VECTRA® E440I

Liquid Crystal Polymer

Mineral and glass filled grade with low warp, easy flow and smooth surface appearance. Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant.

Product information

Resin Identification	LCP-(GF+MD)43	ISO 1043
Part Marking Code	>LCP-(GF+MD)43<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.5	%	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	12000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	110	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2	%	ISO 527-1/-2
Flexural modulus	13000	MPa	ISO 178
Flexural strength	160	MPa	ISO 178
Flexural strain at failure	2	%	ISO 178
Charpy impact strength, 23°C	24	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	5	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	9	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	25	kJ/m²	ISO 180/1U
Poisson's ratio	0.33[C]		

[C]: Calculated

Thermal properties

Melting temperature, 10°C/min	335	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	260	°C	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	177	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	11	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	20	E-6/K	ISO 11359-1/-2
Specific heat capacity solid	1370	J/(kg K)	ISO 22007-4

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10

Electrical properties

Volume resistivity	1E14	Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Comparative tracking index	175		IEC 60112
Comparative tracking index, 100 drops	175		IEC 60112

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Physical/Other properties

Density	1770	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	340	°C
Max. melt temperature	350	°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
Back pressure	3	MPa

Characteristics

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

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).

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