



Water & Wastewater

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PURON®

Solutions

Innovative MBR system for municipal and industrial water & wastewater treatment

2016 Version

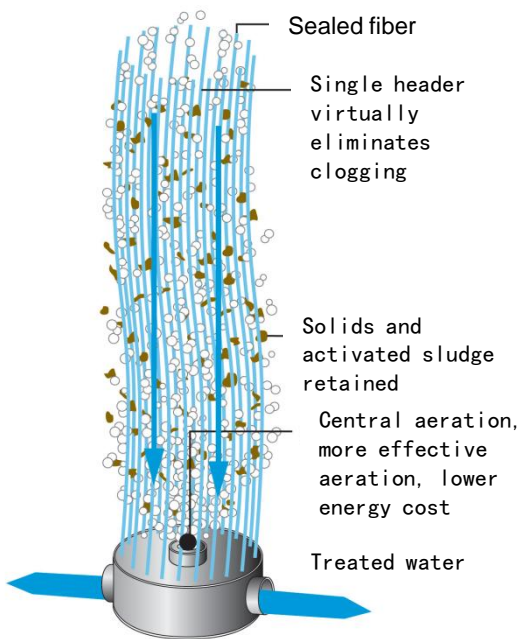
KOCH
MEMBRANE SYSTEMS



TM

PURON® MBR technology

The latest generation of high flux PURON® modules for submerged UF and MBR applications are newly-designed and improved, while continuing to leverage the innovative PURON® central aeration and single header design. The reinforced fibers are allowed to float freely like the sea weed in the water, greatly reduce the clogging and sludging problem during operation therefore the low energy cost.

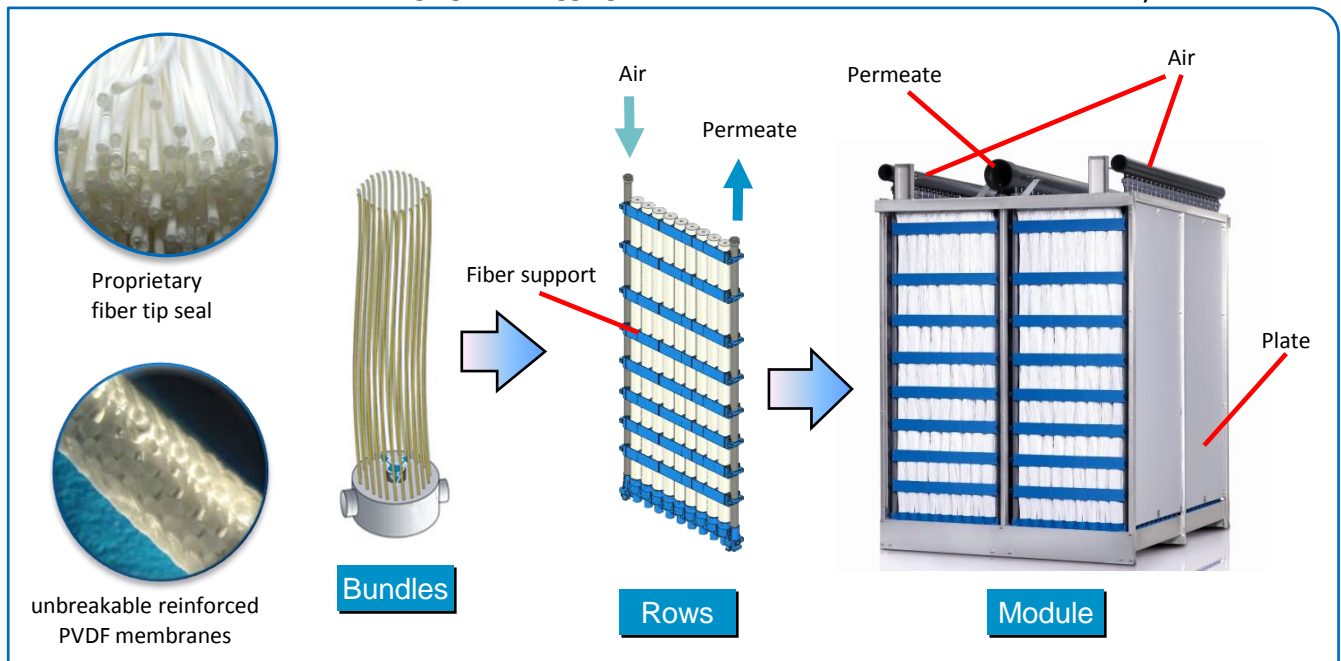


Superiority of PURON® MBR

- ✓ Robust membrane—Reinforced fiber never break
- ✓ Low energy cost—Central aeration, more efficient
- ✓ High and Stable flux—Single header design,
- ✓ Low pretreatment requirement—2mm fine screen
- ✓ High quality permeate—Narrow pore size distribution and smaller pores
- ✓ Less maintenance—Built in reliability

