

# ZENITE® 6140L

## Liquid Crystal Polymer

Zenite® 6140L is a 40% glass fiber reinforced and lubricated liquid crystal polymer for injection molding. It has excellent impact resistance and excellent heat deflection temperature.

### Product information

|                      |            |           |
|----------------------|------------|-----------|
| Resin Identification | LCP-GF40   | ISO 1043  |
| Part Marking Code    | >LCP-GF40< | 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                       | 17000 MPa            | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min      | 130 MPa              | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min      | 1.1 %                | ISO 527-1/-2 |
| Flexural modulus                      | 16500 MPa            | ISO 178      |
| Flexural strength                     | 190 MPa              | ISO 178      |
| Charpy impact strength, 23°C          | 23 kJ/m <sup>2</sup> | ISO 179/1eU  |
| Charpy impact strength, -30°C         | 20 kJ/m <sup>2</sup> | ISO 179/1eU  |
| Charpy notched impact strength, 23°C  | 15 kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy notched impact strength, -30°C | 15 kJ/m <sup>2</sup> | ISO 179/1eA  |
| Izod notched impact strength, 23°C    | 12 kJ/m <sup>2</sup> | ISO 180/1A   |
| Poisson's ratio                       | 0.33 <sup>[C]</sup>  |              |

[C]: Calculated

### Thermal properties

|                                                          |          |                |
|----------------------------------------------------------|----------|----------------|
| Melting temperature, 10°C/min                            | 335 °C   | ISO 11357-1/-3 |
| Temperature of deflection under load, 1.8 MPa            | 280 °C   | ISO 75-1/-2    |
| Ball pressure test                                       | 260 °C   | IEC 60695-10-2 |
| Coefficient of linear thermal expansion (CLTE), parallel | 4 E-6/K  | ISO 11359-1/-2 |
| Coefficient of linear thermal expansion (CLTE), normal   | 64 E-6/K | ISO 11359-1/-2 |

### 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                     | 0.4 mm    | IEC 60695-11-10 |
| UL recognition                       | yes       | UL 94           |

### Electrical properties

|                            |             |               |
|----------------------------|-------------|---------------|
| 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 | 1710 kg/m <sup>3</sup> | ISO 1183 |
|---------|------------------------|----------|

## Injection

|                                 |               |
|---------------------------------|---------------|
| Drying Recommended              | yes           |
| Drying Temperature              | 150 °C        |
| Drying Time, Dehumidified Dryer | 4 - 6 h       |
| Processing Moisture Content     | ≤0.01 %       |
| Melt Temperature Optimum        | 355 °C        |
| Min. melt temperature           | 350 °C        |
| Max. melt temperature           | 360 °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        |

## Characteristics

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

## Additional information

Injection molding

## Preprocessing

Drying Recommended = Yes  
Drying Temperature = 130 °C  
Drying Time, Dehumidified Dryer = 4h  
Processing Moisture Content = <0.01 %

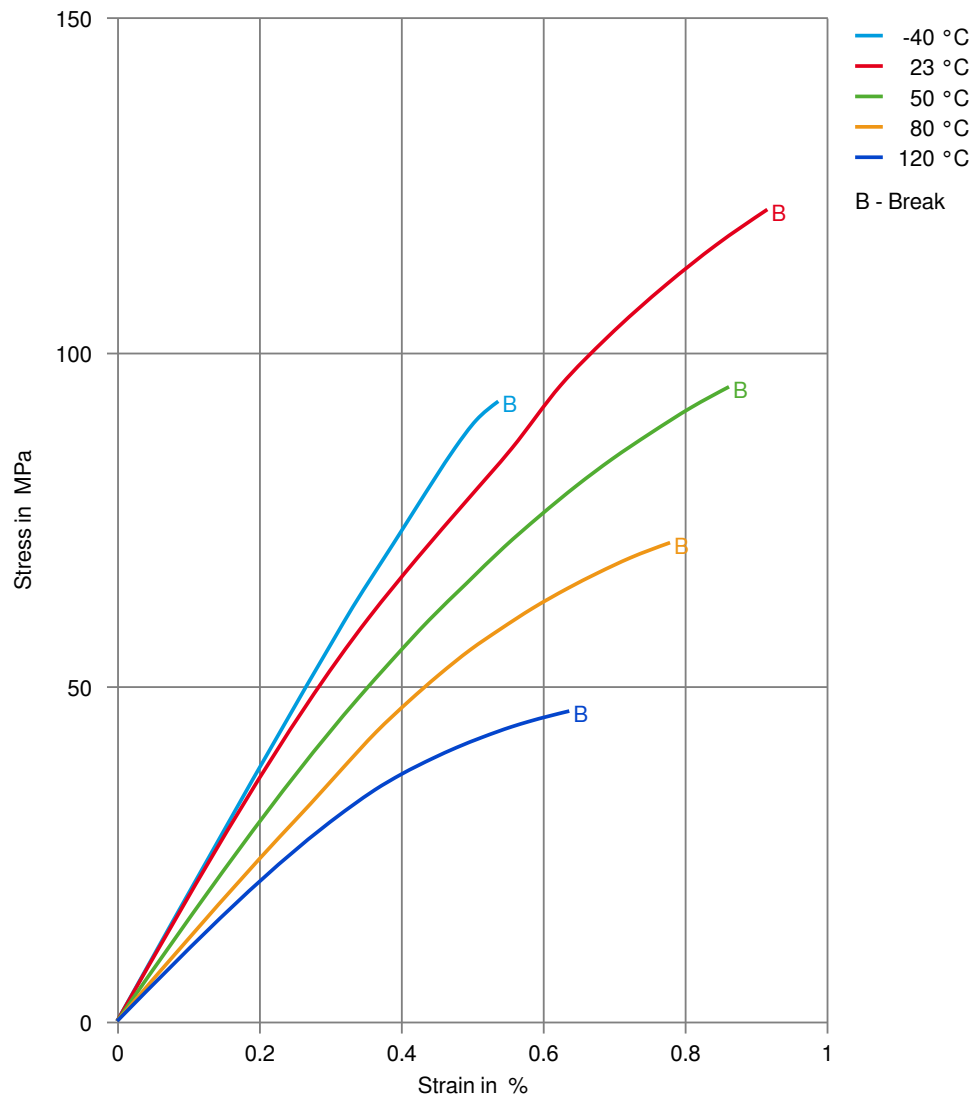
## Processing

Melt Temperature Optimum = 355 °C  
Melt Temperature Range = 350-360 °C  
Mold Temperature Optimum = 100 °C  
Mold Temperature Range = 80-120 °C

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## Stress-strain



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Secant modulus-strain

