



TriTech® PermaMax™ Hollow Fiber Membrane for Membrane Bioreactor



A Host of Latest Water Membrane Technologies



Introduction

Tritech® PermaMax™ MBR Hollow Fiber Membrane

PermaMax™ MBR hollow fiber membrane modules from Tritech (Singapore) Water can be used in treating various industrial and municipal wastewater of variable water quality. We have the capability to provide professional technical support that includes in-house design consultation, selection of optimal process flow and after sales support to our customers. Tritech is committed to its customers worldwide by providing cost-effective, reliable and sustainable solutions with its innovative and customer-centered MBR systems. The supply of **PermaMax™** MBR hollow fiber membrane modules is ensured with the commissioning of our new membrane manufacturing plant in Qingdao, China, in 2012. This manufacturing plant is one of the largest in China and incorporates state of the art production technology that produces reliable and advance PermaMax™ MBR hollow fiber membranes developed by Tritech (Singapore) Water Institute membrane experts and scientists.

Based on the exceptional dedicated R&D strength of Tritech Water Institute and its China subsidiary in the field of specialized membrane manufacturing, Tritech has developed its own Thermally Induced Phase Separation (TIPS) technology for fabricating MBR hollow fiber membranes using high performance polymer materials such as polyvinylidene fluoride (PVDF) and polypropylene (PP). Such high performing MBR hollow fiber membranes are complimented by effective and reliable submerged MBR membrane modules solely developed by Tritech (Singapore) Water Institute.

Tritech Water is committed to ensure sustainable water resource and protect our precious environment by becoming a world market leader in water and wastewater treatment with the supply of cost-effective and advanced membrane technologies.

Product features and benefits

- *Excellent quality product water*

PermaMax™ MBR hollow fiber membrane module utilizes PVDF membrane with nominal pore size of 0.08 μm , is capable of producing product water of reliable quality with below 1 NTU. The treated water is free from e. coli and has minimal suspended solids.

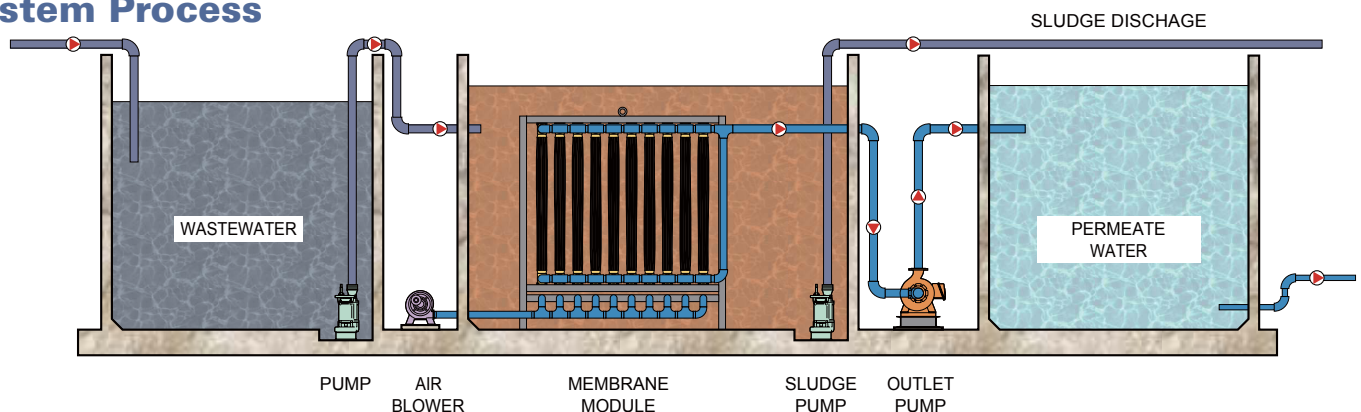
- *Low capital cost and compact design*

The MBR system does not require a final sedimentation tank and can be retrofitted into existing plant with ease. With a higher MLSS, of 8000-15000 mg/L, than conventional method, the MBR system can accept high organic (BOD) loading with less excess sludge production.

