

CALIBRE™ 5101-15

Trinseo - Polycarbonate Resin

General Information

Product Description

CALIBRE™ 5101 Polycarbonate resin is 10% glass-reinforced and provides increased modulus and improved heat distortion resistance with minimal shrinkage. CALIBRE 5101 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

- Information Technology Equipment
- Telecommunications
- Medical applications
- Surgical Device Handles
- Dialyzer

General

Filler / Reinforcement	• Glass Fiber, 10% Filler by Weight
Additive	• Mold Release
Features	• Biocompatible • Flame Retardant • Radiation Sterilizable • Ethylene Oxide Sterilizable • Ignition Resistant
Uses	• Electrical Housing • Medical Devices • Surgical Instruments • Electrical/Electronic Applications • Medical/Healthcare Applications
Agency Ratings	• ISO 10993 ¹
Appearance	• Colors Available • Opaque
Forms	• Pellets
Processing Method	• Injection Molding

Properties²

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.27		ASTM D792
Density	1.27	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	15	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	15	g/10 min	ISO 1133
Molding Shrinkage - Flow	2.0E-3 to 5.0E-3	in/in	ASTM D955
Molding Shrinkage - Flow	0.20 to 0.50	%	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	508000	psi	ASTM D638
Tensile Modulus	508000	psi	ISO 527-1/1
Tensile Strength ⁴ (Yield)	9000	psi	ASTM D638
Tensile Stress (Yield)	8990	psi	ISO 527-2/50

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Mechanical	Nominal Value	Unit	Test Method
Tensile Strength ⁴ (Break)	8800	psi	ASTM D638
Tensile Stress (Break)	8850	psi	ISO 527-2/50
Tensile Elongation ⁴ (Yield)	5.1	%	ASTM D638
Tensile Strain (Yield)	5.1	%	ISO 527-2/50
Tensile Elongation ⁴ (Break)	6.0	%	ASTM D638
Tensile Strain (Break)	6.0	%	ISO 527-2/50
Flexural Modulus	460000	psi	ASTM D790
Flexural Modulus ⁵	460000	psi	ISO 178
Flexural Strength	14500	psi	ASTM D790
Flexural Stress ⁵	14500	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (73°F)	1.5	ft-lb/in	ASTM D256
Instrumented Dart Impact ⁶ (73°F, Total Energy)	355	in-lb	ASTM D3763
Tensile Impact Strength	70.0	ft-lb/in ²	ASTM D1822
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	62		
R-Scale	122		
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (66 psi, Unannealed)	280	°F	ASTM D648
Deflection Temperature Under Load (66 psi, Annealed)	291	°F	ASTM D648
Deflection Temperature Under Load (66 psi, Annealed)	291	°F	ISO 75-2/B
Deflection Temperature Under Load 264 psi, Unannealed	273	°F	ASTM D648
Deflection Temperature Under Load 264 psi, Unannealed	273	°F	ISO 75-2/A
Vicat Softening Temperature	306	°F	ASTM D1525 ⁷
Vicat Softening Temperature	289	°F	ISO 306/B50
CLTE - Flow (-40 to 176°F)	2.1E-5	in/in/°F	ASTM D696
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	
0.12 in		V-0	
Oxygen Index ⁸	32	%	ISO 4589-2
Average Extent of Burning ⁸	1	in	ASTM D635

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