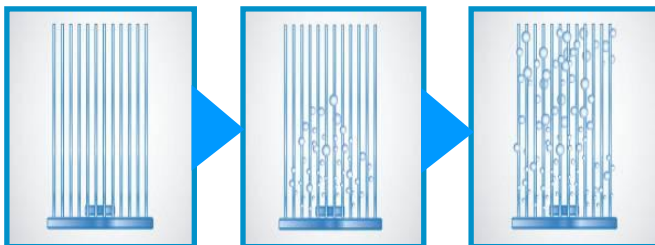
PURON® Single Header Design

- ✓ High fouling resistance—Single header design, eliminates sludging and clogging



KOCH – PURON® MBR

Single Header – Central Aeration



- Trouble-free operation, reliable performance
- Low energy demand, Less cleaning
- Smaller blowers, simple prescreening (2mm)
- **Lifetime: 8-10 years**
- **Warranty: 2 years**

Orther MBR

Double Header – Aeration from below



- Reduced system reliability
- Increased energy demand and cleaning
- Expensive prescreening (<1mm)
- Lifetime: 1-6 years
- Warranty: 1 years



PURON® HOLLOW FIBER ROWS

Hollow Fiber Submerged Membrane Row for MBR Applications

PRODUCT DESCRIPTION

Membrane Chemistry:	→ Proprietary PVDF
Membrane Type:	Braided hollow fiber for outside-in operation
Fiber Support Chemistry:	Polyester
Nominal Pore Size:	→ 0.03 μm
Outside Fiber Diameter:	0.1 inch (2.6 mm)
Regulatory Information:	Accepted by California Department of Public Health (CDPH) for compliance with California Water Recycling Criteria (Title 22)
Potting Material:	Proprietary epoxy compound
Storage Solution:	Glycerin

PRODUCT SPECIFICATIONS

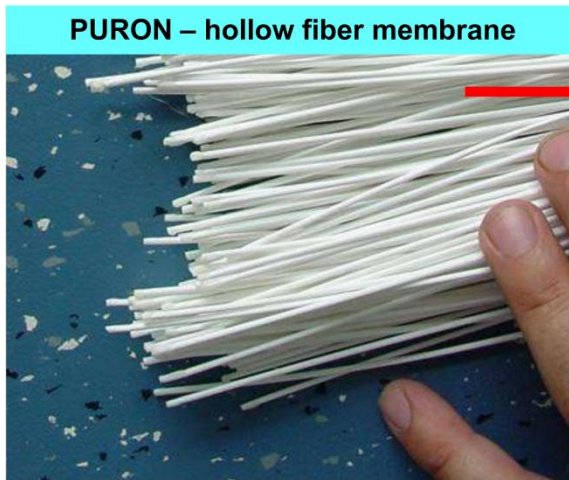
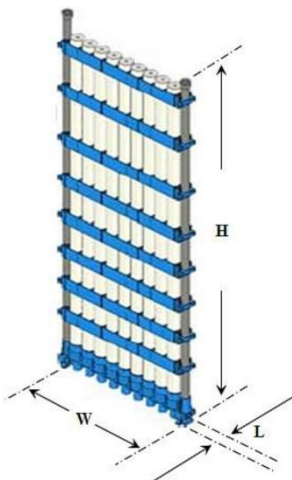
Model	Membrane Area ft ² (m ²)
PSH 31HD	330 (31)
PSH 31	330 (31)
PSH 34	370 (34)
PSH 37	400 (37)
→ PSH 41	→ 440 (41)

OPERATING & DESIGN INFORMATION*

Temperature Range:	41 - 104°F (5 - 40°C)
Maximum Filtration Transmembrane Pressure:	9 psi (0.6 bar)
Maximum Backflush Transmembrane Pressure:	9 psi (0.6 bar)
Allowable pH Range for Cleaning:	2.0 – 10.5
Maximum Allowed Total Chlorine @ 95°F (35°C) or Lower:	1,000 ppm @ pH 8 or higher during maintenance clean
Maximum Allowed Total Chlorine @ 95°F (35°C) or Lower:	2,000 ppm @ pH 8 or higher during recovery clean
Maximum Allowed Total Chlorine Contact:	500,000 ppm-hrs cumulative

* Consult Process Technology Group for specific applications.

