



MAKROFOL[®] LM 309 2-4 160004

Characterization

Makrofol LM 309 2-4 160004 is an extruded polycarbonate film.

Properties / Applications

Makrofol LM 309 2-4 160004 is an extruded polycarbonate film filled with light-scattering agent. It displays a smooth homogenous illumination of the front side of a backlight part even if a point source is applied. Typical applications are automotive instrument panels and backlight displays.

Makrofol LM 309 2-4 160004 is available in standard thicknesses of 0.012" and 0.020" (300 microns and 500 microns). The surface structure of Makrofol LM 309 2-4 160004 is one side very fine matte, and one side fine matte. As with any product, use of Makrofol LM 309 2-4 160004 in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

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Typical Properties*

Property	Test Method	Unit	Value
General			
Density	ISO 1183 20°C, Method C	g/cm ³	1.2
Thickness	following ISO 4593, 23°C	µm	300, 375, 500
Gloss top surface	ISO 2813, 60° backprinted black	Digits	≥ 80
back surface			< 60
Roughness, R3z top surface	acc. to ISO 4287/88, Lm 12.5 mm; lc 2.5 mm average over 3-5 measurements	µm	< 1.0
back surface			< 11
Optical			
Light Transmission	ISO 13468-2	%	
300 µm, back surface			86
300 µm, top surface			86
500 µm, back surface			81
500 µm, top surface			81
Haze	ASTM D 1003	%	
300 µm, back surface			100
300 µm, top surface			100
500 µm, back surface			100
500 µm, top surface			100
Half-Power Angle	following DIN 5036	Degree	
300 µm, top surface			20
500 µm, top surface			28

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Typical Properties* (CONT'D)

Property	Test Method	Unit	Value
Mechanical			
Stress at Break	ISO 527-1,-3	MPa	≥ 65
Machine Direction			≥ 65
Transverse Direction			≥ 65
Strain at Break	ISO 527-1,-3	%	≥ 120
Machine Direction			≥ 120
Transverse Direction			≥ 120
Tensile Modulus	ISO 527-1,-3	MPa	≥ 2,200
Machine Direction			≥ 2,200
Transverse Direction			≥ 2,200
Thermal			
Relative Temperature Index	UL 746 B	°C	80
Electrical			
Surface Resistivity	following DIN IEC 60093	Ohm	10 ¹⁶
Other			
Water Absorption	following ISO 62	%	0.2

**These items are provided as general information only. They are approximate values and are not part of the product specifications.*



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Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling this product. Before working with this product, you must read and become familiar with the available information on its risks, proper use, and handling. This cannot be overemphasized. Information is available in several forms, e.g., safety data sheets and product labels. For further information contact your Covestro LLC representative or the Product Safety and Regulatory Affairs Department in Pittsburgh, PA.

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Editor: Covestro LLC
1 Covestro Circle
Pittsburgh, Pennsylvania 15205
United States
www.covestro.com

Contact:
8 Fairview Way South Deerfield, MA 01371
Tel. 413-665-7016