

AquArya Ultrafiltration

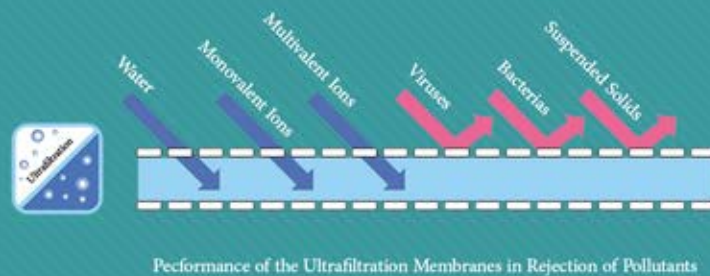


■ Ultrafiltration

Ultrafiltration (UF) is a kind of membrane filtration in which pressure or concentration gradients leads to a separation through a semipermeable membrane, due to have pores between 20 to 100 nm. Suspended solids and solutes of high molecular weight are retained in the rejected flow, while water and low molecular weight solutes pass through the membrane in the permeate. This separation process is used in industry and research for purifying and concentrating macromolecular solutions. The operating pressure of the module is in the range of 0.1 to 2 bar.

■ Advantages of AquArya Ultrafiltration

- Easy installation and handling
- Excellent quality of filtrate
- Reliable blocking of microorganisms and viruses
- Ideal pretreatment to Reverse Osmosis
- Different membrane materials: PP, PES, PAN
- Outside to inside flow path (Ideal for production of remarkably clean water and elimination of stagnant areas on the permeate side)
- Large membrane area results in high flow rates per module
- Low membrane fouling rates
- Capability of Cleaning in Place(CIP)



■ Description of AquArya Ultrafiltration Module

AquArya hollow fiber membranes designed based on outside-to-inside flow. The outside-Inside flow configuration is tolerant of wide ranging feed water qualities and allows air scour cleaning. The dead-end flow offers higher recovery and energy savings. The pressurized vertical shell and tube design eliminates the need for separate pressure vessels and allows easy removal of air from cleaning and integrity testing steps.

■ Characteristics of AquArya Ultrafiltration Modules

The AquArya ultrafiltration modules are designed for production of ultra-pure water and they can provide a competitive solution for water treatment problems in different industries. The compact purification systems based on these modules do not require chemicals (aside from cleaning).

AquArya Ultrafiltration Modules are made of various high strength membranes that have the following characteristics:

Membrane Material	Fiber inner diameter (mm)	Fiber out diameter (mm)	MWCO (KDalton)	Nominal Pore Diameter(nm)
PP(Polypropylene)	0.25-0.3	0.35-0.4	500	30-150
PES (Poly Ether Sulfone)	0.65-0.7	1.2-1.3	100-200	20-30
PAN(Poly Acrylonitrile)	0.65-0.7	1.2-1.3	100-200	20-30

- The fibers used in the AquArya modules have high strength and good chemical
- Module shell is made of U-PVC that is UV-resistant and no need for pressure chamber.
- The modules are resistant to temperature range 4-40^o C .
- The structure of the membranes and their pores are designed in such a way that they result high flow intensity and high efficiency together.

■ Application of AquArya Ultrafiltration Module

1. Drinking water purification

- Large Drinking water treatment systems in cities, towns and rural area.
- Small drinking water treatment systems for restaurants, schools, hotels, public buildings, military bases, ...
- Treatment of surface water and well water for drinking.

2. Wastewater treatment

- Using as a post treatment for water reuse in waste water treatment systems.
- Industrial wastewater treatment
- Waste water treatment of pharmacy, food, beverage,...

3. Seawater desalination

- Pretreatment of reverse osmosis for various raw water includes seawater, surface water, well water and sewage water, etc.

Outlet water of AquArya characteristics

Outlet water Silt Density Index (SDI)	< 3
Outlet water turbidity	<0.1 NTU
Suspended solids removal rate	99.9 %
Bcutecia and Microb removal	99.9 % , 4 to 6 Log rejection
Viruses removal	99.9 % , 1 to 4 Log rejection

■ Other application

- Sterilization and turbidity removal for fruit wine, grape wine and yellow wine.
- Cheese manufacturing
- Removal of pathogens from milk
- Enzyme recovery
- Dialysis and other blood treatments
- Whey Protein Concentration
- Filtration of effluent from paper pulp mill



Clean Water for the Clean World

Our effort and commitment is to increase the value of the product that we supply for our consumers. AquArya Modules are developed with advanced capabilities and focus on improving membrane formulation and process applications. Advanced AquArya ultrafiltration modules are made of high-strength membranes and offer excellent solutions to meet operational and environmental standards

■ AquArya Ultrafiltration Modules

AquArya is the trade mark for ultrafiltration (UF) membrane modules. These products feature hollow fiber membranes having a uniformly smooth and tight skin on outside of the fiber. The nano-sized pores on the skin of these fibers allow water to pass through but retain all kinds of microorganisms and suspended solids.





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