NOMINAL DIMENSIONS & WEIGHT



- No fiber breakage during operation
- Long membrane lifetime



10 liter bucket filled with water

Model	L Inches (mm)	W Inches (mm)	H Inches (mm)	Dry Weight Pounds (kg)
PSH 31HD	3.62 (92)	32.60 (828)	71.69 (1,821)	48.5 (22)
PSH 31	3.62 (92)	32.60 (828)	84.68 (2,151)	50.7 (23)
PSH 34	3.62 (92)	32.60 (828)	91.30 (2,319)	52.9 (24)
PSH 37	3.62 (92)	32.60 (828)	84.68 (2,151)	57.3 (26)
→ PSH 41	→ 3.62 (92)	→ 32.60 (828)	→ 91.30 (2,319)	61.7 (28)

PURON® MBR

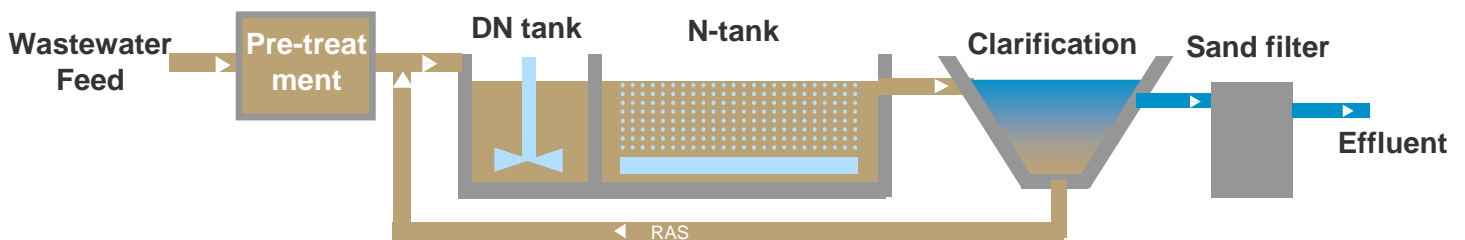
The system with PURON® MBR modules will provide high quality permeate to meet the severe environmental discharge standard, to be reused for farm irrigation, industrial process water and RO feed. PURON® modules have been widely applied in municipal and industrial waste water treatment , secondary waste water treatment and conventional WWTP upgrading.

- ❑ Compared with conventional treatment process, MBR will
 - ✓ Remove bacteria
 - ✓ Provide high quality permeate
 - ✓ Eliminate clarification tank
 - ✓ Need much less footprint

