



KRISTAL[®]

Hollow Fibre Ultrafiltration Membrane

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

Fully designed and developed by Hyflux, Kristal® UF membranes have proven to consistently achieve optimal results in treating industrial and municipal wastewater as well as seawater, even in aggressive environments.



Kristal® has received the NSF mark of approval in 2010. One of seven UF membrane products in the world to receive such recognition.

Certified to NSF/ANSI 61
Kristal® 600ET

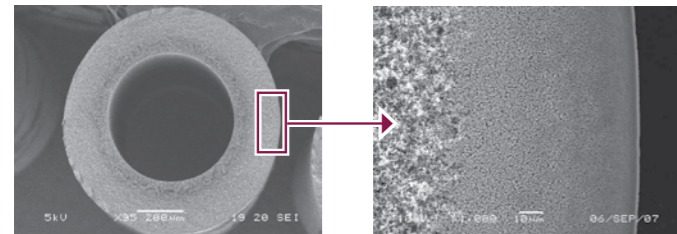
Product Features & Benefits

- Modified polyethersulfone (PES) or polyvinylidene difluoride (PVDF) for greater hydrophilicity and less fouling
- Asymmetric structure for higher flux
- Enhanced tolerance to cleaning chemicals
- Sharp rejection profile for high permeate quality

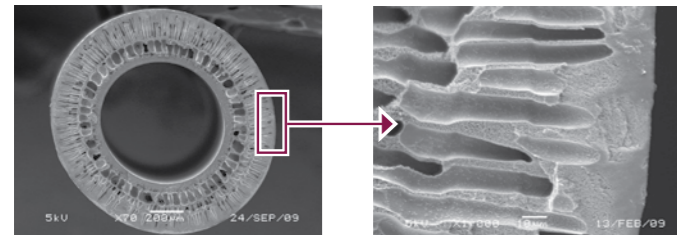
Operation Features & Benefits

- Proven long service life
- Effective air-scouring backwash
- Small footprint

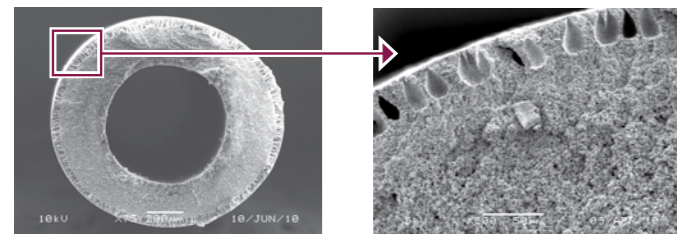
Cross-section and magnified view of asymmetric structures



K600B



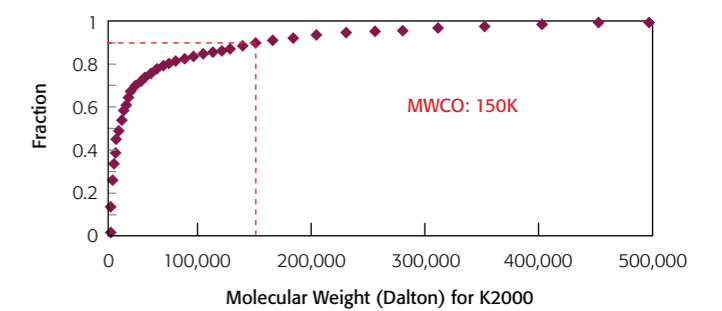
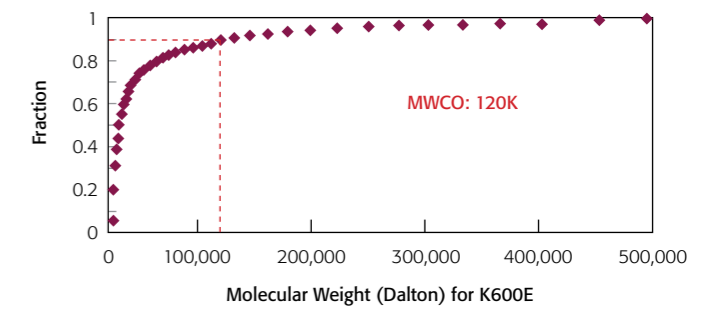
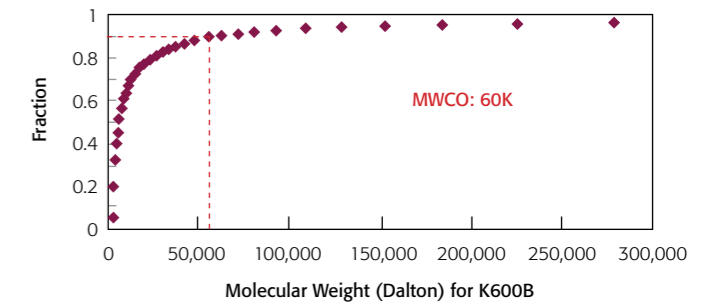
K600E



