MANN+HUMMEL Water & Membrane Solutions: High-purity portfolio

MANN+HUMMEL Water & Membrane Solutions offers advanced filtration solutions tailored for **high-purity applications** in the **pharmaceutical and semiconductor industries**. Our comprehensive production line includes **filters** for pretreatment, brackish water **spiral-wound membranes** for effective removal of dissolved solids, **hollow fiber** ultrafiltration systems for reducing turbidity or polishing for the removal of endotoxins, and **capillary** membranes designed for specific separation. Depending on your feed water source, these technologies can be integrated into systems for producing:

- purified water and highly purified water
- water for injection
- ultrapure water
- red biotechnology products

HOT WATER SANITIZABLE RO MEMBRANES

Turboclean HP, Oltremare SAL and SN elements are **USP-compliant** and widely used in producing purified water for pharmaceutical, medical, biotechnology and semiconductor processes. These **energy-efficient** membranes feature **high permeability and rejection rates**, delivering **exceptional flux** while minimizing energy costs. All elements can be hot water sanitizable and preconditioned at the factory to ensure predictable flows from the moment of installation.

ULTRADYN HOLLOW FIBER UF

Hollow fiber ultrafiltration such as Ultradyn are ideal for the recovery and separation of highly valuable process streams. They are particularly effective in **reducing endotoxin levels** to less than 0.25 EU/ml, meeting Water For Injections (WFI) quality standards.
With a 6,000 Dalton MWCO, Ultradyn effectively removes endotoxins, pyrogens, and bacteria. Its hot water sanitizable, sanitary design offers **excellent heat and chemical resistance**, while FDA CFR Title 21 and USP <88> Class VI compliance ensures reliability and safety.

FILTER LINE PRE-FILTRATION

A comprehensive range of **cutting-edge prefiltration products** to help you overcome the numerous challenges of today's water treatment landscape.
High performance pre-treatment products, that can be **seamlessly integrated into your water treatment process scheme**. Depending on the feedwater source, we can provide the best solutions for TSS and turbidity removal.

HOLLOW FIBER UF

Hollow fiber ultrafiltration membranes are especially effective for removing particles, microorganisms, colloids, and even certain organic molecules, making them **ideal for high-purity water production**.
Top choice for standard UF (PVDF) applications for **high turbidity feedwater** to protect reverse osmosis equipment downstream. PureULTRA II hollow fiber UF is **drinking water certified MOH & NSF61**.

MICRODYN MD CAPILLARY

Capillary microfiltration membranes are a highly effective solution for the **separation and removal of solids** from valuable process streams, ensuring **optimal recovery** and **minimizing waste**. Their robust design allows for compatibility with challenging operating conditions, including **high temperatures** and exposure to **cleaning chemicals**, making them a reliable choice for critical purification and recovery processes. This technology is widely applied in industries where precision and efficiency are critical, such as biotechnology.

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