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Celanese
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ZENITE® 5145L

Liquid Crystal Polymer

Zenite® 5145L is a 45% glass fiber reinforced and toughened liquid crystal polymer for injection molding. It has improved toughness.

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	15000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	115	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.1	%	ISO 527-1/-2
Flexural modulus	11000	MPa	ISO 178
Flexural strength	190	MPa	ISO 178
Compressive strength	71	MPa	ISO 604
Compressive stress at 1% strain	21.3	MPa	ISO 604
Poisson's ratio	0.33[C]		

[C]: Calculated

Thermal properties

Melting temperature, 10 °C/min	319	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	290	°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	60	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.35	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	0.8	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Oxygen index	33	%	ISO 4589-1/-2

Electrical properties

Relative permittivity, 1MHz	3.9		IEC 62631-2-1
Dissipation factor, 1MHz	180	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	45	kV/mm	IEC 60243-1
Comparative tracking index	175		IEC 60112

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Physical/Other properties

Density	1750	kg/m³	ISO 1183
Density of melt	1480	kg/m³	

Injection

Drying Recommended	yes	
Drying Temperature	150	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.01	%
Melt Temperature Optimum	335	°C
Min. melt temperature	325	°C
Max. melt temperature	345	°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	290	°C

Characteristics

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

Additional information

Injection molding

Preprocessing

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

Processing

Melt Temperature Optimum = 335°C
Melt Temperature Range = 325-345°C
Mold Temperature Optimum = 80°C
Mold Temperature Range = 40-150°C

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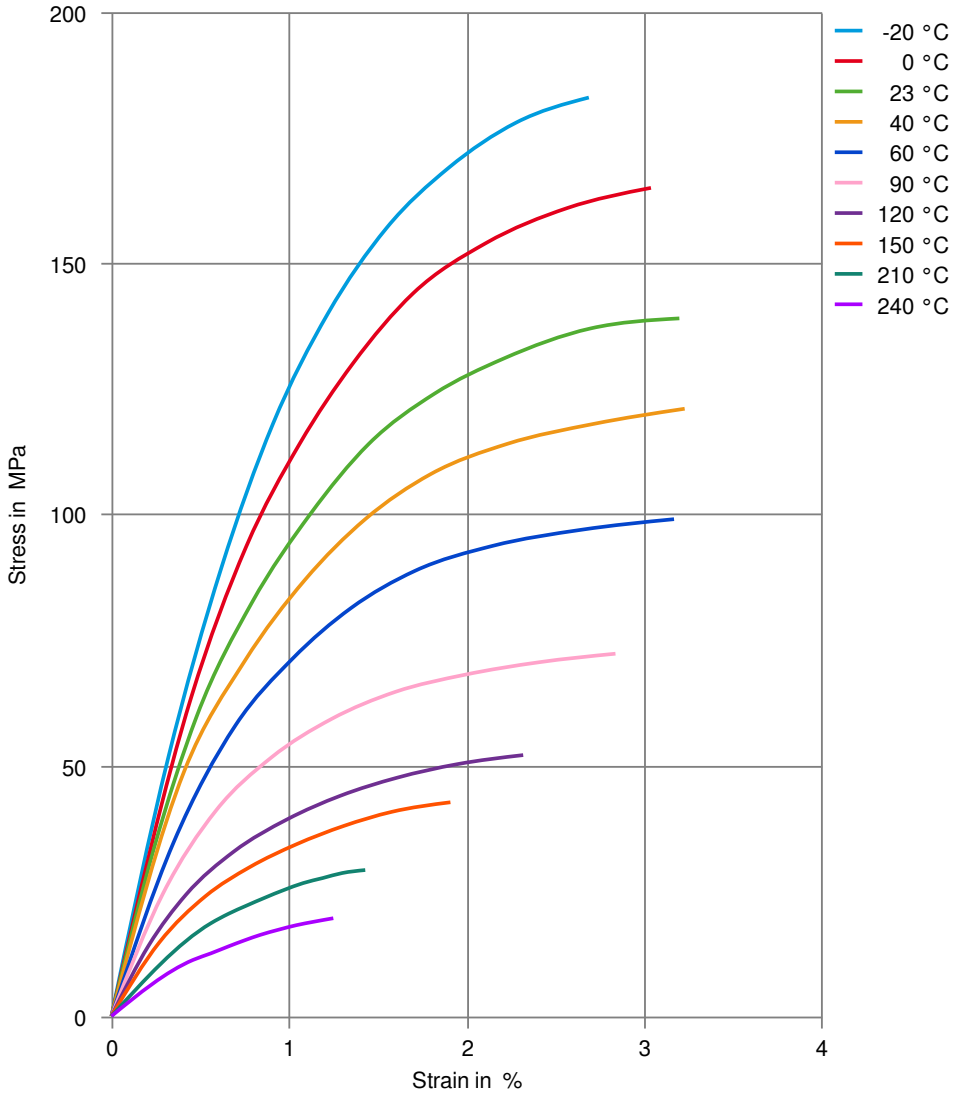
Stress-strain



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