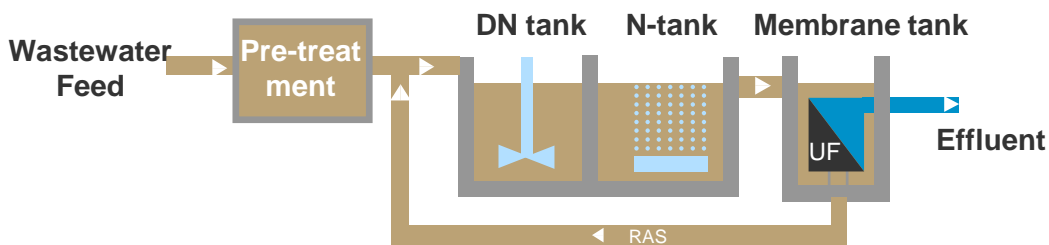


PURON® MBR

Conventional Treatment Process

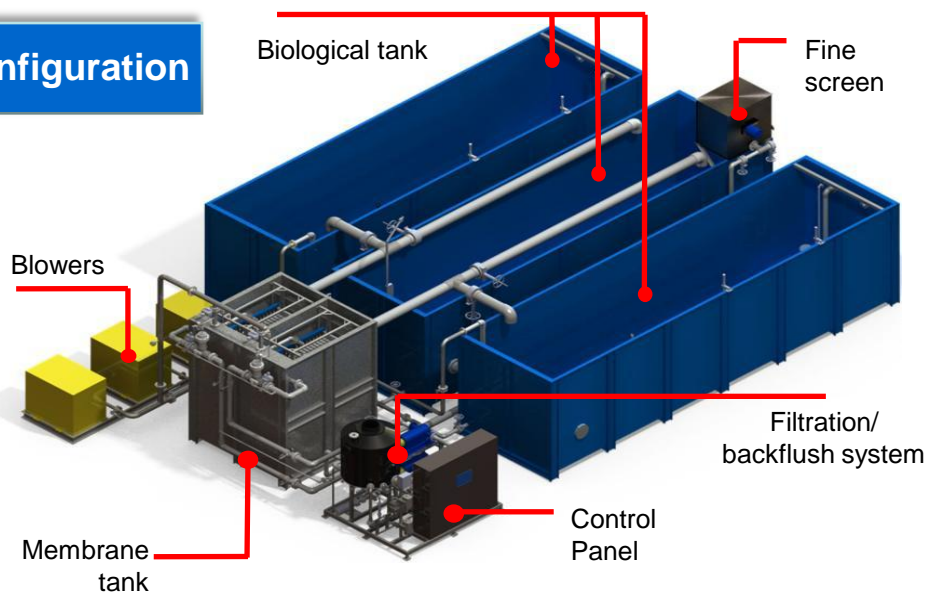


PURON® MBR Process

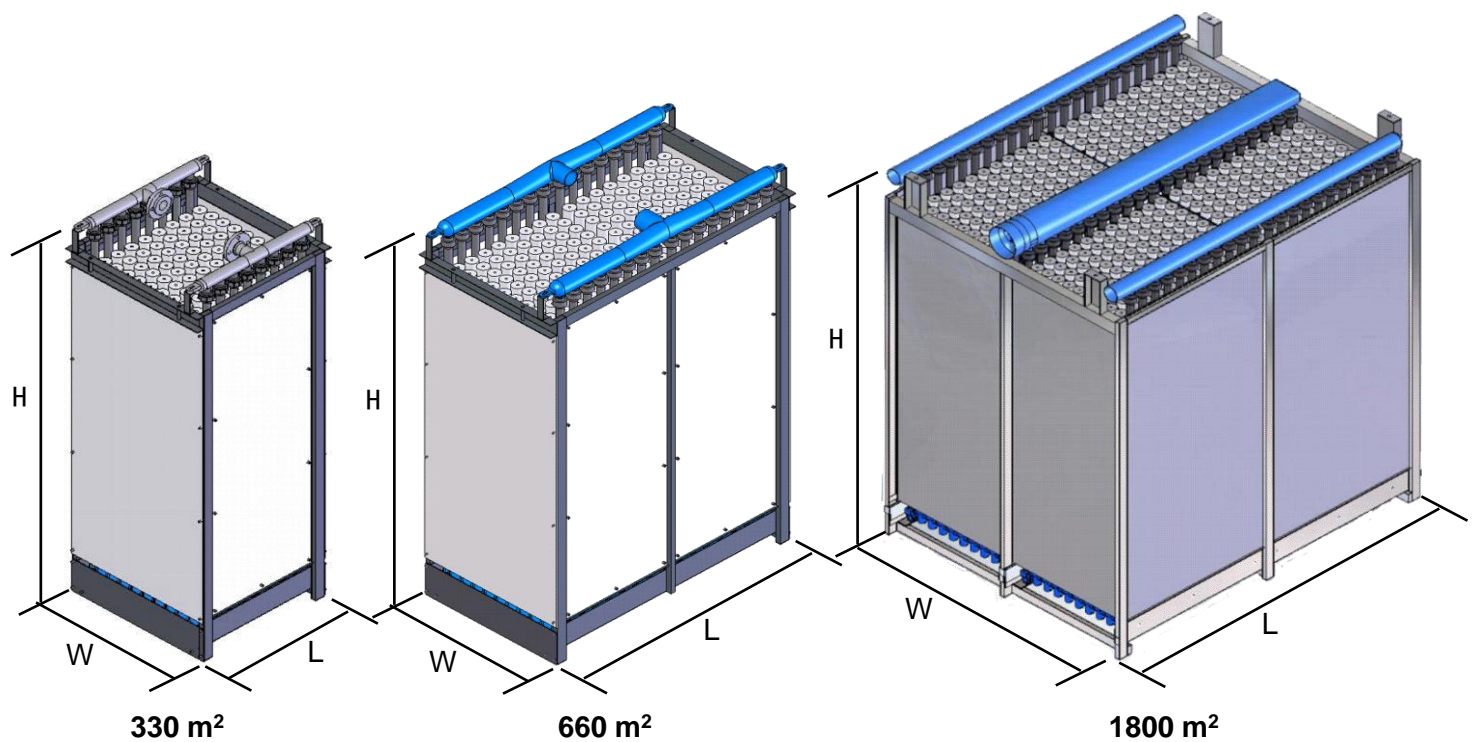


PURON® MBR System Configuration

PURON® MBR system is mainly composed of pre-treatment fine screen(1-2mm), biological tank and membrane tank with auxiliary pumps, blowers, pipes and control system. It is integrated with biological process and membrane filtration process.



