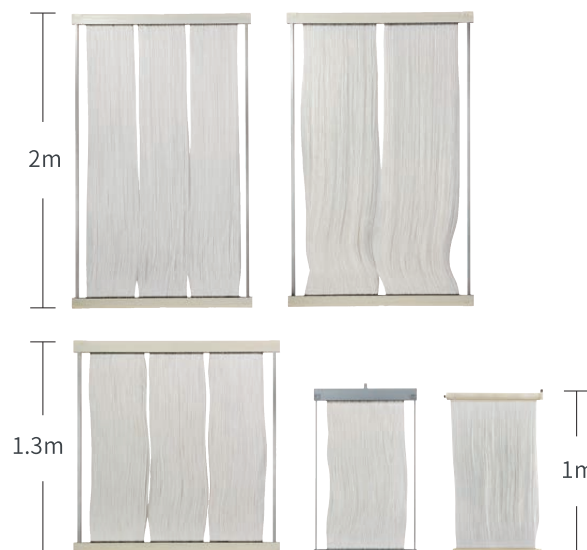
PVDF Membrane

- 1 Superb durability by the high-strong support layer
- 2 High permeability
- 3 Excellent chemical resistance



PVDF Membrane Element

- 1 Easy transport and storage under dry conditions
- 2 High packing density
- 3 More choices

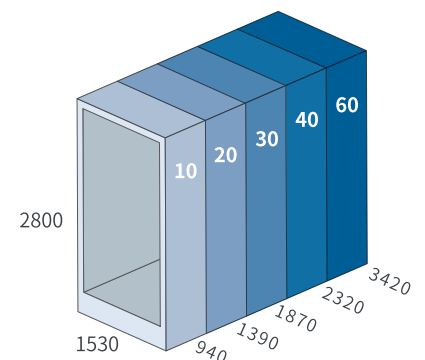
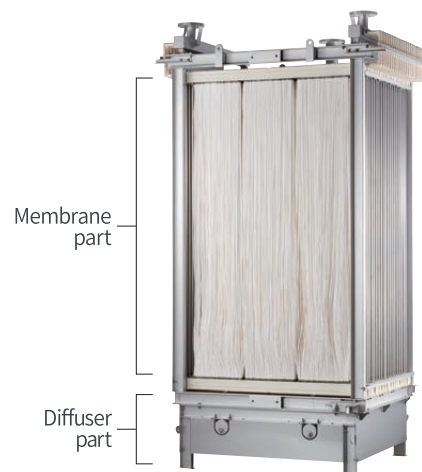


Membrane area
Dimensions: D × W × H (mm)

Thick	MF : 0.4 μm
	UF : 0.05 μm
Thin	UF : 0.05 μm

PVDF Membrane Module

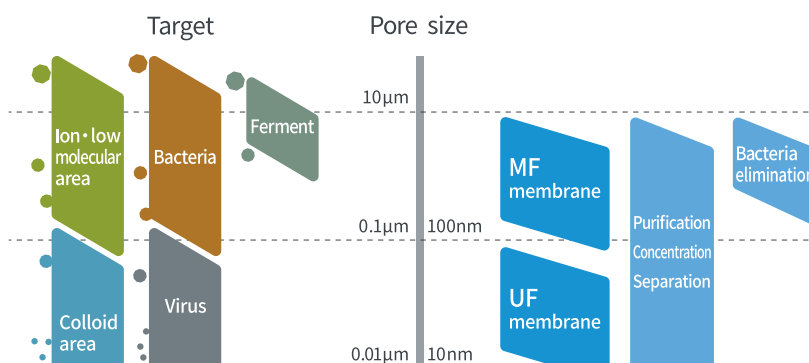
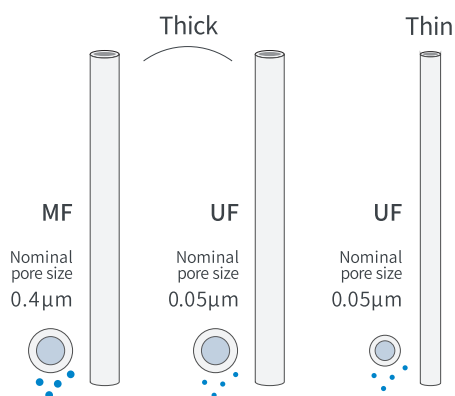
- 1 Space-saving
- 2 Energy-saving
- 3 Extensive product lineup



Element type	40m ² / 25m ²
Minimum water depth	3.0m

PVDF membranes deliver energy saving, long service life and enhanced solid-liquid separation performance.

