

QUALITY PERFORMS.



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LANXESS
Energizing Chemistry

Ultrafiltration as part of combined processes

Ultrafiltration (UF) has been proven as a reliable option to ensure constant water quality. It removes particles and microorganism from water effectively and cost-efficiently. The ultrafiltration reduces the adsorption on particles during reverse osmosis (RO) and ion exchange (IX) processes and extends the operational lifetime of the system. LANXESS cooperates for this technology with the French ultrafiltration (UF) membrane producer Polymem. Typical UF applications are pretreatment for RO and IX in the production of industrial water, the treatment of wastewater or the municipal water supply.

Saving operational costs due to compact design

The innovative Gigamem® UF modules reduce the operational costs and the footprint of the plant, which can be a limiting factor using UF. Additionally, the permanent hydrophilic Neophil™ membrane material lowers the fouling tendency and ensures a stable filtration process. The membranes are arranged as exchangeable cartridges, which further decreases the maintenance and replacement costs.

A unique polymer and module design

The hydrophilic Neophil™ membrane has the stability of PVDF material and is improved with a permanent hydrophilic part to reduce the adsorption of particles on the membrane. The advantages are:

- Higher and permanent hydrophilicity to reduce fouling and cleaning
- High mechanical and chemical stability as PVDF
- Homogeneous membrane structure
- Narrow pore size to avoid internal pore clogging

The Gigamem® concept is based on a housing permanently fixed in place and exchangeable membrane cartridges. If a fiber is damaged the user can decide to fix the hollow fiber or to exchange the individual cartridge. This makes the maintenance very easy to perform and the process very reliable. The filtration process itself operates outside/in and has therefore a high tolerance of suspended solids. Constructions are feasible for different regeneration processes like backflush or air scouring.

Worldwide references in several applications

The applications vary from the production of drinking water to industrial water production or recycling. The high packing density of the Gigamem® module makes it also very suitable if compact solutions are requested like the treatment of sea-water prior to desalination.

The complete service line is offered starting from initial lab tests to pilot tests, system design, and system optimization. LANXESS offers several Gigamem® types to serve different needs and applications. Two different sizes are available like the UF80G types with 73 m² membrane area and PVC housings and the UF240 types with a 540 m² membrane area in stainless steel housings. These modules can be mounted with polysulfone or Neophil™ membrane bundles.

References	Treated water	Application
BHP Shenzi, Gulf of Mexico	30,000 m ³ /day	Offshore water treatment
Eau de Paris, France	15,000 m ³ /day	Municipal drinking water
Vaujany, France	6,000 m ³ /day	Drinking water
Circuit Foil, Luxembourg	750 m ³ /day	Industrial water
Consolidated Fabrics, Mauritius	800 m ³ /day	Industrial water

UF module	Membrane material	Membrane area	Housing
Gigamem® UF80G S2	Polysulfone	73 m ² (786 ft ²) 7 membrane elements	PVC housing Diameter 225 mm (8 inch)
Gigamem® UF80G S2F	Neophil™	73 m ² (786 ft ²) 7 membrane elements	PVC housing Diameter 225 mm (8 inch)
Gigamem® UF240 S2	Polysulfone	540 m ² (5,800 ft ²) 52 membrane elements	Stainless steel Diameter 610 mm (24 inch)
Gigamem® UF240 S2F	Neophil™	540 m ² (5,800 ft ²) 52 membrane elements	Stainless steel Diameter 610 mm (24 inch)

We will be happy to support your business. Please contact us for additional information: visit www.lpt.lanxess.com

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