

Makrolon® GF9415

Covestro - Polycarbonates - *Polycarbonate*

General Information

Product Description

Polycarbonate; MVR (300 °C/1.2 kg) 6.0 cm³/10 min; 10 % glass fiber reinforced; flame retardant; UL 94V-0/1.5 mm and 5VA/3.0 mm; high viscosity; easy release; available as opac colors only

General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Europe • North America • Asia Pacific • Latin America
Filler / Reinforcement	• Glass Fiber, 10% Filler by Weight
Additive	• Flame Retardant
Resin ID (ISO 1043)	• PC-GF10 FR

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.27	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	4.0 to 7.6	cm³/10min	ISO 1133
Molding Shrinkage ²			ISO 294-4
Across Flow : 0.0787 in	0.45	%	
Flow : 0.0787 in	0.65	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	551000	psi	ISO 527-1/1
Tensile Stress (Yield)	8990	psi	ISO 527-2/5
Tensile Stress (Break)	6530	psi	ISO 527-2/5
Tensile Strain (Yield)	4.8	%	ISO 527-2/5
Tensile Strain (Break)	15	%	ISO 527-2/5
Nominal Tensile Strain at Break	10	%	ISO 527-2/5
Flexural Modulus ³	522000	psi	ISO 178
Flexural Stress ³			ISO 178
3.5% Strain	13800	psi	
--	15200	psi	
Flexural Strain at Flexural Strength ⁴	5.8	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength			ISO 179/1eU
-4°F, Complete Break	62	ft·lb/in²	
73°F, Complete Break	71	ft·lb/in²	
Notched Izod Impact Strength			ISO 180/A
-22°F, Complete Break	2.9	ft·lb/in²	
73°F, Complete Break	4.8	ft·lb/in²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-22°F	11.1	ft·lb	
73°F	18.4	ft·lb	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-22°F	832	lbf	
73°F	877	lbf	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	293	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	279	°F	ISO 75-2/A
Vicat Softening Temperature	293	°F	ISO 306/B50



RTI Elec (0.06 in)	257 °F	UL 746B
RTI Imp (0.06 in)	257 °F	UL 746B
Heat Resistance - Ball Pressure Test	275 °F	IEC 60695-10-2
Electrical	Nominal Value Unit	Test Method
Surface Resistivity	1.0E+15 ohms	IEC 62631-3-2
Volume Resistivity	1.0E+15 ohms·m	IEC 62631-3-1
Electric Strength (0.0394 in)	940 V/mil	IEC 60243-1
Comparative Tracking Index (Solution A)	175 V	IEC 60112
Flammability	Nominal Value Unit	Test Method
Flame Rating		UL 94
0.030 in	V-2	
0.06 in	V-0	
0.12 in	5VA	
Glow Wire Flammability Index		IEC 60695-2-12
0.030 in	1760 °F	
0.06 in	1760 °F	
0.12 in	1760 °F	
Glow Wire Ignition Temperature		IEC 60695-2-13
0.030 in	1520 °F	
0.06 in	1560 °F	
0.12 in	1560 °F	
Oxygen Index ⁵	35 %	ISO 4589-2
Fill Analysis	Nominal Value Unit	Test Method
Melt Viscosity (572°F, 1000 sec^-1)	330 Pa·s	ISO 11443-A
Additional Information	Nominal Value Unit	Test Method
Filler Content - Glass Fiber	10 %	ISO 3451-1A
Test Specimen Production		ISO 294
Inj. Molding - Injection Velocity	472 in/min	
Inj. Molding - Melt Temperature	572 °F	
Inj. Molding - Mold Temperature	230 °F	

Processing Information

Injection	Nominal Value Unit
Drying Temperature - Dry Air Dryer	248 °F
Drying Time - Dry Air Dryer	2.0 to 3.0 hr
Melt Temperature (Optimum)	572 °F
Mold Temperature	230 °F

Notes

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

² 60×60×2 mm

³ 0.079 in/min

⁴ 2.0 mm/min

⁵ Procedure A

