TECACOMP PEEK MED LDS grey 1067594 - Compounds

Chemical Designation
PEEK (Polyetheretherketone)

Colour
grey

Density
1.65 g/cm^3

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
- medical technology

Mechanical properties	parameter	value	unit	norm		comment
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		

Thermal properties	parameter	value	unit	norm		comment
Glass transition temperature		143	°C	DIN 53765		(1) literature value (2) literature value
Melting temperature		343	°C	DIN 53765		
Heat distortion temperature		254	°C	ISO-R 75 Method A		
Service temperature	short term	300	°C	-	1)	
Service temperature	long term	260	°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		

Electrical properties	parameter	value	unit	norm		comment
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	0,002		-		
Dielectric constant	test frequency of 1 GHz	3,6		-		

Other properties	parameter	value	unit	norm		comment
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)	

Processing parameter	parameter	value	unit	norm	comment
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.

Predrying	parameter	value	unit	norm	comment
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.

Our information and statements reflect to current state of our knowledge and shall inform about the products and their applications. They do not assure or guarantee chemical resistance, quality of products and their merchantability in a legally binding way. Our products are not defined for the use in medical or dental implants. Existing commercial patents have to be observed. The corresponding values and information are no minimum or maximum values, but guideline values that can be used primarily for comparison purposes for material selection. These values are within the normal tolerance range of product properties and do not represent guaranteed property values. Therefore they shall not be used for

specification purposes. Unless otherwise noted, these values were determined by tests on injection moulded samples, dry as moulded. The customer is sorely 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.

Ensinger Ltd
Wilfried Way
Tonyrefail, Mid Glamorgan CF39 8JQ
Great Britain

Phone (01443) 678400
Fax (01443) 675777
ensingerplastics.com

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