

**PMR10R1 - September 18, 2024**

Item # PMR10R1 was discontinued on September 18, 2024. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

**HIGH-REFLECTANCE PTFE SHEETS**

- ▶ **Omnidirectional, Diffusely Reflective PTFE Ideal for UV Sterilization**
- ▶ **>93% Average Reflectance from 250 to 400 nm**
- ▶ **Usable at Temperatures up to 260 °C**
- ▶ **Hydrophobic and Chemically Inert**



**PMR10P1**  
33 cm x 33 cm Sheet with  
Adhesive Backing



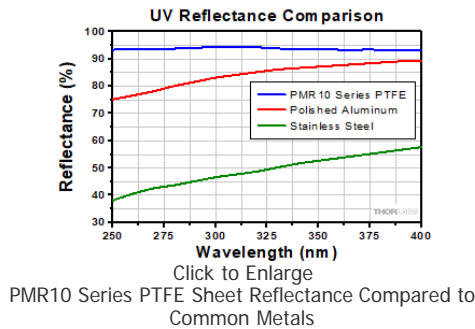
**PMR10R2**  
33 cm x 13.2 m Sheet

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**OVERVIEW**

**Features**

- Porous, Sintered PTFE for High Omnidirectional Tensile Strength
- Nearly Lambertian Reflectance
- $R_{avg} > 93\%$  (250 - 400 nm)
- Skived (Shaved) for Precise Thickness Control
- Naturally Hydrophobic Material (IP-Rated)
- Contact Tech Support for Custom Requests
  - Different Sizes
  - With or Without Adhesive Backing



Specifications			
Item #	PMR10P1	PMR10R1	PMR10R2
PTFE Dimensions	Thickness	0.75 mm	
	Width	33 cm	
	Length	33 cm	13.2 m ± 1.5 m
Adhesive Backing	3M 93020 Tape w/ 300LSE Adhesive, 0.20 mm Thick <sup>a</sup>		None
Average Reflectance (Click for Graph; Raw Data)	>93% (250 - 400 nm) >92% (400 - 800 nm)		
Dielectric Constant	1.7		
Operating Temperature	-40 to 260 °C		
UL Rating	5VA V-0 (UL 94), f1 (UL 746C)		

a. With Protective Liner Removed

These polytetrafluoroethylene (PTFE) sheets provide highly efficient and uniform diffuse reflection of UV light, making them ideal for applications such as UV irradiation and sterilization of objects. Their average reflectance of >93% from 250 to 400 nm provides better performance than polished aluminum or stainless steel (see the graph to the right). PTFE is also chemically inert and UV resistant, traits not found in common polymers such as polyethylene, polycarbonate, and nylon.

**Sintering & Skiving**

These sheets are produced by first sintering PTFE particles, where the particles are fused together using heat and pressure to produce a cohesive porous solid. This technique allows for precise control of the output material properties, including pore size and pore volume. The material is then skived, a process in which thin layers of material are cut from the bulk, to produce precisely 0.75 mm thick sheets.

**Comparison with Molded PTFE and Extended PTFE (ePTFE)**

Sintered and skived PTFE material offers many benefits, such as low flex fatigue, omnidirectional diffuse reflectance, and compatibility with heat and vibrational welding. Testing<sup>†</sup> also shows that PTFE samples that have been sintered and then skived exhibited a lower and more consistent median pore diameter (roughly 1 to 7 μm) than those that were sintered and then molded (roughly 7 to 27 μm). The robust pore structure also makes it safe to handle during assembly and it can be easily mounted inside or outside of an enclosure. This is in contrast with extended PTFE (ePTFE), made by heating and stretching extruded PTFE, which is fragile and requires a supporting layer due to the low strength of the nodes and fibrils that comprise it; ePTFE membranes are also sensitive to temperature and pressure.

<sup>†</sup> Porex Corporation. Ultraviolet Reflectance of Microporous PTFE [White Paper].

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Part Number	Description	Price	Availability
PMR10P1	PTFE Diffuse Reflector Sheet with Adhesive Backing, 33 cm x 33 cm, 0.75 mm Thick	\$61.50	Today
PMR10R1	PTFE Diffuse Reflector Sheet with Adhesive Backing, 33 cm x 13.2 m, 0.75 mm Thick	\$1,745.42	Lead Time
PMR10R2	PTFE Diffuse Reflector Sheet, 33 cm x 13.2 m, 0.75 mm Thick	\$1,232.66	Today