

HOLLOW FIBER MEMBRANE TECHNOLOGY

Efficient, safe and cost effective processes

Membrane ultrafiltration is an efficient low energy purification process which is intrinsically safe and environmentally sound.

Drinking water production

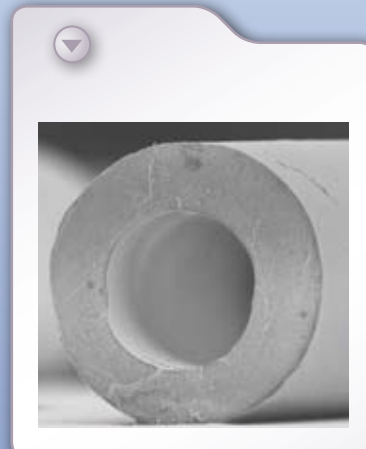
For thousands up to millions liters per hour drinking water production, from small emergency units to huge drinking water production plants, Polymem membrane modules allow to build safe, efficient and cost effective systems.

Pre treatment before demineralization or desalination

Polymem ultrafiltration (UF) technology is the best pre-treatment before demineralization or desalination : coupling Polymem UF and reverse osmosis (RO) offers a double barrier against bacteria and viruses, allows the RO system to work at a lower pressure with a reduced number of membranes and allows a lower frequency of RO membranes cleaning and replacement.

Wastewater Re-Use

Polymem UF membranes eliminates all suspended solids and microbiology to provide a high quality non-demineralised water for reuse, rejection to natural environment or post demineralisation.



Optimised membrane modules

Polymem standard modules are featuring S2 type hollow fiber membranes (PSF), with 0.01 µm pore size for a true UF process (100 kda cut off) in compact and resistant modules.

Performances

Not only mineral particles but also bacteria and viruses are rejected. Typical warranty on ultrafiltered water :

- turbidity < 0.2 NTU
- 6 log of pathogens micro organisms removal
- SDI < 3

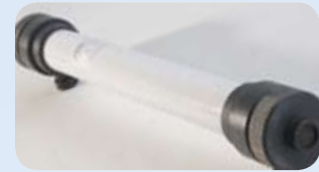
Polysulfone or PVDS double skin membrane

Our PSF and PVDF hollow fibers (HF) are offering on both surfaces a very thin layer with the smallest pores, giving the membrane its rejection capacity.

Benefits

- Excellent quality of permeate (virus, SDI)
- Mechanical and chemical resistance (Caustic soda, acid, Chlorine) operating pH Range from 2 to 12
- Non biodegradable
- Long life time
- Easy cleanings
- Minimized risk of deep clogging

POLYMEM'S INNOVATIVE MEMBRANE FILTRATION



Inside / Out dead-end or cross flow filtration module range

Polymem provides standard UF20, UF30 and UF50 modules designed for suspended solids or micro-organisms concentration, clarification, purification, recycling for all industries: beverage manufacturing, chemical processing, food processing, dairy industry, electronics, laboratory and cosmetics, petroleum and gas, metalworking and mining, bioengineering...



Outside / In suction filtration modules for MBR

Polymem manufactures MBR module range. Hollow fibers membranes are housed in modules shells located outside the bioreactor for process safety and reliability improvements (security, quality control, handling, chemicals consumption). Suction dead-end outside / in hollow fiber ultrafiltration with periodic backwashes is preferred for capital and operation costs reduction. Moreover, continuous air scouring during filtration and backwashing is improving filtration efficiency and a lowering backwash frequency



Customized hollow fibers and associated cartridges

For your specific needs, we design and manufacture hollow fibers answering to your requirements. For manufacturing cartridges, they can be inserted in vessels you provide, standard ones or custom designed ones.

