

Makrolon® 2408

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 19 cm³/10 min; medical devices; suitable for ETO and steam sterilization at 121 °C; biocompatible according to many ISO 10993-1 test requirements; low viscosity; injection molding - melt temperature 280 - 320 °C; available in color code 000000 only

General Information			
Features	Biocompatible		
	Ethylene Oxide Sterilizable		
	Low Viscosity		
	Steam Sterilizable		
Uses	Medical Devices		
	Medical/Healthcare Applications		
Agency Ratings	ISO 10993-Part 1		
RoHS Compliance	RoHS Compliant		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.20	g/cm³	ISO 1183
Apparent Density ¹	0.66	g/cm³	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)	19.0	cm³/10min	ISO 1133
Molding Shrinkage			
Across Flow	0.50 to 0.70	%	ISO 2577
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Across Flow : 2.00 mm ²	0.65	%	ISO 294-4
Flow : 2.00 mm ³	0.65	%	ISO 294-4
Water Absorption			ISO 62
Saturation, 23°C	0.30	%	
Equilibrium, 23°C, 50% RH	0.12	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	113	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2350	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield, 23°C	65.0	MPa	
Break, 23°C	70.0	MPa	
Tensile Strain			ISO 527-2/50

Yield, 23°C	6.3	%	
Break, 23°C	120	%	
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Tensile Creep Modulus			ISO 899-1
1 hr	2200	MPa	
1000 hr	1900	MPa	
Flexural Modulus ⁴ (23°C)	2350	MPa	ISO 178
Flexural Stress ⁵			ISO 178
3.5% Strain, 23°C	72.0	MPa	
23°C	96.0	MPa	
Flexural Strain at Flexural Strength ⁶ (23°C)	7.0	%	ISO 178
Flash Ignition Temperature	480	°C	ASTM D1929
Self Ignition Temperature	550	°C	ASTM D1929
ISO Shortname	ISO 7391-PC,M _i (,,)-18-9		
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷			ISO 7391
-30°C, Complete Break	14	kJ/m ²	
23°C, Partial Break	65	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	65	kJ/m ²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	65.0	J	
23°C	55.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	6000	N	
23°C	5100	N	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	139	°C	ISO 75-2/B
1.8 MPa, Unannealed	127	°C	ISO 75-2/A
Glass Transition Temperature ⁹	147	°C	ISO 11357-2
Vicat Softening Temperature			
--	147	°C	ISO 306/B50
--	148	°C	ISO 306/B120
Ball Pressure Test (138°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
Optical	Nominal Value	Unit	Test Method
Refractive Index ¹¹	1.586		ISO 489
Transmittance			ISO 13468-2
1000 μm	89.0	%	
2000 μm	89.0	%	
3000 μm	88.0	%	
4000 μm	87.0	%	
Haze (3000 μm)	< 0.80	%	ISO 14782

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. Method A

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