

Advantages of our Ultrafiltration Systems

- ▶ Fully automatic backwash and Chemically Enhanced Backwash (CEB) processes
- ▶ Low level of embedding
- ▶ Stainless steel skids
- ▶ Fully automated chemical dosage in CEB
- ▶ Possibility of sanitary construction for mineral water applications
- ▶ Control by Programmable Logic Controller (PLC) and Supervisory Control and Data Acquisition (SCADA)
- ▶ Self-cleaning mesh filter, 50-200 mm
- ▶ Built-in integrity test

Ultrafiltration vs Conventional Systems

- ▶ Compact design with 50% less area consumption compared to conventional treatments (chemical dose, static mixer, flocculation decanter, multimedia filter)
- ▶ Lower investment and operative costs
- ▶ No need of coagulants
- ▶ Low operating pressures (<2 bar)
- ▶ Constant water quality
- ▶ Efficient pathogen removal
- ▶ Extended life of RO membranes when used as pretreatment for high SDI waters

Membrane Bioreactor (MBR)

MBR technology efficiently combines biological processes for effluent treatment with membrane filtration processes.

The biological processes in the effluent treatment use bacteria and microorganisms to biodegrade the organic matter in wastewater. After this biodegradation stage, high-performance membrane technology is used to separate the activated sludge from the treated effluent.

Microfiltration/UF processes are used in place of

secondary sedimenters and conventional filters, which substantially increase the effluent treatment process performance.

This highly efficient suspended solid removal step allows for biological reactors to operate at concentrations of Mixed Liquor Suspended Solids (MLSS) up to 18,000 mg/l, enhancing the removal efficiency of organic matter per m² of implantation area.

Main Advantages of MBR Systems

Construction:

- ▶ Smaller layout due to elimination of the secondary sedimenter and higher MLSS
- ▶ Ideal for upgrading existing plants with increased flow or load
- ▶ Less generation of sludge

Effluent Quality:

- ▶ Complete removal of suspended solids
- ▶ Complete disinfection by removing pathogenic bacteria
- ▶ High slow-growing bacteria retention enables degrading specific pollutants

Typical Applications

- ▶ Municipal wastewater
- ▶ Industrial wastewater
- ▶ Wastewater from real estate developments
- ▶ Wastewater from ships
- ▶ Conversion of existing plants
- ▶ Water reuse

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Partner with Aquatech Energia for complete water and waste water solutions we look forward to solving your water treatment challenges:

PROGREEN AQUATECH ENERGIA SOLUTION PVT. LTD.

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Ultrafiltration



Efficient Treatment of Water and Wastewater With High Concentration of Suspended Solids

Ultrafiltration (UF) is considered the most efficient barrier for suspended solids, bacteria, viruses, endotoxins, and other pathogens for the production of high-purity water with low Silt Density Index (SDI).

It serves as an upstream pretreatment in demineralization systems using membranes, such as Reverse Osmosis (RO) and nanofiltration, for water purification.

Applications

- ▶ RO pretreatment
- ▶ Surface water clarification
- ▶ Groundwater with high SDI
- ▶ Seawater pretreatment
- ▶ Arsenic removal from water
- ▶ Effluent reuse biologically treated
- ▶ Bacteriological treatment for mineral water

Treated Water Quality

- ▶ Constant water quality independent of the Total Suspended Solids (TSS) present
- ▶ Effective removal of pathogens
- ▶ 4-Log (99.99 %) of virus removal
- ▶ 6-Log (99.9999 %) of bacteria removal
- ▶ Turbidity < 0.1 NTU
- ▶ Arsenic removal through injection of coagulant
- ▶ Organic matter reduction between 50 and 90%, depending on its size

Our Membranes

- ▶ Lowest operating pressure in the market
- ▶ 4-Log (99.99%) of virus removal
- ▶ 6-Log (99.9999%) of bacteria removal
- ▶ High permeability polysulfone (PES)
- ▶ Reduction of organic matter and precursors of THMzs
- ▶ Removal of organic matter dissolved through the use of coagulants
- ▶ Optimal hydraulic design
- ▶ Filtering Out/In process
- ▶ High mechanical strength fibers
- ▶ Equivalent pore size between 0.025 and 0.030 mm

Dow/Torayns Polyvinyl Difluoride (PDVF) membranes have a high permeability and resistance.

These features, among others, make UF technology a highly robust process for water containing high content and varying concentrations of solids in suspension.