



# InoCep<sup>®</sup>

Ceramic Hollow Fibre Membrane

# Long-lasting superior ceramic hollow fibre membrane for extreme conditions

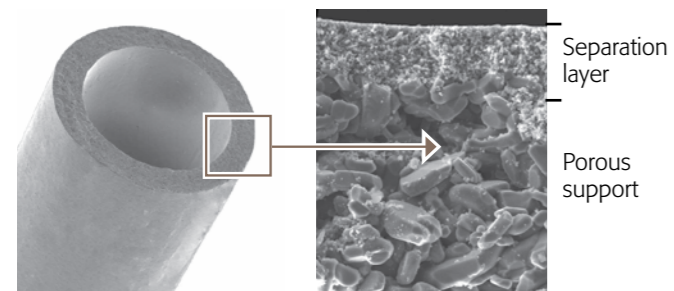
Exploiting the superior chemical, thermal and mechanical stability of  $\alpha\text{-Al}_2\text{O}_3$  material, InoCep® enjoys long service life and high filtration rate even for highly demanding applications.

## Product Features & Benefits

- Acid and base resistant
- Excellent thermal stability
- High flux

## Operation Features & Benefits

- Easy cleaning
- Proven long service life
- High packing density

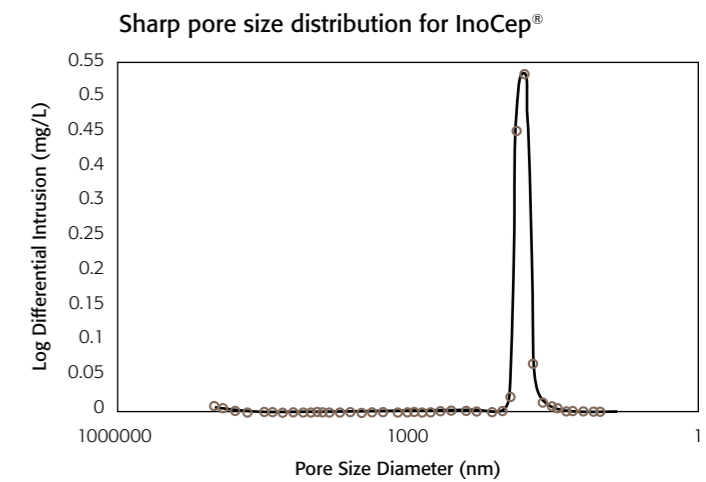


Cross-section of InoCep® fibre with magnified view of its asymmetric structure



Membrane Comparison		
Membrane Type	InoCep®	Multichannel Ceramic Monoliths
Solvent, Acid and Base, Thermal Stability	Excellent	Excellent
Lifespan	Long	Long
Operating Pressure	High	High
Water Pathway in Substrate	Short	Long
Mechanical Strength	Strong	Strong

Module Comparison		
Module Type	InoCep®	Multichannel Ceramic Monoliths
Packing Density	High	Low
Sealing Gasket	Less	Many
Rate of Fouling	Less	More
Footprint	Small	Large
Cost of Maintenance	Low	High



### Membrane Specifications

InoCep® Membrane	M1400	M800	M500	M200	M100	M40	M20
Pore Size (nm)	1400	800	500	200	100	40	20
Clean Water Flux (LMH @ 1 bar)	4500	2500	2800	1500	750	300	250
Structure	Symmetric		Asymmetric				
Membrane Material	$\alpha$ -Al <sub>2</sub> O <sub>3</sub>						
Coating Material	Uncoated		$\alpha$ -Al <sub>2</sub> O <sub>3</sub>				
Operating Temperature (°C)	-5 – 120						
pH Resistance	0 - 14						
Max Operating Pressure (bar)	6						

