ENSINGER
ASK. THINK. SUCCEED.

Material Data Sheet, December 2007

TECAMID 66 HI

Chemical Designation :	Polyamide 66
DIN-Abbreviation:	PA 66
Colours, fillers:	brown, heatstabilizer

Main features

- very strong
- good sliding properties
- tough
- easily machined
- good electrical insulation
- rigid
- resistant to heat ageing
- resistant to many oils, greases, diesels and petrol
- wear resistant
- easily welded and bonded

Preferred Fields

- mechanical engineering
- transport and conveyor technology
- precision engineering
- textile machinery
- automotive engineering
- electrical engineering
- domestic appliance

Applications

Diverse machine parts, gear wheels, friction bearings, friction strips, bushes, cam discs, rope pulleys, connectors

Properties

Mechanical	dry / moist		standard
Tensile strength at yield	80 / 60	MPa	DIN EN ISO 527
Elongation at yield	4	%	DIN EN ISO 527

Tensile strength at break		MPa	
Elongation at break	50 / 150	%	DIN 53 455
Modulus of elasticity in tension	2700 / 1600	MPa	DIN EN ISO 527
Modulus of elasticity after flexural test		MPa	
Hardness	170 / 100		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		MPa	
Time yield limit for 1% elongation after 1000 h	6	MPa	
Co−efficient of friction p = 0,05 N/mm²v=0,6 m/s on steel, hardened and ground			
Wear p = 0,05 N/mm²v=0,6 m/s on steel, hardened and ground		µm/km	

Thermal	**dry / moist**		**standard**
Crystalline melting point		°C	
Glass transition temperature	72 / 5	°C	DIN 53 765
Heat distortion temperature HDT, Method A	100	°C	ISO−R 75 Verfahren A (DIN 53 461)
Heat distortion temperature HDT, Method B	200	°C	ISO−R 75 Verfahren B (DIN 53 461)
Max. service temperature			
short term	180	°C	
long term	115	°C	
Thermal conductivity (23° C)	0,23	W/(K·m)	
Specific heat (23° C)	1,7	J/g.K	
Coefficient of thermal expansion (23−55°C)	8	10^{-5}1/K	DIN 53 752

Properties

Electrical	dry / moist		standard
Dielectric constant (10^6 Hz)	3,2−5		DIN 53 483, IEC−250
Dielectric loss factor (10^6 Hz)	0,025−0,2		DIN 53 483, IEC−250
Specific volume resistance	10^12	Ω*cm	DIN IEC 60093
Surface resistance	10^10	Ω	DIN IEC 60093
Dielectric strength	100 / 80	kV/mm	DIN 53 481, IEC−243, VDE 0303 Teil 2
Resistance to tracking	KB>600 KC>600		DIN 53 480, VDE 0303 Teil 1

Miscellaneous	dry / moist		standard
Density	1,14	g/cm^3	DIN 53 479
Moisture absorption (23°C/50RH)	2,8	%	DIN EN ISO 62
Water absorption to equilibrium	8,5	%	DIN EN ISO 62
Flammability acc. to UL standard 94	HB		

(1) Testing of semi−finished products

The above information corresponds with our current knowledge and indicates our products and possible applications. We cannot give a legally binding guarantee of chemical resistance, of certain properties and the suitability of our products and their applications. Our products are not destined for use in medical and dental implants. Existing commercial patents must be observed. Unless otherwise stated, these values represent averages taken from injection moulding samples, dry as moulded. We reserve the right to make technical alterations.