

CALIBRE™ 5201-12

Polycarbonate Resin

Overview

CALIBRE™ 5201-12 polycarbonate resin is 20% glass reinforced and provides increased modulus and improved heat distortion resistance with minimal shrinkage. CALIBRE 5201-12 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:

- Medical applications
- Handheld surgical devices
- Powered medical devices
- Equipment housings
- Electrical components

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.36 g/cm ³	1.36 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	12 g/10 min	12 g/10 min	ASTM D1238 ISO 1133
Molding Shrinkage - Flow	2.0E-3 to 4.0E-3 in/in	0.20 to 0.40 %	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	812000 psi	5600 MPa	ASTM D638
--	812000 psi	5600 MPa	ISO 527-1/1
Tensile Strength			
Yield ²	12000 psi	82.7 MPa	ASTM D638
Yield	12000 psi	82.7 MPa	ISO 527-2/50
Break ²	12000 psi	82.7 MPa	ASTM D638
Break	12000 psi	82.7 MPa	ISO 527-2/50
Tensile Elongation			
Yield ²	4.0 %	4.0 %	ASTM D638
Yield	4.0 %	4.0 %	ISO 527-2/50
Break ²	4.7 %	4.7 %	ASTM D638
Break	4.7 %	4.7 %	ISO 527-2/50
Flexural Modulus			
--	827000 psi	5700 MPa	ASTM D790
-- ³	812000 psi	5600 MPa	ISO 178
Flexural Strength			
--	21500 psi	148 MPa	ASTM D790
-- ³	21500 psi	148 MPa	ISO 178

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	1.8 ft-lb/in	95 J/m	ASTM D256
Instrumented Dart Impact ⁴ 73°F (23°C), Total Energy	410 in-lb	46.3 J	ASTM D3763
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (R-Scale)	122	122	ASTM D785
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed	289 °F	143 °C	ASTM D648
66 psi (0.45 MPa), Annealed	299 °F	148 °C	ASTM D648
66 psi (0.45 MPa), Annealed	298 °F	148 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	280 °F	138 °C	ASTM D648 ISO 75-2/A
264 psi (1.8 MPa), Annealed	288 °F	142 °C	ASTM D648 ISO 75-2/A
Vicat Softening Temperature			
--	311 °F	155 °C	ASTM D1525 ⁵
--	295 °F	146 °C	ISO 306/B50
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	
0.10 to 0.13 in (2.5 to 3.2 mm), White	V-1	V-1	
0.12 in (3.0 mm)	V-0	V-0	
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	