CALIBRE™ 5201-12

Trinseo - Polycarbonate Resin

General Information

Product Description

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

General			
Filler / Reinforcement	• Glass Fiber, 20% Filler by Weight		
Additive	• Mold Release		
Features	• Biocompatible • Ethylene Oxide Sterilizable • Flame Retardant	• Good Dimensional Stability • Good Processability • Ignition Resistant	• Radiation Sterilizable
Uses	• Electrical Housing • Electrical/Electronic Applications	• Housings • Medical Devices	• Medical/Healthcare Applications • Surgical Instruments
Agency Ratings	• ISO 10993 [1]		
Appearance	• Colors Available	• Opaque	
Forms	• Pellets		
Processing Method	• Injection Molding		

Properties [2]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.36		ASTM D792
Density	1.36	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (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
Water Absorption (Saturation, 73°F)	0.32	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.12	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [3]	812000	psi	ASTM D638
Tensile Modulus	812000	psi	ISO 527-1/1
Tensile Strength [4] (Yield)	12000	psi	ASTM D638

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Mechanical	Nominal Value	Unit	Test Method
Tensile Stress (Yield)	12000	psi	ISO 527-2/50
Tensile Strength [4] (Break)	12000	psi	ASTM D638
Tensile Stress (Break)	12000	psi	ISO 527-2/50
Tensile Elongation [4] (Yield)	4.0	%	ASTM D638
Tensile Strain (Yield)	4.0	%	ISO 527-2/50
Tensile Elongation [4] (Break)	4.7	%	ASTM D638
Tensile Strain (Break)	4.7	%	ISO 527-2/50
Flexural Modulus	827000	psi	ASTM D790
Flexural Modulus [5]	812000	psi	ISO 178
Flexural Strength	21500	psi	ASTM D790
Flexural Stress [5]	21500	psi	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Notched Izod Impact (73°F)	1.8	ft·lb/in	ASTM D256
Instrumented Dart Impact [6] (73°F, 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, Unannealed)	289	°F	ASTM D648
Deflection Temperature Under Load (66 psi, Annealed)	299	°F	ASTM D648
Deflection Temperature Under Load (66 psi, Annealed)	298	°F	ISO 75-2/B
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	280	°F	
Deflection Temperature Under Load			ISO 75-2/A
264 psi, Unannealed	280	°F	
Deflection Temperature Under Load (264 psi, Annealed)	288	°F	ASTM D648
Deflection Temperature Under Load (264 psi, Annealed)	288	°F	ISO 75-2/A
Vicat Softening Temperature	311	°F	ASTM D1525 [7]
Vicat Softening Temperature	295	°F	ISO 306/B50
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating [8]			UL 94
0.06 in	HB		
0.06 to 0.12 in, Depends on color;	V-2		
0.10 to 0.13 in, White	V-1		
0.12 in	V-0		

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	248	°F
Drying Time	4.0	hr
Processing (Melt) Temp	554 to 599	°F
Mold Temperature	176 to 230	°F