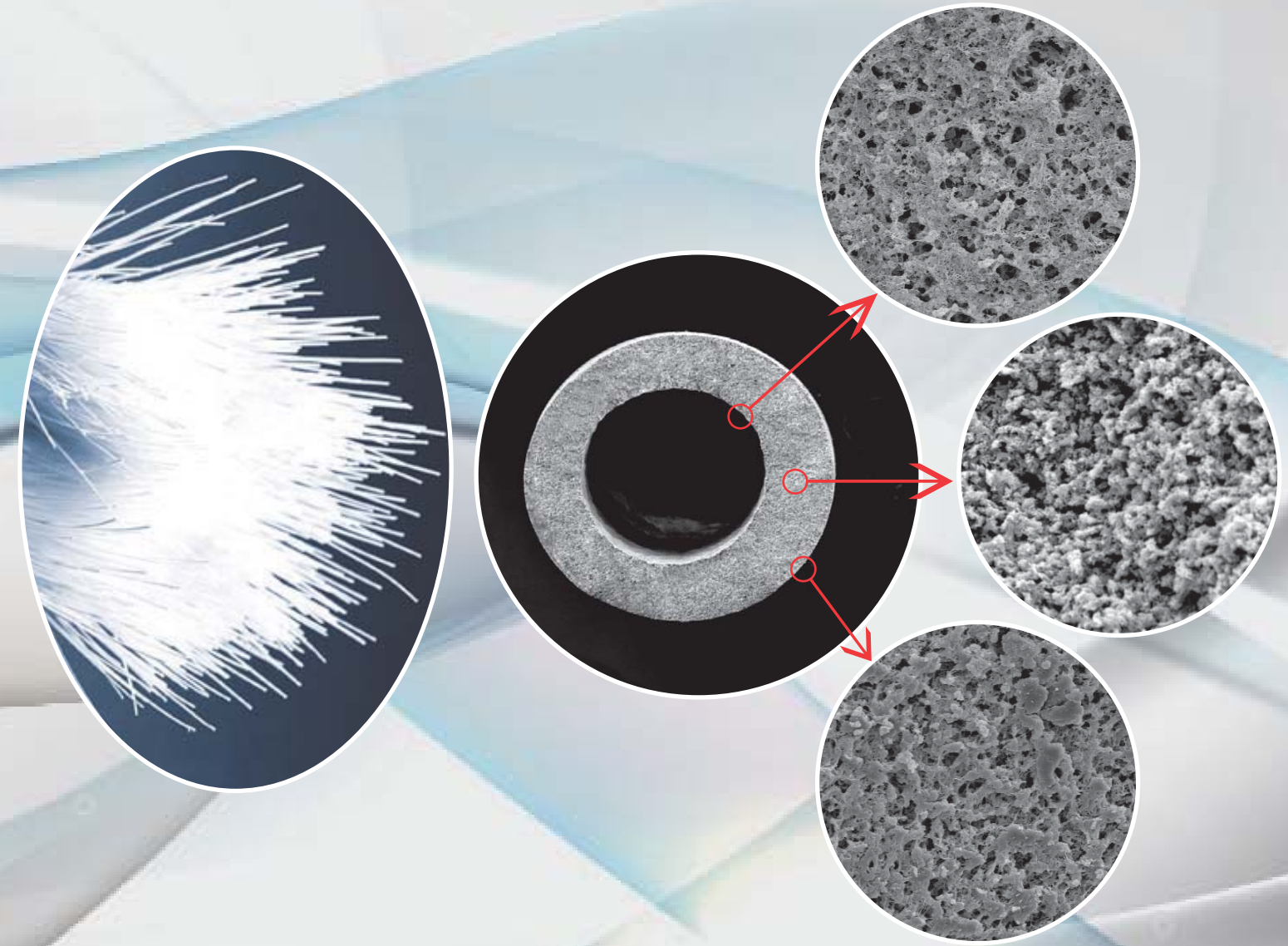
- *Ease of maintenance*

Minimal maintenance personnel required with full automation on system backwash and chemical-clean-in-place (CIP).

