

# Makrofol<sup>®</sup> LM322 2-4 160006

## Description and Application Information

Makrofol<sup>®</sup> LM322 2-4 160006 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 light is applied.

Makrofol<sup>®</sup> LM322 2-4 160006 is available in a standard thickness of 100 microns and 300 microns. Other thicknesses on request.

Surface structure is gloss/fine matte (2-surface/4-surface).

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 <sup>3</sup>	ISO 1183, 20°C, Method C
Thickness	100, 300	µm	acc. to ISO 4593, 23°C
Gloss		Digits	ISO 2813, Angle 60°, backprinted black
2-surface	> 70		
4-surface	< 60		
Roughness R3z		µm	acc. to ISO 4287/88, Lm12,5mm, lc 2,5mm, Average over 3-5 measurements
2-surface	≤ 5		
4-surface	≤ 11		

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<b>Optical properties</b>			
<b>Property</b>	<b>Value</b>	<b>Unit of measurement</b>	<b>Method</b>
Light transmission		%	ISO 13468-2
100 µm, 4-surface	69		
100 µm, 2-surface	68		
200 µm, 4-surface	60		
200 µm, 2-surface	61		
300 µm, 4-surface	57		
300 µm, 2-surface	57		
Haze		%	ASTM D1003
100 µm, 4-surface	100		
100 µm, 2-surface	100		
200 µm, 4-surface	100		
200 µm, 2-surface	100		
300 µm, 4-surface	100		
300 µm, 2-surface	100		
Half-power angle		Degree	following DIN 5036
100 µm, 2-surface	38		
200 µm, 2-surface	55		
300 µm, 2-surface	58		
<b>Mechanical properties</b>			
<b>Property</b>	<b>Value</b>	<b>Unit of measurement</b>	<b>Method</b>
Stress at break		MPa	ISO 527-1,-3
machine direction	≥ 45		
transverse direction	≥ 45		
Strain at break		%	ISO 527-1,-3
machine direction	≥ 105		
transverse direction	≥ 100		
Tensile Modulus		MPa	ISO 527-1,-3
machine direction	≥ 1530		
transverse direction	≥ 1500		
<b>Thermal properties</b>			
<b>Property</b>	<b>Value</b>	<b>Unit of measurement</b>	<b>Method</b>
Relative temperature index	80	°C	UL 746 B
<b>Electrical properties</b>			
<b>Property</b>	<b>Value</b>	<b>Unit of measurement</b>	<b>Method</b>
Surface resistivity	10 <sup>16</sup>	Ohm	following DIN IEC 60093



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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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