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

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

Typical mechanical properties

Tensile modulus	10000	MPa	ISO 527-1/-2
Tensile stress at break, 50mm/min	100	MPa	ISO 527-1/-2
Tensile strain at break, 50mm/min	2	%	ISO 527-1/-2
Flexural modulus	11000	MPa	ISO 178
Flexural strength	120	MPa	ISO 178
Flexural strain at failure	3	%	ISO 178
Compressive modulus	7700	MPa	ISO 604
Compressive strength	74	MPa	ISO 604
Compressive stress at 1% strain	53	MPa	ISO 604
Charpy impact strength, 23°C	30	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	3	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	4	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	30	kJ/m²	ISO 180/1U
Hardness, Rockwell, M-scale	44		ISO 2039-2
Poisson's ratio	0.34[C]		

[C]: Calculated

Thermal properties

Melting temperature, 10°C/min	335	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	235	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	270	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	185	°C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	10	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	43	E-6/K	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	59	kV/mm	IEC 60243-1

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Comparative tracking index	150		IEC 60112

Physical/Other properties

Water absorption, 2mm	0.02	%	Sim. to ISO 62
Density	1720	kg/m³	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	345	°C
Min. melt temperature	335	°C
Max. melt temperature	345	°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
Ejection temperature	293	°C

Characteristics

Processing	Injection Moulding
Special characteristics	Flame retardant, Heat stabilised 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).