Material Data Sheet

PA6G natural

Chemical Designation :	Cast Polyamide 6
DIN-Abbreviation:	PA 6 G
Colours, fillers:	opaque/ yellow

Main features

- very easily machined
- shock absorbing
- good sliding properties
- very strong
- wear resistant
- electrically insulating
- very tough
- resistant to many oils, greases, diesels and petrol

Preferred Fields

- mechanical engineering
- transport and conveyor technology
- textile machinery
- building machinery
- printing machinery
- automotive engineering
- gears, couplings and engine construction
- packaging and paper processing machinery
- agricultural machinery

Applications

Properties

Mechanical	**dry / moist**		**standard**
Tensile strength at yield	85 / 60	MPa	DIN EN ISO 527
Elongation at break	30 / 50	%	DIN EN ISO 527
Modulus of elasticity in tension	3300 / 1700	MPa	DIN EN ISO 527
Hardness	160 / 90		DIN 53 456 (Kugeldruckhärte)
Impact strength 23° C (Charpy)	n.b.	KJ/m²	DIN EN ISO 179 (Charpy)
Creep rupture strength after 1000 h with static load	50	MPa	
Time yield limit for 1% elongation after 1000 h	5	MPa	
Co-efficient of friction p = 0,05 N/mm²v=0,6 m/s on steel, hardened and ground	0,4		

Thermal	**dry / moist**		**standard**
Crystalline melting point	220	°C	DIN 53 765
Glass transition temperature	40 / 5	°C	DIN 53 765
Heat distortion temperature HDT, Method A	95	°C	ISO-R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B	195	°C	ISO-R 75 Verfahren B (DIN 53 461)
Max. service temperature			
short term	170	°C	
long term	100	°C	
Thermal conductivity (23° C)	0,24	W/(K·m)	
Specific heat (23° C)	1,7	J/g.K	
Coefficient of thermal expansion (23-55°C)	7,5 / 9,5	10^{-5}1/K	DIN 53 752

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Electrical	**dry / moist**		**standard**
Dielectric constant (10^6 Hz)	3,7		DIN 53 483, IEC-250
Dielectric loss factor (10^6 Hz)	0,03-0,30		DIN 53 483, IEC-250
Specific volume resistance	10^12 - 5*10^14	Ω*cm	DIN IEC 60093
Surface resistance	5*10^12	Ω	DIN IEC 60093
Dielectric strength	25-50	kV/mm	DIN 53 481, IEC-243, VDE 0303 Teil 2
Resistance to tracking	KA 3c KA 3b		DIN 53 480, VDE 0303 Teil 1

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Miscellaneous	**dry / moist**		**standard**
Density	1,15	g/cm^3	DIN 53 479
Moisture absorption (23°C/50RH)	2,5	%	DIN EN ISO 62
Water absorption to equilibrium	6,0-7	%	DIN 53 495
Flammability acc. to UL standard 94	HB		
Resistance to hot water, washing soda:	(+)		
Resistance to weathering	-		

(1) Testing of semi-finished products