

# ZENITE® 451P

## Liquid Crystal Polymer

Zenite® 451P is a 30% mineral filled grade. It offers thermal conductivity, excellent mechanical strength, surface appearance, low warpage, and excellent dimensional stability. Application for this grade is for a part with thin wall design in automotive and electronics.

### Product information

Resin Identification	LCP-MD29	ISO 1043
Part Marking Code	>LCP-MD29<	ISO 11469

### Rheological properties

Moulding shrinkage, parallel	0.1 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.6 %	ISO 294-4, 2577

### Typical mechanical properties

Tensile modulus	14000 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	155 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.3 %	ISO 527-1/-2
Flexural modulus	13000 MPa	ISO 178
Flexural strength	170 MPa	ISO 178
Charpy impact strength, 23°C	50 kJ/m <sup>2</sup>	ISO 179/1eU
Poisson's ratio	0.33 <sup>[C]</sup>	

[C]: Calculated

### Thermal properties

Temperature of deflection under load, 1.8 MPa	243 °C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	8 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	60 E-6/K	ISO 11359-1/-2

### Flammability

Burning Behav. at thickness h	V-0 class	IEC 60695-11-10
Thickness tested	0.8 mm	IEC 60695-11-10

### Electrical properties

Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	1E14 Ohm	IEC 62631-3-2

### Physical/Other properties

Humidity absorption, 2mm	0.03 %	Sim. to ISO 62
Density	1640 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	330 °C

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Min. melt temperature	320 °C
Max. melt temperature	340 °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, Specialty appearance, Low Warpage, Lead-free soldering resistant

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