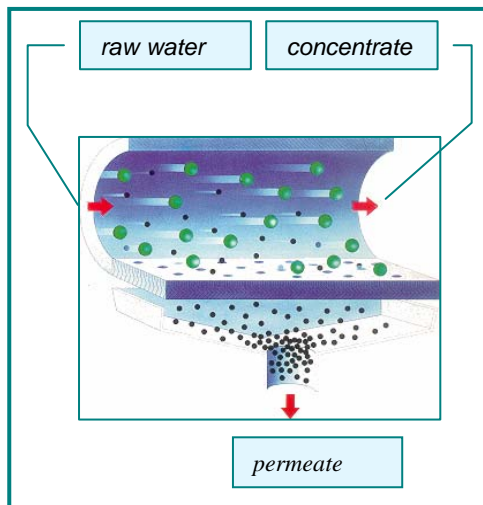




Tecnology

Membrane Filtration Processes

Austep designs and supplies membrane filtration plants for water and process fluids of the industrial production. **Austep** integrates in an optimal way (costs and benefits) the membrane treatment with the customer's production process or waste water treatment plant, operating mass balance and cost evaluation and performing pilot tests for the results confirmation.



MEMBRANE TYPES:

- Spiral
- Hollow fibres
- Tubular
- Ceramics



PROCESS DESCRIPTION

The main design parameters for a membrane system are: Transmembrane Pressure (TMP), and Tangential flow speed (TV). They determine the cleaning of the internal surface of the membrane. The combination of these two parameters, that have to be determined experimentally with pilot tests, concurs to the proper design of the plant for each particular stream.

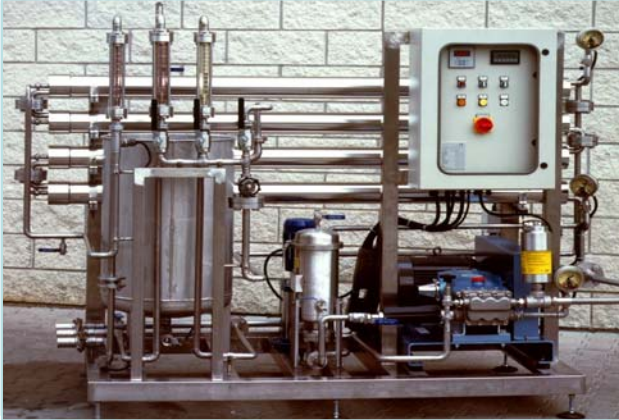
Micro- Ultra- Nano-filtration and reverse osmosis differ from each other depending on the molecular cut-off (dimension of the particles that can be separated). The operating principle is the same, but different pressures are applied and different permeate flows can be achieved.

Other parameters that affect membrane filtration performances are temperature, viscosity and, for nano-filtration and reverse osmosis, salinity and Silt Density Index.



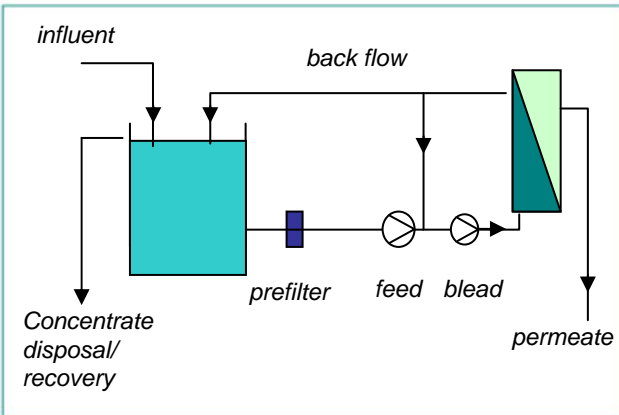
AUSTEP

EXTANT ENVIRONMENTAL SOLUTIONS



Applications

- Recovery of concentrate/permeate with a added value.
- Water reuse.
- Clear destination of the concentrate/permeate.
- Oil recovery from oil emulsions.
- Replacement of a chemical-physical treatment.
- Concentration of a re-usable product
- Separation of streams for diversified treatment.



Advantages

- Reduction of overall water consumption
- Reduction of resource consumption and waste minimization
- Industrial water re-use for process and service purposes.
- Optimization of the industrial water circuit efficiency



Austep nanofiltration membrane plant

Austep has studied and integrated a nanofiltration plants in the industrial production process of a chemical factory, reducing water provision, softening and recovery of high costs chemicals. Also wastewater quality has been improved by streams segregation and filtration, reducing overall treatment and environmental costs.

Austep srl

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