Generic Nylon 66

Polyamide 66

Generic

Message:

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This information is provided for comparative purposes only.

General Information			
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity			
--	1.07 - 1.18	g/cm³	ASTM D792
23°C	1.03 - 1.21	g/cm³	ISO 1183
--	1.14 - 1.15	g/cm³	ASTM D1505
Apparent Density			
--	0.67 - 0.70	g/cm³	ASTM D1895
--	0.70	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR)			
235°C/1.0 kg	9.3 - 35	g/10 min	ASTM D1238
275°C/0.325 kg	2.0 - 5.1	g/10 min	ISO 1133
Molding Shrinkage			
Flow: 23°C	1.2 - 1.8	%	ASTM D955
Transverse flow: 23°C	0.79 - 2.6	%	ASTM D955
23°C	0.97 - 2.3	%	ISO 294-4
Water Absorption			
23°C, 24 hr	0.59 - 1.3	%	ASTM D570
23°C, 24 hr	0.82 - 1.7	%	ISO 62
Saturated, 23°C	0.10 - 8.6	%	ASTM D570
Saturated, 23°C	7.9 - 8.6	%	ISO 62
Equilibrium, 23°C	0.81 - 2.8	%	ASTM D570
Equilibrium, 23°C, 50% RH	1.0 - 2.9	%	ISO 62
Viscosity Number	134 - 150	cm³/g	ISO 307
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			
23°C	78 - 122		ASTM D785
23°C	55 - 122		ISO 2039-2
Durometer Hardness			
23°C	70 - 83		ASTM D2240
23°C	78 - 93		ISO 868
Ball Indentation Hardness	67.4 - 166	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**

Tensile Modulus			
23°C	805 - 6860	MPa	ASTM D638
23°C	707 - 7760	MPa	ISO 527-2
--	4880	MPa	ISO 527-2 [1]
Tensile Strength			
Yield, 23°C	44.1 - 90.5	MPa	ASTM D638
Yield, 23°C	38.3 - 91.3	MPa	ISO 527-2
Yield	65.3	MPa	ISO 527-2 [2]
Fracture, 23°C	39.3 - 126	MPa	ASTM D638
Fracture, 23°C	34.8 - 169	MPa	ISO 527-2
Fracture	119	MPa	ISO 527-2 [3]
Limit, 23°C	79.2 - 83.7	MPa	ASTM D638
23°C	37.6 - 88.1	MPa	ASTM D638
23°C	39.5 - 139	MPa	ISO 527-2
Tensile Elongation			
Yield, 23°C	1.0 - 14	%	ASTM D638
Yield, 23°C	1.3 - 22	%	ISO 527-2
Yield	13	%	ISO 527-2 [4]
Fracture, 23°C	0.75 - 440	%	ASTM D638
Fracture, 23°C	1.5 - 16	%	ISO 527-2
Fracture	3.8 - 10	%	ISO 527-2 [5]
Nominal Tensile Strain at Break (23°C)	24 - 51	%	ISO 527-2
Tensile Creep Modulus			ISO 899-1
1 hr	4300	MPa	ISO 899-1
1000 hr	3490	MPa	ISO 899-1
Flexural Modulus			
23°C	1500 - 3750	MPa	ASTM D790
23°C	602 - 3600	MPa	ISO 178
Flexural Strength			
23°C	49.7 - 139	MPa	ASTM D790
23°C	11.0 - 250	MPa	ISO 178
Yield, 23°C	44.0 - 200	MPa	ASTM D790
Fracture, 23°C	56.5 - 211	MPa	ASTM D790
Compressive Strength			
23°C	30.3 - 193	MPa	ASTM D695
23°C	24.0 - 110	MPa	ISO 604
Shear Strength (23°C)	65.0 - 85.3	MPa	ASTM D732
Poisson's Ratio (23°C)	0.40 - 0.42		ASTM E132
Coefficient of Friction	0.056 - 0.37		ASTM D1894
Taber Abrasion Resistance (23°C)	4.00 - 24.0	mg	ASTM D1044
Wear Factor	11 - 400	10^-8 mm^3/N·m	ASTM D3702

