



DYNATEC SYSTEMS INC.

THE WASTEWATER MEMBRANE SPECIALIST

360 Connecticut Drive • Burlington, NJ 08016 • USA • (609) 387-0330 • www.dynatecsystems.com

The Dynatec Difference

Industrial

- High effluent quality
- Low space requirements
- High nitrogen removal efficiency
- High strength waste
- Low space requirements
- Thermophilic treatment

Retrofits

- Increase capacity without adding tank volume
- Add external membranes to existing treatment for higher quality effluent
- High nitrogen removal efficiency
- Solves settling problems

Commercial

- Recycle/Reclamation
- Low space requirements
- High nitrogen removal efficiency
- Leach field/soil limitations
- Decentralized applications

Variety of UF membrane Sizes

8 mm & 14 mm tubular products are selected depending on the application.



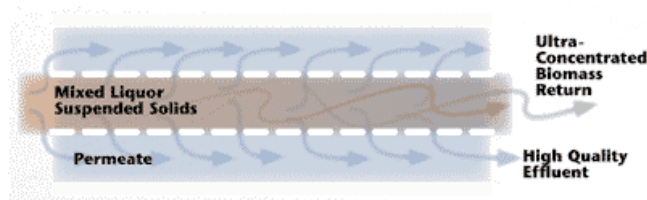
HiRate™ MBR

Dynatec Systems' HiRate™ MBR uses external crossflow type UF membranes that have over three times the flux as the hollow fiber and flat sheet alternatives (60-90 GFD vs.15-20 GFD for hollow fibers and flat sheet). Higher flux means less membrane surface area, ultimately saving capital cost. Bio-reactor aeration alternatives include coarse bubble aeration for commercial systems or, for higher strength industrial waste, the use of more efficient jet aeration for improved performance and power savings.

"True UF" Filtration using 0.03 micron, cross flow, tubular membranes. Others use microfiltration (MF) with pore sizes 0.1- 0.4 micron, allowing more contaminants to make their way across the membrane surface. Dynatec Systems has installed over 600 membrane systems providing wastewater solutions since 1997. The HiRate™ MBR combines sound engineering and effective process design with state of the art materials of construction.



Outsource your wastewater service! Dynatec will design-build-own-operate-maintain your wastewater treatment plant allowing you to concentrate on your core business.



Graphic shows flow of bio-mass and treated water through membrane



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HiRate™ MBR - Advantages Over Other Treatment:

- It is a simple controllable operation and requires less operator attention.
- Reliable high quality effluent.
- Smaller footprint - high MLSS levels (8,000 - 25,000 mg/l and higher).
- High rejection efficiency of organic constituents, solids and microorganisms.
- Lower effluent turbidity.
- Excellent nutrient removal capability (<3 mg/l total N).
- Lower sludge yield (0.25 - 0.35 #MLSS/# BOD5).
- Operates at higher sludge concentrations (Less waste sludge to haul at high mixed liquor concentrate).
- Eliminates filamentous bacteria and sludge bulking problems.
- Handles variable loading with higher MLSS level.
- Lower chemical requirements.
- Controlled environment around the membrane system.
- Denitrification and carbon source feed is controlled with ORP controller.



HiRate™ MBR - Advantages over Immersed Membrane Systems:

- Removing immersed membranes from the process tank is difficult and inefficient.
- Cleaning is easier for operator.
- No working above aeration tanks with hoist that can be dangerous. Maintenance is safer.
- No annual fine bubble diffuser replacement required. Maintenance is less frequent.
- Less oxygen is recycled to the denitrification zone minimizing carbon addition.
- No recycle pump for denitrification UF recirculation pump provides membrane scouring and recycle.
- No permeate vacuum pumps, valves and air relief valves.
- No backwash pump and backwash tank.
- No denitrification recycle pumps.
- No hoist system for membrane removal.
- No soak tank for membrane cleaning.
- No dedicated blower needed for membrane air scour.
- Lower capital cost than immersed membrane MBR's.
- Lower membrane replacement cost.
- Hollow Fiber failure bypasses solids when potting fails.
- Higher temperature membranes available for thermophilic applications.