Three types of PVDF membrane



MF membrane can separate SS and coliforms, and it can be used for MBR etc.

UF membrane can be used for water purification, MBR + RO treatment and pretreatment of seawater desalination etc.

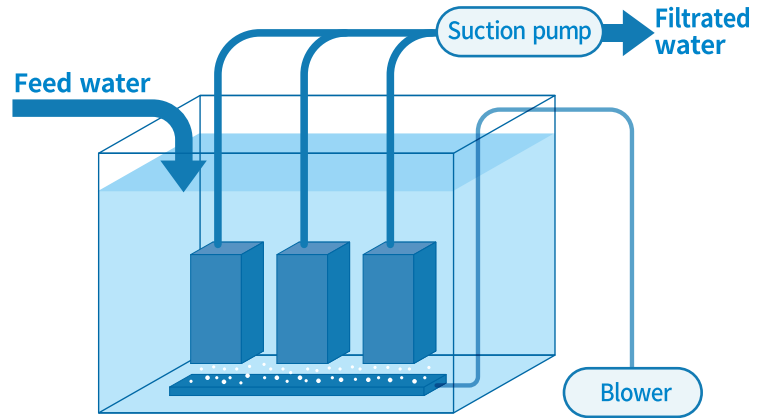
<p>40m² 30 × 1250 × 2000</p>	<p>25m² 30 × 1250 × 2000</p>	<p>15m² 30 × 1250 × 1300</p>	<p>6m² 44 × 620 × 1015</p>	<p>5m² 18 × 600 × 1000</p>
—	○	○	○	—
—	○	—	—	—
○	—	—	—	○

15m ²	6m ²	5m ²
2.3m	1.8m	1.8m

● PVDF membrane module products (Water purification / Wastewater treatment)

Submerged membrane filtration

- Membrane modules are submerged in a tank to permeate filtrated water with suction pumps or gravity filtration.
- Low operation pressure to treat water allows energy saving operation.
- PVDF membrane modules can be used in a wide range of water treatment applications such as drinking water, pretreatment and wastewater etc.
- A variety of membrane modules in capacity and height allows more flexibility in system designs.



Specification: Contents




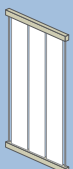

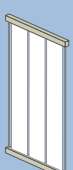

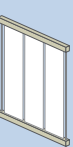

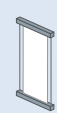

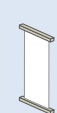
Module model No.	76M1600FP
Dimension (D×W×H) mm	D : 1524 W : 2345 H : 2628
Dry weight	1000kg
Membrane area	1600m ²

		Number of elements				
Element type		10	20	30	40	60
40m² Thin UF : 0.05 76E0040SA	76M0400FP D : 1524 W : 921 H : 2598 400kg 400m ²	76M0800FP D : 1524 W : 1371 H : 2598 600kg 800m ²	76M1200FP D : 1524 W : 1895 H : 2628 800kg 1200m ²	76M1600FP D : 1524 W : 2345 H : 2628 1000kg 1600m ²	76M2400FP D : 1524 W : 3396 H : 2678 1550kg 2400m ²	
	25m² Thick UF : 0.05 75E0025SA	75M0250FP D : 1524 W : 921 H : 2598 400kg 250m ²	75M0500FP D : 1524 W : 1371 H : 2598 600kg 500m ²	75M0750FP D : 1524 W : 1895 H : 2628 800kg 750m ²	75M1000FP D : 1524 W : 2345 H : 2628 1000kg 1000m ²	75M1500FP D : 1524 W : 3396 H : 2678 1550kg 1500m ²