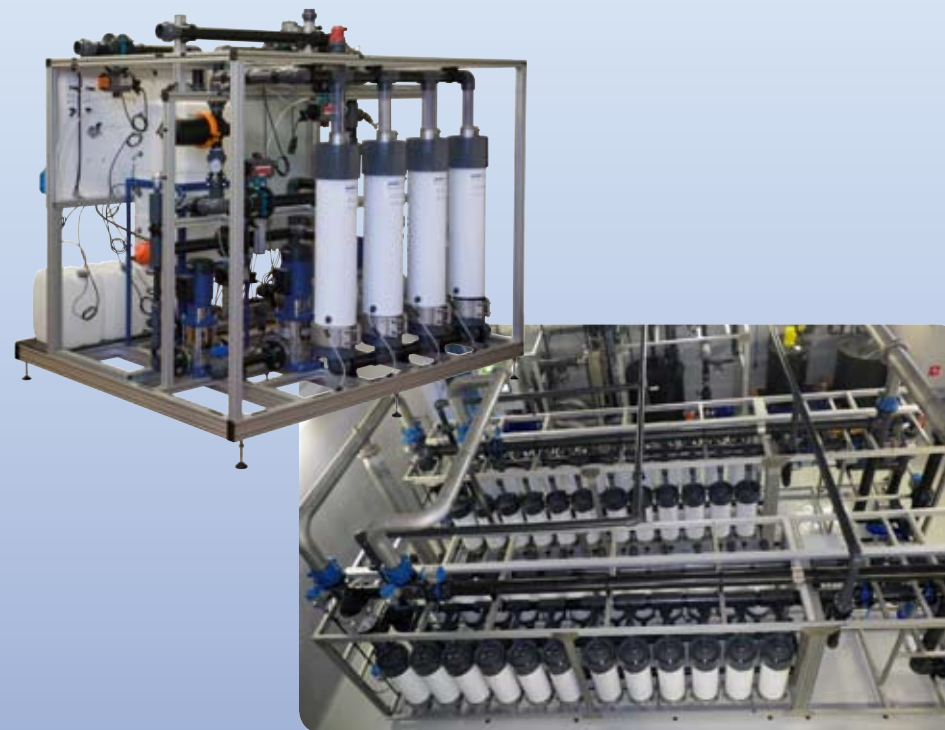
The possible choices:

Membranes

- Material
- Diameter
- Pore size
- Isotropy or asymmetry ...

Modules

- Membrane area
- Geometry and sizing of vessels
- Potting material and process
- Connections...



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The most recent innovation in water ULTRAFILTRATION

ULTRAMEM RANGE

Drinking water production
Pre treatment before RO
Tertiary treatment



COMPACT PRESSURISED OUTSIDE / IN ULTRAFILTRATION MODULES



UNIQUE AND INNOVATIVE MEMBRANE MODULES



The Polymem UF modules provide water treatment companies with an unrivalled technology for water treatment processing with excellent quality of permeate combined with significant space saving compared with conventional filtration technologies. **Polymem is the only membrane manufacturer offering compact ultrafiltration modules, polysulfone based and working in pressurised Outside / In dead end mode with aerated backwashes.**



Outside/In filtration benefits
The membrane operates with flow from outside-to-inside with the following benefits compared to inside to-outside designs:

- no risk of fiber clogging.
- facilitates simple cleaning of the membrane surface with air and water.
- high area to volume ratio allows for a more compact design.



Compact module, simple process
Each membrane module consists of a pressure vessel housing a number of membrane bundles, and each bundle consists of a series of hollow fiber (HF) membranes. Each HF membrane is secured such that the feed water flows from the outside of the HF membrane to the inside before exiting the vessel. The module is installed in a vertical position.

- Compact modules up to 114 m² of filtration area for a 31.5 cm diameter, 93 cm height module (UF120 modules)
- Easy cleaning with air and less water
- Simple process for minimizing piping and tanks volume thanks to modules with only one inlet and one outlet
- Easy maintenance : short chemical cleaning with few and simple chemicals, easy and fast fiber defect detection and repair (only on one side)



Approvals

- NSF / ANSI 61 (American Public Health and Safety Company)
- ETV / EPA
- CDHS
- ACS (French Ministry of Health)



▶ UF 120

The most compact Ultrafiltration module available on the market for the largest plants

Membrane Area

114
m²

Module Diameter
315 mm (12 inches)
Module Length
930 mm (36 inches)
Number of bundles
19
Production flow
3 to 10 m³/h dependent on raw water quality
Air scour diffusers
yes



▶ UF 100XL

Small size module for pilot studies or small ultrafiltration units

Membrane Area

6
m²

Module Diameter
75 mm (3 inches)
Module Length
930 mm (36 inches)
Number of bundles
1
Production flow
150 to 500 l/h dependent on raw water quality
Air scour diffusers
yes



ULTRAMEM RANGE

▶ UF 80

A Middle range capacity for medium size systems

Membrane Area

42
m²

Module Diameter
200 mm (8 inches)
Module Length
930 mm (36 inches)
Number of bundles
7
Production flow
1.2 to 4 m³/h dependent on raw water quality
Air scour diffusers
yes



▶ UF 100L

Module dedicated to compact and light Polymem's Aquamem® units

Membrane Area

4.5
m²

Module Diameter
75 mm (3 inches)
Module Length
550 mm (22 inches)
Number of bundles
1
Production flow
100 to 400 l/h dependent on raw water quality

