

VECTRA® E135I

Liquid Crystal Polymer

35% glass fiber filled /Higher weldline strength. Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant. UL-Listing V-0 in all colors at .15mm thickness per UL 94 flame testing. UL = Underwriters Laboratories (USA)

Product information

Resin Identification	LCP-GF35	ISO 1043
Part Marking Code	>LCP-GF35<	ISO 11469

Rheological properties

Moulding shrinkage range, parallel	0 %	ISO 294-4, 2577
Moulding shrinkage range, normal	0.3 %	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	17000 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	140 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.5 %	ISO 527-1/-2
Flexural modulus	16000 MPa	ISO 178
Flexural strength	220 MPa	ISO 178
Flexural strain at failure	2.1 %	ISO 178
Compressive modulus	13500 MPa	ISO 604
Compressive strength	135 MPa	ISO 604
Compressive stress at 1% strain	100 MPa	ISO 604
Charpy impact strength, 23°C	40 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	27 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	20 kJ/m ²	ISO 180/1A
Izod impact strength, 23°C	40 kJ/m ²	ISO 180/1U
Hardness, Rockwell, M-scale	62	ISO 2039-2
Poisson's ratio	0.33 ^[C]	

[C]: Calculated

Thermal properties

Melting temperature, 10°C/min	331 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	275 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	200 °C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	5 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	59 E-6/K	ISO 11359-1/-2

Electrical properties

Relative permittivity, 1MHz	4.1	IEC 62631-2-1
Dissipation factor, 1MHz	320 E-4	IEC 62631-2-1
Volume resistivity	1E14 Ohm.m	IEC 62631-3-1
Surface resistivity	1E15 Ohm	IEC 62631-3-2
Electric strength	28 kV/mm	IEC 60243-1
Comparative tracking index	175	IEC 60112

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Physical/Other properties

Water absorption, 2mm	0.07 %	Sim. to ISO 62
Density	1670 kg/m ³	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	355 °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

Characteristics

Processing	Injection Moulding
Special characteristics	Flame retardant, Heat stabilised or stable to heat, High Flow, Improved weld line, Lead-free soldering resistant