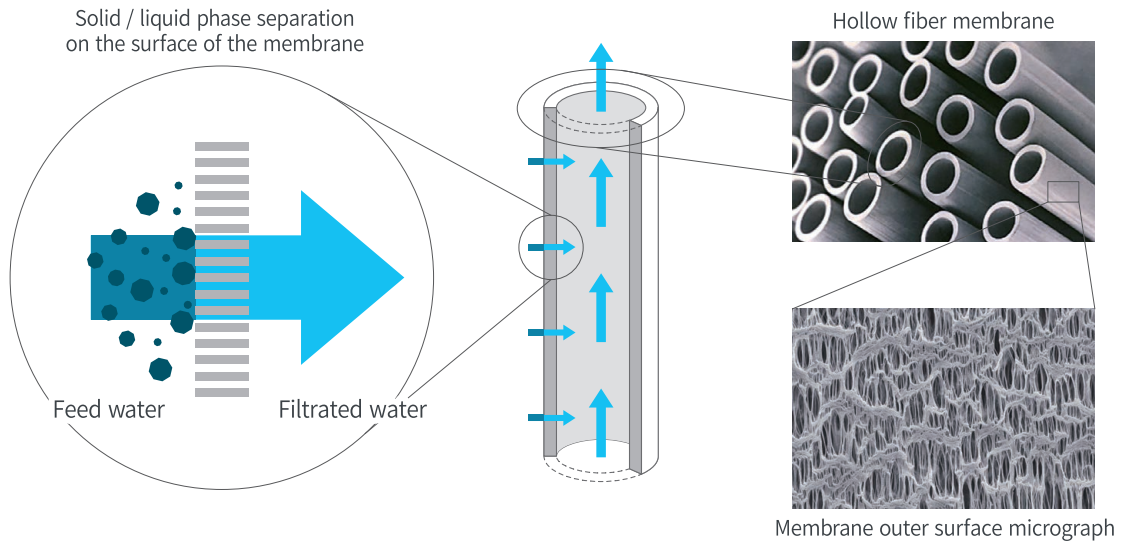
Minimum water depth 2.5m (for 40m² and 25m² types)

Minimum water depth 2.6m (for 30, 40, and 60 element types)

Title 22 California approval for recycled water application

		Number of elements				
Element type		10	20	30	40	60
Minimum water depth 3.0m	40m² Thin UF : 0.05   56E0040SA	56M0400FF D : 1524 W : 940 H : 2798 400kg 400m ²	56M0800FF D : 1524 W : 1390 H : 2798 600kg 800m ²	56M1200FF D : 1524 W : 1870 H : 2798 800kg 1200m ²	56M1600FF D : 1524 W : 2320 H : 2798 1000kg 1600m ²	56M2400FF D : 1524 W : 3416 H : 2798 1550kg 2400m ²
	25m² Thick MF : 0.4   50E0025SA	50M0250FF D : 1524 W : 940 H : 2798 400kg 250m ²	50M0500FF D : 1524 W : 1390 H : 2798 600kg 500m ²	50M0750FF D : 1524 W : 1870 H : 2798 800kg 750m ²	50M1000FF D : 1524 W : 2320 H : 2798 1000kg 1000m ²	50M1500FF D : 1524 W : 3416 H : 2798 1550kg 1500m ²
	25m² Thick UF : 0.05   55E0025SA	55M0250FF D : 1524 W : 940 H : 2798 400kg 250m ²	55M0500FF D : 1524 W : 1390 H : 2798 600kg 500m ²	55M0750FF D : 1524 W : 1870 H : 2798 800kg 750m ²	55M1000FF D : 1524 W : 2320 H : 2798 1000kg 1000m ²	55M1500FF D : 1524 W : 3416 H : 2798 1550kg 1500m ²
Minimum water depth 2.3m	15m² Thick MF : 0.4   50E0015SA	50M0150FF D : 1524 W : 940 H : 2098 350kg 150m ²	50M0300FF D : 1524 W : 1390 H : 2098 500kg 300m ²	50M0450FF D : 1524 W : 1870 H : 2098 650kg 450m ²	50M0600FF D : 1524 W : 2320 H : 2098 800kg 600m ²	
Minimum water depth 1.8m	6m² Thick MF : 0.4   50E0006SM	50M0060FF D : 642 W : 855 H : 1922 120kg 60m ²	50M0120FF D : 642 W : 1295 H : 1922 190kg 120m ²	50M0180FF D : 642 W : 1735 H : 1922 260kg 180m ²		
	5m² Thin UF : 0.05   57E0005SM	57M0050FF D : 668 W : 719 H : 1600 90kg 50m ²	57M0100FF D : 668 W : 994 H : 1602 120kg 100m ²	57M0150FF D : 670 W : 1269 H : 1632 150kg 150m ²	57M0200FF D : 670 W : 1544 H : 1632 180kg 200m ²	

