

Material: Polyamide 6 cast

Abbreviation: PA 6-G



Short description of material:

PA 6- G is produced by direct polymerisation in moulds and has a partially crystalline structure. The high crystallinity gives it excellent mechanical properties such as high abrasion and wear resistance and good hardness and stiffness.

Application examples:

- sheaves
- gears
- wheels
- bearings
- wear strips and plates
- guide strips

Colors: Natural, Black, Blue

Mechanical values		dry / humid	
Density	ISO 1183	1, 15	g/cm ³
Yield Stress	ISO 527	80/ 60	MPa
Elongation due to tearing	ISO 527	40 / 100	%
Modulus of elasticity resulting from tensile test	ISO 527	3.100 / 1.800	MPa
Modulus of elasticity resulting from bending test	ISO 178	3.400 / 2.000	MPa
Flexural strength	ISO 178	140/ 60	MPa
Impact strength ¹⁾	ISO 179	o.B.	kJ/m ²
Notched –bar impact strength	ISO 179	>4/ >15.	kJ/m ²
Ball indentation hardness H _{358/30}	ISO2039-1	160 / 125	MPa
Creep rate stress at 1% elongation ²⁾	DIN53 444	>7	MPa
Sliding friction coefficient against steel (dry running) ³⁾	-----	0, 36 / 0, 42	-----
Sliding wear agents steel dry running) ³⁾	-----	0, 10	µm/km
Thermal values			
Melting temperature	ISO 3146	+220	°C
Thermal conductivity	DIN 52612	0, 23	W/ (K·m)
Specific thermal capacity	-----	1,7	J/ (g·k)
Coefficient of linear expansion ⁴⁾	-----	7 - 8	10 ⁻⁵ ·K ⁻¹
Operating temperature range (long-term) ⁵⁾	-----	-40 / +105	°C
Operating temperature range (short-term) ⁵⁾	-----	+170	°C
Fire behavior	UL 94	HB	-----
Electrical values			
Dielectric constant ⁶⁾	IEC 250	3,7	-----
Dielectric loss factor ⁶⁾	IEC 250	0,03	-----
Specific volume resistance	IEC 93	10 ¹⁵ /10 ¹²	Ω· cm
Surface resistance	IEC 93	10 ¹³ /10 ¹²	Ω
Dielectric strength	IEC 243	50 / 20	KV/mm
Creep current resistance	IEC112	KA 3c / KA 3b	-- ----
Miscellaneous data			
Moisture absorption in normal climate until saturated	DIN 53715	2, 2	%
Water absorption until saturated	ISO 62	6,5	%

1; Measured with a pendulum impact testing machine 0,1 DIN 51 222

2; Tension resulting in 1% total elongation after 1.000 h

3; against steel, hardened and ground , P = 0,05 MPa,

V=0,6 m/s, t = 60 °C near running surface

4; For a temperature range of + 23 °C to + 60 °C

5; Experience values established with finished part that are not under any stress in heated air, depending on the type and from of heat exposure, short-term = max. 1 h long term = months 6; at 10⁶ Hz

w.b. = without breakage

1 MPa = 1 N/mm²

1 g/cm³ = 1.000 kg/m³

1 kV/mm = 1 MV/m

The contents of this datasheet are meant to give an overview of the product's properties. It reflects our current knowledge and may not be complete. The values should be taken as guide values because they are very dependent on surrounding condition and machining methods. The values are in no way a legally binding assurance of the product's properties or its suitability for use in a specific application. All stated values are average values established from many individual tests. They are based on a temperature of 23 °C and 50% RH. For specific application, we recommend determining suitability by means of a trial.

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