Makrolon® M820 GF

Preliminary Datasheet /

polycarbonate; MVR (300 °C/1.2 kg) 3.5 cm³/10 min; high 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	3.5
	Melt viscosity	1000 s^{-1}/ 300 °C	Pa·s	b.o. ISO 11443-A	660
C	Molding shrinkage, parallel	60x60x2 mm	%	ISO 294-4	0.3
C	Molding shrinkage, normal	60x60x2 mm	%	ISO 294-4	0.55
Mechanical properties (23 °C/50 % r. h.)					
C	Tensile modulus	1 mm/min	MPa	ISO 527-1,-2	5600
C	Stress at break	5 mm/min	MPa	ISO 527-1,-2	100
C	Strain at break	5 mm/min	%	ISO 527-1,-2	4.0
	Flexural modulus	2 mm/min	MPa	ISO 178	5800
	Flexural strength	2 mm/min	MPa	ISO 178	168
	Izod notched impact strength	23 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	16
	Izod notched impact strength	-30 °C/ 3 mm	kJ/m²	ISO 21305/based on ISO 180/A	14
Thermal properties					
C	Temperature of deflection under load	1.80 MPa	°C	ISO 75-1,-2	140
C	Temperature of deflection under load	0.45 MPa	°C	ISO 75-1,-2	146
	Vicat softening temperature	50 N; 120 °C/h	°C	ISO 306	150
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	-	310
	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