System Process



Cost-effective and reliable wastewater treatment solution using the latest and most advanced PermaMax™ MBR hollow fiber membrane module technology.



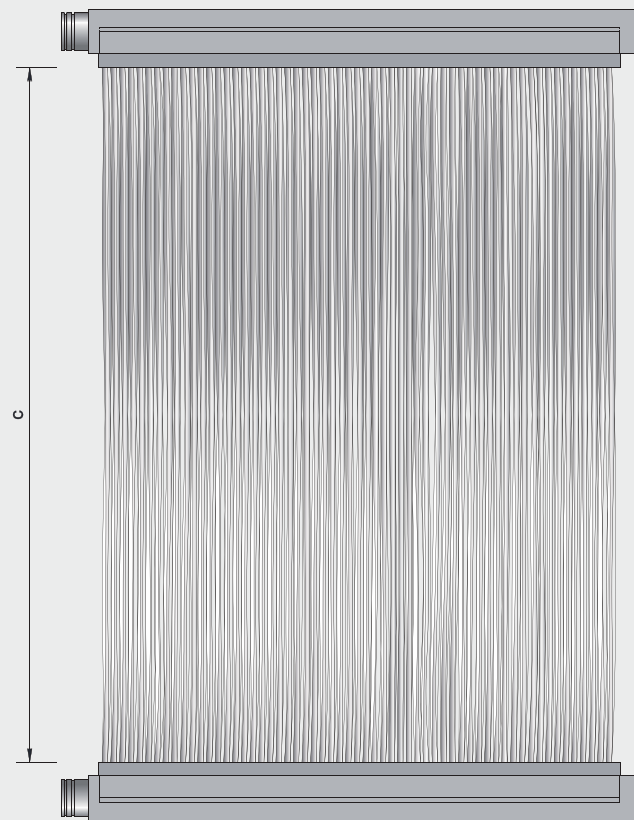
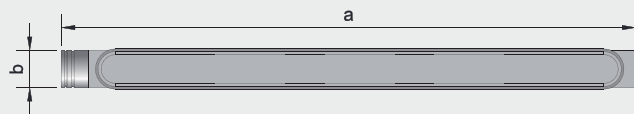
Application

Broad range of application for the treatment of high BOD and/or suspended solids containing wastewater from:

1. Municipal sewage treatment
2. Industrial wastewater treatment including chemical waste and food waste
3. Livestock wastewater treatment
4. Landfill leachate treatment

PermaMax™ MBR hollow fiber membrane features

- **High performance**
High and stable permeate flux with excellent separation capability.
- **High reliability**
Narrow pore size distribution guarantees excellent treated water quality. PVDF material provides exceptional chemical compatibility and durability.
- **High mechanical strength**
PermaMax™ MBR hollow fiber membranes are made exceptionally tough to abate breakage under harsh environment.
- **Long lifespan**
Longer service life reduces maintenance and replacement frequency. This reduces system downtime and sustains performance KPIs.



Single Membrane Module Diagram with Specifications Table

Module Type			STM08008	STM15015	STM15020	STM20028
Membrane	Membrane Area	m ²	8	15	20	28
	Fiber ID/OD	mm	1.0/1.8			
	PVDF (PP) Pore Size	µm	0.1 (0.4)			
Operating Condition	Filtration Mode		Submerged membrane with suction filtration			
	Designed Flux *	m ³ /d	2.9-6.7	5.2-12.7	7.2-16.8	10.2-23.7
	Max. Transmembrane Pressure (TMP)	kPa	300			
	Operation Temperature	°C	5 - 40			
	pH Range **		2 - 10			
Material	Membrane Material		PVDF/PP			
	Module Material		ABS resin			
	Potting Material		Polyurethane Resin			
Connection	Pipe Connection		DN32			
Module Dimensions	Length, a	mm	600	600	600	600
	Width, b	mm	45	45	45	45
	Height, c	mm	800	1500	1500	2000

*Designed flux varies depending on feed water quality or system design basis. Please consult Tritech Water for further information.

**Above specified pH range may be exceeded during chemical cleaning. Please refer to operation manual for further information.



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