



## NYLON 6

Properties	Test Methods	Units	Values
Density	ISO 1183-1	g/cm <sup>3</sup>	1.15
<b>Water absorption:</b>			
- after 24/96 hrs immersion in water of 23°C	ISO 62	mg	44 / 83
	ISO 62	%	0.65 / 1.22
- at saturation in air of 23°C / 50% RH	-	%	2.2
- at saturation in water of 23°C	-	%	6.5
<b>Thermal Properties</b>			
Melting temperature ( DSC, 10°C/min)	ISO 11357-1/-3	°C	215
Glass transition Temperature (DSC, 20°C.min)	ISO 11357-1/-2	°C	-
Thermal conductivity at 23°C	-	W/(m.K)	0.29
<b>Coefficient of linear thermal expansion:</b>			
- average value between 23°C and 60°C	-	m/(m.K)	80 x 10 <sup>-6</sup>
- average value between 23°C and 100°C	-	m/(m.K)	90 x 10 <sup>-6</sup>
<b>Temperature of deflection under load:</b>			
- method A: 1.8 Mpa	+ ISO 75-1/-2	°C	80
<b>Max. allowable service temperature in air:</b>			
- for short periods	-	°C	170
- continuously: for 5,000 / 20,000 hrs	-	°C	105 / 90
Min. service temperature	-	°C	-30
<b>Flammability:</b>			
- "Oxygen Index"	ISO 4589-1/-2	%	25
- according to UL 94 (3 / 6mm thickness)	-	-	HB / HB
<b>Mechanical Properties at 23°C</b>			
<b>Tension test:</b>			
- tensile stress at yield / tensile stress at break	+ ISO 527-1/-2	MPa	86 / -
	++ ISO 527-1/-2	MPa	55 / -
- tensile strength	+ ISO 527-1/-3	MPa	88
- tensile strain at yeild	+ ISO 527-1/-4	%	5
- tensile strain at break	+ ISO 527-1/-5	%	25
	++ ISO 527-1/-6	%	>50
- tensile modulus of elasticity	+ ISO 527-1/-7	MPa	3600
	++ ISO 527-1/-8	MPa	1750
<b>Compression test</b>			
- compressive stress at 1 / 2 / 5 % nominal strain	+ ISO 604	MPa	34 / 64 / 93
Charpy impact strength - Unnotched	+ ISO 179-1/1eU	kJ/m <sup>2</sup>	no break
Charpy impact strength - Notched	+ ISO 179-1/1eA	kJ/m <sup>2</sup>	3
Ball indentation hardness	+ ISO 2039-1	N/mm <sup>2</sup>	165
Rockwell hardness	+ ISO 2039-2	-	M 88

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Electrical Properties at 23°C		Test Methods	Units	Values
Electric strength	+	IEC 60243-1	kV/mm	25
	++	IEC 60243-1	kV/mm	17
Volume resistivity	+	IEC 60093	Ohm.cm	$>10^{14}$
	++	IEC 60093	Ohm.cm	$>10^{12}$
Surface resistivity	+	IEC 60093	Ohm	$>10^{13}$
	++	IEC 60093	Ohm	$>10^{12}$
Relative permittivity $\epsilon_r$ : - at 100 Hz	+	IEC 60250	-	3.6
	++	IEC 60250	-	6.6
Relative permittivity $\epsilon_r$ : - at 1 MHz	+	IEC 60250	-	3.2
	++	IEC 60250	-	3.7
Dielectric dissipation factor $\tan \delta$ : - at 100 Hz	+	IEC 60250	-	0.012
	++	IEC 60250	-	0.14
Dielectric dissipation factor $\tan \delta$ : - at 1 MHz	+	IEC 60250	-	0.016
	++	IEC 60250	-	0.05
Comparative tracking index (CTI)	+	IEC 60112	-	600
	++	IEC 60112	-	600

+ : values referring to dry materials

++ : values referring to material in equilibrium with the standard atmosphere 23oC / 50 % (mostly derived from literature)

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