

# Physical properties

PROPERTIES	Test methods ISO / (IEC)	Units	PA6
Colour	-	-	Natural / black
<b>Density</b>	1183	g/cm <sup>3</sup>	1.14
Water absorption:			
- after 24/96 h immersion in water of 23°C (1)	62	mg	86/168
	62	%	1.28/2.50
- at saturation in air of 23°C / 50% RH	-	%	2.6
- at saturation in water of 23°C	-	%	9
<b>Thermal Properties (2)</b>			
Melting temperature	-	°C	220
Glass transition temperature (3)	-	°C	-
Thermal conductivity at 23°C	-	W/(K-m)	0.28
Coefficient of linear thermal expansion:			
- average value between 23 and 60°C	-	m/(m-K)	90-10 <sup>-6</sup>
- average value between 23 and 100°C	-	m/(m-K)	105-10 <sup>-6</sup>
Temperature of deflection under load:			
- method A: 1.8 Mpa	+	75	°C
Max. allowable service temperature in air:			
- for short periods (4)	-	°C	160
- continuously: for 5,000 / 20,000 h (5)	-	°C	85/70
Min. service temperature (6)			-40
Flammability (7):			
- "Oxygen Index"	4589	%	25
- according to UL 94 (3 / 6 mm thickness)	-	-	HB/HB
<b>Mechanical Properties at 23°C (8)</b>			
Tension test (9):			
- tensile stress at yield / tensile stress at break (10)	+	527	Mpa
	++	527	Mpa
- tensile strain at break (10)	+	527	%
	++	527	%
- tensile modulus of elasticity (11)	+	527	Mpa
	++	527	Mpa
Compression test (12):			
- compressive stress at 1/2/5% nominal strain (11)	+	604	Mpa
Creep test in tension (9):			
- stress to produce 1% strain in 1,000 h ( <sup>0</sup> 1/1,000)	+	899	Mpa
	++	899	Mpa
Charpy impact strength - Unnotched (13)	+	179/1eU	kJ/m <sup>2</sup>
Charpy impact strength - Notched	+	179/1eA	kJ/m <sup>2</sup>
Izod impact strength - Notched	+	180/2A	kJ/m <sup>2</sup>
	++	180/2A	kJ/m <sup>2</sup>
Ball indentation hardness (14)	+	2039-1	N/mm <sup>2</sup>
Rockwell hardness (14)	+	2039-2	-
<b>Electrical Properties at 23°C</b>			
Electric strength (15)	+	(60243)	kV/mm
	++	(60243)	kV/mm
Volume resistivity	+	(60093)	Ω -cm
	++	(60093)	Ω -cm
Surface resistivity	+	(60093)	Ω
	++	(60093)	Ω
Relative permittivity ε <sub>r</sub> :			
- at 100 Hz	-	(60250)	-
	++	(60250)	-
- at 1 MHz	+	(60250)	-
	++	(60250)	-
Dielectric dissipation factor tan δ:			
- at 100 Hz	+	(60250)	-
	++	(60250)	-
- at 1 MHz	+	(60250)	-
	++	(60250)	-
Comparative tracking index (CTI)	+	(60112)	-
	++	(60112)	-

Note: 1 g/cm<sup>3</sup> = 1,000 kg/m<sup>3</sup>; 1 Mpa = 1 N/mm<sup>2</sup>; 1 kV/mm = 1 MV/m.