

TECACOMP PEEK MED LDS grey 1067594 - Compounds

Chemical Designation

PEEK (Polyetheretherketone)

Colour

grey

Density

1.65 g/cm³

Fillers

mineral filler

Main features

- developed for the LPKF-LDS® process
- biocompatibility see declaration of conformity
- very good chemical resistance
- inherent flame retardant
- good heat deflection temperature
- low moisture absorption

Target Industries

- electrical engineering
- mechanical engineering
- medical technology
- automotive industry

<i>Mechanical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Tensile strength		103	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)		10700	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)		2,2	%	DIN EN ISO 527-1	
Impact strength (Charpy)		30	kJ/m ²	DIN EN ISO 179-1eU	
<i>Thermal properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Glass transition temperature		143	°C	DIN 53765	(1) literature value
Melting temperature		343	°C	DIN 53765	(2) literature value
Heat distortion temperature		254	°C	ISO-R 75 Method A	
Service temperature	long term	260	°C	-	1)
Service temperature	short term	300	°C	-	2)
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)	31	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 200 - 260 °C)	47	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 200 - 260 °C)	87	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)	110	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Specific heat		0,8	J/(g*K)	DIN EN 821	
Thermal conductivity	in-plane	1,2	W/(K*m)	DIN EN 821	
Thermal conductivity	through-plane	0,5	W/(K*m)	DIN EN 821	
Thermal diffusivity	in-plane	0,67	mm ² /s	DIN EN 821	
Thermal diffusivity	through-plane	0,28	mm ² /s	DIN EN 821	
<i>Electrical properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
surface resistivity		10 ¹⁴	Ω	DIN EN 61340-2-3	
volume resistivity		10 ¹⁴	Ω*m	DIN EN 61340-2-3	
Dielectric loss factor	test frequency of 1 GHz	0,0006	-	-	
Dielectric constant	test frequency of 1 GHz	3,6	-	-	
<i>Other properties</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Water absorption	23 °C / 50 % relative humidity up to saturation	0,04	%	DIN EN ISO 62	(1) No listing at UL (Yellow Card).
Molding shrinkage	longitudinal	0,6	%	DIN EN ISO 294-4	
Molding shrinkage	transverse	0,6	%	DIN EN ISO 294-4	
Flammability (UL94)	at 0,9 mm	V0		DIN IEC 60695-11-10; 1)	
<i>Processing parameter</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
processing temperatures		360 - 410	°C	-	
Mould temperature		170 - 210	°C	-	

→ This material can be processed as a thermoplastic taking the normal technical provisions into account. The above mentioned information refers exclusively to the injection moulding process.

→ Back pressure and injection rate should be adjusted to the component geometry accordingly. The optimum processing temperature depends upon the respective geometry of the moulded part and can be different from machine to machine.

<i>Pre-drying</i>	<i>parameter</i>	<i>value</i>	<i>unit</i>	<i>norm</i>	<i>comment</i>
Permissible residual moisture content		< 0,02	%	-	
Drying temperature		160	°C	-	
Drying time		4	h	-	

→ To achieve optimum mechanical properties, it is recommended to pre-dry the material with the above mentioned parameters.

→ Information on storage and shelf life: The granules must be stored in dry, normally tempered rooms and in closed containers. For moisture-sensitive materials, the granules must be sealed airtight. Protection against direct sunlight must be guaranteed. The granules are usually subject to the requirements of no shelf life limitation. Shelf Life may be limited by some additives.

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specification purposes. Unless otherwise noted, these values were determined by tests on injection moulded samples, dry as moulded. The customer is solely responsible for the quality and suitability of products for the application and has to test usage and processing prior to use. Data sheet values are subject to periodic review, the most recent update can be found at ensingerplastics.com. Technical changes reserved.

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