

**Product Description**

UV Stabilized, Polycarbonate.  
grades have good diffusivity appropriate for LED lighting.

Makropol DF

**General Considerations**

Resin ID (ISO 1043)	· PC	
Additive	· UV Resistant	· Diffuse
Processing	· Extrusion	
Color	· Haze	

Physical	Dry	50%RH	Unit	Method
Density	1200	--	kg/m <sup>3</sup>	ISO 1183
Mold Shrinkage				ISO 2577
Parallel	0,5	--	%	
Normal	0,7	--	%	
Water Absorption				ISO 62
Saturation (Water at 23°C)	--	0,3	%	
Equilibrium (23°C)	--	0,12	%	
Melt mass-flow rate 300 °C; 1.2 kg	20	--	g/10min	ISO 1133

Mechanical	Dry	50%RH	Unit	Method
Tensile Modulus (1mm/min)	--	2350	MPa	ISO 527-1,-2
Yield Stress (50 mm/min)	--	65	MPa	ISO 527-1,-2
Yield Strain (50 mm/min)	--	6,3	%	ISO 527-1,-2
Nominal Strain at Break				ISO 527-1,-2
Stress at Break (50 mm/min)	--	75	MPa	
Strain at Break (50 mm/min)	--	125	%	
Flexural Modulus (2 mm/min)	--	2350	MPa	ISO 178
Flexural Strength (2 mm/min)	--	96	MPa	ISO 178
Flexural Strain (2 mm/min)	--	7,2	%	ISO 178
Charpy Impact Strength				ISO 179-1eU
-30°C	--	Non-Break	kJ/m <sup>2</sup>	
23°C	--	Non-Break	kJ/m <sup>2</sup>	
Charpy Notched Impact Strength				ISO 179-1eA
-30°C	--	18	kJ/m <sup>2</sup>	
23°C	--	80	kJ/m <sup>2</sup>	
Izod Notched Impact Strength				ISO 180-A
-30°C	--	16	kJ/m <sup>2</sup>	
23°C	--	90	kJ/m <sup>2</sup>	

Thermal	Value	Unit	Method
Heat Deflection Temperature			ISO 75-1,-2
0,45 MPa	141	°C	
1,82 MPa	129	°C	
Thermal Conductivity	0,2	W/(m·K)	ISO 8302
Vicat Softening Temperature			ISO 306
50 N ; 50°C/h	149	°C	
50 N ; 120°C/h	150	°C	
Melting Point	280	°C	ISO 294
Coefficient of Linear Thermal Expansion			ISO 11359-1,-2
Parallel ; (23 to 55 °C)	0,65	10 <sup>-4</sup> /K	
Transverse ; (23 to 55 °C)	0,65	10 <sup>-4</sup> /K	

<b>Thermal</b>	<b>Value</b>	<b>Unit</b>	<b>Method</b>
Flammability			UL 94
0,75 mm	V-2	Class	
1,5 mm	V-2	Class	
2,8 mm	V-2	Class	
2,9 mm	HB	Class	
Glow Wire Test			IEC 60695-2-12
1,0 mm	850	°C	
1,5 mm	850	°C	
2,0 mm	850	°C	
3,0 mm	850	°C	

<b>Electrical</b>	<b>Dry</b>	<b>50%RH</b>	<b>Unit</b>	<b>Method</b>
Relative Permittivity				IEC 60250
100 Hz	--	3,1	--	
1 MHz	--	3,0	--	
Dissipation factor				IEC 60250
100 Hz	--	5	10 <sup>-4</sup>	
1 MHz	--	85	10 <sup>-4</sup>	
Surface Resistivity	--	1E+16	ohm	IEC 60093
Volume Resistivity	--	1E+14	ohm.m	IEC 60093
Electric Strength (1 mm)	--	33	kV/mm	IEC 60243-1

<b>Process</b>		<b>Unit</b>	<b>Method</b>
Molding Process Temperature	270 to 290	°C	--
Mold Temperature	70 to 90	°C	--
Drying	120/4	°C/Hours	--

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