

Makrolon® M410 GF

 Covestro - Polycarbonates - *Polycarbonate*
General Information
Product Description

 polycarbonate; MVR (300 °C/1.2 kg) 12 cm³/10 min; low viscosity; 10 % glass fiber reinforced; biocompatible according to many ISO 10993-1 test requirements; injection molding; available in opaque colors only; suitable for medical devices

General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Europe • North America • Asia Pacific • Latin America
Filler / Reinforcement	• Glass Fiber, 10% Filler by Weight
Features	• Biocompatible • Low Viscosity
Uses	• Medical Devices • Medical/Healthcare Applications
Agency Ratings	• ISO 10993-1 • USP Class VI
RoHS Compliance	• RoHS Compliant
Appearance	• Colors Available • Opaque
Processing Method	• Injection Molding
ISO Designation	• PC-GF10

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.27	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	12	cm ³ /10min	ISO 1133
Molding Shrinkage ²			ISO 294-4
Across Flow : 0.0787 in	0.50	%	
Flow : 0.0787 in	0.50	%	
Water Absorption (Saturation, 73°F)	0.30	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.12	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	551000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	11600	psi	ISO 527-2/5
Tensile Strain (Yield, 73°F)	3.8	%	ISO 527-2/5
Nominal Tensile Strain at Break (73°F)	4.9	%	ISO 527-2/5
Flexural Modulus ³ (73°F)	566000	psi	ISO 178
Flexural Stress ³ (73°F)	19400	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength ⁴			ISO 180/A
-22°F	2.9	ft·lb/in ²	
73°F	3.3	ft·lb/in ²	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	288	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	275	°F	ISO 75-2/A
Vicat Softening Temperature	297	°F	ISO 306/B120
CLTE - Flow (73 to 131°F)	2.2E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	2.2E-5	in/in/°F	ISO 11359-2
Fill Analysis	Nominal Value	Unit	Test Method
Melt Viscosity (572°F, 1000 sec ⁻¹)	320	Pa·s	ISO 11443-A

Processing Information
Injection
Nominal Value Unit


Drying Temperature - Dry Air Dryer	248 °F
Drying Time - Dry Air Dryer	4.0 hr
Processing (Melt) Temp	572 °F
Mold Temperature	212 °F

Notes

¹ Typical properties: these are not to be construed as specifications.

² 60x60x2mm

³ 0.079 in/min

⁴ 3.0 mm

