Ultrafiltration

Ultrafiltration is a process that removes the following non-soluble and colloidal contaminants from water and other solutions:

- Oil
- Metals
- Emulsions
- Suspended solids
- Ink
- Some dyes
- Latex
- Bacteria
- Biomass
- Very large molecular-weight materials

UF membranes are characterized by their molecular weight cut-off (MWCO) expressed in either MWCO or Angstroms. Ultrafiltration is a form of filtration that uses a membrane to separate suspended and colloidal materials in an aqueous phase. Ultrafiltration will normally separate everything that is not soluble and sometimes larger molecules that are soluble when a very tight UF membrane is used. Ultrafiltration uses a semi permeable membrane to perform the separation. One of the uses that demonstrates the usefulness of ultrafiltration is separation of oil in an emulsion from water. In this case, oil emulsions, for example, can have the oil separated and concentrated, with the water passing through the membrane, and the oil.

Ultrafiltration can be provided in three different modes of operation:

- High cross flow
- Low cross flow
- Dead end

Two different Configurations:

- Wide channel—tubular
- Narrow channel—hollow fiber and flat sheet