

Makrofol[®] LM228 2-4 160005

Description and Application Information

Makrofol[®] LM228 2-4 160005 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[®] LM228 2-4 160005 is available in the standard thicknesses of 300 microns and 500 microns.

Typical applications are automotive instrument panels and backlight displays.

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	acc. to ISO 4593, 23°C
Gloss		Digits	ISO 2813, Angle 60°, backprinted black
top surface	≥ 80		
back surface	< 6		
Roughness R3z		µm	acc. to ISO 4287/88, Lm12,5mm, lc 2,5mm, Average over 3-5 measurements
top surface	≤ 2		
back surface	< 11		

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Optical properties			
Property	Value	Unit of measurement	Method
Luminous transmittance		%	ISO 13468-2
300 µm, back surface	73		
300 µm, top surface	72		
500 µm, back surface	65		
500 µm, top surface	65		
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	39		
500 µm, top surface	51		
Mechanical properties			
Property	Value	Unit of measurement	Method
Stress at break		MPa	ISO 527-1,-3
machine direction	≥ 50		
transverse direction	≥ 50		
Strain at break		%	ISO 527-1,-3
machine direction	≥ 105		
transverse direction	≥ 100		
Tensile Modulus		MPa	ISO 527-1,-3
machine direction	≥ 1850		
transverse direction	≥ 1800		
Thermal properties			
Property	Value	Unit of measurement	Method
Relative temperature index	80	°C	UL 746 B
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

* These values provide general information and are not part of the product specification.

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Remark

(1) This is the typical value, would need more production runs to confirm.

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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