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

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

Typical mechanical properties

Tensile modulus	2.18E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	16700	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.1	%	ISO 527-1/-2
Flexural modulus	2.03E6	psi	ISO 178
Flexural strength	27600	psi	ISO 178
Compressive strength	10300	psi	ISO 604
Compressive stress at 1% strain	3090	psi	ISO 604
Charpy notched impact strength, 23°C	11.9	ftlb/in²	ISO 179/1eA

Thermal properties

Melting temperature, 10°C/min	606	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	554	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.04	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.333	E-4/°F	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	0.0591	in	IEC 60695-11-10
Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.0315	in	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
Relative permittivity, 2GHz	4.67[OT, 1]		IEC 61189-2-721
Relative permittivity, 10GHz	4.53[OT, 2]		IEC 61189-2-721
Dissipation factor, 1MHz	180	E-4	IEC 62631-2-1
Dissipation factor, 2GHz	62[OT, 1]	E-4	IEC 61189-2-721
Dissipation factor, 10GHz	59[OT, 2]	E-4	IEC 61189-2-721
Volume resistivity	1E13	Ohm.m	IEC 62631-3-1

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Surface resistivity	1E15	Ohm	IEC 62631-3-2
Electric strength	1140	kV/in	IEC 60243-1
Comparative tracking index	175		IEC 60112

[OT]: One time tested

[1]: Black color, tested at 1.9GHz

[2]: Black color

Physical/Other properties

Density	0.0632	lb/in³	ISO 1183
Density of melt	92.4	lb/ft³	

Injection

Drying Recommended	yes	
Drying Temperature	302	°F
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.01	%
Melt Temperature Optimum	635	°F
Min. melt temperature	617	°F
Max. melt temperature	653	°F
Max. screw tangential speed	0.2 - 0.3	m/s
Mold Temperature Optimum	212	°F
Min. mold temperature	176	°F
Max. mold temperature	248	°F
Back pressure	435	psi
Ejection temperature	554	°F

Characteristics

Processing	Injection Molding
Special characteristics	Flame retardant, High impact or impact modified, Heat stabilized 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 %

