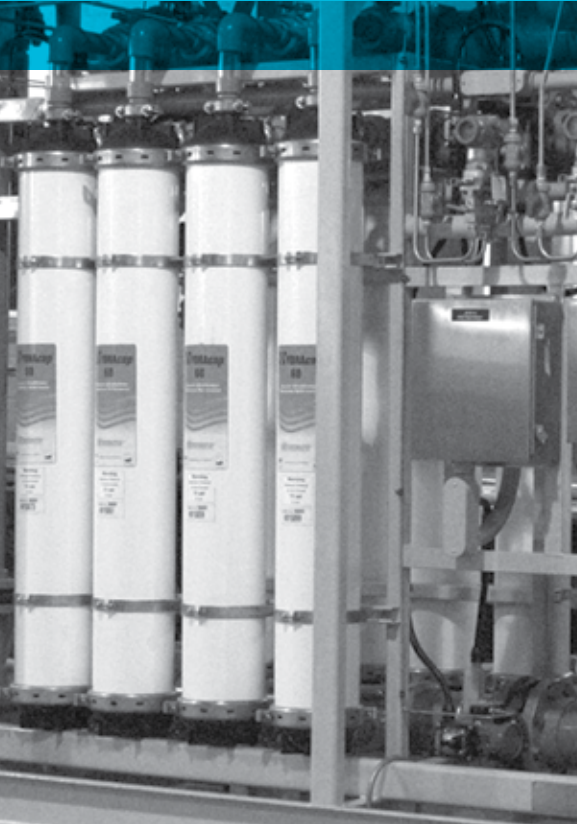


Microfiltration & Ultrafiltration Systems

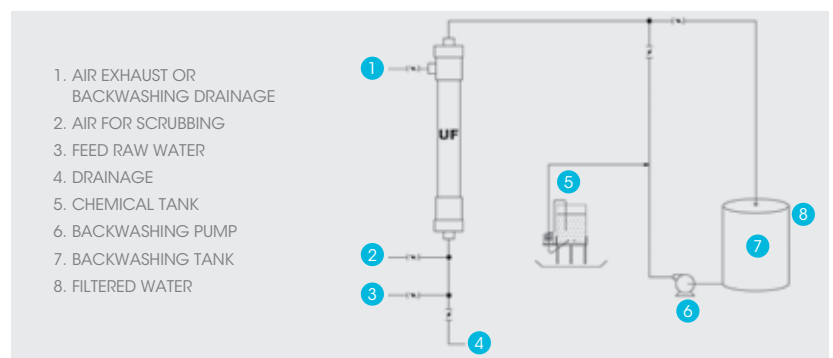


Microfiltration and Ultrafiltration (MF and UF) enable the filtration of small particles, with a molecular weight cut-off between 0.01 μm and 0.1 μm for the UF and higher than 0.1 μm for the MF. The main difference between the two processes is the pore size of the membrane modules. The system itself including pumps, piping and valves will be very similar no matter if we use an MF membrane or a UF membrane. This treatment process blocks all bacteria, suspended solids, and even pre-oxidized dissolved contents as well as most proteins and high molecular-weight organic polymers. It is used in several applications, such as the production of drinking water, the recycling of wastewater and the filtration of various process fluids (food-and-beverage, biotechnology, powergeneration, petrochemical).

H₂O Innovation[®] designs and manufactures MF and UF systems for a number of water filtration applications. The company's expertise is based on its ability to determine the best combination of system's features for an optimal performance. Our team of experts works closely with industry leaders to carefully select the membrane modules, the pumps, and the cleaning and filtration modes that will best fit the application.

H₂O INNOVATION[®]'S EXPERTISE

The challenges of the MF/UF process include the determination of the appropriate operating flows, recovery ratios, and cleaning procedures. H₂O Innovation[®] specializes in the design of systems with a conservative approach to reduce irreversible fouling of the membranes and provide extended operating lifetimes. We mainly design our systems around pressurized modules where the water flows through the membrane driven by a low pressure forwarding pump. The filtered water is then collected in the "innertubes" of the hollow fibers before it reaches the common permeate port and manifold. Periodically, backwashes and air scrubbing cycles are processed to enhance the performance of the membranes.



DESIGN ADVANTAGES

Use of large modules for increased membrane area (small system footprint).

- Integrated MF/UF and NF/RO mounted on the same skid
- Selection of a specific membrane for each application
- Whole process under automatic and local control (remote also possible)
- Pilot units available
- Engineers with extensive experience in membrane processes

APPLICATIONS

Acknowledged to be the best process for reducing the silt density index of any feed water, MF/UF is commonly used as a pretreatment to nanofiltration (NF) or reverse osmosis (RO). For example, the integrated UF-NF approach for the treatment of surface water uses UF membranes to reduce turbidity and SDI to acceptable levels, while the downstream NF membranes remove organic materials and color to produce water of exceptional quality, all without the use of any chemicals. H₂O Innovation[®]'s engineered systems can also be designed for the following applications: desalination pretreatment, surface water, GWUDI (Ground Water under Direct Influence of Surface Water), industrial process water and various streams of wastewater.

TYPES OF MEMBRANE

While our expert engineers always take care to select the best membrane for the water to be treated, H₂O Innovation[®] may also provide you with a pilot test unit, to compare the performances of various membranes. When necessary, certified integrity-testing procedures are applied to provide the system with the appropriate credits (up to 6 log) for removal of *Giardia* and *Cryptosporidium*.



1. HOLLOW FIBER
2. INTEGRATED UF-RO ON SAME SKID
3. INTEGRITY TEST.

Phone: 418.688.0170
Toll free: 1 888.688.0170
info@h2oinnovation.com

www.h2oinnovation.com

