



Makrolon® M420 GF

Preliminary Datasheet /

polycarbonate; MVR (300 °C/1.2 kg) 9.0 cm³/10 min; low viscosity; 20 % glass fiber reinforced; biocompatible according to many ISO 10993-1 test requirements; injection molding; available in opaque colors only; suitable for medical devices

ISO Shortname

PC-GF20

Property	Test Condition	Unit	Standard	typical Value
Rheological properties				
Melt volume-flow rate	300 °C/ 1.2 kg	cm³/10 min	ISO 1133	9
Melt viscosity	1000 s ⁻¹ / 300 °C	Pa·s	b.o. ISO 11443-A	350
C Molding shrinkage, parallel	60x60x2 mm	%	ISO 294-4	0.3
C Molding shrinkage, normal	60x60x2 mm	%	ISO 294-4	0.5
Mechanical properties (23 °C/50 % r. h.)				
C Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	5800
Yield stress	5 mm/min	MPa	ISO 527-1,-2	105
Yield strain	5 mm/min	%	ISO 527-1,-2	3.0
Nominal strain at break	5 mm/min	%	ISO 527-1,-2	3.3
Flexural modulus	2 mm/min	MPa	ISO 178	6000
Flexural strength	2 mm/min	MPa	ISO 178	172
Izod notched impact strength	23 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	12
Izod notched impact strength	-30 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	11
Thermal properties				
C Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	138
C Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	143
Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	148
C Coefficient of linear thermal expansion, parallel	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.3
C Coefficient of linear thermal expansion, normal	23 to 55 °C	10 ⁻⁴ /K	ISO 11359-1,-2	0.4
Other properties (23 °C)				
C Water absorption (saturation value)	Water at 23 °C	%	ISO 62	0.28
C Water absorption (equilibrium value)	23 °C; 50 % r. h.	%	ISO 62	0.11
C Density		kg/m³	ISO 1183-1	1340
Recommended processing and drying conditions				
Standard Melt temperature		°C	-	300
Mold Temperatures		°C	-	100
Dry Air Drying Temperature		°C	-	120
Dry Air Drying Time		h	-	4

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