Additional information

Processing Notes

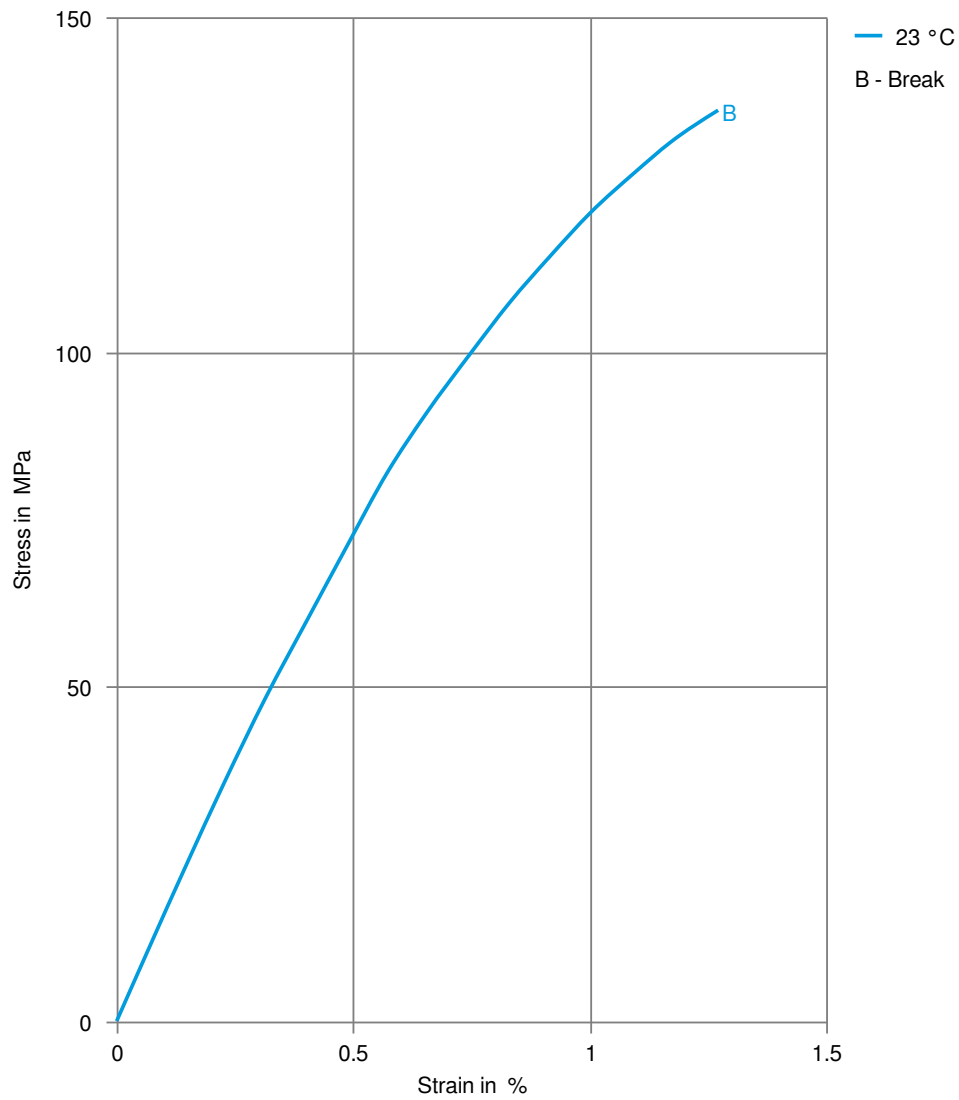
Pre-Drying

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.

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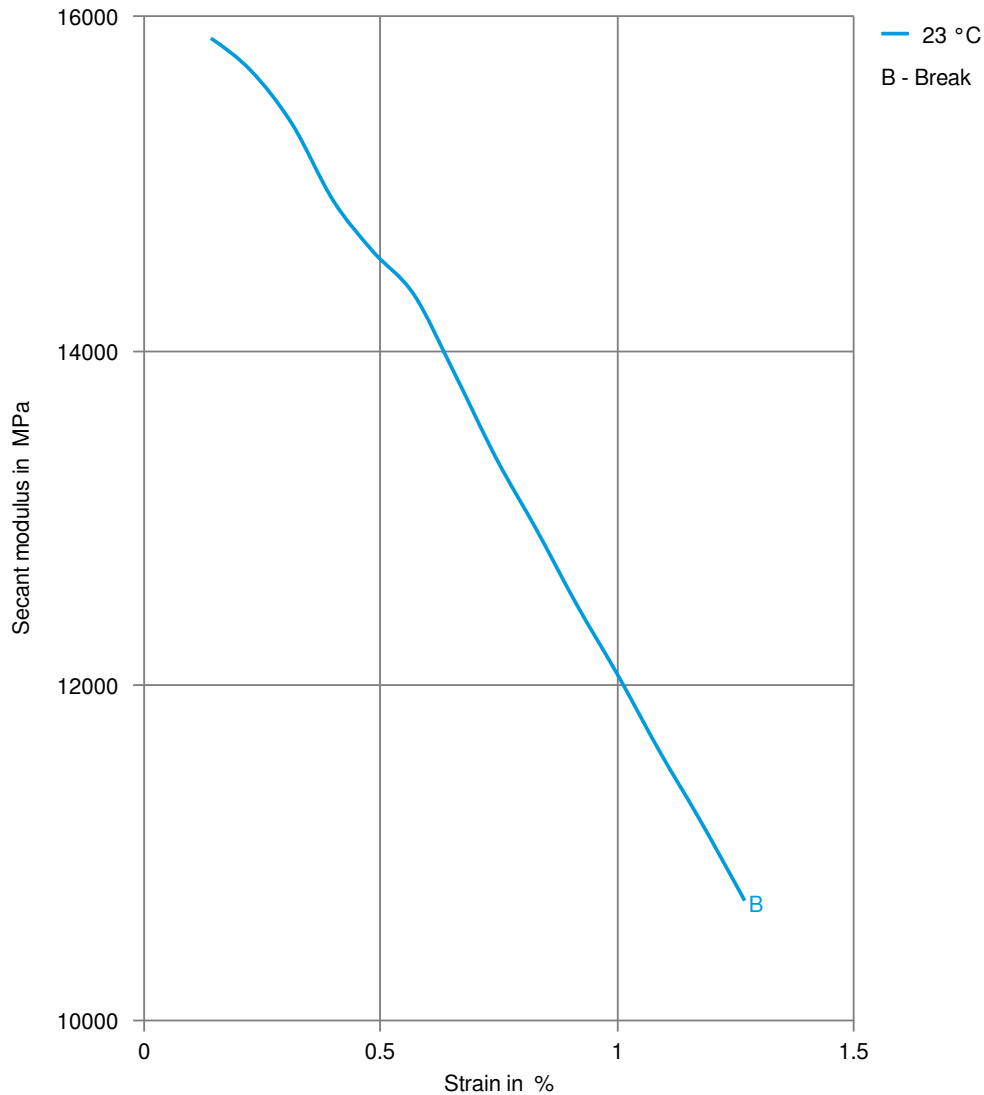
Stress-strain



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Secant modulus-strain



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