CALIBRE™ 5101-8

Trinseo - Polycarbonate Resin

Tuesday, November 5, 2019

General Information

Product Description

CALIBRE™ 5101 Polycarbonate resin is 10% glass-reinforced and provides increased modulus and improved heat distortion resistance with minimal shrinkage. This resin offers outstanding UL94 flammability ratings and contains mold release. CALIBRE 5101 is available in 8 and 15 melt flow rates. 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
- Ignition resistant
- Tested under ISO 10993

Applications

- Information Technology Equipment
- Telecommunications
- Medical applications

General		
Material Status	• Commercial: Active	
Availability	• Latin America	• North America
Filler / Reinforcement	• Glass Fiber, 10% Filler by Weight	
Additive	• Mold Release	
Features	• Biocompatible	• Flame Retardant
Uses	• Medical/Healthcare Applications	
Agency Ratings	• ISO 10993 [1]	
Automotive Specifications	• FORD WSS-M4D309-C	• GM GMP.PC.017
Forms	• Pellets	
Processing Method	• Injection Molding	

ASTM & ISO Properties [2]

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity	1.27		ASTM D792
Density	1.27	g/cm³	ISO 1183/B
Melt Mass-Flow Rate (300°C/1.2 kg)	8.0	g/10 min	ASTM D1238
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	8.0	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 (24 hr, 73°F)	0.15	%	ASTM D570
Water Absorption (24 hr, 73°F)	0.15	%	ISO 62
Water Absorption (Equilibrium, 73°F, 50% RH)	0.25	%	ASTM D570
Water Absorption (Equilibrium, 73°F, 50% RH)	0.25	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus [3]	490000	psi	ASTM D638
Tensile Modulus	490000	psi	ISO 527-2/50
Tensile Strength [3] (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 [3] (Break)	8800	psi	ASTM D638
Tensile Stress (Break)	8850	psi	ISO 527-2/50
Tensile Elongation [3] (Break)	6.0	%	ASTM D638
Tensile Strain (Break)	6.0	%	ISO 527-2/50
Flexural Modulus [4]	460000	psi	ASTM D790
Flexural Modulus [5]	460000	psi	ISO 178
Flexural Strength [4]	13600	psi	ASTM D790
Flexural Stress [5]	13600	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/in²	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, Annealed)	291	°F	ASTM D648
Heat Deflection Temperature (66 psi, Annealed)	291	°F	ISO 75-2/B
Deflection Temperature Under Load			ASTM D648
264 psi, Unannealed	273	°F	
Heat Deflection Temperature (264 psi, Unannealed)	273	°F	ISO 75-2/A
Vicat Softening Temperature	320	°F	ASTM D1525 [7]
Vicat Softening Temperature	320	°F	ISO 306/B50
CLTE - Flow (-40 to 180°F)	2.1E-5	in/in/°F	ASTM D696
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating [8]			UL 94
0.06 in	V-2		
0.13 in	V-0		
Oxygen Index [8]	32	%	ISO 4589-2
Average Extent of Burning	1	in	ASTM D635

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.