

# 3M™ Flat Membrane MicroPES™ Series Type 12F iv

Chemical Composition	
Polymer	Polyethersulfone
Wetting property	Hydrophilic

Physical Properties	
Thickness	110 ± 10 µm (4.3 ± 0.4 mil)
Tensile strength	
Longitudinal	≥ 900 cN/15 mm
Transversal	≥ 800 cN/15 mm
Elongation at break	
Longitudinal	≥ 25%
Transversal	≥ 30%
Change of length (steam, 121 °C)	≤ 3%

Membrane Performance Characteristics	
Bubble point (in water)	0.84 ± 0,16 bar (12.2 ± 2.3 psi)
Transmembrane flow (water, 25 °C)	≥ 360 ml/(min cm² bar) (≥ 23060 ml/(min ft² psi)) (≥ 160.14 ml/(min in² psi))
Retention of bacteria ( <i>Brevundimonas diminuta</i> )	≥ 7 log reduction value

Available Make-up Configurations	
Rolls	

All specifications are based on 3M internal test procedures.

**Technical Information:** The technical information, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

**Product Use:** Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

**Warranty, Limited Remedy, and Disclaimer:** Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

**Limitation of Liability:** Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

3M and Membrana are trademarks of 3M Company. © 2018 3M Company. All rights reserved.