

Winery Wastewater Treatment Systems



BIO **MICROBICS**[®]

Bio  **Barrier**[®] **HSMBR**[®]
HIGHSTRENGTH MEMBRANE BIOREACTOR

FOR WINERIES



*Treats high strength
winery process waste*



*Meets the most stringent
regulatory requirements*



Ideal for water reuse applications



RECLAIM • REUSE • CONSERVE



BETTER WATER. BETTER WORLD.[®]

www.biomicrobics.com

SIMPLE • LOW

BioBarrier[®] HSMBR[®] HIGHSTRENGTH MEMBRANE BIOREACTOR

Low Cost, Long Lasting Solution

The BioBarrier[®] HSMBR[®] for wineries is a membrane bioreactor system specifically configured to treat highly concentrated process waste from wine making, tasting rooms, and bottling facilities. This technology removes organic pollutants and suspended solids with the use of ultrafiltration membranes, producing high-quality effluent that is safe for reuse.

The BioBarrier[®] HSMBR[®] systems are predesigned for the particular wastewater characteristics present in winery applications where process wastewater is generated from crush, winemaking, and bottling operations. The systems include the membrane filtration system along with a high-capacity aeration system designed to handle much higher organic loads as compared to residential and light-commercial wastewater applications. The system can also be adapted to other kinds of brewery, food, and beverage process wastewater with high organic loads.



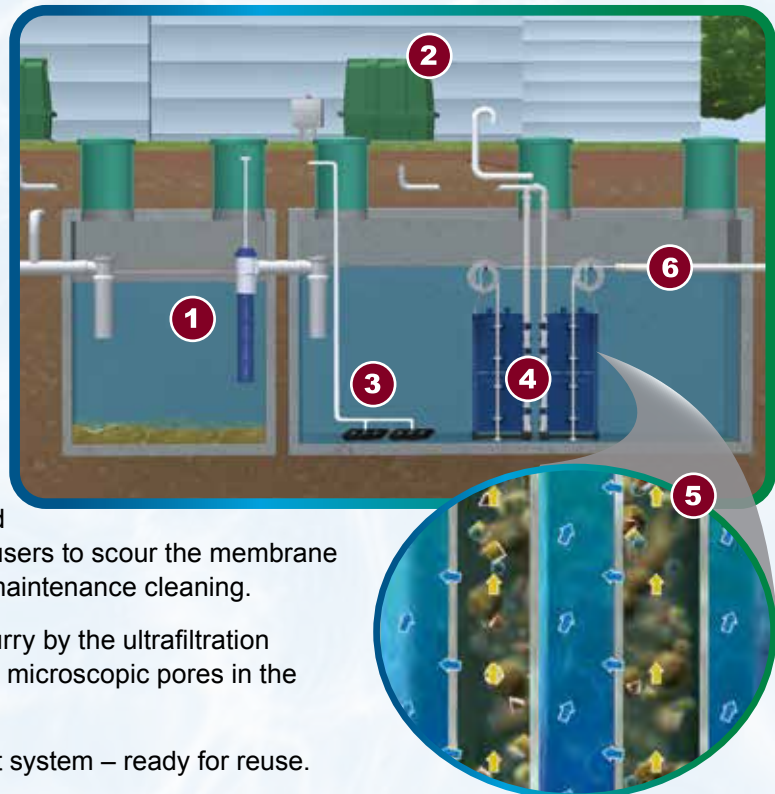
Water effluent BEFORE and AFTER

Benefits of Treating Waste with BioBarrier[®] HSMBR[®]:

- System is typically buried for a clean look and maximal use of space (under parking lots)
- Ability to adjust aeration rates based on crush and non-crush seasons, yielding power savings
- Reuse-quality water for irrigation, wash-down, fire suppression, toilet flushing, and more
- Lowest O&M of any MBR system – preventative maintenance only twice per year

HOW IT WORKS!

- 1 In the primary settling zone, a SaniTEE[®] screen prevents large solids such as grape skins and stems from entering the treatment zone.
- 2 Above-ground blowers introduce air into the treatment tank to aerate the wastewater and scour the membrane filters.
- 3 In the treatment tank, suspended (free-swimming) microbes thrive in the richly aerated environment, developing a robust population to break down organic matter.
- 4 The BioBarrier[®] membrane filters are submerged in the aeration tank using coarse bubble air diffusers to scour the membrane filters during operation, minimizing fouling and maintenance cleaning.
- 5 Treated water is separated from the microbial slurry by the ultrafiltration membrane using pump(s) to draw water through microscopic pores in the membrane material.
- 6 Clear, odorless, treated water exits the treatment system – ready for reuse.



