

Kormax Nylon PA6

Kormax Material Document

Kormax Nylon [technical name Polyamide] is one of the most widely used engineering plastic materials due to its excellent wear and bearing properties. Due to the way nylon shapes are manufactured, a vast array of shapes, sizes and grades are available. Kormax Nylons are frequently used to replace metals and other materials and can be a cost effective alternative. Kormax Nylons have extremely good wear resistance, high tensile strength, high impact resistance and good chemical resistance against many harsh chemicals. Compared to some metals, nylon can be up to 80% lighter.

	Max Continuous Operating Temperature	90°C		Density	1.14
	Tensile Strength	24 MPa		Outside in Sunlight	No
	Suitability for Food Contact	Yes		Moisture Absorption	6.5%
	Coefficient of Friction to Steel	Very good		Machinability	Moderate

Physical Properties

	Test Method	Unit	Value
Specific gravity (ρ)	ISO 1183	g/cm ³	1.15
Water absorption ⁹	ISO 62	%	6.5
Humidity absorption ⁹	ISO 62	%	2.2
Maximum permissible service temp. ⁹	UL746B	°C	105
Lower permissible service temp. ⁹	UL746B	°C	-40

Mechanical Properties

	Test Method	Unit	Value
Tensile strength at yield (σ_S)	ISO 527	MPa	80
Elongation at yield (ξ_S)	ISO 527	%	-
Tensile strength at break (σ_B)	ISO 527	MPa	-
Elongation at break (ξ_B)	ISO 527	%	60
Impact strength (a_n) ⁹	ISO 179	kJ/m ²	n.b.
Notch impact strength (a_k) ⁹	ISO 179	kJ/m ²	> 4
Ball indentation (H_k)/Rockwell hardness ⁹	ISO 2039	MPa	155
Shore-D	ISO 868	-	83
Flexural strength ($\sigma_{B3.5\%}$) ⁹	ISO 178	MPa	≥ 100
Modulus of elasticity (E_t)	ISO 527	MPa	3100

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Thermal Properties ⁹		Test Method	Unit	Value
Vicat-softening point	VST/B/50	ISO 306	°C	-
	VST/A/50	ISO 306	°C	-
Heat deflection temperature	HDT/B	ISO 75	°C	-
	HDT/A	ISO 75	°C	-
Coef. of linear thermal expansion (α)		ISO 11359	K ⁻¹ * 10 ⁻⁴	≥ 0.8
Thermal conductivity at 20°C (λ)		ISO 22007-4	W/(m * K)	0.23
Glass transition temperature (T _g)		ISO 3146	°C	40
Melting temperature (T _m)		ISO 3146	°C	220

Electrical Properties		Test Method	Unit	Value
Volume resistivity (ρ_D) ⁸		IEC 60093	Ω *cm	≥ 10 ¹³
Surface resistivity (R _o) ⁸		IEC 60093	Ω	≥ 10 ¹³
Dielectric constant at 1MHz (ϵ_r) ⁹		IEC 60250	-	3.7
Dielectric loss factor at 1 MHz (tan δ) ⁹		IEC 60250	-	0.03
Dielectric strength ⁹		IEC 60243-1	kV/mm	50
Tracking resistance ⁹		IEC 60112	V	CTI 600

Additional Data		Test Method	Unit	Value
Bondability		-	-	+
Physiological indifference ⁵ according		EEC	-	+
		FDA	-	0
Flammability ^{8 9}		UL 94	-	HB
Limiting Oxygen Index (LOI) ^{8 9}		ASTM D2863	%	-
UV stabilisation ^{6 8 9}		-	-	-

¹ The physical data contained in this table are typical values and reflect the current state of our knowledge. The data are arithmetic average values which are tested by test specimens made out of rods (\varnothing 40-60 mm). These has to be understood as guidelines, and shall not be used for specification purposes for finished parts. Missing data are completed by data of the raw materials.

⁵ Physiological indifferences are valid for nature coloured materials on the raw material side. There are also approvals for our semi-finished products available or in preparation. Please check this separately with us. ⁶ Valid for nature coloured materials. An additional UV protection can be taken over by special pigments e.g. carbon black. ⁷ Test results without UL registration ⁸ Data are only valid for natural colours ⁹ Data taken from raw material *Self-assessment without test certificate * Own classification without official test report n.b. = No break + = yes o = Limited - = no / no data available

Notes for the user: The values given in this data sheet are based on a sheet with a 40mm thickness. Depending on the thickness the technical values may vary during processing.

The technical data given in this sheet correspond to our current state of knowledge and should not be construed as an agreement or guarantee regarding certain properties of our products. The decision on the suitability of a particular material for a specific application is up to the user. We reserve the right to modify the given data. Errors of the given data are reserved. The document was produced by machine and is valid without signature.