



Makrolon 9415

Glass fiber reinforced grades / 10 % Glass fiber reinforced

Global grade; MFR 7 g/10 min; 10% Glass fiber reinforced; Flame retardant; UL 94 V-0/1.5 mm and 5VA/3.0 mm; High viscosity; Easy release; Injection molding; Available in opaque colors only

ISO Shortname

ISO 7391-PC,GFR,(,.)-09-9,GF10

Property	Test Condition	Unit	Standard	Value
Rheological properties				
Melt flow rate	300 °C / 1.2 kg	g/(10 min)	ASTM D 1238	7.0
Mold shrinkage, flow/cross to flow		in/in	ASTM D 955	0.004-0.006
Mechanical properties (23 °C/50 % r.h.)				
Tensile modulus	1 mm/min	lb/in ²	ASTM D 638	550000
Tensile stress at yield	-	lb/in ²	ASTM D 638	9400
Tensile elongation at yield	-	%	ASTM D 638	4.5
Tensile elongation at break	-	%	ASTM D 638	15
Tensile stress at break	-	lb/in ²	ASTM D 638	7200
Izod notched impact strength	73 °F, 0.125 in	ft-lb/in	ASTM D 256	2.0
Flexural modulus	-	lb/in ²	ASTM D 790	500000
Flexural stress at 5 % strain		lb/in ²	ASTM D 790	15000
Rockwell hardness		M Scale	ASTM D 785	75
Thermal properties				
Deflection temperature under load, Unannealed	264 psi; 0.250 in	°F	ASTM D 648	284
Deflection temperature under load, Unannealed	66 psi; 0.250 in	°F	ASTM D 648	295
Vicat softening temperature	50 N, 50 °C/h	°F	ASTM D 1525	293
Coefficient of linear thermal expansion, flow/cross-flow		in/in/°F	ASTM D 696	2.1E-05
UL94 Flame Class	Thickness tested: 1.5 mm	Class	UL 94	V-0
UL94 Flame Class	Thickness tested: 3.0 mm	Class	UL 94	5VA
UL94 Flame Class	Thickness tested: 6.0 mm	Class	UL 94	V-0/5VA
Oxygen index		%	ASTM D 2863	37
Thermal conductivity		Btu*in/(h*ftz*°F)	ASTM C 177	1.53
Relative temperature index, mechanical with impact	Thickness tested: 1.5 mm	°C	UL 746 B	125
Relative temperature index, mechanical without impact	Thickness tested: 1.5 mm	°C	UL 746 B	125
Electrical properties (23 °C/50 % r.h.)				
Dissipation factor, Tinfoil electrodes	60 Hz	-	ASTM D 150	0.0008
Dissipation factor, Tinfoil electrodes	1 MHz	-	ASTM D 150	0.008
Dielectric constant, Tinfoil electrodes	60 Hz	-	ASTM D 150	3.2
Dielectric constant, Tinfoil electrodes	1 MHz	-	ASTM D 150	3.0
Volume resistivity, Tinfoil electrodes		Ohm-m	ASTM D 257	1.0 E+16
Surface resistivity		Ohm	ASTM D 257	1.0 E+16
Dielectric strength	Short time under oil at 73 °F; 0.162 in	V/mil	ASTM D 149	880
Other properties (23 °C)				
Water absorption	73 °F; immersion to saturation	%	ASTM D 570	0.3
Water absorption	73 °F; immersion 24 h	%	ASTM D 570	0.12
Density		lb/in ³	ASTM D 792	0.046
Specific volume		in ³ /lb	ASTM D 792	21.8
Specific gravity		-	ASTM D 792	1.27