PURON[®] MBR Standard Module



PURON[®] MBR Modules Technical Data

Module Model	PSH 330	PSH 660	PSH 1800
Nominal Area (m ²)	330	660	1,800
Frame Length-L (mm)	906	1,662	2,244
Frame Width-W (mm)	893	893	1,755
Frame Height-H (mm)	2,384	2,422	2,530
Permeate Pipe (mm)	DN50	DN80	Ø200
Air Pipe (mm)	DN50	DN80	Ø110
Dry Weight (kg)	325	590	1,570
Fiber Type	PURON [®] Supported Hollow Fiber		
Membrane Chemistry	Proprietary PVDF		
Nominal Pore Size	0.03µm		
pH Range	2.0 ~ 10.5		
Temperature Range	5 ~ 40°C		

* According to the capacity and customer requirements, KMS will add or remove some rows from the standard modules configure a non-standard module to meet the requirements.

PURON[®] MBR Applications



- ❖ Location: Australia
- ❖ Feed: Wastewater from rural area
- ❖ Capacity: 360m³/day
- ❖ Start-up: 2006



- ❖ Location: USA
- ❖ Feed: Wastewater from resort
- ❖ Capacity: 380m³/day
- ❖ Start-up: 2008



- ❖ Location: Vietnam
- ❖ Feed: Hotel and Residential Wastewater
- ❖ Capacity: 1,900m³/day
- ❖ Start-up: 2012



- ❖ Location: Zhangjiagang, China
- ❖ Capacity: 25,000m³/day
- ❖ Feed: Mainly municipal wastewater
- ❖ Start-up: 2012



- ❖ Location: California, USA
- ❖ Feed: Municipal wastewater
- ❖ Capacity: 28,000m³/day
- ❖ Start-up: 2010



- ❖ Location: Brazil
- ❖ Feed: Secondary wastewater
- ❖ Capacity: 86,400m³/day
- ❖ Start-up: 2012



- ❖ Location: Australia
- ❖ Feed: Municipal wastewater
- ❖ Capacity: 8,000m³/day
- ❖ Start-up: 2010



- ❖ Location: France
- ❖ Feed: Municipal wastewater
- ❖ Capacity: 28,800m³/day
- ❖ Start-up: 2010



- ❖ Location: Australia
- ❖ Feed: Malty industry wastewater
- ❖ Capacity: 1,700m³/day
- ❖ Start-up: 2006



- ❖ Location: Iowa, USA
- ❖ Feed: Protein production wastewater
- ❖ Capacity: 2,620m³/day
- ❖ Start-up: 2011



- ❖ Location: Chongqing, China
- ❖ Feed: Automobile industry wastewater
- ❖ Capacity: 2,100m³/day
- ❖ Start-up: 2014



- ❖ Location: Taiwan
- ❖ Feed: Textile industry wastewater
- ❖ Capacity: 1,200m³/day
- ❖ Start-up: 2013



- ❖ Location: Jiangsu, China
- ❖ Feed: Chemical plant wastewater
- ❖ Capacity: 9,100m³/day
- ❖ Start-up: 2013



- ❖ Location: Nanjing, China
- ❖ Feed: Municipal + Electronic wastewater
- ❖ Capacity: 50,000m³/day
- ❖ Start-up: 2014

PURON[®] HF Applications



- ❖ Location: China
- ❖ Capacity: 28,800m³/day
- ❖ Feed: Secondary chemical wastewater
- ❖ Application: RO feed
- ❖ Start-up: 2012/2014



- ❖ Location: Inner Mongolia, China
- ❖ Capacity: 60,000m³/day
- ❖ Feed: Secondary Steel plant wastewater
- ❖ Application: RO feed
- ❖ Start-up: 2014

Contact your local Koch Membrane Systems representative for more information :

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www.kochmembrane.com



For five decades, Koch Membrane Systems, Inc. has led the way in developing innovative membrane technologies that serve a diverse range of industries and applications around the globe. KMS provides solutions to markets including industrial and municipal water and wastewater, food and life sciences and industrial processes helping thousands of clients reduce their water footprint, increase productivity, and reduce costs. With an installed base approaching 20,000 systems throughout the world, KMS is setting the standard as a comprehensive membrane solutions provider.

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01/2016

Various Applications



KMS Headquarter in US

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