

CALIBRE[™] 5201-12

Polycarbonate Resin

Overview

CALIBRE[™] 5201-12 polycarbonate resin is 20% glass reinforced containing mold release for optimal processing. This resin exhibits high modulus and excellent dimensional stability. CALIBRE 5201-12 resin is typically used in medical market applications. 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
- Ignition resistant
- 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/B
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
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ¹	750000 psi	5170 MPa	ASTM D638
--	750000 psi	5170 MPa	ISO 527-2/50
Tensile Strength			
Yield ¹	12000 psi	82.7 MPa	ASTM D638
Yield	12000 psi	82.7 MPa	ISO 527-2/50
Break ¹	12000 psi	82.7 MPa	ASTM D638
Break	12000 psi	82.7 MPa	ISO 527-2/50
Tensile Elongation			
Yield ¹	2.6 %	2.6 %	ASTM D638
Yield	2.6 %	2.6 %	ISO 527-2/50
Break ¹	3.0 %	3.0 %	ASTM D638
Break	2.6 %	2.6 %	ISO 527-2/50
Flexural Modulus			
-- ²	700000 psi	4830 MPa	ASTM D790
-- ³	699000 psi	4820 MPa	ISO 178
Flexural Strength			
-- ²	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), 0.126 in (3.20 mm)	2.0 ft-lb/in	110 J/m	ASTM D256

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Instrumented Dart Impact ⁴ 73°F (23°C), 0.126 in (3.20 mm), 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), 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			
--	318 °F	159 °C	ASTM D1525 ⁵
--	316 °F	158 °C	ISO 306/B50
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁶			UL 94
0.06 in (1.6 mm)	V-2	V-2	
0.12 in (3.0 mm)	V-0	V-0	

Notes

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

¹ 2.0 in/min (50 mm/min)

² Method I (3 point load), 0.079 in/min (2.0 mm/min)

³ 0.079 in/min (2.0 mm/min)

⁴ 11.1 ft/sec (3.39 m/sec)

⁵ Rate A (50°C/h), Loading 2 (50 N)

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



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