Celanese
The chemistry inside innovation™

VECTRA® C130

30% glass fiber, higher temp. capability & easier flow than A130
Has the same excellent balance of properties as A130 with higher temperature capability and easier flow. Slightly more dimensional stability in vapor phase soldering than A130. Suitable for some infrared SMT applications. 30% glass reinforced.

Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant FDA compliant UL-Listing V-0 in natural and black at 0.38mm thickness per UL 94 flame testing, and UL-5VA in natural at 1.5mm. Relative-Temperature-Index (RTI) according to UL 746B: electrical 240 °C, mechanical 220 °C at 0.75mm. UL = Underwriters Laboratories (USA)

Rheological properties

Moulding shrinkage range, parallel	0.2	%	ISO 294-4, 2577
Moulding shrinkage range, normal	0.4	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	16000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	160	MPa	ISO 527-1/-2
Strain at break, 5mm/min	1.6	%	ISO 527-1/-2
Flexural Modulus	15000	MPa	ISO 178
Flexural Strength	245	MPa	ISO 178
Compressive modulus	22000	MPa	ISO 604
Compressive stress at 1% strain	139	MPa	ISO 604
Tensile creep modulus, 1h	13600	MPa	ISO 899-1
Tensile creep modulus, 1000h	11700	MPa	ISO 899-1
Charpy notched impact strength, 23 °C	40	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23 °C	29	kJ/m²	ISO 180/1A
Hardness, Rockwell, M-scale	80		ISO 2039-2

Thermal properties

Melting temperature, 10 °C/min	325	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	255	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	250	°C	ISO 75-1/-2
Temp. of deflection under load, 8 MPa	211	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	6	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	18	E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	V-0	class	UL 94
Oxygen index	45	%	ISO 4589-1/-2

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Electrical properties

Relative permittivity, 100Hz	4.2		IEC 62631-2-1
Relative permittivity, 1MHz	3.7		IEC 62631-2-1
Dissipation factor, 100Hz	140	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	180	E-4	IEC 62631-2-1
Volume resistivity	1E13	Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	35	kV/mm	IEC 60243-1
Comparative tracking index	PLC 3	PLC	UL 746A
Arc Resistance	182	s	Internal

Other properties

Density	1620	kg/m³	ISO 1183

Injection

Drying Temperature	150	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	0.01	%
Screw tangential speed	0.17 - 0.18	m/s
Max. mould temperature	80 - 120	°C
Back pressure	3	MPa
Injection speed	very fast	

Additional information

Injection molding

A three-zone screw evenly divided into feed, compression, and metering zones is preferred. A higher percentage of feed flights may be needed for smaller machines: 1/2 feed, 1/4 compression, 1/4 metering.

Vectra LCPs are shear thinning, their melt viscosity decreases quickly as shear rate increases. For parts that are difficult to fill, the molder can increase the injection velocity to improve melt flow.

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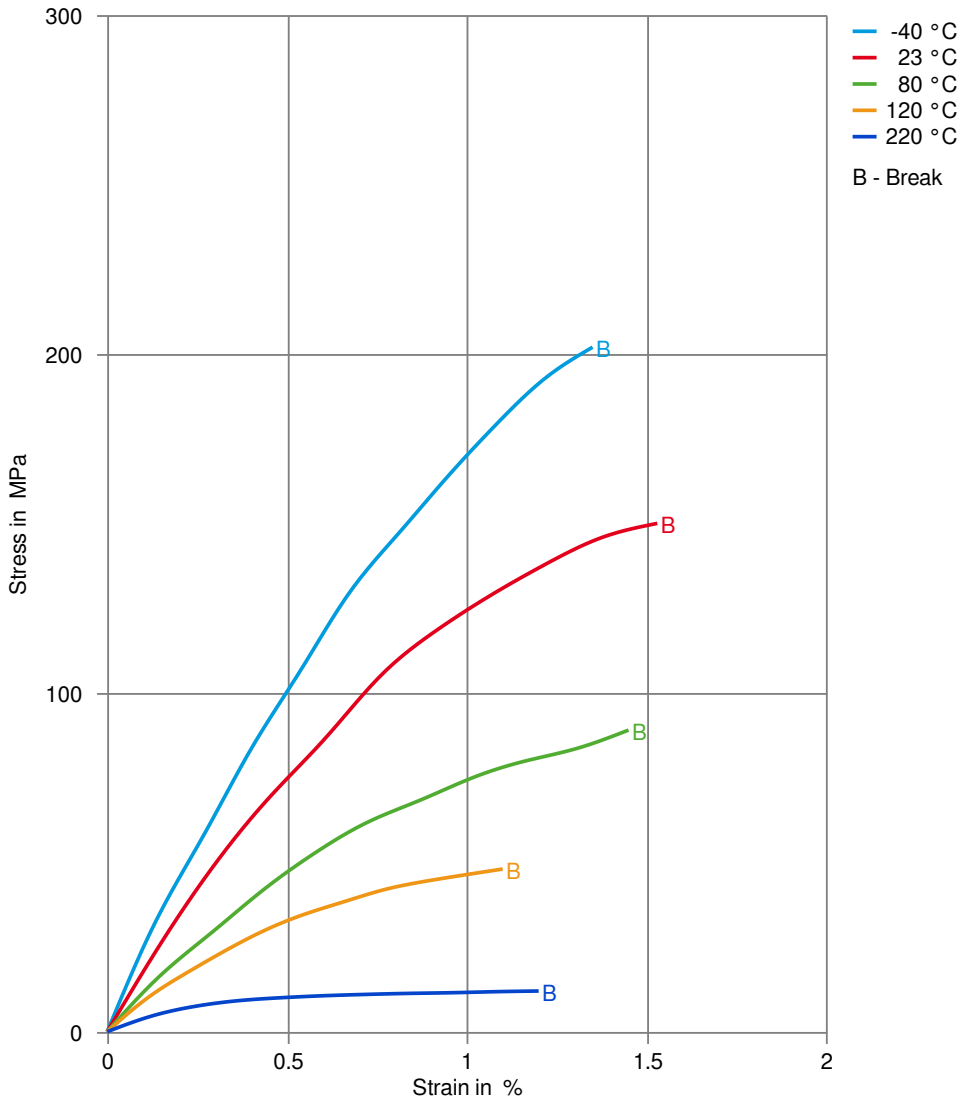
Stress-strain