● PE Membrane (Polyethylene)



PE Membrane Pressurized type

- The high density of hollow fiber membranes provides a large membrane surface, enabling exceptionally compact design.
- PE membrane modules are suitable for packaging devices because of the easy-to-handle module size.
- PE membranes can be used for not only water treatment but also applications in concentration and purification.



PE Membrane Submerged type

- Submerged type of PE membrane modules can be used for high turbidity water which is more than 100 NTU.
- We have a lot of references in purification of river water and industrial water with high turbidity.
- PE membrane modules can be used for wastewater in small and medium-sized capacity. PE membranes can also be used for concentration such as sludge concentration.



Module



Element



PE membranes deliver environmentally-friendly and high chemical resistance to acid and alkali

1 Outstanding Environmentally Friendly

Our PE membranes are made of a high-purity polyethylene polymer, so they include no solvents or plasticizers. These products are clean, environmentally friendly and recyclable.

2 High chemical resistance to acid and alkali

Superior resistance to acid and alkali makes these membranes exceptionally durable. Superb mechanical strength and flexibility enables PE membranes to be used in a diverse range of products, from small to large - scale filters.

3 Both Hydrophilic and Hydrophobic Membranes Available

Hydrophilic membranes can be used instantly, as water can be transmitted them even in a dry state. Similarly, hydrophobic membranes repel water, so they can be used as air filters and mist filters.

4 Excellent Hygiene

Inner side of hollow fiber membranes, which are purified water (or gas) way, are kept within the membranes throughout the product process, from membrane formation to elements product processing. Because they are never exposed to external pollutants, they are maintained in clean condition at all times.

Model no.	Nominal pore size (μm)	Membrane type	Membrane area (m ²)	Dry weight (kg)	Dimensions (mm)	Material			
						Housing	Water collecting pipe	Cap	Sealant
UMF824WI	0.1	MF	8	3	φ110×830	—	PVC	—	Polyurethane
UMF2024WFA			20			—			
UMF2012WFA	0.03	UF	20	3.5	φ170×810	—	ABS	—	—

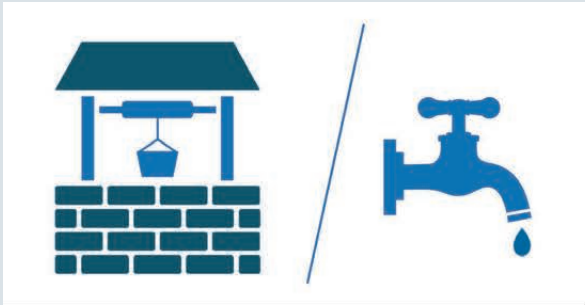
Model no.	Nominal pore size (μm)	Membrane type	Membrane area (m ²)	Dry weight (kg)	Dimensions (mm)			Material	
					Depth	Width	Height	Potting resin	Water collecting pipe
LFB13623	0.1	MF	136	40	400	1200	420	Polyurethane	ABS
LFB40823			408	120	400	1200	1260		
LFB81623			816	240	400	1200	2520		

Title 22 California approval for recycled water application

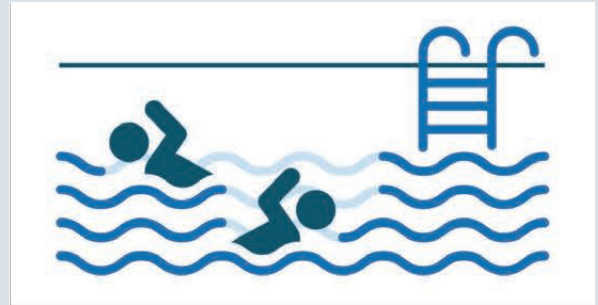
Model no.	Element model no.	Number of elements (pcs/module)	Membrane area (m ²)	Dry weight (kg)	Minimum water depth (m)	Dimensions (mm)			Diffuser type
						Depth	Width	Height	
50M0105LP	50E0002SL	70	105	205	1.9	540	1540	1450	PVC pipe type
50M0105LS				210	1.9	680	1540	1450	Rubber slit
50M0105LN				165	—	540	1540	1100	—
50M0210LP	50E0003SL	70	210	210	1.9	620	1540	1450	PVC pipe type
50M0210LS				215	1.9	730	1540	1450	Rubber slit
50M0210LN				170	—	620	1540	1100	—

