

TECACOMP LCP LDS black 1049426 - Compounds

Chemical Designation

LCP (Liquid crystal polymer)

Colour

black

Density

1.74 g/cm³

Main features

- developed for the LPKF-LDS® process
- very low melt viscosity
- very good chemical resistance
- inherent flame retardant
- good heat deflection temperature
- low moisture absorption

Target Industries

- automotive industry
- electrical engineering
- LED lighting technology
- mechanical engineering

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength		85	MPa	DIN EN ISO 527-1	
Modulus of elasticity (tensile test)		9600	MPa	DIN EN ISO 527-1	
Elongation at break (tensile test)		1,6	%	DIN EN ISO 527-1	
Impact strength (Charpy)		15	kJ/m ²	DIN EN ISO 179-1eU	

Thermal properties	parameter	value	unit	norm	comment
Melting temperature		310	°C	-	1)
Heat distortion temperature		221	°C	ISO-R 75 Method A	2)
Service temperature	short term	260	°C	-	2)
Service temperature	long term	200	°C	-	3)
Thermal expansion (CLTE)	longitudinal (at 50 - 100 °C)	8	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 50 - 100 °C)	34	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 100 - 150 °C)	11	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 100 - 150 °C)	44	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 150 - 200 °C)	14	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 150 - 200 °C)	53	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	longitudinal (at 200 - 250 °C)	13	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal expansion (CLTE)	transverse (at 200 - 250 °C)	64	10 ⁻⁶ K ⁻¹	DIN EN ISO 11359-1;2	
Thermal conductivity	in-plane	2,1	W/(K*m)	ISO 22007-4:2008	
Thermal conductivity	through-plane	0,5	W/(K*m)	ISO 22007-4:2008	

Electrical properties	parameter	value	unit	norm	comment
surface resistivity		10 ¹⁵	Ω	DIN EN 61340-2-3	
volume resistivity		10 ¹⁵	Ω*m	DIN EN 61340-2-3	
Dielectric loss factor	test frequency of 1 GHz	0,0052	-	-	
Dielectric constant	test frequency of 1 GHz	3,5	-	-	
Resistance to tracking (CTI)		150	V	DIN EN 60112	

Other properties	parameter	value	unit	norm	comment
Molding shrinkage	longitudinal	0,03	%	DIN EN ISO 294-4	
Molding shrinkage	transverse	0,56	%	DIN EN ISO 294-4	
Water absorption	23 °C / 50 % relative humidity up to saturation	< 0,1	%	DIN EN ISO 62	
Flammability (UL94)	3,2 mm	V0	-	DIN IEC 60695-11-10;	

Processing parameter	parameter	value	unit	norm	comment
processing temperatures		290 - 350	°C	-	
Mould temperature		90 - 130	°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.

Pre-drying	parameter	value	unit	norm	comment
Permissible residual moisture content		< 0,01	%	-	
Drying temperature		130 - 150	°C	-	
Drying time		3 - 5	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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