Makrolon® 2458

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; easy release; injection molding - melt temperature 280 - 320 °C; available in transparent and opaque colors

General Information	
UL YellowCard	E41613-233136
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
Processing Method	Injection Molding
Multi-Point Data	Creep Modulus vs. Time (ISO 11403-1) Isochronous Stress vs. Strain (ISO 11403-1) Isothermal Stress vs. Strain (ISO 11403-1) Secant Modulus vs. Strain (ISO 11403-1) Shear Modulus vs. Temperature (ISO 11403-1) 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/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
Flow	0.50 to 0.70	%	ISO 2577

Across Flow : 2.00 mm [2]	0.70	%	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	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	70.0	MPa	
Tensile Strain			ISO 527-2/50
Yield, 23°C	6.1	%	
Break, 23°C	130	%	
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	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,(,,)-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	125	°C	ISO 75-2/A
Glass Transition Temperature [9]	146	°C	ISO 11357-2
Vicat Softening Temperature			
--	145	°C	ISO 306/B50
--	146	°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
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**
Oxygen Index [11]	28	%	ISO 4589-2
Optical	**Nominal Value**	**Unit**	**Test Method**
Refractive Index [12]	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.	Procedure A
12.	Method A

Recommended distributors for this material

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