Physical properties PA 6 G

Properties	Test methods	Units	Values
Colour	-	-	natural (ivory) / black
Density	ISO 1183-1	g/cm3	1.15
Water absorption:			
- after 24/96 h 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
Thermal Properties			
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/(K.m)	0.29
Coefficient of linear thermal expansion:			
- average value between 23 and 60°C	-	m/(m.K)	80×10^{-6}
- average value between 23 and 100°C	-	m/(m.K)	90×10^{-6}
Temperature of deflection under load:			
- method A: 1.8 MPa	+ ISO 75-1/-2	°C	80
Max. allowable service temperature in air:			
- for short periods	-	°C	170
- continuously: for 5'000 / 20'000 h	-	°C	105 / 90
Min. service temperature	-	°C	-30
Flammability:			
- „Oxygen Index"	ISO 4589-1/-2	%	25
- according to UL 94 (3 / 6 mm thickness)	-	-	HB / HB
Mechanical Properties at 23°C			
Tension test:			
- tensile stress at yield / tensile stress at break	+ ISO 527-1/-2	MPa	86 / -
	++ ISO 527-1/-2	MPa	55 / -
- Ttensile strength	+ ISO 527-1/-2	MPa	88
- tensile strain at yield	+ ISO 527-1/-2	%	5
- tensile strain at break	+ ISO 527-1/-2	%	25
	++ ISO 527-1/-2	%	> 50
- tensile modulus of elasticity	+ ISO 527-1/-2	MPa	3600
	++ ISO 527-1/-2	MPa	1750
Compression test:			
- compressive stress at 1 / 2 / 5% nominal strain	+ ISO 604	MPa	34 / 64 / 93
Charpy impact strength - unnotched	+ ISO 179-1/1eU	kJ/m²	ohne Bruch
Charpy impact strength - notched	+ ISO 179-1/1eA	kJ/m²	3
Ball indentation hardness	+ ISO 2039-1	N/mm²	165
Rockwell hardness	+ ISO 2039-2	-	M88
Electrical Properties at 23°C			
Electrical 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 ε_r: - at 100 Hz	+ IEC 60250	-	3.6
	++ IEC 60250	-	6.6
- at 1 MHz	+ IEC 60250	-	3.2
	++ IEC 60250	-	3.7
Dielectric dissipation factor δ tan: - at 100 Hz	+ IEC 60250	-	0.012
	++ IEC 60250	-	0.14
- at 1 MHz	+ IEC 60250	-	0.016
	++ IEC 60250	-	0.05
Comparative tracking index (CTI)	+ IEC 60112	-	600
	++ IEC 60112	-	600

Note: 1 g/cm³ = 1000 kg/m³; 1 Mpa = 1 N/mm²; 1 kV/mm = 1 MV/m.

\+ : Values for dry material
++ : Values for up to saturation in air of 23 ° C / 50% RF material stored (mostly derived from large)

This table is a valuable help in the choice of a material. The data listed here fall within the normal range of products properties, but they should not be used to establish material specification limits nor used alone as the basis of design.

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