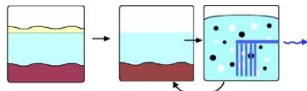


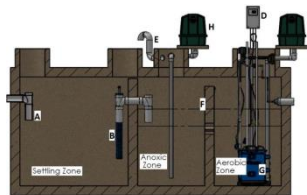
Firm: Bio-Microbics Inc.
www.biomicrobics.com

System: **BioBarrier–N MBR Series**

Category:



**MEMBRANE BIOREACTOR
with ACTIVATED SLUDGE**



BioBarrier®-N

A. Influent
B. SanITEE®
C. Blower & Housing
D. Control Panel
E. Vent
F. Optional baffle wall
G. BioBarrier Reactor
H. Optional Mixing blower

Process:

Wastewater first enters an anoxic chamber for primary treatment and sedimentation. The effluent then travels by gravity to the treatment chambers. An anoxic zone with mixing device is where mixing and denitrification occur. It is interconnected by openings in a baffle wall to the aeration chamber, where air activates the suspended sludge as well as scours the membrane. Ultra-filtered effluent passes through the pores of the membrane for dispersal. The system alternates between a filtration sequence and a relaxation sequence.

System:

The unit has three chambers: prescreening chamber, an anoxic mixing chamber, and an aerobic chamber with membrane filtration. The system does not replace the discharge components.

Flow Range: 500-1500 GPD

Tests:

NSF/ANSI 245 for denitrification
NSF/ANSI 350 for non-potable reuse
Pending: Suffolk County Pilot 2

Cost:

Manufacturer's Recommended Retail Price:
\$7,140 - \$16,650, not including installation

Energy:

5 kWh/d (MAX); cost estimated \$18 (aver.), \$27 (Max) per month; Aerator and mixers run intermittently.

Tanks:

Concrete or polyethylene, sourced locally
Option for H2O loading designed to support vehicles

Venting:

Direct or subsurface with perforated pipe

Footprint: 50 SF

Bio-microbics Inc.
 8450 Cole Parkway
 Shawnee
 Kansas 66227

Telephone:
 1 800 753 3278
 913 422 0707



Depth: Burial depth is based on manufacturer’s requirements or local regulations.

Life Cycle: Membrane: 7 years (Cost: \$1295)
 Pumps: 2-5 years (Cost: ~\$200)
 Blower: 7-10 years (Cost: \$500)

Warranty: 2 years after installation; 3 years after shipping

Maintenance: Recommend Clean-In-Place (CIP) procedure twice a year. System backwashes automatically. Pump-out as needed.

Notes: Can accommodate seasonal use, but prior to restarting a deep chemical clean is recommended. BioBarrier is seeded at start-up for quicker attainment of treatment goals.

Capable of handling heavy organic loads very well, with some design adjustments.

Installations: 2,000+ have been installed. The installations are considered best available technology for difficult sites. For instance the MBR is used for sites with no soil, small lot, waterfront, or the need for disinfection while avoiding ultraviolet treatment.

Treatment: info from manufacturer

	TN /aver 50%	cBOD 25 mg/L aver/mon	TSS 30 mg/L aver/mon	BOD ₅	e-coli /fecal
%	96.2%	97.2%	99.8%	98.9%	99.9%

Advantages:

- Provides enhanced disinfection
- Good for non-potable reuse
- Ability to handle heavy organic loads
- High treatment levels for difficult sites
- Resilient for uneven use

Disadvantages:

- Seasonal start-up would benefit from servicing
- Multiple pumps
- Blower noise