

Makrolon® LED5102

 Covestro - Polycarbonates - *Polycarbonate*
General Information
Product Description

 MVR (300 °C/1.2 kg) 34 cm³/10 min; low viscosity; UV stabilized; easy release; high optical transmittance; LED Lighting, optics and lenses; injection molding - melt temperature 280 - 320 °C

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East	• Europe	• North America
	• Asia Pacific	• Latin America	
Additive	• UV Stabilizer		
Features	• Good Mold Release	• Low Viscosity	• UV Stabilized
Uses	• LEDs	• Lighting Applications	
	• Lenses	• Optical Applications	
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.19	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	34	cm ³ /10min	ISO 1133
Molding Shrinkage ²			ISO 294-4
Across Flow : 0.0787 in	0.70	%	
Flow : 0.0787 in	0.65	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (73°F)	341000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	9140	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	8700	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	6.0	%	ISO 527-2/50
Tensile Strain (Break, 73°F)	120	%	ISO 527-2/50
Nominal Tensile Strain at Break (73°F)	> 50	%	ISO 527-2/50
Flexural Modulus ³ (73°F)	341000	psi	ISO 178
Flexural Stress ³			ISO 178
73°F	14100	psi	
3.5% Strain, 73°F	10600	psi	
Flexural Strain at Flexural Strength ⁴ (73°F)	7.1	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact Strength ⁵			ISO 180
-22°F, Complete Break	5.7	ft·lb/in ²	
73°F, Partial Break	26	ft·lb/in ²	
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	277	°F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	253	°F	ISO 75-2/A
Vicat Softening Temperature			
--	293	°F	ISO 306/B120
--	289	°F	ISO 306/B50
CLTE - Flow (73 to 131°F)	3.6E-5	in/in/°F	ISO 11359-2
CLTE - Transverse (73 to 131°F)	3.6E-5	in/in/°F	ISO 11359-2
Optical	Nominal Value	Unit	Test Method
Refractive Index ⁶	1.584		ISO 489



Light Transmittance		ISO 13468-2
78.74 mil	90.0 %	
157.5 mil	89.0 %	
Haze (118.1 mil)	< 0.500 %	ISO 14782

Processing Information

Injection	Nominal Value	Unit
Drying Temperature - Dry Air Dryer	248	°F
Drying Time - Dry Air Dryer	4.0	hr
Suggested Max Moisture	< 0.020	%
Suggested Shot Size	30 to 70	%
Rear Temperature	446 to 464	°F
Middle Temperature	482 to 500	°F
Front Temperature	500 to 518	°F
Nozzle Temperature	500 to 518	°F
Processing (Melt) Temp	482 to 572	°F
Mold Temperature	158 to 230	°F
Back Pressure	1450 to 2900	psi
Vent Depth	9.8E-4 to 3.0E-3	in

Injection Notes

Standard Melt Temperature: 270°C
Peripheral Screw Speed: 0.05 - 0.2 m/s
Hold Pressure (% of Injection Pressure): 50 - 75%

Notes

- ¹ Typical properties: these are not to be construed as specifications.
- ² 60x60x2mm, 500 bar
- ³ 0.079 in/min
- ⁴ 2.0 mm/min
- ⁵ 3.0 mm
- ⁶ Method A