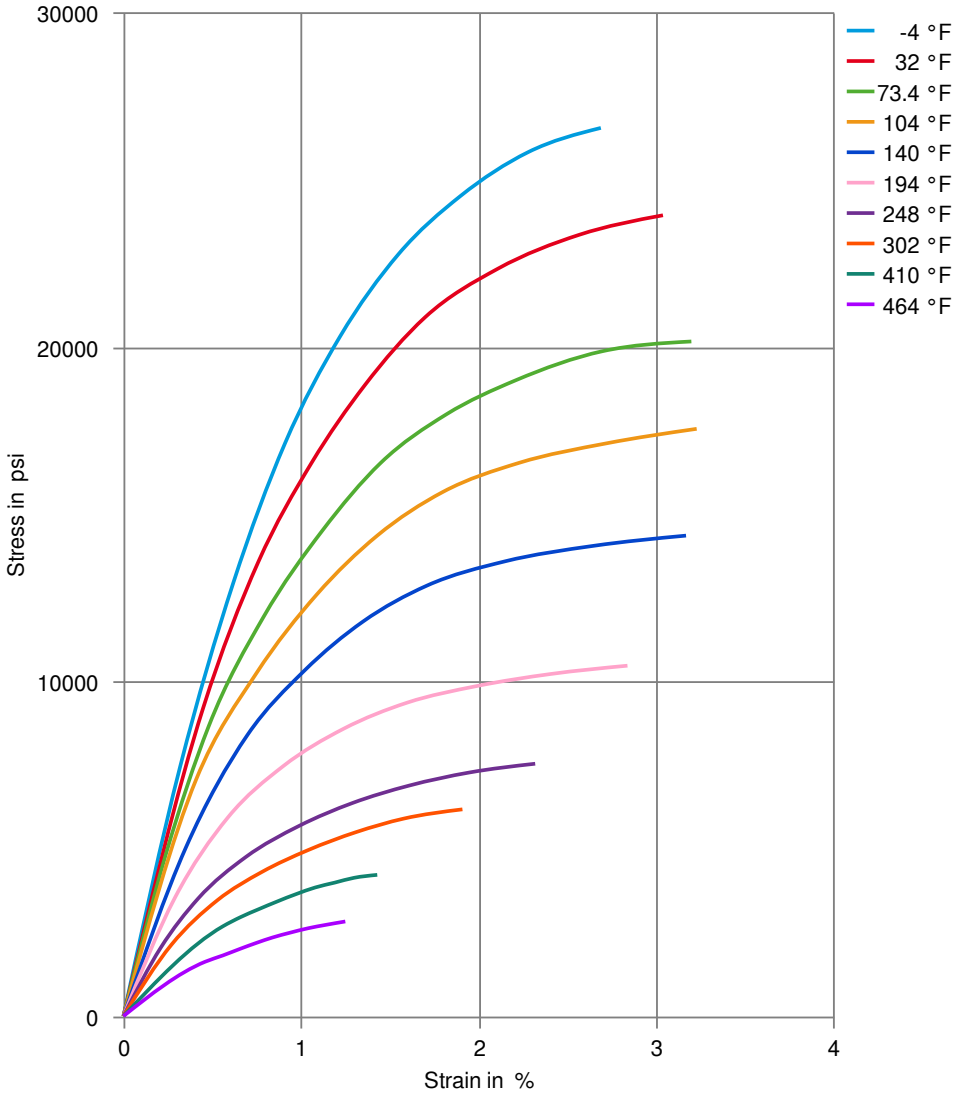
Processing

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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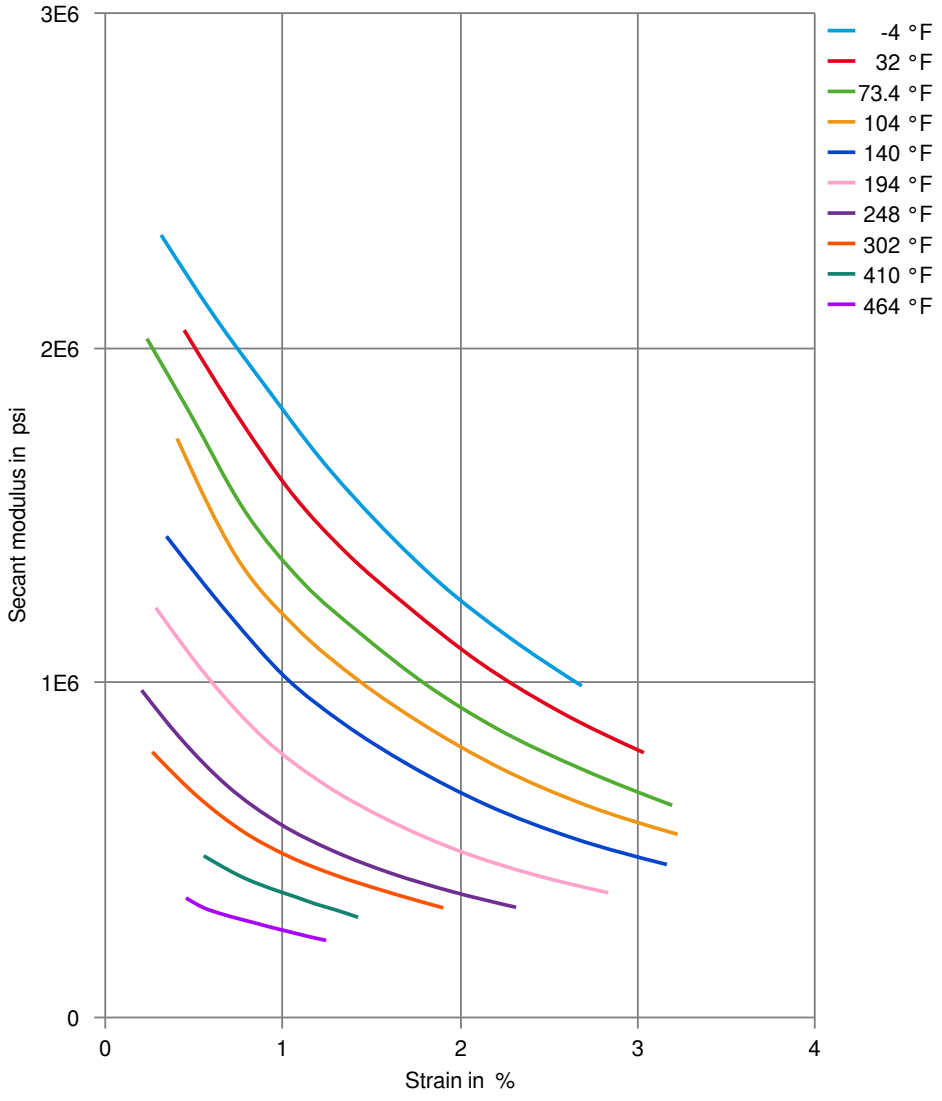
Stress-strain



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Secant modulus-strain



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