



FILMTEC Membranes

Water Chemistry and Pretreatment: Colloidal and Particulate Fouling Prevention

Microfiltration/ Ultrafiltration

Microfiltration (MF) or ultrafiltration (UF) membrane removes virtually all suspended matter and, in the case of ultrafiltration, also dissolved organic compounds depending on their molecular mass and on the molecular mass cut-off of the membrane. Hence, an SDI <1 can be achieved with a well-designed and properly maintained MF or UF system. There is both dead-end and cross-flow filtration. Dead-end filtration has two streams, inlet and outlet. 100% of the feed passes through the UF or MF filter medium (i.e., 100% recovery). In cross-flow filtration, there are three streams: feed, concentrate, and permeate. In UF and MF hollow-fiber membranes, there are two different types of configurations: flow can be from outside-in or inside-out. For outside-in configuration, there is more flexibility in the amount of feed to flow around the hollow fibers, whereas inside-out configuration has to consider the pressure drop through the inner volume of the hollow fibers. Inside-out configuration, however, offers much more uniform flow distribution through the bore of hollow fiber compared to the outside-in configuration. Cross-flow UF/MF systems operate at high recovery and flux rate and so backwashing and air-scouring techniques are frequently used to reduce fouling.

If a chlorine-resistant membrane material is used (e.g., polysulfone or a ceramic membrane), chlorine can be added to the wash water in order to retard biological fouling. A review on microfiltration and ultrafiltration processes is given by Porter [/26/](#).

FILMTEC™ Membranes

For more information about FILMTEC membranes, call the Dow Liquid

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Notice: The use of this product in and of itself does not necessarily guarantee the removal of cysts and pathogens from water. Effective cyst and pathogen reduction is dependent on the complete system design and on the operation and maintenance of the system.

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