

Projects - Machinery - Engineering - Process Automation and Controls

Ceramic / Ultra and Nano Filtration and Reverse Osmosis systems

For continuous removal of caustic, protein and cellulose content of the alkaline solution

Features

- A. Highly effective membranes and ceramic filters
- B. Can operate in high temperature and alkaline/ acidic conditions
- C. With several years life
- D. Reliable and stable operation
- E. High availability

Example of Applications:

**Dairy – Fruit Juices – Pulp and paper – Chemical Industries – Wine – Beer
Breweries – Meat & Fish - Textile industry – Sugar recovery - Effluents**

- Pre-concentration of milk and whey proteins
- Improved cheese yield and product consistency
- Caustic recovery in pulp & paper, pharmaceutical and dairy wash cycles
- Production of WPC and valuable by-products
- Fractionation of whey and lactose intermediates
- Recovery and recycle/reuse of permeate waste and brine
- Wine and brew quality
- Separation of pectin and “shine” of orange /apple juice

In Detail

Membrane separation is a physical procedure for the separation of low-molecular weight substances (e.g. NaOH) and macro-molecular substances (e.g. sugars, hemicelluloses etc).

The procedure is based on the fact that low-molecular weight solutes are light, whereas macro-molecular solutes or colloids are very heavy in comparison and cannot penetrate semi permeable membranes.

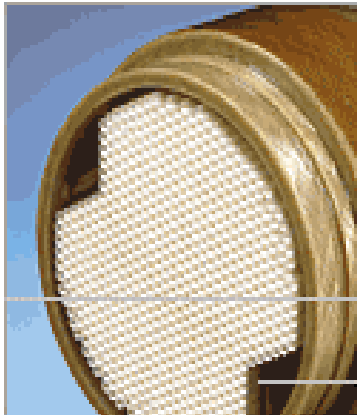
The separation system consists of two chambers separated by a semi permeable membrane. One of these chambers contains a solvent (water) while the other one contains a solution (press-lye).

The low-molecular weight substances will then diffuse through the semi permeable membrane into the solvent, while the macro-molecular or colloid substances remain. This process is known as osmosis. The hydrostatic overpressure on the side of the solution, which is in the process of being diluted, whereby it remains at a stronger concentration, is called "osmotic pressure".

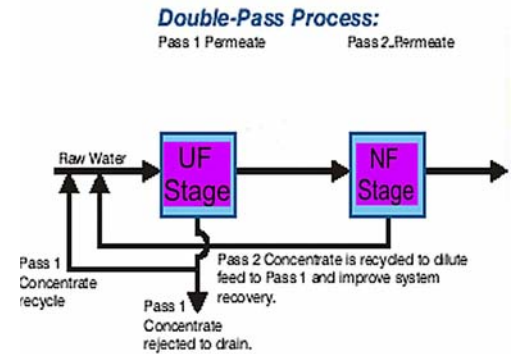
Carefully controlled pressure and temperatures and use of high tech membranes allows high efficiency and cost effective separation / recovery tailored to the process needs.

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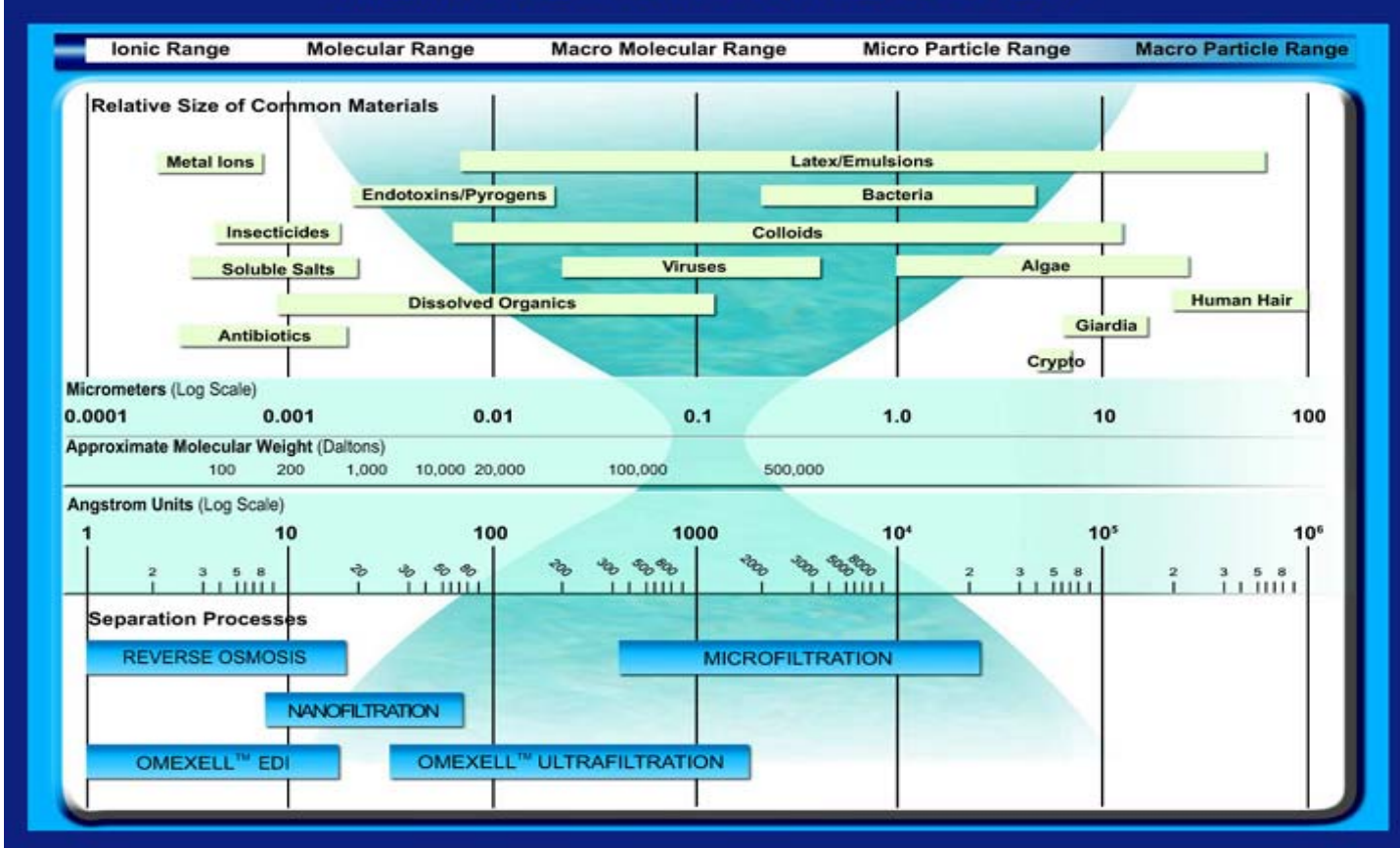
UF Hollow Fiber



Ceramic Membrane



MEMBRANE FILTRATION SPECTRUM



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Recently Delivered 2 Stage System - Front View showing the Control panel, High pressure pump and tank



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Side View showing the 2-stage system (High and Low pressure)