Model no.	Nominal pore size (μm)	Membrane type	Membrane area (m ²)	Dry weight (kg)	Dimensions (mm)			Material	
					Depth	Width	Height	Potting resin	Water collecting pipe
50E0002SL	0.4	MF	1.5	0.7	14	446	1035	Polyurethane	ABS
50E0003SL			3		14	524	1035		

● Application of PVDF and PE membrane



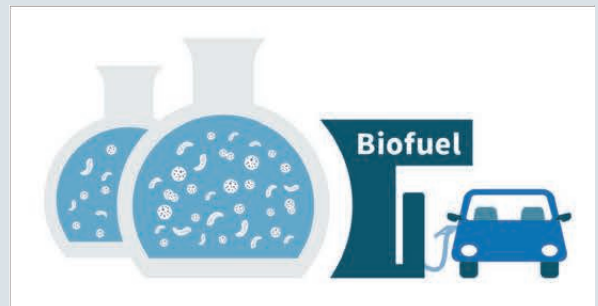
● Well water purification



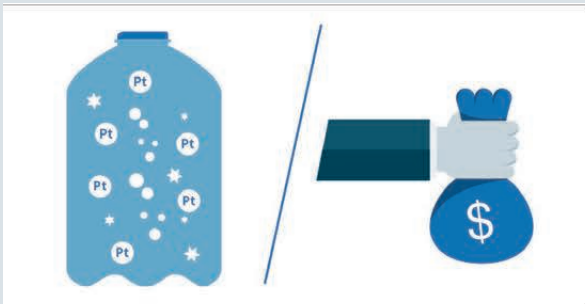
● Pool water purification



● Sulfuric acid purification



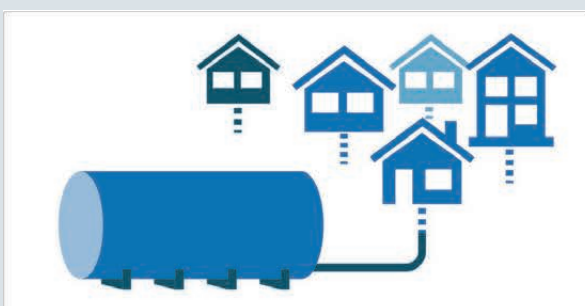
● Algae concentration



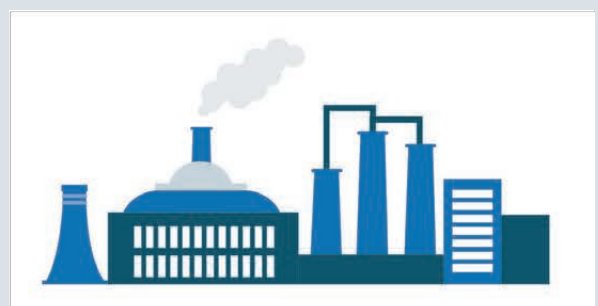
● Valuable metal dust concentration and recovery



