Material-Data-Sheet

Material: **LiNNOTAM** *HiPERFORMANCE 612*

Stand 05/2020

Short description of material

This polyamide mixture is static cast from caprolactam and laurinlactam. Compared to pure LiNNOTAM it has better impact and shock resistance as well as less moisture absorption. This material is also characterised by is improved creep resistance and higher elasticity.

Application examples

- Gears
- Geared bars
- Pinions
- Castors with long downtimes
- supporting discs.

Colours natural

Mechanical values	**ISO / EN / DIN**	**Dry**	**Humid**	
Density	ISO 1183	1,12	--	g/cm³
Yield stress	ISO 527	80	55	MPa
Elongation at break	ISO 527	55	120	%
Modulus of elasticity from tensile test	ISO 527	2500	1500	MPa
Modulus of elasticity from bending test	ISO 178	2800	1800	MPa
Flexural Strength	ISO 178	135	55	MPa
Impact strength[1)]	ISO 179	without break	without break	KJ/m²
Notched-bar Impact Strength	ISO 179	>12	--	KJ/m²
Ball indentation hardness H358/30	ISO 2039-1	140	100	MPa
Creep rate stress at 1% Dehnung[2)]	DIN EN ISO 899-1	>15	--	MPa
Sliding friction coefficient against steel (dry running)[3)]	-	0,36	0,42	-
Sliding wear against steel (dry running)I[3)]	-	0,12	--	µm/km
Thermal values				
Melting temperature	ISO 3146	+220	--	°C
Thermal conductivity	DIN EN 12939	0,23	--	W/(K*m)
Specific thermal capacity	-	1,7	--	J/(g*K)
Coefficient of thermal expansion (linear)[4)]	-	7-8	--	10-5*K-1
Operating temperature range (long-term)[5)]	-	-40 bis +105	--	°C
Operating temperature range (short-term)[5)]	-	+160	--	°C
Fire behaviour	UL 94, IEC 60695	HB	--	-
Electrical values				
Dielectric constant[6)]	IEC 60250	3,7	--	-
Dielectric loss factor[6)]	IEC 60250	0,03		-
Specific volume resistance	IEC 60093	10^{15}	--	Ω *cm
Surface resistance	IEC 60093	10^{13}	--	Ω
Dieletric strength	IEC 60243	50	20	kV/mm
Creep current resistance	IEC 60112	KA 3c	--	-
Miscellaneous data				
Moisture absorption in normal climate until saturated	DIN EN ISO 62	1,9	--	%
Water absorption until saturated	DIN EN ISO 62	5,8	--	%

[1)] measured with a pendulum impact testing machine 0,1 DIN 51 222
[2)] tension resulting in 1% total elongation after 1.000h
[3)] against steel, hardened and ground
P = 0,05 Mpa; V = 0,6m/s; t = 60 °C near running surface
[4)] For a temperature range of + 23 °C up to + 60 °C
[5)] Experience values established with finished parts that are not under any stress in heated air, depending on the type and form of heat exposure, short-term = max. 1h, long-term=months
[6)] at 10^6 Hz

The content 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 depent on surrounding conditions 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 applications, we recommend determining suitability by means of a trial.

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