Generic Nylon 6 - Glass Fiber

Polyamide 6

Generic

Message:

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This information is provided for comparative purposes only.

General Information			
Filler / Reinforcement	Glass fiber reinforced material		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity			
--	1.19 - 1.57	g/cm³	ASTM D792
23°C	1.19 - 1.56	g/cm³	ISO 1183
--	1380	kg/m³	ISO 1183 [1]
--	1.22 - 1.44	g/cm³	ASTM D1505
Apparent Density	0.70	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR)			
235°C/2.16 kg	2.7 - 25	g/10 min	ASTM D1238
230°C/2.16 kg	1.7 - 3.1	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	24.1 - 60.3	cm³/10min	ISO 1133
Spiral Flow	34.5 - 95.0	cm	
Molding Shrinkage			
Flow: 23°C	0.10 - 0.78	%	ASTM D955
Transverse flow: 23°C	0.48 - 1.2	%	ASTM D955
23°C	0.051 - 1.1	%	ISO 294-4
Water Absorption			
23°C, 24 hr	0.55 - 1.4	%	ASTM D570
23°C, 24 hr	0.62 - 1.7	%	ISO 62
Saturated, 23°C	0.10 - 7.6	%	ASTM D570
Saturated, 23°C	4.3 - 8.2	%	ISO 62
Saturation	6.6	%	ISO 62 [2]
Equilibrium, 23°C	0.24 - 2.3	%	ASTM D570
Equilibrium, 23°C, 50% RH	1.4 - 2.5	%	ISO 62
Balance	1.7	%	ISO 62 [3]
Viscosity Number			
--	145 - 153	cm³/g	ISO 307
--	145	cm³/g	ISO 307, 1157, 1628 [4]
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			
23°C	115 - 123		ASTM D785

23°C	114 - 123		ISO 2039-2
Durometer Hardness			
23°C	80 - 85		ASTM D2240
23°C	77 - 89		ISO 868
Ball Indentation Hardness	168 - 283	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			
23°C	4630 - 13500	MPa	ASTM D638
23°C	4600 - 16600	MPa	ISO 527-2
--	8680	MPa	ISO 527-2 [5]
Tensile Strength			
Yield, 23°C	83.0 - 222	MPa	ASTM D638
Yield, 23°C	68.2 - 210	MPa	ISO 527-2
Fracture, 23°C	79.3 - 222	MPa	ASTM D638
Fracture, 23°C	80.0 - 236	MPa	ISO 527-2
Fracture	141	MPa	ISO 527-2 [6]
23°C	82.1 - 210	MPa	ASTM D638
23°C	105 - 223	MPa	ISO 527-2
Tensile Elongation			
Yield, 23°C	2.4 - 5.1	%	ASTM D638
Yield, 23°C	1.9 - 4.2	%	ISO 527-2
Fracture, 23°C	1.0 - 5.5	%	ASTM D638
Fracture, 23°C	2.0 - 4.9	%	ISO 527-2
Fracture	3.0 - 3.1	%	ISO 527-2 [7]
Flexural Modulus			
23°C	3200 - 11200	MPa	ASTM D790
23°C	3600 - 15000	MPa	ISO 178
Flexural Strength			
23°C	114 - 305	MPa	ASTM D790
23°C	136 - 327	MPa	ISO 178
Yield, 23°C	148 - 320	MPa	ASTM D790
Fracture, 23°C	99.4 - 285	MPa	ASTM D790
Compressive Strength (23°C)	27.4 - 241	MPa	ASTM D695
Shear Strength (23°C)	66.7 - 100	MPa	ASTM D732
Coefficient of Friction	0.15 - 0.36		ASTM D1894
Taber Abrasion Resistance (23°C)	10.0 - 30.5	mg	ASTM D1044
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			
23°C	44.1 - 119	J/m	ASTM D256
23°C	3.0 - 21	kJ/m^2	ISO 179
-30°C	9.00	kJ/m^2	ISO 179/1eA [8]
23°C	10.6	kJ/m^2	ISO 179/1eA [9]