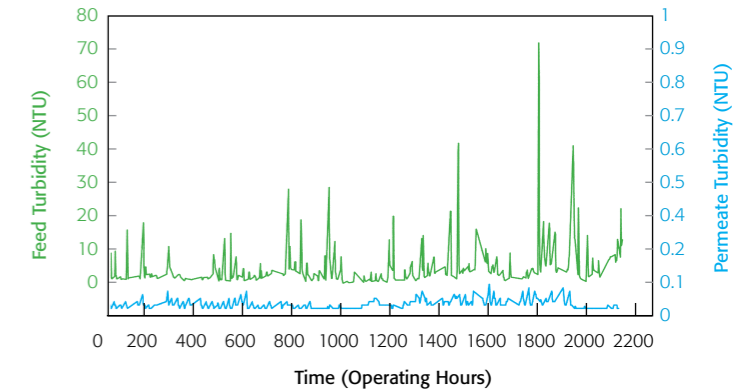
K2000



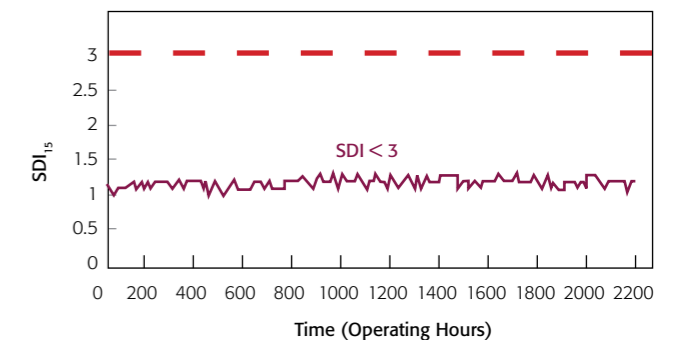
Sharp molecular weight cut-off for Kristal® fibres



Reduced and consistent permeate turbidity by Kristal®




Reduced and consistent permeate SDI by Kristal®



Membrane Specifications			
Membrane Type	600B	600E	2000
Material	Modified PES	Modified PES	Modified PVDF
O.D./I.D./Wall Thickness (mm)	1.15 / 0.6 / 0.27	1.35 / 0.7 / 0.325	1.2 / 0.6 / 0.3
Nominal Molecular Weight Cut Off (Dalton)	60K	120K	150K
Bacteria Log Reduction Value (LRV)*	≥6	≥6	≥6