● Wastewater reuse and tertiary treatment



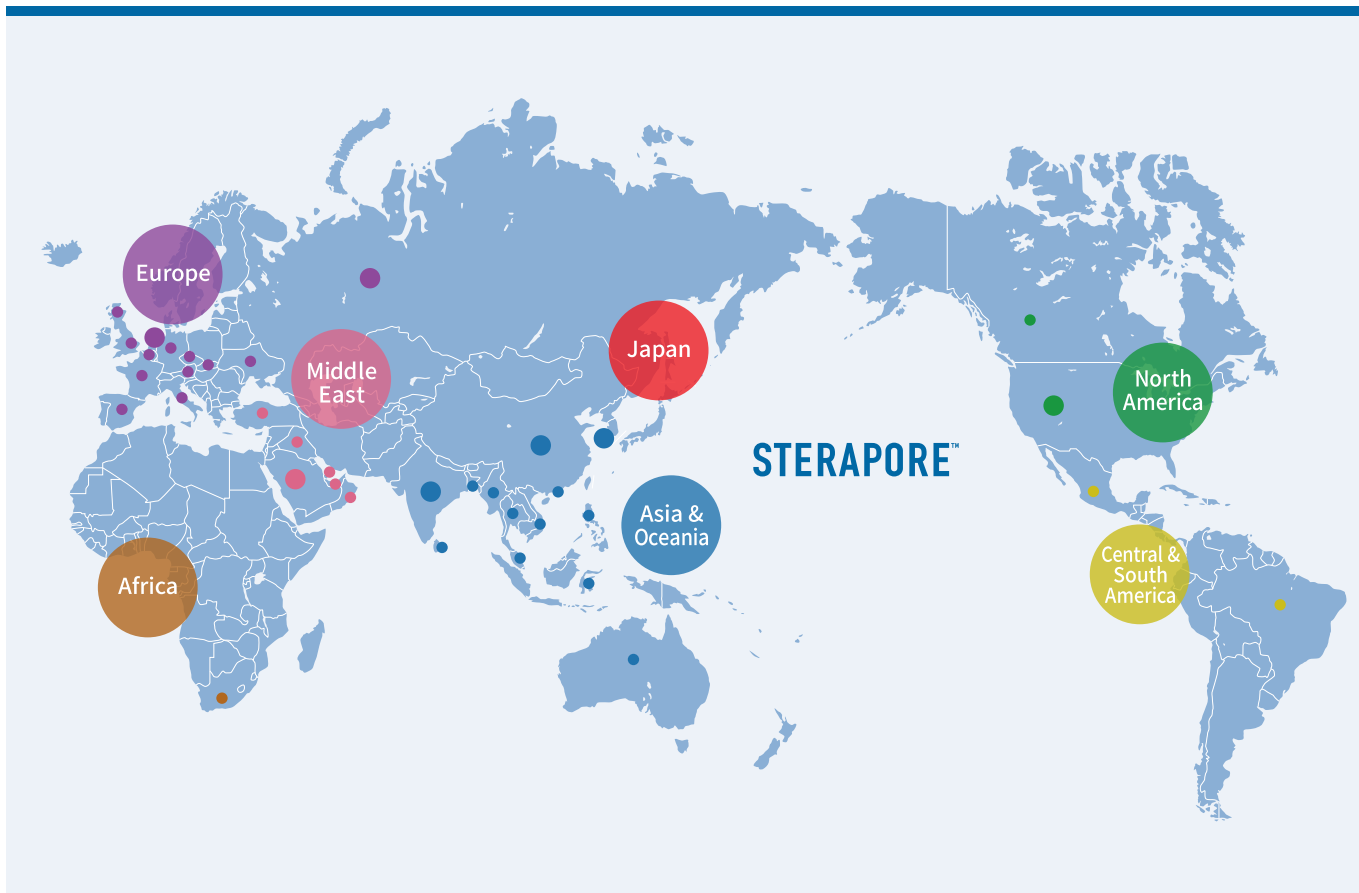
● Septic tank



● Industrial wastewater treatment

● MBR World References

More than 5000 projects all over the world



Dongtang STP (South Korea)
Capacity : 120000m³/d
Operation : 2008~
Application : Municipal (Ground level)



Tilburg WWTP (Netherlands)
Capacity : 9000m³/d
Operation : 2016~
Application : Industrial



Mitsubishi Chemical (Japan)
Capacity : 2000m³/d
Operation : 2013~
Application : Industrial



Cheonan STP (South Korea)
Capacity : 70000m³/d
Operation : 2008~
Application : Municipal



STERAPORE™

Membrane

Element

Module

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MEMBRANE BUSINESS GROUP
SEPARATION MATERIALS DEPARTMENT
AMENITY LIFE DIVISION
ADVANCED SOLUTIONS BUSINESS GROUP
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