Technical Data Sheet

PA 6 G
Polyamid

General properties	Test method	Unit	Guideline value
Density	DIN EN ISO 1183-1	g / cm³	1,15
Water absorption	DIN EN ISO 62	%	2,5
Flammability (Thickness 3 mm / 6 mm)	UL 94	---	HB / HB
Mechanical properties			
Yield stress	DIN EN ISO 527	MPa	75
Elongation at break	DIN EN ISO 527	%	45
Tensile modulus of elasticity	DIN EN ISO 527	MPa	3400
Notched impact strength	DIN EN ISO 179	kJ / m²	3
Shore hardness	DIN EN ISO 868	scale D	83
Thermal properties			
Melting temperature	ISO 11357-3	°C	216
Thermal conductivity	DIN 52612-1	W / (m * K)	0,25
Thermal capacity	DIN 52612	kJ / (kg * K)	1,70
Coefficient of linear thermal expansion	DIN 53752	10^{-6} / K	80
Service temperature, long term	Average	°C	-40 / +110
Service temperature, short term (max.)	Average	°C	170
Heat deflection temperature	DIN EN ISO 75, Verf. A, HDT	°C	95
Electrical properties			
Dielectric constant	IEC 60250	---	3,7
Dielectric dissipation factor (50 Hz)	IEC 60250	---	0,02
Volume resistivity	DIN EN 62631-3-1	Ω * cm	10^{15}
Surface resistivity	DIN EN 62631-3-2	Ω	10^{13}
Comporative tracking index	IEC 60112	---	600
Dielectric strength	IEC 60243	kV / mm	20

Moisture absorption changes the mechanical properties of polyamides, the material becomes tougher and more impact resistant, and the modulus of elasticity decreases. Depending on the ambient atmosphere, the temperature and the time for moisture absorption, however, only a certain surface layer is affected by the property changes. In the case of thick-walled parts, the core area remains unchanged. The short-term maximum service temperature applies only to applications with very low mechanical stress for a few hours. The long-term maximum service temperature is based on the thermal aging of the plastics by oxidation, which results in a decrease of the mechanical properties. Specified are the temperatures that cause a 50% decrease in tensile strength (measured at room temperature) compared to the initial value after a period of at least 5,000 hours. This value provides information on the mechanical strength of the material at high application temperatures. In the case of thick-walled parts, oxidation at high temperatures affects only the surface, which can be better protected by the addition of antioxidants. The core area of the parts remains undamaged in any case. The minimum operating temperature is largely determined by possible impact or shock loads during use. The values given refer to low impact stress. The values given are mean values which have been verified by continuous statistical tests. They comply with the requirements of DIN EN 15860 and are intended only as information about our products and as an aid to material selection. They do not constitute a legally binding guarantee of specific properties or suitability for specific applications. Since the properties also depend on the dimensions of the semi-finished products and the degree of crystallization (e.g. nucleation by pigments), the actual property values of a particular product may differ somewhat from the specifications.

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