

Makrofol® LM309 2-4 160004

Description and Application Information

Makrofol® LM309 2-4 160004 is an extruded polycarbonate film filled with a light-scattering agent. It displays a smooth homogenous illumination of the front side of a backlit part even if a point source light is applied.

The surface structure combination is very fine matte - fine matte. Makrofol® LM309 2-4 160004 is available in standard thicknesses of 300 microns and 500 microns.

Typical applications are automotive instrument panels and backlight displays.

Preliminary guide data

General properties			
Property	Value	Unit of measurement	Method
Density	1,2	g/cm ³	ISO 1183, 20°C, Method C
Thickness	300, 500	µm	following ISO 4593, 23°C
Gloss		Digits	ISO 2813, Angle 60°, backprinted black
top surface	≥ 80		
back surface	< 60		
Roughness R3z		µm	acc. to ISO 4587/88, Lm12,5mm, lc 2,5mm, Average over 3-5 measurements
top surface	< 1,0		
back surface	< 11		
Optical properties			
Property	Value	Unit of measurement	Method
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 D1003
300 µm, back surface	100		
300 µm, top surface	100		
500 µm, back surface	100		
500 µm, top surface	100		
Half-power angle		Degree	following DIN 5036
300 µm, top surface	20		
500 µm, top surface	28		

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Mechanical properties			
Property	Value	Unit of measurement	Method
Stress at break		MPa	ISO 527-1,-3
machine direction	≥ 65		
transverse direction	≥ 65		
Strain at break		%	ISO 527-1,-3
machine direction	≥ 120		
transverse direction	≥ 120		
Tensile Modulus		MPa	ISO 527-1,-3
machine direction	≥ 2200		
transverse direction	≥ 2200		
Thermal properties			
Property	Value	Unit of measurement	Method
Relative temperature index	80	°C	UL 746 B
Burning rate (FMVSS 302)	≤ 100	mm/min	ISO 3795
Electrical properties			
Property	Value	Unit of measurement	Method
Surface resistivity	10 ¹⁶	Ohm	following DIN IEC 60093
Other properties			
Property	Value	Unit of measurement	Method
Water absorption	0,2	%	following ISO 62

Labeling and REACH applications

This product data sheet is only valid in conjunction with the latest edition of the corresponding Safety Data Sheet.

Any updating of safety-relevant information – in accordance with statutory requirements – will only be reflected in the Safety Data Sheet, copies of which will be revised and distributed. Information relating to the current classification and labeling, applications and processing methods and further data relevant to safety can be found in the currently valid Safety Data Sheet.

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(1) Please see the "Guidance on Use of Covestro Products in a Medical Application" document.

(2) As defined in Commission Regulation (EU) 1935/2004.

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