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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/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	27	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	20	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	40	kJ/m²	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/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	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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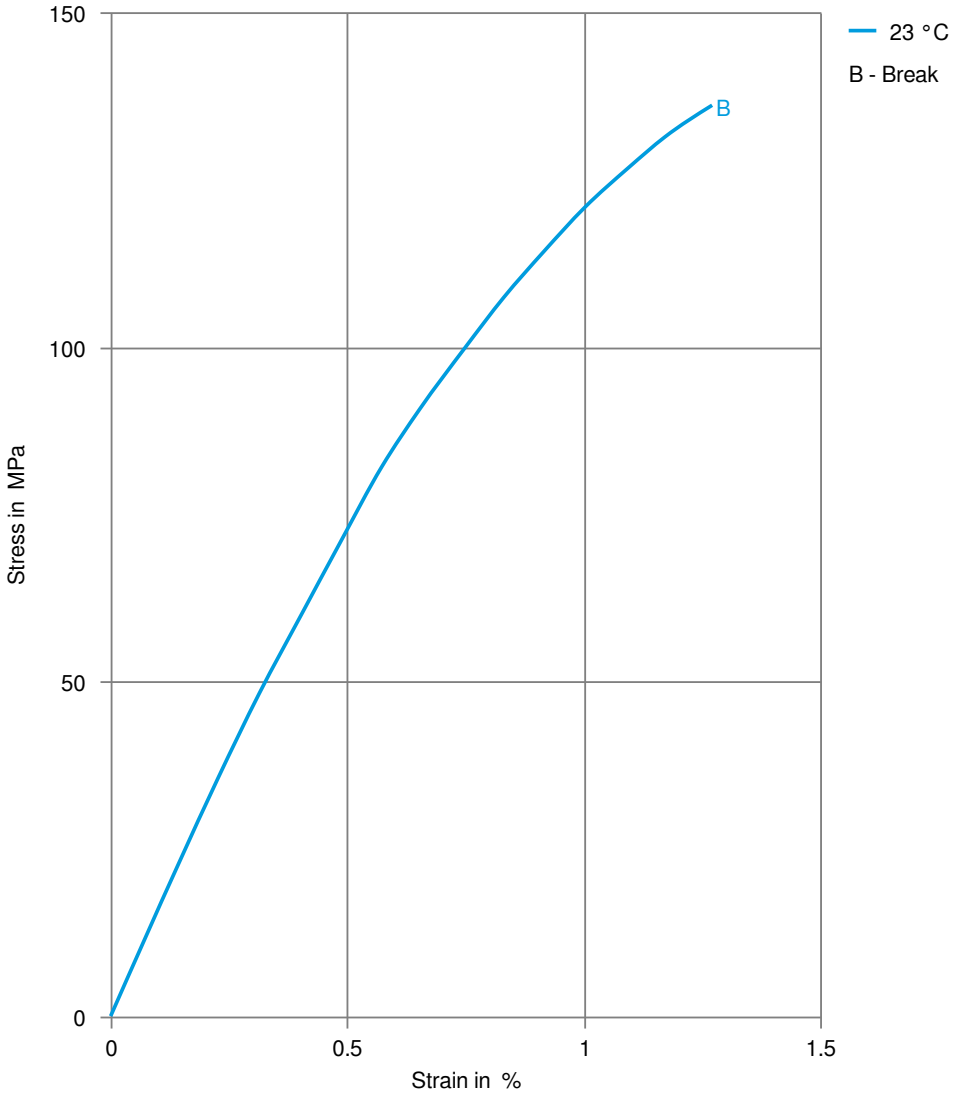
Stress-strain



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Secant modulus-strain