



Makrolon® MD4810

Glass fiber (Normal fiber) reinforced grades / 10 % Glass fiber MVR (300 °C/1.2 kg) 15 cm³/10 min; available in opaque colors only; housings for mobile telephones reinforced

ISO Shortname PC-I-GF10

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
C Melt volume-flow rate	300 °C/ 1.2 kg	cm³/10 min	ISO 1133	15
C Molding shrinkage, parallel	60x60x2 mm	%	ISO 294-4	0.5
C Molding shrinkage, normal	60x60x2 mm	%	ISO 294-4	0.45
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	3450
Yield stress	5 mm/min	MPa	ISO 527-1,-2	50
Yield strain	5 mm/min	%	ISO 527-1,-2	4.4
C Stress at break	5 mm/min	MPa	ISO 527-1,-2	38
C Strain at break	5 mm/min	%	ISO 527-1,-2	13
Flexural modulus	2 mm/min	MPa	ISO 178	3400
Flexural strength	2 mm/min	MPa	ISO 178	89
Charpy notched impact strength	23 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 179/1eA	19C
Charpy notched impact strength	-30 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 179/1eA	8C
Izod notched impact strength	23 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	18C
Izod notched impact strength	-30 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	9C
C Puncture impact properties - maximum force	23 °C	N	ISO 6603-2	3600
C Puncture energy	23 °C	J	ISO 6603-2	22
Thermal properties				
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	132
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	141
C Vicat softening temperature	50 N; 50 °C/h	°C	ISO 306	141
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	143
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.4
C Coefficient of linear thermal expansion, normal	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.7
Electrical properties (23 °C/50 % r. h.)				
C Volume resistivity		Ohm·m	IEC 60093	1E16
C Surface resistivity		Ohm	IEC 60093	1E16
Other properties (23 °C)				
C Density		kg/m³	ISO 1183-1	1250
Processing conditions for test specimens				
C Injection molding - Melt temperature		°C	ISO 294	280
C Injection molding - Mold temperature		°C	ISO 294	80
C Injection molding - Injection velocity		mm/s	ISO 294	200





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Property	Test Condition	Unit	Standard	typical Value
Recommended processing and drying conditions				
Melt temperatures		°C	-	280 - 320
Standard Melt temperature		°C	-	300
Barrel Temperatures - Rear		°C	-	250 - 270
Barrel Temperatures - Middle		°C	-	270 - 290
Barrel Temperatures - Front		°C	-	285 - 305
Barrel Temperatures - Nozzle		°C	-	270 - 305
Mold Temperatures		°C	-	70 - 110
Hold Pressure (% of injection pressure)		%	-	50 - 75
Plastic Back Pressure (specific)		bar	-	100 - 200
Peripheral Screw Speed		m/s	-	0.05 - 0.2
Shot-to-Cylinder Size		%	-	30 - 70
Dry Air Drying Temperature		°C	-	120
Dry Air Drying Time		h	-	4
Moisture Content max. (%)		%	-	<= 0.02
Vent Depth		mm	-	0.025 - 0.075

C These property characteristics are taken from the CAMPUS plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350.

Impact properties: N = non-break, P = partial break, C = complete break

