

TECAFIL PEEK LDS black - Filament

Chemical Designation

PEEK (Polyetheretherketone)

Colour

black

Density

1.67 g/cm³

Fillers

mineral filler

This data sheet is only for development purposes and can be changed without prior notice. The commercialisation of the product is not guaranteed.

Main features

- developed for the LPKF-LDS® process
- Standard spool body: OD Ø 200mm, width 55mm, Take up Ø52mm

Target Industries

- electrical engineering
- mechanical engineering
- medical technology

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50 mm/min	105	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)	1 mm/min	10900	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)	50 mm/min	2,5	%	DIN EN ISO 527-1	
Impact strength (Charpy)		35	kJ/m ²	DIN EN ISO 179-1eU	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		143	°C	DIN 53765	
Melting temperature		343	°C	DIN 53765	
Heat distortion temperature		218	°C	ISO-R 75 Method A	
Service temperature	long term	260	°C	-	
Service temperature	short term	300	°C	-	
Thermal expansion (CLTE)	longitudinal (at 23 - 100 °C)	18	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 23 - 100 °C)	26	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 200 - 260 °C)	46	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 200 - 260 °C)	67	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 260 - 300 °C)	63	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 260 - 300 °C)	88	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal diffusivity	in-plane	0,84	mm ² /s	DIN EN 821	
Thermal diffusivity	through-plane	0,29	mm ² /s	DIN EN 821	
Electrical properties	parameter	value	unit	norm	comment
surface resistivity		5,8 x 10 ¹²	Ω	DIN EN 61340-2-3	
volume resistivity		5,8 x 10 ¹¹	Ω*m	DIN EN 61340-2-3	
Dielectric strength	70 mm x 70 mm x 3 mm	17,5	kV/mm	ISO 60243-1	
Dielectric loss factor	test frequency of 1 kHz	0,0066		DIN 53483-1	
Dielectric constant	test frequency of 1 kHz	3,73		DIN 53483-1	
Resistance to tracking (CTI)		225	V	DIN EN 60112	
Other properties	parameter	value	unit	norm	comment
Molding shrinkage	transverse	0,56	%	DIN EN ISO 294-4	(1) No listing at UL (Yellow Card).
Molding shrinkage	longitudinal	0,52	%	DIN EN ISO 294-4	(2) test method: pull-off-test
Water absorption	23 °C / 50 % relative humidity up to saturation	< 0,1	%	DIN EN ISO 62	
Flammability (UL94)	at 0,8 mm	V0		DIN IEC 60695-11-10;	1)
Melt flow index (MFI)	380 °C / 10 kg	77	g/10 min	DIN EN ISO 1133	
Bulk density		0,90	g/cm ³	EN ISO 60	
Adhesive strength (metal path)		19,4	N/mm ²	-	2)
Laser Marking Parameter	Power	2 - 8	W	-	
Laser Marking Parameter	Frequency	120 - 180	kHz	-	
Laser Marking Parameter	Forward movement	1,8 - 2,4	m/s	-	
Predrying	parameter	value	unit	norm	comment
Permissible residual moisture content		< 0,02	%	-	
Drying temperature		140 - 160	°C	-	
Drying time		4 - 6	h	-	

- To achieve optimum mechanical properties, it is recommended to pre-dry the material with the above mentioned parameters.
- The filament should preferably be stored in dry, normal temperature rooms and protected from direct sunlight.

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