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# 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

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

## Typical mechanical properties

| | | | |
|---|---|---|---|
| Tensile modulus | 2.61E6 | psi | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min | 17400 | psi | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min | 0.9 | % | ISO 527-1/-2 |
| Flexural modulus | 2.58E6 | psi | ISO 178 |
| Flexural strength | 26100 | psi | ISO 178 |
| Charpy impact strength, 23°C | 8.56 | ftlb/in² | ISO 179/1eU |
| Charpy impact strength, -30°C | 6.18 | ftlb/in² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 4.76 | ftlb/in² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 4.76 | ftlb/in² | ISO 179/1eA |
| Hardness, Rockwell, M-scale | 58 | | ISO 2039-2 |

## Thermal properties

| | | | |
|---|---|---|---|
| Melting temperature, 10°C/min | 671 | °F | ISO 11357-1/-3 |
| Temperature of deflection under load, 1.8 MPa | 563 | °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 | 0.133 | E-4/°F | 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 | 0.0591 | in | IEC 60695-11-10 |
| Burning Behav. at thickness h | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 0.0591 | in | IEC 60695-11-10 |
| UL recognition | yes | | UL 94 |
| Oxygen index | 45 | % | ISO 4589-1/-2 |

## 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 |

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| | | | |
|---|---|---|---|
| Surface resistivity | >1E15 | Ohm | IEC 62631-3-2 |
| Electric strength | 914 | kV/in | IEC 60243-1 |
| Comparative tracking index | 200 | | IEC 60112 |

## Physical/Other properties

| | | | |
|---|---|---|---|
| Density | 0.0628 | lb/in³ | ISO 1183 |
| Density of melt | 90.5 | 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 | 689 | °F |
| Min. melt temperature | 680 | °F |
| Max. melt temperature | 698 | °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 | 527 | °F |

## Characteristics

| | |
|---|---|
| Processing | Injection Molding |
| Special characteristics | Flame retardant, Heat stabilized 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

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