

Generic Nylon 66 - Carbon Fiber

Polyamide 66

Generic

Message:

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General Information			
Filler / Reinforcement	Carbon fiber reinforced material		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.16 - 1.38	g/cm ³	ASTM D792
23°C	1.17 - 1.39	g/cm ³	ISO 1183
Molding Shrinkage			
Flow: 23°C	0.096 - 0.42	%	ASTM D955
Transverse flow: 23°C	0.36 - 2.0	%	ASTM D955
23°C	0.18 - 0.74	%	ISO 294-4
Water Absorption			
23°C, 24 hr	0.40 - 1.0	%	ASTM D570
23°C, 24 hr	0.99 - 1.0	%	ISO 62
Saturated, 23°C	4.5 - 5.6	%	ISO 62
Equilibrium, 23°C, 50% RH	0.75 - 2.2	%	ISO 62
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (23°C)	118 - 120		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
23°C	7240 - 32800	MPa	ASTM D638
23°C	7810 - 26700	MPa	ISO 527-2
Tensile Strength			
Yield, 23°C	105 - 242	MPa	ASTM D638
Yield, 23°C	130 - 243	MPa	ISO 527-2
Fracture, 23°C	131 - 268	MPa	ASTM D638
Fracture, 23°C	124 - 296	MPa	ISO 527-2
23°C	126 - 276	MPa	ASTM D638
Tensile Elongation			
Yield, 23°C	1.5 - 3.6	%	ASTM D638
Yield, 23°C	1.3 - 7.6	%	ISO 527-2
Fracture, 23°C	0.90 - 4.1	%	ASTM D638
Fracture, 23°C	1.4 - 3.1	%	ISO 527-2
Flexural Modulus			

23°C	5990 - 23400	MPa	ASTM D790
23°C	4630 - 24000	MPa	ISO 178
Flexural Strength			
23°C	174 - 415	MPa	ASTM D790
23°C	180 - 440	MPa	ISO 178
Yield, 23°C	159 - 368	MPa	ASTM D790
Fracture, 23°C	237 - 410	MPa	ASTM D790
Compressive Strength (23°C)	129 - 172	MPa	ASTM D695
Coefficient of Friction	0.081 - 0.36		ASTM D1894
Wear Factor	11 - 18	10 ⁻⁸ mm ³ /N·m	ASTM D3702
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	3.0 - 15	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength (23°C)	24 - 67	kJ/m ²	ISO 179
Notched Izod Impact			
23°C	27 - 110	J/m	ASTM D256
23°C	4.1 - 11	kJ/m ²	ISO 180
Unnotched Izod Impact			
23°C	410 - 1100	J/m	ASTM D256
23°C	24 - 69	kJ/m ²	ISO 180
Instrumented Dart Impact			
23°C	5.20 - 15.5	J	ASTM D3763
23°C	1.70 - 3.99	J	ISO 6603-2
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, not annealed	253 - 263	°C	ASTM D648
0.45 MPa, not annealed	249 - 261	°C	ISO 75-2/B
1.8 MPa, not annealed	231 - 262	°C	ASTM D648
1.8 MPa, not annealed	239 - 251	°C	ISO 75-2/A
Continuous Use Temperature	119 - 120	°C	ASTM D794
Vicat Softening Temperature	200 - 260	°C	ISO 306
Melting Temperature (DSC)	260 - 265	°C	ISO 3146
Linear thermal expansion coefficient			
Flow	2.0E-6 - 7.0E-5	cm/cm/°C	ASTM D696
Flow	1.1E-5 - 8.3E-5	cm/cm/°C	ASTM E831
Flow	1.1E-5 - 3.0E-5	cm/cm/°C	ISO 11359-2
Lateral	8.0E-6 - 1.0E-4	cm/cm/°C	ASTM D696
Lateral	1.3E-5 - 4.9E-5	cm/cm/°C	ASTM E831
Lateral	1.0E-5 - 1.1E-4	cm/cm/°C	ISO 11359-2
Thermal Conductivity			
23°C	0.39 - 1.2	W/m/K	ASTM C177
23°C	0.28 - 1.0	W/m/K	ISO 8302
Electrical	Nominal Value	Unit	Test Method

Surface Resistivity			
--	2.5 - 1.2E+10	ohms	ASTM D257
--	10 - 2.5E+10	ohms	IEC 60093
Volume Resistivity			
23°C	5.1 - 2.5E+10	ohms·cm	ASTM D257
23°C	5.0 - 2.5E+10	ohms·cm	IEC 60093
Insulation Resistance (23°C)	1.0E+2 - 2.5E+10	ohms	IEC 60167
Injection	Nominal Value	Unit	
Drying Temperature	73.8 - 106	°C	
Drying Time	2.9 - 11	hr	
Suggested Max Moisture	0.097 - 0.20	%	
Rear Temperature	270 - 300	°C	
Middle Temperature	280 - 300	°C	
Front Temperature	280 - 301	°C	
Nozzle Temperature	288 - 291	°C	
Processing (Melt) Temp	286 - 294	°C	
Mold Temperature	79.0 - 106	°C	
Injection Pressure	96.1 - 104	MPa	
Back Pressure	0.172 - 0.517	MPa	
Screw Speed	45 - 46	rpm	
Injection instructions			

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