Absorb Apply Diffuse **Filter** Vent Wick

# POREX® TMF 1.1

## TUBULAR MEMBRANE FILTER (TMF) MODULES

### Optimal high solids separation at high flux rates

POREX TMF cross-flow tubular membrane modules contain Porex's unique, structural membrane tubes. The superior strength of the membrane/substrate composite allows higher operating and backwash pressures for superior solids removal efficiency, higher flux and reduced system footprint. The structural composite membrane features PVDF membrane anchored to PE substrate.

### Chemical resistance

POREX TMF modules are resistant to a broad spectrum of corrosive chemicals and reagents as well as pH ranges of 0 to 14. Typically, pilot feasibility tests are needed to determine the actual TMF module performance under real operating conditions.

## TMF Series Features

- Consistent, reliable solid/liquid separations and long service life
- Unique support with PVDF membrane offers high performance tubular membrane with superior operating characteristics
- Three distinct membrane pore sizes available
- Uniform, thermally-bonded omni-directional substrate pore structure provides an optimized support structure for tubular membranes and enchanced membrane durability
- Now available in multiple tube quantitites and diameters for increased surface area and flux

## Porex's TMF Business Partner: **Danheng**

Nanjing Danheng Technology Co., Ltd. (Danheng) is Porex's TMF business partner. Located in Nanjing, China, Danheng is qualified and authorized to build POREX®TMF modules to specified POREX design and following the POREX manufacturing process using POREX manufacture tube membrane. Danheng has been working with POREX TMF water treatment modules for more than 10 years and has experience with serving global customers in TMF applications with design consultation, engineering support, and aftermarket product services. Danheng holds more than 30 patents in industrial water treatment and has in-house testing for R&D and customer process verification.

To purchase Porex TMF modules:
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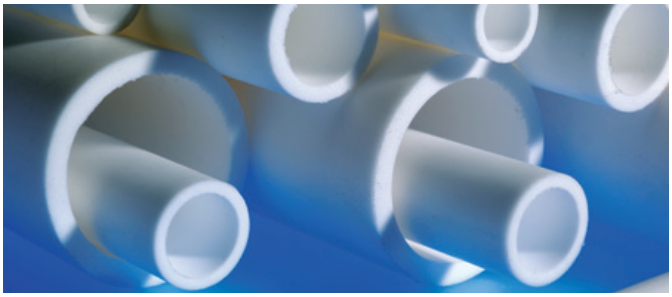
POREX Filtration Group®



## Operating Specifications

| | |
|---|---|
| **Pre-Use Wetting Agent** | IPA |
| **Water Flux** | >200 GFD (340 LMH) |
| **Cross Flow Liquid Velocity** | 10 - 16 ft/sec (3.0 to 4.9 m/s) |
| **pH Range** | 0-14 |
| **Max Backpulse Pressure** | 20 psi (138 kPa) at 25°C |
| **Max Differential Pressure** | 60 psi (827 kPa) at 25°C |
| **Max Solids** | 18% |
| **Min Solids** | 0.25% |
| **Max Viscosity** | 50 cp |
| **Min Viscosity** | <1 cp |

## Maximum Cleaning Solution Strength

| | |
|---|---|
| **Bleach (NaOCl)** | < 17% to 100°F (38°C) |
| **Caustic (NaOH)** | < 15% to 104°F (40°C) |
| **Acid (HCl)** | < 15% to 140°F (60°C) |
| **Peroxide ($H_20_2$)** | < 5% to 100°F (38°C) |

## Physical Specifications

| | |
|---|---|
| **Modules** | |
| **Housing Diameter** | 1 1/2" Sc40 |
| **Filtrate Port (Qty 2)** | 3/4" NPT Female |
| **Retentate Ports** | 1 1/4" pipe stub |
| **Mounting Required** | Horizontal; 2 point |
| **Module Length** | 72" (1829 mm) |
| **Tubes** | |
| **Number of Tubes** | 1 |
| **Nominal ID** | 1" (25.4 mm) |
| **Nominal OD** | 1.34" (34 mm) |
| **Total Active Surface Area** | 1.52 $ft^2$ (0.141 $m^2$) |
| **Internal Liquid Volume** | |
| **Filtrate Volume** | 0.21 gallons (0.795 ltr) |
| **Concentrate Volume** | 0.24 gallons (0.908 ltr) |
| **Total Volume** | 0.45 gallons (1.703 ltr) |
| **Materials of Construction** | |
| **Potting** | Solvent Cement |
| **Internal Supports** | None |
| **Gasket Material** | None |
| **Preservative** | Propylene Glycol |
| **Membrane** | PVDF |

## TMF Item Numbers

| Item Number | Description | Normal Pore Size (µm) | Maxium Continuous Operating Temperature* | Housing | Substrate Tube | Shipping Dimensions | Shipping Weight |
|---|---|---|---|---|---|---|---|
| MME3005601VP | 1 Tube PVC Module / PE 1" tube - 0.05 µm | 0.05 µm | 43°C / 110°F | Grade 1 PVC | UHMWPE | 4 x 4 x 74 in.<br>102 x 102 x 1880 mm | 6 lbs<br>2.72 kg |
| MME3S01601VP | 1 Tube PVC Module / PE 1" tube - 0.1 µm | 0.1 µm | 43°C / 110°F | Grade 1 PVC | UHMWPE | 4 x 4 x 74 in.<br>102 x 102 x 1880 mm | 6 lbs<br>2.72 kg |
| MME3002601VP | 1 Tube PVC Module / PE 1" tube - 0.02 µm | 0.02 µm | 43°C / 110°F | Grade 1 PVC | UHMWPE | 4 x 4 x 74 in.<br>102 x 102 x 1880 mm | 6 lbs<br>2.72 kg |

* For operation at higher than listed temperatures, contact Danheng.
Note: Rapid temperature changes may potentially cause damage to the TMF modules.

**For information on all TMF modules, go to porex.com/TMF**
**To purchase TMF modules, contact Danheng directly**

Website: www.njdhkj.cn
Email: TMF@njdhkj.cn

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Patent Pending