

CALIBRE™ 2061-3

Polycarbonate Resin

Overview

CALIBRE™ 2061-3 Polycarbonate resin is used in medical applications involving steam or ethylene oxide sterilization - though suitability for use in these applications is dependent upon autoclave cycle times and temperatures. CALIBRE 2061-3 provides exceptional clarity, heat resistance, impact strength, and processability, and has low contamination levels. CALIBRE 2061 has been evaluated by certain biocompatibility tests based on ISO 10993-1 (Biological Evaluation of Medical Devices) and is suitable for use in approved medical applications. This product contains mold release.

Main Characteristics

- Tested under ISO 10993

Applications

- Medical Applications

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.20 g/cm ³	1.20 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	3.5 g/10 min	3.5 g/10 min	ASTM D1238 ISO 1133
Molding Shrinkage - Flow	5.0E-3 to 7.0E-3 in/in	0.50 to 0.70 %	ASTM D955 ISO 294-4
Water Absorption			ISO 62
Saturation, 73°F (23°C)	0.32 %	0.32 %	
Equilibrium, 73°F (23°C), 50% RH	0.12 %	0.12 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ¹	360000 psi	2480 MPa	ASTM D638
--	334000 psi	2300 MPa	ISO 527-1/1
Tensile Strength			
Yield ²	8700 psi	60.0 MPa	ASTM D638
Yield	8700 psi	60.0 MPa	ISO 527-2/50
Break ²	10400 psi	72.0 MPa	ASTM D638
Break	10400 psi	72.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ²	6.0 %	6.0 %	ASTM D638
Break ²	140 %	140 %	ASTM D638
Break	150 %	150 %	ISO 527-2/50
Flexural Modulus			
--	350000 psi	2410 MPa	ASTM D790
-- ^{3,4}	348000 psi	2400 MPa	ISO 178
Flexural Strength			
--	14000 psi	96.5 MPa	ASTM D790
-- ^{3,4}	14100 psi	97.0 MPa	ISO 178

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	6.7 ft·lb/in ²	14 kJ/m ²	
73°F (23°C)	26 ft·lb/in ²	55 kJ/m ²	
Notched Izod Impact			
73°F (23°C)	18 ft·lb/in	960 J/m	ASTM D256
73°F (23°C)	44 ft·lb/in ²	93 kJ/m ²	ISO 180/1A
Instrumented Dart Impact ⁵			ASTM D3763
73°F (23°C), Total Energy	830 in·lb	93.8 J	
Tensile Impact Strength	300 ft·lb/in ²	630 kJ/m ²	
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness			ASTM D785
M-Scale	74	74	
R-Scale	118	118	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Annealed	295 °F	146 °C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	270 °F	132 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	266 °F	130 °C	ISO 75-2/A
264 psi (1.8 MPa), Annealed	289 °F	143 °C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature	304 °F	151 °C	ASTM D1525 ⁶
CLTE - Flow			
-40 to 176°F (-40 to 80°C)	3.8E-5 in/in/°F	6.8E-5 cm/cm/°C	ASTM D696
--	3.9E-5 in/in/°F	7.0E-5 cm/cm/°C	ISO 11359-2
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Volume Resistivity	1.0E+15 ohms·cm	1.0E+15 ohms·cm	IEC 60093
Electric Strength	430 V/mil	17 kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	3.00	3.00	
1 MHz	3.00	3.00	
Dissipation Factor			IEC 60250
100 Hz	1.0E-3	1.0E-3	
1 MHz	2.0E-3	2.0E-3	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁷			UL 94
0.12 in (3.0 mm)	HB	HB	
0.030 in (0.75 mm)	V-2	V-2	
0.06 in (1.5 mm)	V-2	V-2	
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index	1.586	1.586	ASTM D542 ISO 489
Light Transmittance	87.0 to 91.0 %	87.0 to 91.0 %	ASTM D1003
Haze	< 1.00 %	< 1.00 %	ASTM D1003
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	248 °F	120 °C	
Drying Time	4.0 hr	4.0 hr	
Processing (Melt) Temp	554 to 626 °F	290 to 330 °C	
Mold Temperature	176 to 230 °F	80 to 110 °C	