

Membrane Bioreactor – MBR



Biological processes integrated with membrane separation are one of the fastest growing technologies in the wastewater industry. MBR technology can aid both the portable and industrial users by conserving their current water supplies and energy use, as well as helping them meet and maintain stringent regulatory requirements for irrigation, industrial, aquifer injection and other non-portable uses and applications.

Ecologix™ MBR module systems replace the Clarifier, Sand filter and Disinfection processes used in Conventional Activated Sludge (CAS) process by removing the suspended materials with Ultra-Filtration membrane. The membranes modules are submerged in a biological tank or side streams tank, with the water being drawn through the membranes under vacuum, leaving the suspended biomass material in the biological aeration tank. The MBR systems have a smaller footprint than CAS systems, produce consistent effluent quality even in varying influent conditions, and provide effective treatment for high BOD levels in wastewater.

MBR allows the biological process to operate at long sludge ages (typically 20-100 days) and increases mixed liquor suspended solids (MLSS) concentrations range 8,000-15,000 mg/L. High MLSS concentrations and low SRT promote numerous process benefits including stable operation, complete nitrification, and reduced bio-solids production. High MLSS concentration also reduces biological volume requirements to only 30-50 % of conventional biological processes. Further, the membrane tanks provide extremely space efficient solids separation and do not require a clarifier in the system.

Ecologix™ provides Hollow fiber, Flat-sheet and Spiral wound membrane modules for several projects installations.

Ecologix™ membrane modules are contributing to environmental protection and energy conservation in a global market.

Benefits of MBR Process

- Fewer process steps to achieve high quality effluent
- Eliminates sludge settle ability issues
- Treats higher BOD than conventional reactors
- Low effluent turbidity
- Operates at higher MLSS than conventional reactors
- Reduced sludge yield
- Limited footprint
- Long SRT requirements
- Low operating cost with stable operation
- Continuous air cleaning prevents sludge accumulation
- Reduces plant maintenance



MBR modules Applications

- Municipal wastewater treatment
- Industries wastewater treatment
- Poultry slaughter house wastewater treatment
- Local sewage plants
- Water processing and recycling facilities
- Pretreatment process for drinking water
- River, Surface & Ground waters clarification
- Pretreatment process for RO system
- Beverage production and Food processing
- Boiler feed water, cooling water
- Pharmaceutical manufacturing