

Makrolon® 2258

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 34 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; easy release; injection molding - melt temperature 280 - 320 °C; available in transparent and opaque colors

General Information			
UL YellowCard	E41613-233135		
Features	Biocompatible		
	Ethylene Oxide Sterilizable		
	Good Mold Release		
	Low Viscosity		
	Steam Sterilizable		
Uses	Medical Devices		
	Medical/Healthcare Applications		
Agency Ratings	ISO 10993-Part 1		
RoHS Compliance	RoHS Compliant		
Appearance	Clear/Transparent		
	Colors Available		
	Opaque		
Processing Method	Injection Molding		
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)	37	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	34.0	cm ³ /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			
Saturation, 23°C	0.30	%	ISO 62
Equilibrium, 23°C, 50% RH	0.12	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	115	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	65.0	MPa	
Break, 23°C	60.0	MPa	
Tensile Strain			ISO 527-2/50
Yield, 23°C	6.0	%	
Break, 23°C	130	%	
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Tensile Creep Modulus			ISO 899-1
1 hr	2100	MPa	
1000 hr	1700	MPa	
Flexural Modulus ⁴ (23°C)	2350	MPa	ISO 178
Flexural Stress ⁵			ISO 178
3.5% Strain, 23°C	73.0	MPa	
23°C	97.0	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,MR,(,,)-24-9		
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷			ISO 7391
-30°C, Complete Break	12	kJ/m ²	
23°C, Partial Break	55	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	12	kJ/m ²	
23°C, Partial Break	55	kJ/m ²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	60.0	J	
23°C	55.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	5900	N	
23°C	4900	N	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	137	°C	ISO 75-2/B
1.8 MPa, Unannealed	124	°C	ISO 75-2/A

Glass Transition Temperature ⁹	145	°C	ISO 11357-2
Vicat Softening Temperature			
--	145	°C	ISO 306/B50
--	146	°C	ISO 306/B120
Ball Pressure Test (136°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
RTI Elec (1.50 mm)	125	°C	UL 746
RTI Imp (1.50 mm)	115	°C	UL 746
RTI Str (1.50 mm)	125	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+16	ohms·cm	IEC 60093
Electric Strength (23°C, 1.00 mm)	34	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
23°C, 100 Hz	3.10		
23°C, 1 MHz	3.00		
Dissipation Factor			IEC 60250
23°C, 100 Hz	5.0E-4		
23°C, 1 MHz	9.0E-3		
Comparative Tracking Index (Solution A)	250	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
2.90 mm, CL	HB		
0.750 mm, CL	V-2		
Glow Wire Ignition Temperature			IEC 60695-2-13
0.750 mm	875	°C	
1.50 mm	875	°C	
3.00 mm	900	°C	
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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