



# MBR Membrane Product Specification

## (MBR-844-40)

### 1. Product Introduction

#### 1.1 MBR Introduction

**Membrane Bioreactor (MBR)** is an advanced wastewater treatment technology that combines **activated sludge process** with **membrane filtration**. It replaces the secondary sedimentation tank in traditional processes with membrane modules, achieving efficient solid-liquid separation.

#### 1.2 Product Features

- **High-quality Effluent:** Stable output of **SS-free** water, meeting strict reuse standards.
- **Small Footprint:** Compact design, **30-50% smaller** than conventional systems.
- **High MLSS:** Operates at **8,000-12,000 mg/L** MLSS, boosting treatment capacity.
- **Low Sludge Production:** Reduces sludge disposal costs.
- **Easy Automation:** Simple operation, low labor intensity.
- **Long Membrane Life:** Robust PVDF material with proper maintenance.
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### 2. Product Range & Specifications

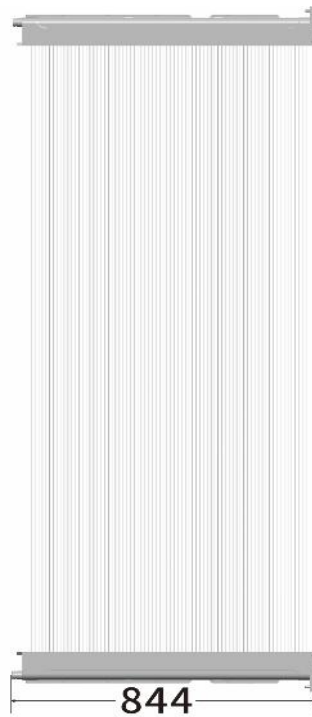
#### 2.1 Membrane Material

- **PVDF (Polyvinylidene Fluoride):** Excellent **chemical resistance, mechanical strength, and anti-fouling properties**.
- **Nominal Pore Size:** **0.03 µm (microfiltration)**.

#### 2.2 Module Types

##### 2.2.1 Hollow Fiber (Submerged)

- **Model:** **MBR-844-40**
- **Effective Area:** **40 m<sup>2</sup>/module**
- **Dimensions (L\*W\*H):** **844\*49\*2198 mm**
- **Dry Weight:** **~17 kg**
- **Design Flux:** **15-25 LMH**



### 3. Technical Parameters

Item	Standard Value
Operating Temp	5-40°C
pH Range	2-10 (continuous); 2-12 (cleaning)
Initial TMP	< 10 kPa
Max. TMP	35 kPa
Aeration Intensity	50-70 Nm <sup>3</sup> /m <sup>2</sup> ·h
Design Flux	15-25 LMH (domestic sewage)
Backwash Flux	20-60 LMH
Max. Backwash Pressure	70 kPa

### 4. Installation & Commissioning

#### 4.1 Pre-installation

- Check components for damage.
- Prepare foundation/rack level.
- Ensure **1 mm fine screening** for influent.

#### 4.2 Installation Steps

1. Place module in membrane tank.
2. Connect permeate pipe, aeration pipe, and fittings.
3. Fill tank with water to submerge membrane.
4. Test for leaks.



#### 4.3 Commissioning

- Start aeration first (**30 min**).
- Initiate suction pump at **low flux** (50% design).
- Gradually increase flux over **1-2 weeks**.
- Monitor TMP daily.

### 5. Operation & Maintenance

#### 5.1 Normal Operation

- **Continuous aeration** for scouring (DO > 2 mg/L).
- **Intermittent suction: 8 min on / 2 min off.**
- Maintain MLSS **8,000-12,000 mg/L**.

#### 5.2 Daily Maintenance

- Record TMP, flux, temperature, pH.
- Inspect for broken fibers (replace if >5% broken).
- Check aeration uniformity.

#### 5.3 Cleaning

##### 5.3.1 Physical Cleaning (Weekly)

- **Backwash:** Permeate, **30-60 sec**.
- **Relaxation:** Stop suction, **30-60 sec**.

##### 5.3.2 Chemical Cleaning (Monthly / When TMP > 30 kPa)

1. **Offline Clean:**
  - **Step 1 (Alkaline): 0.3-0.5% NaClO**, soak **2-4 h**.
  - **Step 2 (Acid): 0.5-1.0% Citric Acid**, soak **1-2 h**.
2. Rinse thoroughly with clean water.

#### 5.4 Shutdown

- **Short-term (<7 days):** Keep aeration on.
- **Long-term (>7 days):** Chemical clean, soak in **0.5% NaClO**, keep moist.

### 6. Troubleshooting

Problem	Cause	Solution
<b>TMP rises fast</b>	Fouling; high MLSS; low aeration	Clean; reduce MLSS; increase aeration
<b>Low permeate</b>	Clogged; broken fibers; air lock	Clean; replace; bleed air
<b>Poor quality</b>	Broken fibers; damaged seals	Replace module; repair seals



### 7. Safety & Handling

- Avoid contact with **strong oxidizers** (concentrated NaClO).
- Wear **gloves/goggles** when handling chemicals.
- Do not drop or impact modules.
- Protect from **freezing** (<0°C).

### 8. Packaging & Storage

- Packed in **carton with plastic film**.
- Store **indoors, dry, 5-30°C**.
- Keep sealed to prevent drying.

### 9. Quality Assurance

- **12-month warranty** against material defects.
- Warranty void if misused, improper cleaning, or unauthorized repair.