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

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

Typical mechanical properties

Tensile modulus	2.03E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	22500	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.3	%	ISO 527-1/-2
Flexural modulus	1.89E6	psi	ISO 178
Flexural strength	24100	psi	ISO 178
Charpy impact strength, 23°C	23.8	ftlb/in²	ISO 179/1eU

Thermal properties

Temperature of deflection under load, 1.8 MPa	469	°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

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.0315	in	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	0.0592	lb/in³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	302	°F
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.01	%
Melt Temperature Optimum	626	°F
Min. melt temperature	608	°F
Max. melt temperature	644	°F

Revised: 2025-03-20 Source: Celanese Materials Database

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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

Characteristics

Processing	Injection Molding
Special characteristics	Flame retardant, Heat stabilized or stable to heat, Specialty appearance, Low Warpage, Lead-free soldering resistant

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