

Makrolon® Rx1805

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 6.0 cm³/10 min; medical devices; high lipid resistance; suitable for sterilization with high-energy radiation; biocompatible according to many ISO 10993-1 test requirements; high viscosity; injection molding - melt temperature 280 - 320 °C; transparent parts for medical devices

General Information	
Features	Biocompatible
	High Viscosity
	Radiation Sterilizable
Uses	Medical Devices
	Medical/Healthcare Applications
Agency Ratings	ISO 10993-Part 1
RoHS Compliance	RoHS Compliant
Appearance	Clear/Transparent
Processing Method	Injection Molding
Multi-Point Data	Specific Volume vs Temperature (ISO 11403-2)
	Viscosity vs. Shear Rate (ISO 11403-2)

Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.20	g/cm ³	ISO 1183
Apparent Density ¹	0.66	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.5	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	6.00	cm ³ /10min	ISO 1133
Molding Shrinkage			
Across Flow	0.60 to 0.80	%	ISO 2577
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Across Flow : 2.00 mm ²	0.70	%	ISO 294-4
Flow : 2.00 mm ³	0.70	%	ISO 294-4
Water Absorption			
Saturation, 23°C	0.30	%	ISO 62
Equilibrium, 23°C, 50% RH	0.12	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	114	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2400	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50

Yield, 23°C	67.0	MPa	
Break, 23°C	75.0	MPa	
Tensile Strain			ISO 527-2/50
Yield, 23°C	6.3	%	
Break, 23°C	130	%	
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Flexural Modulus ⁴ (23°C)	2400	MPa	ISO 178
Flexural Stress ⁵			ISO 178
3.5% Strain, 23°C	73.0	MPa	
23°C	98.0	MPa	
Flexural Strain at Flexural Strength ⁶ (23°C)	7.1	%	ISO 178
Flash Ignition Temperature	480	°C	ASTM D1929
Self Ignition Temperature	550	°C	ASTM D1929
ISO Shortname	ISO 7391-PC,M,(,)-09-9		
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷			ISO 7391
-30°C, Complete Break	16	kJ/m ²	
23°C, Partial Break	80	kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-60°C	No Break		
-30°C	No Break		
23°C	No Break		
Notched Izod Impact Strength ⁸			ISO 7391
-30°C, Complete Break	15	kJ/m ²	
23°C, Partial Break	70	kJ/m ²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	70.0	J	
23°C	65.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	6600	N	
23°C	5700	N	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	138	°C	ISO 75-2/B
1.8 MPa, Unannealed	126	°C	ISO 75-2/A
Glass Transition Temperature ⁹	145	°C	ISO 11357-2
Vicat Softening Temperature			
--	144	°C	ISO 306/B50
--	145	°C	ISO 306/B120
Ball Pressure Test (135°C)	Pass		IEC 60695-10-2
CLTE			ISO 11359-2

Flow : 23 to 55°C	6.5E-5	cm/cm/°C	
Transverse : 23 to 55°C	6.5E-5	cm/cm/°C	
Thermal Conductivity ¹⁰ (23°C)	0.20	W/m/K	ISO 8302
Flammability	Nominal Value	Unit	Test Method
Oxygen Index ¹¹	27	%	ISO 4589-2

NOTE

- | | |
|-----|----------------------------|
| 1. | Pellets |
| 2. | 60x60x2 mm, 500 bar |
| 3. | 60x60x2 mm, 500 bar |
| 4. | 2.0 mm/min |
| 5. | 2.0 mm/min |
| 6. | 2 mm/min |
| 7. | Based on ISO 179-1eA, 3 mm |
| 8. | Based on ISO 180-A, 3 mm |
| 9. | 10°C/min |
| 10. | Cross-flow |
| 11. | Procedure A |

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