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VECTRA® E115I

Liquid Crystal Polymer

15% glass reinforced Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant. UL-Listing V-0 black at 0.75mm thickness per UL 94 flame testing. UL = Underwriters Laboratories (USA)

Product information

Resin Identification	LCP-GF15	ISO 1043
Part Marking Code	>LCP-GF15<	ISO 11469

Typical mechanical properties

Tensile modulus	13000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	160	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2	%	ISO 527-1/-2
Flexural modulus	13000	MPa	ISO 178
Flexural strength	200	MPa	ISO 178
Charpy notched impact strength, 23°C	66	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	40	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	101	kJ/m²	ISO 180/1U
Hardness, Rockwell, M-scale	43		ISO 2039-2
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, 0.45 MPa	298	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	202	°C	ISO 306

Flammability

Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.75	mm	IEC 60695-11-10
UL recognition	yes		UL 94

Electrical properties

Relative permittivity, 1000Hz	3.79[OT]		IEC 62631-2-1
Relative permittivity, 1MHz	3.4[OT]		IEC 62631-2-1
Dissipation factor, 1000Hz	0[OT]	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	340[OT]	E-4	IEC 62631-2-1
Dissipation factor, 1GHz	55[OT, 1]	E-4	IEC 61189-2-721
Volume resistivity	1E14	Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	33	kV/mm	IEC 60243-1
Relative permittivity, printed circuits and boards, 2.5 GHz	3.9[OT, 2]		IEC 61189-2-721
Dissipation factor, printed circuits and boards, 2.5 GHz	60[OT, 2]	E-4	IEC 61189-2-721

[OT]: One time tested

[1]: Service Request Case No.: 00073539

[2]: Shifted data from 1.9GHz to 2.0GHz for harmonization purpose, only use 'whole' numbers

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Physical/Other properties

Density	1460	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	340	°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
Back pressure	3	MPa
Ejection temperature	270	°C

Characteristics

Processing	Injection Moulding
Special characteristics	Flame retardant, Heat stabilised or stable to heat, High Flow, 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).

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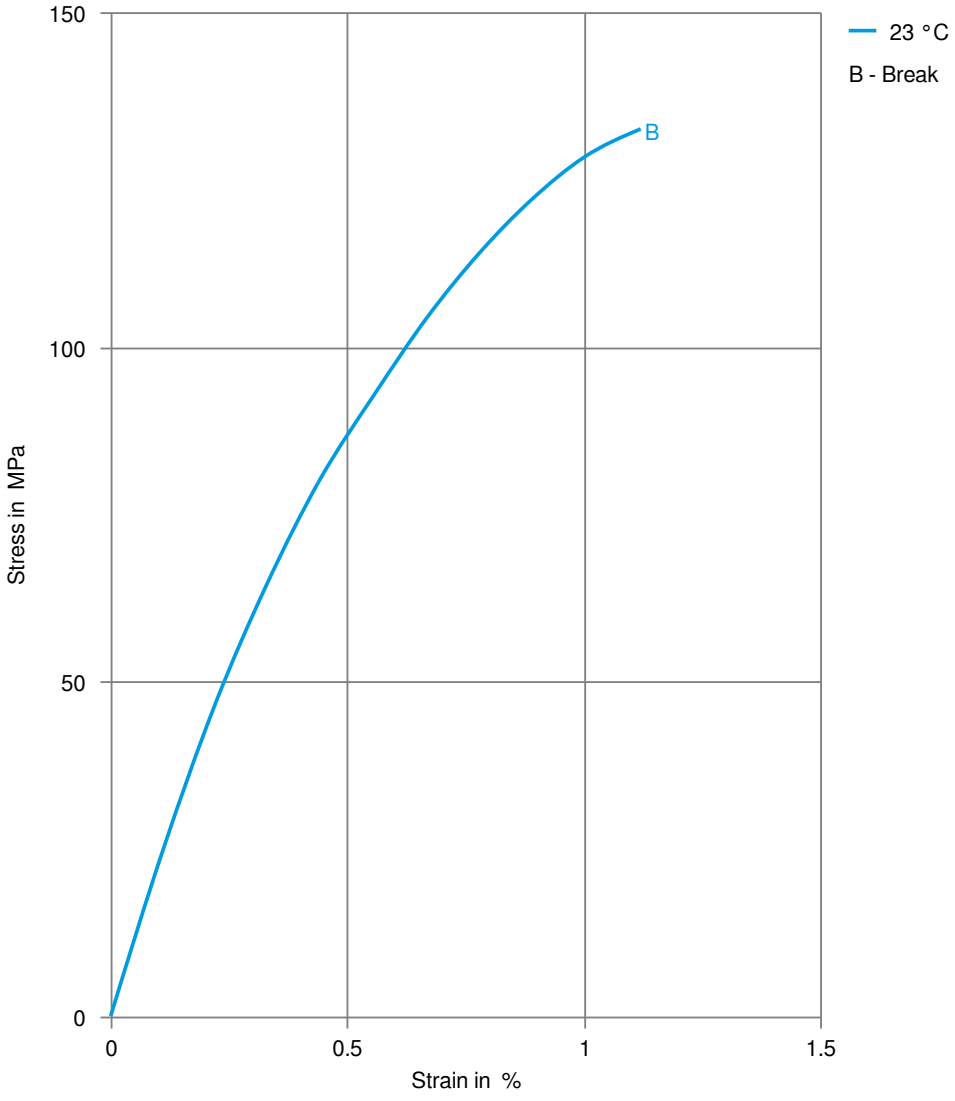
Stress-strain



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Secant modulus-strain