*Tested by accredited laboratory for bacteria reduction

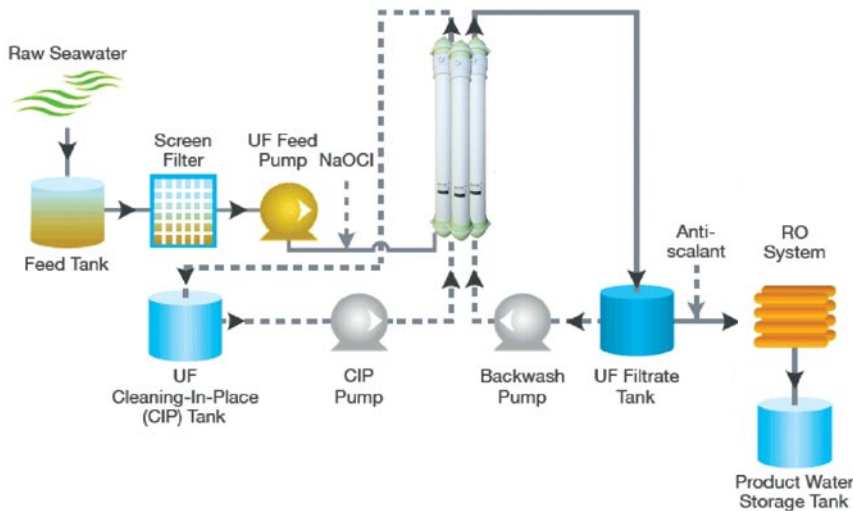
Module Specifications						
Product	Model	K-600B0820	K-600ET0820 	K-600ETN0812	K-600ER0820	K-2000T0820
	Membrane Type	600B	600E	600E	600E	2000
Overall Dimension	Diameter x Length (mm)	257.8 x 2130	344 x 2340	344 x 1190	257.8 x 2130	344 x 2340
	Membrane Area (m ²)	70	60	23	60	58
Materials	End Caps	PVC				
	Sealant	Hyflux Proprietary Composite Potting Materials				
	Housing Shell	PVC				
Typical Operating Parameters*	Flow Type	Outside - In				
	Operating Temperature Range (°C)	5 - 40				
	Clean Water Flux (LMH)	135	170	200	170	140
	Operating pH Range	2 - 10				
	Cleaning pH Range	2 - 11				
	Service TMP Range (bar)	0.2 - 1.5				
	Max Feed Pressure (bar)	2.5				
	Operating Weight (Wet) (kg)	100	100	60	100	95

* Subject to feed quality

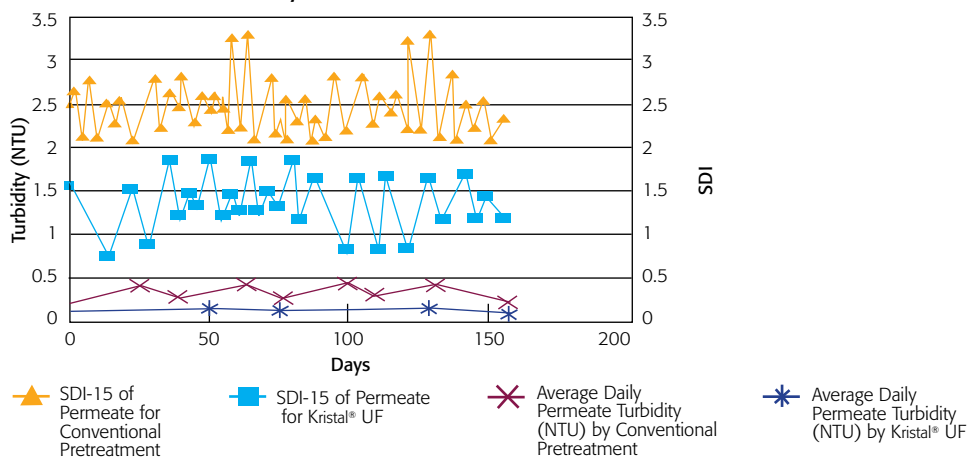
Case Study

Seawater Desalination Pretreatment

Replaces Conventional Treatment Method - Dissolved Air Flotation Filtration Unit (DAFF)



Turbidity & SDI Comparison between Conventional & UF Systems



Key Applications

- RO and NF pretreatment
 - Industrial and municipal wastewater reclamation
 - Ultrapure water production
 - Seawater desalination
- Ion-exchange pretreatment
- Potable water production
- Industrial wastewater treatment for discharge
- Resource recovery from industrial waste streams such as semiconductor, pulp and paper production, textiles etc.

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>.

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Other Products



PetaFlex®

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



MES

Compact and flexible platform for membrane evaluation



InoCep®

Long-lasting superior ceramic hollow fibre membrane for extreme conditions



FerroCep®

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

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