Celanese
The chemistry inside innovation™

VECTRA® E463I

Liquid Crystal Polymer

40% glass/mineral filled excellent flow, low warpage, high heat resistance.
Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant UL-Listing V-0 all colors at 1.5mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electricals 130°C, mechanicals 130°C. UL = Underwriters Laboratories (USA)

Product information

Resin Identification	LCP-(GF+MD)40		ISO 1043
Part Marking Code	>LCP-(GF+MD)40<		ISO 11469

Rheological properties

Molding shrinkage, parallel	0.1	%	ISO 294-4, 2577
Molding shrinkage, normal	0.4	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	1.45E6	psi	ISO 527-1/-2
Tensile stress at break, 50mm/min	14500	psi	ISO 527-1/-2
Tensile strain at break, 50mm/min	2	%	ISO 527-1/-2
Flexural modulus	1.6E6	psi	ISO 178
Flexural strength	17400	psi	ISO 178
Flexural strain at failure	3	%	ISO 178
Compressive modulus	1.12E6	psi	ISO 604
Compressive strength	10700	psi	ISO 604
Compressive stress at 1% strain	7690	psi	ISO 604
Charpy impact strength, 23°C	14.3	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	1.43	ftlb/in²	ISO 179/1eA
Izod notched impact strength, 23°C	1.9	ftlb/in²	ISO 180/1A
Izod impact strength, 23°C	14.3	ftlb/in²	ISO 180/1U
Hardness, Rockwell, M-scale	44		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	635	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	455	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	518	°F	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	365	°F	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	0.06	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.239	E-4/°F	ISO 11359-1/-2

Electrical properties

Relative permittivity, 1MHz	3.9		IEC 62631-2-1
Dissipation factor, 1MHz	35	E-4	IEC 62631-2-1
Volume resistivity	1E14	Ohm.m	IEC 62631-3-1
Surface resistivity	1E16	Ohm	IEC 62631-3-2
Electric strength	1500	kV/in	IEC 60243-1
Comparative tracking index	150		IEC 60112

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Physical/Other properties

Water absorption, 2mm	0.02	%	Sim. to ISO 62
Density	0.0621	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	653	°F
Min. melt temperature	635	°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
Ejection temperature	559	°F

Characteristics

Processing	Injection Molding
Special characteristics	Flame retardant, Heat stabilized or stable to heat, High Flow, Low Warpage

Additional information

Processing Notes

Pre-Drying

VECTRA should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be =< - 40° C. The time between drying and processing should be as short as possible.

Storage

For subsequent storage of the material in the dryer until processed the temperature does not need to be lowered for grades A, B, C, D and V (<= 24 h).

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