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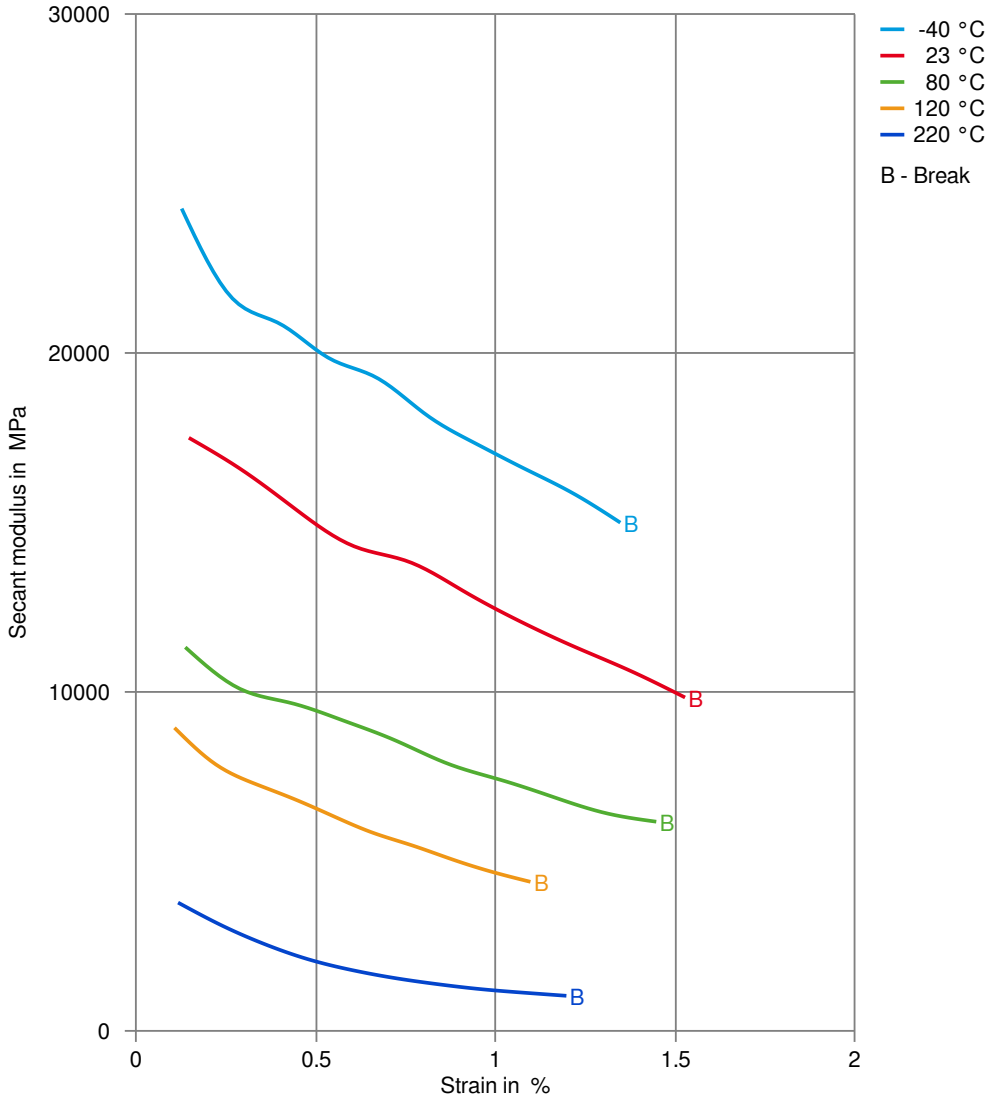
Secant modulus-strain



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Processing Texts

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.
Longer pre-drying times/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).
Injection molding	A three-zone screw evenly divided into feed, compression, and metering zones is preferred. A higher percentage of feed flights may be needed for smaller machines: 1/2 feed, 1/4 compression, 1/4 metering. Vectra LCPs are shear thinning, their melt viscosity decreases quickly as shear rate increases. For parts that are difficult to fill, the molder can increase the injection velocity to improve melt flow.
Injection molding Preprocessing	Vectra resins are well known for their excellent thermal and hydrolytic stability. In order to ensure these properties are optimum, the resin should be dried correctly prior to processing. Vectra C-grades should be dried at 150 C for a minimum of 4 hours in a desiccant dryer.