

CALIBRE™ 5201-12

Polycarbonate Resin

Trinseo

Message:

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

General Information			
Filler / Reinforcement	Glass Fiber,20% Filler by Weight		
Additive	Mold Release		
Features	Biocompatible		
	Flame Retardant		
	Good Dimensional Stability		
	Good Processability		
Uses	Electrical/Electronic Applications		
	Housings		
	Medical/Healthcare Applications		
Agency Ratings	ISO 10993 2		
Forms	Pellets		
Processing Method	Injection Molding		
Multi-Point Data	Specific Heat vs. Temperature (ASTM D3417)		
	Specific Volume vs Temperature (ISO 11403-2)		
	Tensile Stress vs. Strain (ASTM D638)		
	Thermal Conductivity vs. Temperature (ASTM E1530)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.36	g/cm³	ASTM D792, ISO 1183/B
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	12	g/10 min	ASTM D1238, ISO 1133
Molding Shrinkage - Flow	0.20 to 0.40	%	ASTM D955, ISO 294-4
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	122		ASTM D785

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	5170	MPa	ASTM D638
--	5170	MPa	ISO 527-2/50
Tensile Strength			
Yield ²	82.7	MPa	ASTM D638
Yield	82.7	MPa	ISO 527-2/50
Break ³	82.7	MPa	ASTM D638
Break	82.7	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	2.6	%	ASTM D638
Yield	2.6	%	ISO 527-2/50
Break ⁵	3.0	%	ASTM D638
Break	2.6	%	ISO 527-2/50
Flexural Modulus			
-- ⁶	4830	MPa	ASTM D790
-- ⁷	4820	MPa	ISO 178
Flexural Strength			
-- ⁸	148	MPa	ASTM D790
-- ⁹	148	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C, 3.20 mm)	110	J/m	ASTM D256
Instrumented Dart Impact ¹⁰ (23°C, 3.20 mm, Total Energy)	46.3	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Annealed	148	°C	ASTM D648, ISO 75-2/B
1.8 MPa, Unannealed	138	°C	ASTM D648, ISO 75-2/A
1.8 MPa, Annealed	142	°C	ASTM D648, ISO 75-2/A
Vicat Softening Temperature			
--	159	°C	ASTM D1525 ¹¹
--	158	°C	ISO 306/B50
Flammability	Nominal Value	Test Method	
Flame Rating ¹²		UL 94	
1.59 mm	V-2		
3.05 mm	V-0		
NOTE			
1.	50 mm/min		
2.	50 mm/min		
3.	50 mm/min		
4.	50 mm/min		
5.	50 mm/min		

6.	Method I (3 point load), 2.0 mm/min
7.	2.0 mm/min
8.	Method I (3 point load), 2.0 mm/min
9.	2.0 mm/min
10.	3.39 m/sec
11.	Rate A (50°C/h), Loading 2 (50 N)
12.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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