Impact	Nominal Value	Unit	Test Method

Charpy Notched Impact Strength			
23°C	39.2 - 59.5	J/m	ASTM D256
23°C	1.2 - 26	kJ/m²	ISO 179
23°C	14.3	kJ/m²	ISO 179/1eA [6]
Charpy Unnotched Impact Strength			
23°C	44 - 110	kJ/m²	ISO 179
23°C	77.5	kJ/m²	ISO 179/1eU [7]
Notched Izod Impact			
23°C	34 - 100	J/m	ASTM D256
23°C	2.5 - 24	kJ/m²	ISO 180
Notched Izod Impact (23°C)	3.00 - 15.0	kJ/m²	ASTM D256
Unnotched Izod Impact			
23°C	40 - 1700	J/m	ASTM D256
23°C	19 - 140	kJ/m²	ISO 180
Unnotched Izod Impact (23°C)	31.0 - 70.0	kJ/m²	ASTM D256
Instrumented Dart Impact			
23°C	0.570 - 76.0	J	ASTM D3763
23°C	0.700 - 67.8	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force (23°C)	816 - 5400	N	ISO 6603-2
Tensile Impact Strength (23°C)	63.0 - 344	kJ/m²	ASTM D1822
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
0.45 MPa, not annealed	177 - 241	°C	ASTM D648
0.45 MPa, not annealed	141 - 234	°C	ISO 75-2/B
1.8 MPa, not annealed	56.7 - 93.6	°C	ASTM D648
1.8 MPa, not annealed	57.8 - 96.2	°C	ISO 75-2/A
8.0 MPa, not annealed	50.0 - 60.1	°C	ISO 75-2/C
Continuous Use Temperature	84.4 - 131	°C	ASTM D794
Vicat Softening Temperature			
--	197 - 260	°C	ASTM D1525
--	198 - 252	°C	ISO 306
Ball Indentation Temperature	189 - 191	°C	IEC 60598-1
Melting Temperature			
--	254 - 260	°C	
--	257 - 260	°C	DSC
--	255 - 264	°C	ISO 11357-3
--	255 - 262	°C	ASTM D3418
--	260 - 262	°C	ISO 3146
Peak Crystallization Temperature (DSC)	214 - 221	°C	ASTM D3418
Linear thermal expansion coefficient			
Flow	5.6E-5 - 9.8E-5	cm/cm/°C	ASTM D696

Flow	7.5E-5 - 1.4E-4	cm/cm/°C	ASTM E831
Flow	6.7E-6 - 1.2E-4	cm/cm/°C	ISO 11359-2
Lateral	9.9E-5 - 1.3E-4	cm/cm/°C	ASTM E831
Lateral	7.0E-6 - 1.3E-4	cm/cm/°C	ISO 11359-2
Specific Heat (23°C)	1670 - 2100	J/kg/°C	ASTM C351
Thermal Conductivity			
23°C	0.20 - 1.8	W/m/K	ASTM C177
23°C	0.20 - 0.70	W/m/K	ISO 8302
RTI Elec	65.0 - 131	°C	UL 746
RTI Imp	65.0 - 96.9	°C	UL 746
RTI	64.8 - 112	°C	UL 746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity			
--	55 - 2.5E+15	ohms	ASTM D257
--	0.010 - 2.5E+16	ohms	IEC 60093
Volume Resistivity			
23°C	5.0 - 2.5E+16	ohms·cm	ASTM D257
23°C	0.10 - 2.5E+17	ohms·cm	IEC 60093
--	1.0E+10 - 1.0E+13	ohms·m	IEC 60093 [8]
Dielectric Strength			
23°C	16 - 28	kV/mm	ASTM D149
23°C	15 - 45	kV/mm	IEC 60243-1
Dielectric Constant			
23°C	3.05 - 5.53		ASTM D150
23°C	2.90 - 10.2		IEC 60250
23°C	4.41		IEC 60250
Dissipation Factor			
23°C	0.010 - 0.20		ASTM D150
23°C	3.0E-3 - 0.20		IEC 60250
1 MHz	0.16		IEC 60250 [9]
Arc Resistance	118 - 150	sec	ASTM D495
Comparative Tracking Index (CTI)	588 - 600	V	UL 746
Comparative Tracking Index			
--	595 - 609	V	IEC 60112
--	529 - 600	V	ASTM D3638
High Amp Arc Ignition (HAI)	87.6 - 200		UL 746
Hot-wire Ignition (HWI)	20 - 93	sec	UL 746
Insulation Resistance (23°C)	9.8E+11 - 1.0E+12	ohms	IEC 60167
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	26 - 28	%	ASTM D2863, ISO 4589-2
Optical	**Nominal Value**	**Unit**	**Test Method**
Yellowness Index	0.75 - 15	YI	ASTM D1925
Injection	**Nominal Value**	**Unit**	
Drying Temperature	73.8 - 90.6	°C	
Drying Time	2.7 - 5.3	hr	
Drying Time, Maximum	6.0	hr	
Dew Point	-18.1 - -17.8	°C	
Suggested Max Moisture	0.095 - 0.24	%	
Suggested Shot Size	50 - 60	%	
Suggested Max Regrind	23	%	
Hopper Temperature	70.0 - 270	°C	
Rear Temperature	257 - 303	°C	
Middle Temperature	270 - 302	°C	
Front Temperature	265 - 300	°C	
Nozzle Temperature	269 - 291	°C	
Processing (Melt) Temp	269 - 293	°C	
Mold Temperature	58.9 - 94.2	°C	
Injection Pressure	7.02 - 99.7	MPa	
Holding Pressure	40.9 - 97.5	MPa	
Back Pressure	0.138 - 2.63	MPa	
Screw Speed	45 - 101	rpm	
Clamp Tonnage	4.0 - 4.5	kN/cm^2	
Cushion	4.68 - 5.04	mm	
Vent Depth	0.019 - 0.024	mm	

Injection instructions

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Extrusion	Nominal Value	Unit
Drying Temperature	70.0 - 80.0	°C
Drying Time	2.0 - 5.0	hr
Suggested Max Moisture	0.060 - 0.20	%
Cylinder Zone 1 Temp.	272 - 285	°C
Cylinder Zone 2 Temp.	273 - 285	°C
Cylinder Zone 3 Temp.	271 - 298	°C
Cylinder Zone 4 Temp.	273 - 303	°C
Melt Temperature	283	°C

Extrusion 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. ???

Recommended distributors for this material

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