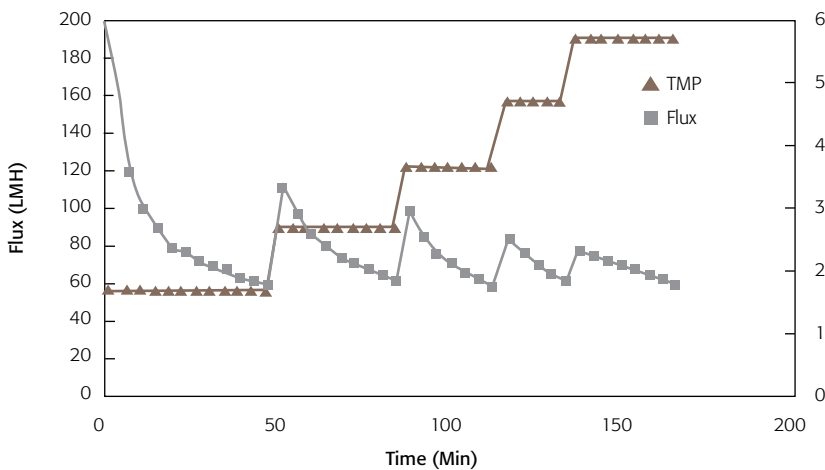
### Module Specifications

InoCep® Module	MM004	MM080	MM5
Membrane Area (m <sup>2</sup> )	0.04	0.8	5
Flow Type	Inside - Out		
Housing Material	SS316		
O-ring Material	Silicone	EPDM	
Feed Connection (in)	1"	4"	8"
Permeate Connection (in)	1/4"	1/2"	1 1/4"
Max Operating Pressure (bar)	6		
Operating Temperature (°C)	-5 – 120		
Warranty (Factory Standard)	1 year		

# Case Study

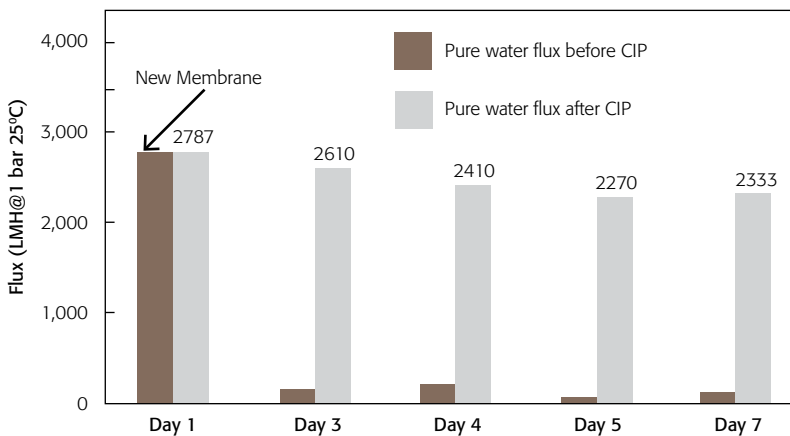
## Beer Clarification

### Replaces Conventional Treatment Method – Kieselguhr



- InoCep® has the ability to withstand high TMP as compared to polymeric membranes which have a maximum tolerance level of 2 bars.

### Pure water flux recovery after CIP



- There is close to complete flux recovery after every CIP.

# Key Applications

- Laundry wastewater recycling
- Acid and caustic purification
- Emulsified oily water separation
- Beer clarification
- Cold sterilisation of skim milk

# About Hyflux

Hyflux Ltd is one of the world's leading fully-integrated water solutions companies, with operations and projects in Southeast Asia, China, India, the Middle East and North Africa. Hyflux's spirit of innovation and entrepreneurship drives its technological advancements in membranes, commercialisation of applications, project management, and operations and maintenance.

Hyflux is committed to providing cost-effective, reliable and sustainable solutions to its customers worldwide, from seawater desalination, water recycling, wastewater treatment, including membrane bioreactors (MBRs), to potable water treatment. Hyflux's track record includes Singapore's first NEWater plant and seawater desalination plant and China's largest membrane-based seawater desalination plant in Tianjin Dagang. The company is building the world's largest membrane-based seawater desalination plant in Magtaa, Algeria and Singapore's largest MBR facility.

Hyflux was awarded Distinction for "Desalination Company of the Year" by Global Water Intelligence (GWI) in 2010. In the same year, it also bagged GWI's Highly Commended Award for "Desalination Deal of the Year" and "Desalination Plant of the Year" for its landmark desalination projects in Magtaa, Algeria and Tianjin, China respectively. Hyflux was conferred "Water Company of the Year" by GWI in 2006.

Hyflux also clinched Frost and Sullivan "Asia Pacific Water Technology Company of the Year" award in 2010 and "Asia Pacific Technology Innovation of the Year (Desalination Technologies)" award in 2007.

For more information on Hyflux, please visit <http://www.hyflux.com>.

For more information on Hyflux membranes, please visit <http://www.hyfluxmembranes.com>.

## Other Products



### KRISTAL®

The preferred polymeric membrane with unparalleled performance in operational consistency and stability



### PetaFlex®

Submerged MBR membrane with unrivalled flux and packing density for quality water treatment



### MES

Compact and flexible platform for membrane evaluation



### FerroCep®

World's toughest stainless steel membrane that provides superior separation performance

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