

Technical Information



CALIBRE™ 5101-15

Polycarbonate Resin

Overview

CALIBRE™ 5101 Polycarbonate resin is 10% glass-reinforced and provides increased modulus and improved heat distortion resistance with minimal shrinkage. CALIBRE 5101 resin has undergone biocompatibility testing based on ISO 10993 (Biological Evaluation of Medical Devices) and is suitable for use in approved medical applications.

Main Characteristics:

- Glass reinforced
- Contains Mold Release
- UL Rated V-2 and V-0
- Tested under ISO 10993

Applications

- Information Technology Equipment
- Telecommunications
- Medical applications
- Surgical Device Handles
- Dialyzer

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.27 g/cm ³	1.27 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	15 g/10 min	15 g/10 min	ASTM D1238 ISO 1133
Molding Shrinkage - Flow	2.0E-3 to 5.0E-3 in/in	0.20 to 0.50 %	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	508000 psi	3500 MPa	ASTM D638
--	508000 psi	3500 MPa	ISO 527-1/1
Tensile Strength			
Yield ²	9000 psi	62.1 MPa	ASTM D638
Yield	8990 psi	62.0 MPa	ISO 527-2/50
Break ²	8800 psi	60.7 MPa	ASTM D638
Break	8850 psi	61.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ²	5.1 %	5.1 %	ASTM D638
Yield	5.1 %	5.1 %	ISO 527-2/50
Break ²	6.0 %	6.0 %	ASTM D638
Break	6.0 %	6.0 %	ISO 527-2/50
Flexural Modulus			
--	460000 psi	3170 MPa	ASTM D790
-- ³	460000 psi	3170 MPa	ISO 178
Flexural Strength			
--	14500 psi	100 MPa	ASTM D790
-- ³	14500 psi	100 MPa	ISO 178

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	1.5 ft-lb/in	80 J/m	ASTM D256
Instrumented Dart Impact ⁴ 73°F (23°C), Total Energy	355 in-lb	40.1 J	ASTM D3763
Tensile Impact Strength	70.0 ft-lb/in ²	147 kJ/m ²	ASTM D1822
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness			ASTM D785
M-Scale	62	62	
R-Scale	122	122	
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed	280 °F	138 °C	ASTM D648
66 psi (0.45 MPa), Annealed	291 °F	144 °C	ASTM D648 ISO 75-2/B
264 psi (1.8 MPa), Unannealed	273 °F	134 °C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature			
--	306 °F	152 °C	ASTM D1525 ⁵
--	289 °F	143 °C	ISO 306/B50
CLTE - Flow (-40 to 176°F (-40 to 80°C))	2.1E-5 in/in/°F	3.8E-5 cm/cm/°C	ASTM D696
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁶			UL 94
0.06 in (1.5 mm)	HB	HB	
0.06 to 0.12 in (1.5 to 3.0 mm), Depends on color	V-2	V-2	
0.12 in (3.0 mm)	V-0	V-0	
Oxygen Index ⁶	32 %	32 %	ISO 4589-2
Average Extent of Burning ⁶	1 in	1 cm	ASTM D635
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 599 °F	290 to 315 °C	
Mold Temperature	176 to 230 °F	80 to 110 °C	

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ 0.039 in/min (1.0 mm/min)

² 2.0 in/min (50 mm/min)

³ 0.079 in/min (2.0 mm/min)

⁴ 11.1 ft/sec (3.39 m/sec)

⁵ Rate B (120°C/h), Loading 1 (10 N)

⁶ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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