

CALIBRE™ 5101-15

Polycarbonate Resin
Trinseo

Message:

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 Information			
UL YellowCard	E54680-469973		
Filler / Reinforcement	Glass Fiber,10% Filler by Weight		
Additive	Mold Release		
Features	Biocompatible		
	Flame Retardant		
Uses	Medical/Healthcare Applications		
Agency Ratings	ISO 10993 3		
Forms	Pellets		
Processing Method	Injection Molding		
Multi-Point Data	Tensile Stress vs. Strain (ASTM D638)		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.27	g/cm³	ASTM D792, ISO 1183/B
--	1270	kg/m³	ISO 1183 ¹
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	15	g/10 min	ASTM D1238, ISO 1133
Melt volume-flow rate (300°C/1.2 kg)	12.0	cm³/10min	ISO 1133 ²
Molding Shrinkage - Flow	0.20 to 0.50	%	ASTM D955, ISO 294-4
Water Absorption			ASTM D570, ISO 62
23°C, 24 hr	0.15	%	
Equilibrium, 23°C, 50% RH	0.25	%	
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness			ASTM D785
M-Scale	62		
R-Scale	122		
Mechanical	Nominal Value	Unit	Test Method

Tensile Modulus			
-- ³	3380	MPa	ASTM D638
--	3380	MPa	ISO 527-2/50
--	3600	MPa	ISO 527-2 ⁴
Tensile Strength			
Yield ⁵	62.1	MPa	ASTM D638
Yield	62.0	MPa	ISO 527-2/50
Yield	60.0	MPa	ISO 527-2 ⁶
Break ⁷	60.7	MPa	ASTM D638
Break	61.0	MPa	ISO 527-2/50
Tensile Strain			
Yield	4.0	%	ISO 527-2 ⁸
Break ⁹	6.0	%	ASTM D638
Break	6.0	%	ISO 527-2/50
Nominal strain at break	10	%	ISO 527-2 ¹⁰
Flexural Modulus			
-- ¹¹	3170	MPa	ASTM D790
-- ¹²	3170	MPa	ISO 178
Flexural Strength			
-- ¹³	93.8	MPa	ASTM D790
-- ¹⁴	94.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy impact strength			ISO 179/1eU ¹⁵
-30°C	No Break		
23°C	No Break		
Notched Izod Impact (23°C)	80	J/m	ASTM D256
Instrumented Dart Impact ¹⁶ (23°C, Total Energy)	40.1	J	ASTM D3763
Tensile Impact Strength	147	kJ/m ²	ASTM D1822
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Annealed	144	°C	ASTM D648, ISO 75-2/B
0.45 MPa	147	°C	ISO 75-2 ¹⁷
1.8 MPa, Unannealed	134	°C	ASTM D648, ISO 75-2/A
1.8 MPa	137	°C	ISO 75-2 ¹⁸
Vicat Softening Temperature			
--	160	°C	ASTM D1525, ISO 306/B50 ⁹ ¹⁹
50°C/h, B (50N)	148	°C	ISO 306 ²⁰
CLTE - Flow			
-40 to 82°C	3.8E-5	cm/cm/°C	ASTM D696
--	3.8E-5	cm/cm/°C	ISO 11359-2 ²¹
Flammability	Nominal Value	Unit	Test Method

Flame Rating ²²			UL 94
1.59 mm	V-2		
3.20 mm	V-0		
Burning Behav. at 1.6mm nom. thickn. (1.60 mm, UL)	V-2		ISO 1210 ²³
Burning Behav. at thickness h (3.20 mm, UL)	V-0		ISO 1210 ²⁴
Oxygen Index ²⁵	32	%	ISO 4589-2
Average Extent of Burning	1	cm	ASTM D635
NOTE			
1.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
2.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
3.	50 mm/min		
4.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
5.	50 mm/min		
6.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
7.	50 mm/min		
8.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
9.	50 mm/min		
10.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
11.	Method I (3 point load), 2.0 mm/min		
12.	2.0 mm/min		
13.	Method I (3 point load), 2.0 mm/min		
14.	2.0 mm/min		
15.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
16.	3.39 m/sec		
17.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
18.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.		
19.	Rate A (50°C/h), Loading 2 (50 N)		

20.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
21.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
22.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.
23.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
24.	Tested in accordance with ISO 10350. 23°C/50%r.h. unless otherwise noted.
25.	This rating not intended to reflect hazards presented by this or any other material under actual fire conditions.

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