



CALIBRE™ 5201-12

Trinseo - Polycarbonate Resin

Tuesday, November 5, 2019

General Information

Product Description

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

Material Status	• Commercial: Active
Availability	• Asia Pacific • Europe • North America
Filler / Reinforcement	• Glass Fiber, 20% Filler by Weight
Additive	• Mold Release
Features	• Biocompatible • Good Dimensional Stability • Flame Retardant • Good Processability
Uses	• Electrical Housing • Housings • Electrical/Electronic Applications • Medical/Healthcare Applications
Agency Ratings	• ISO 10993 ¹
Forms	• Pellets
Processing Method	• Injection Molding

ASTM & ISO Properties ²

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.36		ASTM D792
Density	1.36	g/cm ³	ISO 1183/B
Melt Mass-Flow Rate (300°C/1.2 kg)	12	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	12	g/10 min	ISO 1133
Molding Shrinkage - Flow	2.0E-3 to 4.0E-3	in/in	ASTM D955
Molding Shrinkage - Flow	0.20 to 0.40	%	ISO 294-4
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ³	750000	psi	ASTM D638
Tensile Modulus	750000	psi	ISO 527-2/50
Tensile Strength ³ (Yield)	12000	psi	ASTM D638
Tensile Stress (Yield)	12000	psi	ISO 527-2/50
Tensile Strength ³ (Break)	12000	psi	ASTM D638
Tensile Stress (Break)	12000	psi	ISO 527-2/50

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Mechanical	Nominal Value	Unit	Test Method
Tensile Elongation ³ (Yield)	2.6	%	ASTM D638
Tensile Strain (Yield)	2.6	%	ISO 527-2/50
Tensile Elongation ³ (Break)	3.0	%	ASTM D638
Tensile Strain (Break)	2.6	%	ISO 527-2/50
Flexural Modulus ⁴	700000	psi	ASTM D790
Flexural Modulus ⁵	699000	psi	ISO 178
Flexural Strength ⁴	21500	psi	ASTM D790
Flexural Stress ⁵	21500	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (73°F, 0.126 in)	2.0	ft-lb/in	ASTM D256
Instrumented Dart Impact ⁶ 73°F, 0.126 in, Total Energy	410	in-lb	ASTM D3763
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	122		ASTM D785
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Annealed)	299	°F	ASTM D648
Heat Deflection Temperature (66 psi, Annealed)	298	°F	ISO 75-2/B
Deflection Temperature Under Load 264 psi, Unannealed	280	°F	ASTM D648
Heat Deflection Temperature (264 psi, Unannealed)	280	°F	ISO 75-2/A
Deflection Temperature Under Load (264 psi, Annealed)	288	°F	ASTM D648
Heat Deflection Temperature (264 psi, Annealed)	288	°F	ISO 75-2/A
Vicat Softening Temperature	318	°F	ASTM D1525 ⁷
Vicat Softening Temperature	316	°F	ISO 306/B50
Flammability	Nominal Value	Unit	Test Method
Flame Rating ⁸			UL 94
0.06 in	V-2		
0.12 in	V-0		

Notes

¹ Biocompatibility testing following ISO Guidelines 10993 has been completed on select classic resins in this series. Please consult Styron for details. ISO guidelines include a sensitization test.

² Typical properties: these are not to be construed as specifications.

³ 2.0 in/min

⁴ Method I (3 point load), 0.079 in/min

⁵ 0.079 in/min

⁶ 11.1 ft/sec

⁷ Rate A (50°C/h), Loading 2 (50 N)

⁸ This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.