TEKNIK s.r.l.
LAVORAZIONE MATERIE PLASTICHE
VIA G.ROSSINI, 1
20010 ASMONTE DI OSSONA (MI)
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PA 6 **(POLYAMIDE)**
MATERIAL DATA SHEET

- High mechanical strength, stiffness, hardness and toughness
- Good fatigue resistance
- High mechanical damping ability
- Good sliding properties
- Excellent wear resistance
- Good electrical insulating properties
- Good resistance to high energy radiation (gamma- and X-rays)
- Good machinability

This material offers an optimal combination of mechanical strength, stiffness, toughness, mechanical damping properties and wear resistance. These properties, together with a good electrical insulating ability and a good chemical resistance make PA 6 "general purpose" grade for mechanical construction and maintenance.

PROPERTIES	Test methods	Units	VALUES
Colour	-	-	Natural/black
Density	ISO 1183-1	g/cm³	1.14
Water absorption:			
- after 24/96 h immersion in water of 23°C	ISO 62	mg	86/168
	ISO 62	%	1.28/2.50
- at saturation in air of 23°C / 50% RH		%	2.6
- at saturation in water of 23°C	-	%	9
Thermal Properties			
Melting temperature (DSC, 10°C/min)	ISO 11357-1/-3	°C	220
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)	90x 10^{-6}
- average value between 23 and 100°C	-	m/(m.K)	105x 10^{-6}
Temperature of deflection under load:			
- method A: 1.8 MPa +	ISO 75-1/-2	°C	70
Max. allowable service temperature in air:			
- for short periods	-	°C	160
- continuously : for 5000 /20000 h	-	°C	85/70
Min. service temperature	-	°C	-40
Flammability:			
- "Oxygen Index"	ISO 4589-1/-2	%	25
- according to UL 94 (1.5 / 3 mm thickness)	-	-	HB / HB
Mechanical Properties at 23°C			
Tension test:			
- tensile stress at yield/ tensile stress at break +	ISO 527-1/-2	MPa	80/-
++	ISO 527-1/-2	MPa	45/-
- tensile strength +	ISO 527-1/-2	MPa	80
- tensile strain at yield +	ISO 527-1/-2	%	4
- tensile strain at break	ISO 527-1/-2	%	>50
++	ISO 527-1/-2	%	>100
- tensile modulus of elasticity +	ISO 527-1/-2	MPa	3300
++	ISO 527-1/-2	MPa	1425
Compression test			
- compressive stress at 1/2/5 % nominal strain	ISO 604	MPa	24 / 46 / 80
Creep test in tension to produce 1% strain in 1000 h ($б_{1/1000}$) +	ISO 899-1	MPa	18
++	ISO 899-1	MPa	7
Charpy impact strength - Unnotched	ISO 179/1eU	kJ/m²	No break
Charpy impact strength - Notched	ISO 179/1eA	kJ/m²	5.5
Izod impact strnght – Notched +	ISO 180/A	kJ/m²	5.5
++	ISO 180/A	kJ/m²	15
Ball indentation hardness	ISO 2039-1	N/mm²	150
Rockwell hardness	ISO 2039-2	-	M85
Electrical Properties at 23 °C			
Electric strength +	IEC 60243-1	kV/mm	25

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	++	IEC 60243-1	kV/mm	16
Volume resistivity	+	IEC 60093	Ohm.cm	$>10^{14}$
	++			$>10^{12}$
Surface resistivity	+	IEC 60093	Ohm	$>10^{13}$
	++	IEC 60093	Ohm	$>10^{12}$
Relative permittivity ε_r: - at 100 Hz	+	IEC 60250	-	3.9
	++	IEC 60250	-	7.4
- at 1 MHz	+	IEC 60250	-	3.3
		IEC 60250	-	3.8
Dielectric dissipation factor tan δ: - at 100 Hz	+	IEC 60250	-	0.019
	++	IEC 60250	-	0.13
- at 1 MHz	+	IEC 60250	-	0.021
	++	IEC 60250	-	0.06
Comparative tracking index	+	IEC 60112	-	600
	++	IEC 60112	-	600

Note: 1 g/cm³ = 1,000 kg/m³ ; 1 MPa = 1 N/mm² ; 1 kV/mm = 1 MV/m.

\+ values referring to dry material
++ values referring to material in equilibrium with the standard atmosphere 23°C / 50% RH (mostrly derived from literature)