

## **Glossary Ultrafiltration**

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## Glossary - Ultrafiltration

### **Air Vent**

A valve which is manually opened to allow air to escape from the system to the atmosphere during start-up, and opened at shutdown to prevent a vacuum in the system.

### **Cleaning System**

An accessory system incorporated in the UF unit to clean the membranes if they become fouled. It consists of a cleaning tank, pump, and associated piping and valves.

### **Concentrate**

The mixture returned to the concentrate holding tank after processing.

### **Deionized Water**

Water from which virtually all dissolved solids have been removed

### **Demineralized Water**

See "Dionized Water"

### **Emulsified Oils**

A suspension of oil droplets in water made by blending the oil with emulsifying agents and other material. Emulsions are also called "soluble oils", a misnomer, but generally used in the metal working industry.

### **Flux**

The rate of permeation, usually expressed as GFD (gallons per square foot membrane area per day).

### **Fouling**

A condition in which the membrane flux rate is restricted due to the accumulation of material on the membrane surface.

### **Free Oil**

All unemulsified oils that are present in the process fluid.

### **Membrane Processing**

Separation of the elements of a fluid, at the molecular level, by a membrane. The membrane will pass through smaller molecules while retaining larger molecules.

### **Metal Fines**

Very small slivers of metal generally produced in a grinding operation.

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### **Oil Skimmer**

A device for skimming off the free oil on the surface of the process fluid in a tank.

### **Permeable**

Porous to the passage or penetration by fluids.

### **Permeate**

The term used to describe the passage of water through a membrane. It is also the fluid (basically water) separated from the process fluid in the ultra filtration system.

### **Preservative Solution**

A solution that is introduced to the membrane tubes during idle periods to prevent membrane deterioration.

### **Process Fluid**

The oil and water mixture (or the process fluid) delivered to the UF unit for processing

### **Purge**

A displacement procedure that exchanges the process fluid in the UF system with water from the cleaning tank.

### **Sludge**

Deposits on the bottom of the process tanks that are undesirable as they will foul the membranes.

### **Spongeballing**

A method of hydraulically forcing balls of sponge-like material through the flow channel of a tubular membrane.

### **Surfactant**

Surface active agents used for cleaning the UF system.

### **Tramp Oil**

See "Free Oil"

### **U-blend**

A "U" shaped tube used to connect one membrane tube to another in the same pass to provide a series-connected configuration.

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**Ultrafilter**

An arrangement of tubular membranes used in the ultrafiltration process.

**Ultrafiltrate**

A synonym for permeate.

**Ultrafiltration**

A pressure-driven permeation process used in conjunction with semi-permeable membranes. Flow rate through the membranes and permeate selectivity are governed by pore size, distribution, membrane porosity, and the specific process fluid itself.