

ZENITE® 7145L

Liquid Crystal Polymer

Zenite® 7145L is a 45% glass fiber reinforced and lubricated liquid crystal polymer for injection molding. It has excellent impact resistance and high heat deflection temperature.

Product information

Resin Identification	LCP-GF45	ISO 1043
Part Marking Code	>LCP-GF45<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0.1 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.5 %	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	18000 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	120 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	0.9 %	ISO 527-1/-2
Flexural modulus	17800 MPa	ISO 178
Flexural strength	180 MPa	ISO 178
Charpy impact strength, 23°C	18 kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	13 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	10 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	10 kJ/m ²	ISO 179/1eA
Hardness, Rockwell, M-scale	58	ISO 2039-2
Poisson's ratio	0.33 ^[C]	

[C]: Calculated

Thermal properties

Melting temperature, 10°C/min	355 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	295 °C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	7 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	24 E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.32 W/(m K)	ISO 22007-2
Specific heat capacity of melt	1500 J/(kg K)	ISO 22007-4

Flammability

Burning Behav. at 1.5mm nom. thickn.	V-0 class	IEC 60695-11-10
Thickness tested	1.5 mm	IEC 60695-11-10
Burning Behav. at thickness h	V-0 class	IEC 60695-11-10
Thickness tested	1.5 mm	IEC 60695-11-10
UL recognition	yes	UL 94
Oxygen index	45 %	ISO 4589-1/-2

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Electrical properties

Relative permittivity, 100Hz	4.8	IEC 62631-2-1
Relative permittivity, 1MHz	4.4	IEC 62631-2-1
Dissipation factor, 100Hz	130 E-4	IEC 62631-2-1
Dissipation factor, 1MHz	240 E-4	IEC 62631-2-1
Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Electric strength	36 kV/mm	IEC 60243-1
Comparative tracking index	200	IEC 60112

Physical/Other properties

Density	1740 kg/m ³	ISO 1183
Density of melt	1450 kg/m ³	

Injection

Drying Recommended	yes
Drying Temperature	150 °C
Drying Time, Dehumidified Dryer	4 - 6 h
Processing Moisture Content	≤0.01 %
Melt Temperature Optimum	365 °C
Min. melt temperature	360 °C
Max. melt temperature	370 °C
Screw tangential speed	0.2 - 0.3 m/s
Mold Temperature Optimum	100 °C
Min. mould temperature	80 °C
Max. mould temperature	120 °C
Back pressure	3 MPa
Ejection temperature	275 °C

Characteristics

Processing	Injection Moulding
Special characteristics	Flame retardant, Heat stabilised or stable to heat, High Flow, Improved weld line, Lead-free soldering resistant

Additional information

Injection molding

Preprocessing

Drying Temperature = 150 °C
Drying Time, Dehumidified Dryer = 3h
Processing Moisture Content = <0.01 %

Processing

Melt Temperature Optimum = 365 °C
Melt Temperature Range = 360-370 °C
Mold Temperature Optimum = 80 °C
Mold Temperature Range = 40-150 °C