

Makrolon® Rx2435

 Covestro - Polycarbonates - *Polycarbonate*
General Information
Product Description

MVR (300 °C/1.2 kg) 23 cm³/10 min; medical devices; suitable for sterilization with high-energy radiation; biocompatible according to many ISO 10993-1 test requirements; low viscosity; easy release; injection molding - melt temperature 280 - 320 °C; available in color code 451118 only; transparent parts for medical devices

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Biocompatible • Good Mold Release	• Low Viscosity • Radiation Sterilizable	
Uses	• Medical Devices	• Medical/Healthcare Applications	
Agency Ratings	• ISO 10993-1	• USP Class VI	
RoHS Compliance	• RoHS Compliant		
Appearance	• Clear/Transparent		
Processing Method	• Injection Molding		
ISO Designation	• ISO 7391-PC,MR,(,)-18-9		

Properties ¹

Physical	Nominal Value	Unit	Test Method
Density (73°F)	1.20	g/cm ³	ISO 1183
Apparent (Bulk) Density ²	0.66	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	20	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	23	cm ³ /10min	ISO 1133
Molding Shrinkage			
Across Flow	0.50 to 0.70	%	ISO 2577
Flow	0.50 to 0.70	%	ISO 2577
Across Flow : 0.0787 in ³	0.65	%	ISO 294-4
Flow : 0.0787 in ³	0.65	%	ISO 294-4
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)	348000	psi	ISO 527-1/1
Tensile Stress (Yield, 73°F)	9720	psi	ISO 527-2/50
Tensile Stress (Break, 73°F)	10200	psi	ISO 527-2/50
Tensile Strain (Yield, 73°F)	6.1	%	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 ⁴ (73°F)	348000	psi	ISO 178
Flexural Stress ⁴			ISO 178
73°F	14500	psi	
3.5% Strain, 73°F	10700	psi	
Flexural Strain at Flexural Strength ⁵ (73°F)	7.0	%	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁶			ISO 7391
-22°F, Complete Break	5.7	ft·lb/in ²	
73°F, Partial Break	36	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 ⁷		ISO 7391
-22°F, Complete Break	5.7 ft·lb/in ²	
73°F, Partial Break	29 ft·lb/in ²	
Multi-Axial Instrumented Impact Energy		ISO 6603-2
-22°F	47.9 ft·lb	
73°F	40.6 ft·lb	
Multi-Axial Instrumented Impact Peak Force		ISO 6603-2
-22°F	1350 lbf	
73°F	1150 lbf	
Hardness	Nominal Value Unit	Test Method
Ball Indentation Hardness	17100 psi	ISO 2039-1
Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	270 °F	ISO 75-2/B
Deflection Temperature Under Load (264 psi, Unannealed)	248 °F	ISO 75-2/A
Vicat Softening Temperature		
--	284 °F	ISO 306/B120
--	282 °F	ISO 306/B50
Ball Pressure Test (270°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
Flammability	Nominal Value Unit	Test Method
Flash Ignition Temperature	896 °F	ASTM D1929
Self Ignition Temperature	1022 °F	ASTM D1929

Processing Information

Injection	Nominal Value Unit
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

Standard Melt Temperature: 300°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 Pellets

³ 60x60x2mm, 500 bar

⁴ 0.079 in/min

⁵ 2.0 mm/min

⁶ Based on ISO 179-1eA, 3 mm

⁷ Based on ISO 180-A, 3 mm

⁸ Across Flow