Charpy Unnotched Impact Strength			
23°C	29 - 100	kJ/m²	ISO 179
-30°C	47.5	kJ/m²	ISO 179/1eU [10]
23°C	70.3	kJ/m²	ISO 179/1eU [11]
Notched Izod Impact			
23°C	32 - 200	J/m	ASTM D256
23°C	3.0 - 25	kJ/m²	ISO 180
Unnotched Izod Impact			
23°C	83 - 1400	J/m	ASTM D256
23°C	28 - 97	kJ/m²	ISO 180
Instrumented Dart Impact			
23°C	8.93 - 25.1	J	ASTM D3763
23°C	2.00 - 9.19	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force (23°C)	560 - 1520	N	ISO 6603-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
0.45 MPa, not annealed	206 - 223	°C	ASTM D648
0.45 MPa, not annealed	198 - 223	°C	ISO 75-2/B
0.45 MPa	215	°C	ISO 75-2 [12]
1.8 MPa, not annealed	187 - 218	°C	ASTM D648
1.8 MPa, not annealed	188 - 218	°C	ISO 75-2/A
1.8 MPa, annealed	182 - 211	°C	ASTM D648
1.8 MPa	205	°C	ISO 75-2 [13]
8.0 MPa, not annealed	55.0 - 191	°C	ISO 75-2/C
Continuous Use Temperature	89.0 - 200	°C	ASTM D794
Vicat Softening Temperature			
--	198 - 217	°C	ASTM D1525
--	198 - 216	°C	ISO 306
Ball Indentation Temperature	200	°C	IEC 60598-1
Melting Temperature			
--	215 - 223	°C	
--	220 - 222	°C	DSC, ISO 11357-3, ISO 3146
--	218 - 220	°C	ASTM D3418
Linear thermal expansion coefficient			
Flow	9.5E-6 - 5.4E-5	cm/cm/°C	ASTM D696
Flow	1.0E-5 - 5.1E-5	cm/cm/°C	ASTM E831
Flow	8.8E-6 - 3.2E-5	cm/cm/°C	ISO 11359-2
Lateral	4.7E-5 - 1.0E-4	cm/cm/°C	ASTM E831
Lateral	4.8E-5 - 1.2E-4	cm/cm/°C	ISO 11359-2
Specific Heat (23°C)	1300 - 1700	J/kg/°C	ASTM C351
Thermal Conductivity			

23°C	0.32 - 1.1	W/m/K	ASTM C177
23°C	0.21 - 0.46	W/m/K	ISO 8302
RTI Elec	65.0 - 142	°C	UL 746
RTI Imp	65.0 - 120	°C	UL 746
RTI	65.0 - 142	°C	UL 746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity			
--	3.5 - 2.5E+15	ohms	ASTM D257
--	5.0E+3 - 2.5E+14	ohms	IEC 60093
Volume Resistivity			
23°C	5.5 - 2.5E+16	ohms·cm	ASTM D257
23°C	1.0E+3 - 1.3E+16	ohms·cm	IEC 60093
Dielectric Strength			
23°C	15 - 25	kV/mm	ASTM D149
23°C	19 - 80	kV/mm	IEC 60243-1
Dielectric Constant			
23°C	3.00 - 4.35		ASTM D150
23°C	3.47 - 4.04		IEC 60250
23°C	3.65		IEC 60250
Dissipation Factor			
23°C	0.010 - 0.021		ASTM D150
23°C	5.0E-3 - 0.026		IEC 60250
1 MHz	0.020		IEC 60250 [14]
Arc Resistance	117 - 133	sec	ASTM D495
Comparative Tracking Index (CTI)	490 - 500	V	UL 746
Comparative Tracking Index			
--	394 - 600	V	IEC 60112
--	523		IEC 60112 [15]
Flammability	**Nominal Value**	**Unit**	**Test Method**
Burning Rate	99 - 100	mm/min	ISO 3795
Glow Wire Flammability Index	642 - 960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	650 - 960	°C	IEC 60695-2-13
Oxygen Index			
--	22 - 30	%	ASTM D2863
--	22 - 33	%	ISO 4589-2
Injection	**Nominal Value**	**Unit**	
Drying Temperature	79.8 - 82.9	°C	
Drying Time	2.0 - 5.3	hr	
Drying Time, Maximum	8.0	hr	
Dew Point	-18.0 - -17.8	°C	
Suggested Max Moisture	0.095 - 0.20	%	
Suggested Shot Size	55 - 60	%	

Suggested Max Regrind	18	%
Hopper Temperature	70.0 - 84.8	°C
Rear Temperature	231 - 283	°C
Middle Temperature	239 - 284	°C
Front Temperature	244 - 283	°C
Nozzle Temperature	234 - 294	°C
Processing (Melt) Temp	249 - 292	°C
Mold Temperature	58.1 - 100	°C
Injection Pressure	6.89 - 106	MPa
Holding Pressure	42.2 - 75.0	MPa
Back Pressure	0.00 - 0.735	MPa
Screw Speed	44 - 76	rpm
Cushion	4.66 - 9.53	mm

Injection instructions

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NOTE

1.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
2.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
3.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
4.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
5.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
6.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
7.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
8.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
9.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
10.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
11.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
12.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
13.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
14.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
15.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???

Recommended distributors for this material

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