TECACOMP PEEK LDS black 1047045 - Compounds

Chemical Designation
PEEK (Polyetheretherketone)

Colour
black

Density
1.67 g/cm^3

Fillers
mineral filler

Main features
- developed for the LPKF-LDS® process
- high adhesive strength
- very good chemical resistance
- inherent flame retardant
- good heat deflection temperature
- low moisture absorption

Target Industries
- electrical engineering
- mechanical engineering

Mechanical properties	condition	value	unit	test method		comment
Tensile strength		102	MPa	DIN EN ISO 527-1		
Modulus of elasticity (tensile test)		10700	MPa	DIN EN ISO 527-1		
Elongation at break (tensile test)		2,3	%	DIN EN ISO 527-1		
Impact strength (Charpy)		31	kJ/m^2	DIN EN ISO 179-1eU		
Thermal properties	**condition**	**value**	**unit**	**test method**		**comment**
Glass transition temperature		143	°C	-	1)	(1) literature value (2) literature value (3) literature value (4) literature value
Melting temperature		343	°C	-	2)	
Heat distortion temperature		204	°C	ISO-R 75 Method A		
Service temperature	short term	300	°C	-	3)	
Service temperature	long term	260	°C	-	4)	
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 conductivity	in-plane	1,7	W/(K*m)	ISO 22007-4:2008		
Thermal conductivity	through-plane	0,5	W/(K*m)	ISO 22007-4:2008		
Electrical properties	**condition**	**value**	**unit**	**test method**		**comment**
surface resistivity		10^{12}	Ω	DIN EN 61340-2-3		
volume resistivity		10^{11}	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		-		
Resistance to tracking (CTI)		225	V	DIN EN 60112		
Other properties	**condition**	**value**	**unit**	**test method**		**comment**
Water absorption	23 °C / 50 % relative humidity up to saturation	< 0,1	%	DIN EN ISO 62		(1) No listing at UL (Yellow Card).
Molding shrinkage	longitudinal	0,52	%	DIN EN ISO 294-4		
Molding shrinkage	transverse	0,56	%	DIN EN ISO 294-4		
Flammability (UL94)	at 0,8 mm	V0		DIN IEC 60695-11-10;	1)	
Processing parameter	**condition**	**value**	**unit**	**test method**		**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	condition	value	unit	test method	comment
Permissible residual moisture content		< 0,02	%	-	
Drying temperature		150 - 160	°C	-	
Drying time		2 - 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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