

Makrolon® OD2015

 Covestro - Polycarbonates - *Polycarbonate*
General Information
Product Description

 MVR (250°C/2.16 kg) 17 cm³/10 min; optical storage media; suitable for all formats; high purity; injection molding - melt temperature 300 - 350°C; available in color code 000000 only

General

Material Status	• Commercial: Active
Availability	• Africa & Middle East • Europe • North America • Asia Pacific • Latin America
Features	• High Purity
Uses	• Optical Data Storage
RoHS Compliance	• RoHS Compliant
Processing Method	• Injection Molding
ISO Designation	• ISO 7391-PC,D,(,)-24-9

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.19	g/cm ³	ISO 1183
Apparent (Bulk) Density ²	0.66	g/cm ³	ISO 60
Melt Volume-Flow Rate (MVR) (250°C/2.16 kg)	17	cm ³ /10min	ISO 1133
Molding Shrinkage ³			ISO 294-4
Across Flow : 536°F, 0.0787 in	0.60	%	
Flow : 0.0787 in	0.60	%	
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)	341000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	9140	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	7980	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	5.9	%	ISO 527-2/50
Tensile Strain (Break, 73°F)	100	%	ISO 527-2/50
Nominal Tensile Strain at Break (73°F)	> 50	%	ISO 527-2/50
Flexural Modulus ⁴ (73°F)	341000	psi	ISO 178
Flexural Stress ⁴			ISO 178
73°F	14100	psi	
3.5% Strain, 73°F	10400	psi	
Flexural Strain at Flexural Strength ⁵ (73°F)	7.1	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁶			ISO 179/1eA
-22°F, Complete Break	5.7	ft·lb/in ²	
73°F, Partial Break	24	ft·lb/in ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-76°F	No Break		
-22°F	No Break		
73°F	No Break		
Notched Izod Impact Strength ⁶			ISO 180/A
-22°F, Complete Break	5.7	ft·lb/in ²	
73°F, Partial Break	24	ft·lb/in ²	



Multi-Axial Instrumented Impact Energy		ISO 6603-2
-22°F	40.6 ft·lb	
73°F	36.9 ft·lb	
Multi-Axial Instrumented Impact Peak Force		ISO 6603-2
-22°F	1280 lbf	
73°F	1060 lbf	
Hardness	Nominal Value Unit	Test Method
Ball Indentation Hardness	16700 psi	ISO 2039-1
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	280 °F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	255 °F	ISO 75-2/A
Glass Transition Temperature ⁷	293 °F	ISO 11357-2
Vicat Softening Temperature		
--	295 °F	ISO 306/B120
--	293 °F	ISO 306/B50
Ball Pressure Test (277°F)	Pass	IEC 60695-10-2
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
Thermal Conductivity ⁸ (73°F)	1.4 Btu·in/hr/ft ² /°F	ISO 8302
RTI Elec (0.028 in)	257 °F	UL 746B
RTI Imp (0.028 in)	239 °F	UL 746B
RTI Str (0.028 in)	257 °F	UL 746B
Electrical	Nominal Value Unit	Test Method
Comparative Tracking Index		IEC 60112
Solution A	225 V	
Solution B	125 V	
Flammability	Nominal Value Unit	Test Method
Flame Rating (0.028 in, NC)	V-2	UL 94
Oxygen Index ⁹	28 %	ISO 4589-2
Flash Ignition Temperature	896 °F	ASTM D1929
Self Ignition Temperature	1022 °F	ASTM D1929
Optical	Nominal Value Unit	Test Method
Refractive Index ¹⁰	1.584	ISO 489
Light Transmittance		ISO 13468-2
39.37 mil, 550 nm	> 89.0 %	
39.37 mil, 800 nm	> 90.0 %	
Haze (118.1 mil)	< 0.500 %	ISO 14782

Processing Information

	Nominal Value	Unit
Injection		
Drying Temperature - Dry Air Dryer	248	°F
Drying Time - Dry Air Dryer	2.0 to 3.0	hr
Suggested Max Moisture	< 0.020	%
Suggested Shot Size	30 to 70	%
Rear Temperature	482 to 500	°F
Middle Temperature	518 to 536	°F
Front Temperature	536 to 554	°F
Nozzle Temperature	554 to 572	°F
Processing (Melt) Temp	536 to 608	°F
Mold Temperature	176 to 248	°F
Back Pressure	725 to 2180	psi
Vent Depth	9.8E-4 to 3.0E-3	in
Injection Notes		
Peripheral Screw Speed: 0.05 - 0.2 m/s		
Standard Melt Temperature: 300°C		
Hold Pressure (% of Injection Pressure): 50 - 75%		

Notes

Properties: these are not to be construed as specifications.

n, 500 bar

n

⁵ 2.0 mm/min

⁶ 3.0 mm

⁷ 10°C/min

⁸ Across Flow

⁹ Procedure A

¹⁰ Method A

