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.

MAKROFOL® LM 309 2-4 160004

Typical Properties*

Property	Test Method	Unit	Value
General			
Density	ISO 1183 20°C, Method C	g/cm³	1.2
Thickness	following ISO 4593, 23°C	µm	300, 375, 500
Gloss top surface back surface	ISO 2813, 60° backprinted black	Digits	 ≥ 80 < 60
Roughness, R3z top surface back surface	acc. to ISO 4287/88, Lm 12.5 mm; lc 2.5 mm average over 3-5 measurements	µm	 < 1.0 < 11
Optical			
Light Transmission 300 µm, back surface 300 µm, top surface 500 µm, back surface 500 µm, top surface	ISO 13468-2	%	 86 86 81 81
Haze 300 µm, back surface 300 µm, top surface 500 µm, back surface 500 µm, top surface	ASTM D 1003	%	 100 100 100 100
Half-Power Angle 300 µm, top surface 500 µm, top surface	following DIN 5036	Degree	 20 28

Document contains important information and must be read in its entirety.

Edition 2014-05-15

MAKROFOL® LM 309 2-4 160004

Typical Properties* (CONT'D)

Property	Test Method	Unit	Value
Mechanical			
Stress at Break Machine Direction Transverse Direction	ISO 527-1,-3	MPa	 ≥ 65 ≥ 65
Strain at Break Machine Direction Transverse Direction	ISO 527-1,-3	%	 ≥ 120 ≥ 120
Tensile Modulus Machine Direction Transverse Direction	ISO 527-1,-3	MPa	 ≥ 2,200 ≥ 2,200
Thermal			
Relative Temperature Index	UL 746 B	°C	80
Electrical			
Surface Resitivity	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.*

MAKROFOL® LM 309 2-4 160004

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.

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