COST • ROBUST

BioBarrier® HSMBR® High Strength Membrane BioReactor | WINERY

MODEL SIZE	MAXIMUM HYDRAULIC LOAD		APPROXIMATE CASES PER YEAR WINE PRODUCTION ¹	BioRobic® SUPPLEMENTAL AERATION NUMBER OF DIFFUSERS ²
	GPD	LPD		
0.5	500	1900	3000 — 6000	8
1.0	1000	3800	6000 — 12000	10
1.5	1500	5700	9000 — 18000	14
3.0	3000	11400	18000 — 36000	28
4.5	4500	17000	27000 — 54000	42
6.0	6000	22700	36000 — 72000	56
9.0	9000	34000	54000 — 108000	84

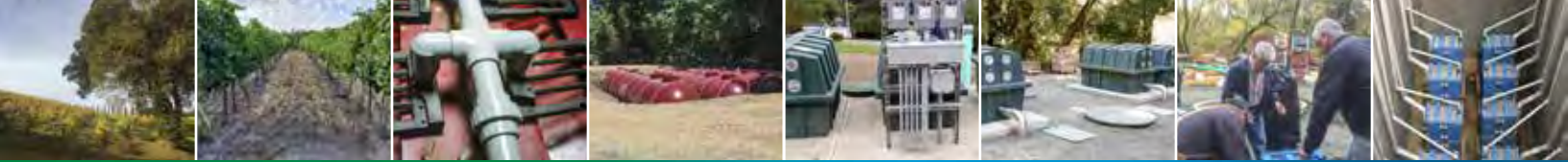
1. Wine production capacity based on 5 gallons wastewater per 1 gallon wine and a 30 – 60 day crush period

2. Supplemental aeration is based on assumed process waste concentration of 7,700 mg/L BOD

WINERY SYSTEM INCLUDES:

- **Durable, BioBarrier® HSMBR Membrane BioReactor modules** with ultrafiltration, flat sheet membranes.
- **BioRobic® System** specifically designed for your winery wastewater package. System includes diffusers, blowers and control panel for optimal aeration performance of your BioBarrier® HSMBR® Winery Wastewater System.
- **SaniTEE® Effluent Screening Device(s)** for installation into your settling tank.
- **Filtrate Pump(s)** to extract your ultra-filtered, treated wastewater from the membrane modules.
- **Filtration and High Level Alarm floats** to operate the filtration process automatically.
- **Control Panel** with customizable settings for proper operation and monitoring of your BioBarrier® HSMBR® Winery Wastewater System.
- **Installation Kit** including necessary connectors and structural parts.





Established in 1996 to focus on water, BioMicrobics – and subsidiaries SeptiTech and Scienco/FAST – is at the forefront of sustainable design, with almost 90,000 systems in over 90 countries. Our systems meet the highest performance standards for treatment of water,

graywater, wastewater, and stormwater. BioMicrobics produces innovative systems dealing with wastewater treatment in decentralized settings. Our products are engineered to be simple, low-cost, and robust.

MicroFAST[®] wastewater treatment systems

The MicroFAST system uses attached growth media for biological treatment and is install-ready. Fits systems needing to treat 400 – 9,000 GPD.



MicroFAST



BioBarrier

BioBarrier[®] MEMBRANE BIOREACTOR

BioBarrier is a Membrane BioReactor (MBR) that uses membrane technology to physically separate water from microorganisms and suspended solids. Designed to meet the most stringent wastewater treatment for BOD, TSS and TN.

SeptiTech[®] a subsidiary of BioMicrobics, Inc.

SeptiTech's STAAR[®] (Smart Trickling Anaerobic/Aerobic Recirculation) utilizes an unsaturated media and trickling filter technology to biologically treat wastewater. It can accommodate flows of 500- 6,000 GPD.



SeptiTech STAAR

BIO MICROBICS

BETTER WATER. BETTER WORLD.[®]

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