

Nylon 66



Physical Properties	Nominal Value	Test Method
Density / Specific Gravity	1.07 to 1.18 g/cm ³	ASTM D792
Apparent (Bulk) Density	0.70 g/cm ³	ISO 60
Water Absorption		
24 hr	0.57 to 1.3 %	ASTM D570
24 hr, 23°C	0.64 to 1.5 %	ISO 62
Saturation	1.9 to 8.5 %	ASTM D570
Saturation, 23°C	6.9 to 9.0 %	ISO 62
Equilibrium	0.10 to 3.0 %	ASTM D570
Equilibrium, 23°C, 50% RH	1.2 to 3.0 %	ISO 62

Mechanical Properties	Nominal Value	Test Method
Tensile Modulus	45.0 to 4730 MPa	ASTM D638
Tensile Strength		
Yield	43.5 to 93.4 MPa	ASTM D638
Break	34.5 to 90.5 MPa	ASTM D638
Tensile Elongation		
Yield	1.0 to 12 %	ASTM D638
Break	0.40 to 67 %	ASTM D638
Nominal Tensile Strain at Break	9.7 to 51 %	ISO 527-2
Flexural Modulus	3.03 to 4760 MPa	ASTM D790
Flexural Strength		
Yield	63.5 to 126 MPa	ASTM D790
Break	89.3 to 131 MPa	ASTM D790
Compressive Strength	8.27 to 193 MPa	ASTM D695
Shear Strength	68.9 to 80.0 MPa	ASTM D732
Poisson's Ratio	0.37 to 0.40	ASTM E132
Coefficient of Friction	0.084 to 0.60	ASTM D1894
Wear Factor	-2.0 to 180 10 ⁻⁸ mm ³ /N·m	ASTM D3702

Impact Properties	Nominal Value	Test Method
Charpy Notched Impact Strength		
--	0.55 to 10 kJ/m ²	ISO 179
23°C	4.03 kJ/m ²	ISO 179/1eA 2
Charpy Unnotched Impact Strength	-1.0 to 110 kJ/m ²	ISO 179
Notched Izod Impact		
--	5.5 to 93 J/m	ASTM D256
--	3.7 to 6.1 kJ/m ²	ISO 180
Notched Izod Impact (Area)	3.00 to 5.18 kJ/m ²	ASTM D256
Unnotched Izod Impact		
--	54 to 1600 J/m	ASTM D4812
--	3.0 to 300 kJ/m ²	ISO 180

Hardness Properties	Nominal Value	Test Method
Rockwell Hardness		
--	84 to 122	ASTM D785
--	110 to 122	ISO 2039-2
Durometer Hardness		
--	72 to 85	ASTM D2240
--	79 to 94	ISO 868
Ball Indentation Hardness	90.5 to 182 MPa	ISO 2039-1

Thermal Properties	Nominal Value	Test Method
Deflection Temperature Under Load		
0.45 MPa, Unannealed	184 to 263 °C	ASTM D648
0.45 MPa, Unannealed	179 to 233 °C	ISO 75-2/B
0.45 MPa, Annealed	184 to 250 °C	ISO 75-2/B
1.8 MPa, Unannealed	58.1 to 93.8 °C	ASTM D648
1.8 MPa, Unannealed	59.8 to 86.2 °C	ISO 75-2/A
1.8 MPa, Annealed	63.1 to 72.2 °C	ISO 75-2/A
1.8 MPa	67.5 °C	ISO 75-2 2
8.0 MPa, Unannealed	49.7 to 60.1 °C	ISO 75-2/C
Continuous Use Temperature	84.4 to 131 °C	ASTM D794
Glass Transition Temperature	5.00 to 80.0 °C	ISO 11357-2
Vicat Softening Temperature		
--	210 to 260 °C	ASTM D1525
--	200 to 251 °C	ISO 306
Melting Temperature		
--	253 to 263 °C	DSC
--	259 to 265 °C	ISO 11357-3
--	253 to 260 °C	ASTM D3418
--	260 °C	ISO 3146
Specific Heat	1650 to 2100 J/kg/°C	ASTM C351
Thermal Conductivity		
--	0.20 to 1.8 W/m/K	ASTM C177
--	0.20 to 0.70 W/m/K	ISO 8302
RTI Elec	65.0 to 131 °C	UL 746B
RTI Imp	65.0 to 106 °C	UL 746B
RTI Str	65.0 to 131 °C	UL 746B

Electrical Properties	Nominal Value	Test Method
Surface Resistivity		
--	55 to 2.5E+15 ohms	ASTM D257
--	1.0E+3 to 2.5E+16 ohms	IEC 60093
--	1.0E+12 to 1.0E+15 ohms	IEC 62631-3-2
Volume Resistivity		
--	5.0 to 2.5E+16 ohms-cm	ASTM D257
--	1.0 to 2.5E+17 ohms-cm	IEC 60093

--	1.0E+10 to 2.5E+14 ohms.m	IEC 62631-3-1
Dielectric Strength		
--	15 to 23 kV/mm	ASTM D149
--	16 to 32 kV/mm	IEC 60243-1
Dielectric Constant		
--	2.88 to 4.06	ASTM D150
--	2.86 to 3.85	IEC 60250
--	3.44	IEC 60250
--	3.41	IEC 62631-2-1
Dissipation Factor		
--	0.010 to 0.030	ASTM D150
--	3.0E-3 to 0.033	IEC 60250
--	5.0E-3 to 0.023	IEC 62631-2-1
Arc Resistance		
	60.0 to 190 sec	ASTM D495
Comparative Tracking Index (CTI)		
	588 to 600 V	UL 746A
Comparative Tracking Index		
	597 to 608 V	IEC 60112
High Amp Arc Ignition (HAI)		
	87.6 to 200	UL 746A
Hot-wire Ignition (HWI)		
	8.0 to 46 sec	UL 746A

Flammability Properties	Nominal Value	Test Method
Burning Rate	99 to 100 mm/min	ISO 3795
Glow Wire Flammability Index	645 to 960 °C	IEC 60695-2-12
Glow Wire Ignition Temperature	697 to 960 °C	IEC 60695-2-13
Oxygen Index		
--	21 to 33 %	ASTM D2863
--	26 to 28 %	ISO 4589-2

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Product samples are available to determine the suitability of the product for any application.