

CarbonResin PR 25

Unspecified
Carbon3D, Inc.

Message:

PR 25 is a rapid production material that has excellent resolution, prints quickly, and is able to withstand moderate functional testing.

General Information			
Forms	Liquid		
Processing Method	3D Printing, Continuous Liquid Interface Production (CLIP)		
Physical	Nominal Value	Unit	
Density ¹	1.10 - 1.12	g/cm ³	
Viscosity (25°C)	1.60 - 1.80	Pa · s	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			ASTM D638
-- ²	1400 - 1500	MPa	ASTM D638
-- ³	600 - 950	MPa	ASTM D638
Tensile Strength			ASTM D638
Yield ⁴	42.0 - 50.0	MPa	ASTM D638
Yield ⁵	26.0 - 32.0	MPa	ASTM D638
Fracture ⁶	26.0 - 32.0	MPa	ASTM D638
Fracture ⁷	42.0 - 50.0	MPa	ASTM D638
Tensile Elongation			ASTM D638
Fracture ⁸	3.0 - 5.0	%	ASTM D638
Fracture ⁹	15 - 28	%	ASTM D638
Flexural Modulus			ASTM D790
-- ¹⁰	2000 - 2500	MPa	ASTM D790
-- ¹¹	1100 - 1300	MPa	ASTM D790
Flexural Strength			ASTM D790
-- ¹²	75.0 - 85.0	MPa	ASTM D790
-- ¹³	35.0 - 45.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact			ASTM D256
-- ¹⁴	24 - 28	J/m	ASTM D256
-- ¹⁵	18 - 21	J/m	ASTM D256
Notched Izod Impact			ASTM D256
-- ¹⁶	2.30 - 2.70	kJ/m ²	ASTM D256
-- ¹⁷	1.70 - 2.00	kJ/m ²	ASTM D256
Unnotched Izod Impact			ASTM D4812
-- ¹⁸	380 - 420	J/m	ASTM D4812
-- ¹⁹	150 - 190	J/m	ASTM D4812

Unnotched Izod Impact			ASTM D256
-- ²⁰	37.0 - 41.0	kJ/m ²	ASTM D256
-- ²¹	15.0 - 19.0	kJ/m ²	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, not annealed ²²	52.0	°C	ASTM D648
0.45 MPa, not annealed ²³	61.0	°C	ASTM D648
1.8 MPa, not annealed ²⁴	41.0	°C	ASTM D648
1.8 MPa, not annealed ²⁵	45.0	°C	ASTM D648
Glass Transition Temperature			DMA
-- ²⁶	47.0	°C	DMA
-- ²⁷	90.0	°C	DMA
CLTE - Flow	1.3E-4 - 1.4E-4	cm/cm/°C	ASTM E228
NOTE			
1.	Liquid		
2.	UV-Cured		
3.	Green		
4.	UV-Cured		
5.	Green		
6.	Green		
7.	UV-Cured		
8.	UV-Cured		
9.	Green		
10.	UV-Cured		
11.	Green		
12.	UV-Cured		
13.	Green		
14.	UV-Cured, Machined Notch		
15.	Green, Machined Notch		
16.	Green, Machined Notch		
17.	UV-Cured, Machined Notch		
18.	Green		
19.	UV-Cured		
20.	Green		
21.	UV-Cured		
22.	Green		
23.	UV-Cured		
24.	Green		
25.	UV-Cured		
26.	E', Green		
27.	tan(d), Green		

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