

VECTRA® A230

30% carbon fiber, conductive

Exceptional stiffness. Electrically conductive. 30% carbon fiber reinforced.

Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant UL-Listing V-0 at 0.43mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electrical 130°C, mechanical 130°C. UL = Underwriters Laboratories (USA)

Rheological properties

Moulding shrinkage range, parallel	0.1 %	ISO 294-4, 2577
Moulding shrinkage range, normal	0.3 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	23500 MPa	ISO 527-1/-2
Stress at break, 5mm/min	149 MPa	ISO 527-1/-2
Strain at break, 5mm/min	1.1 %	ISO 527-1/-2
Flexural Modulus	26000 MPa	ISO 178
Flexural Strength	228 MPa	ISO 178
Compressive modulus	23500 MPa	ISO 604
Compressive stress at 1% strain	136 MPa	ISO 604
Tensile creep modulus, 1h	19600 MPa	ISO 899-1
Tensile creep modulus, 1000h	15800 MPa	ISO 899-1
Charpy impact strength, 23°C	13 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	7 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	7 kJ/m ²	ISO 180/1A
Izod impact strength, 23°C	18 kJ/m ²	ISO 180/1U
Hardness, Rockwell, M-scale	83	ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	280 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	233 °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	193 °C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	2 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	6 E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	V-0 class	UL 94
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Electrical properties

Volume resistivity	1 Ohm.m	IEC 62631-3-1
Surface resistivity	10 Ohm	IEC 62631-3-2



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Other properties

Humidity absorption, 2mm	0.06 %	Sim. to ISO 62
Density	1500 kg/m ³	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

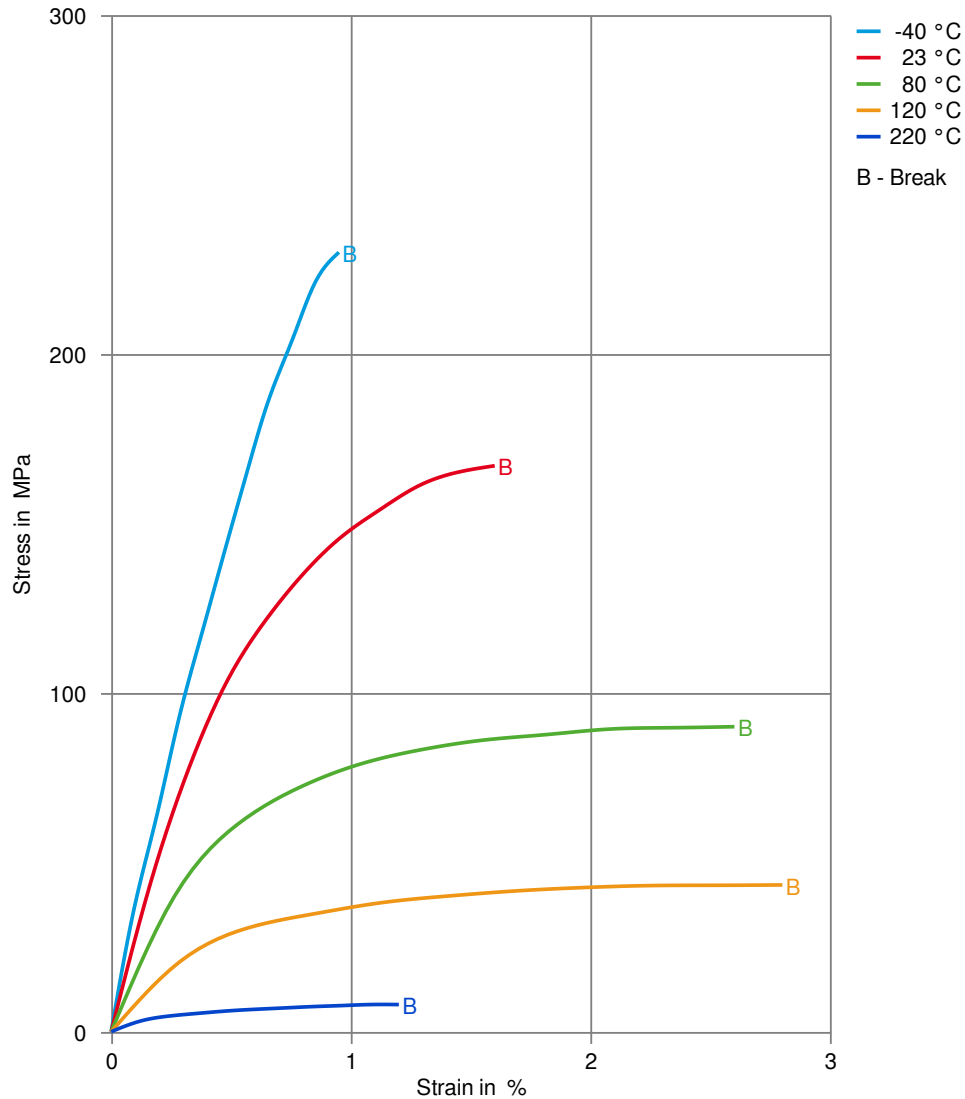
A three-zone screw evenly divided into feed, compression, and metering zones is preferred. A higher percentage of feed flights may be needed for smaller machines: 1/2 feed, 1/4 compression, 1/4 metering.

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. To prevent thermal decomposition, off-gassing, and pressure build-up in the barrel, melt temperatures should not exceed 330°C.



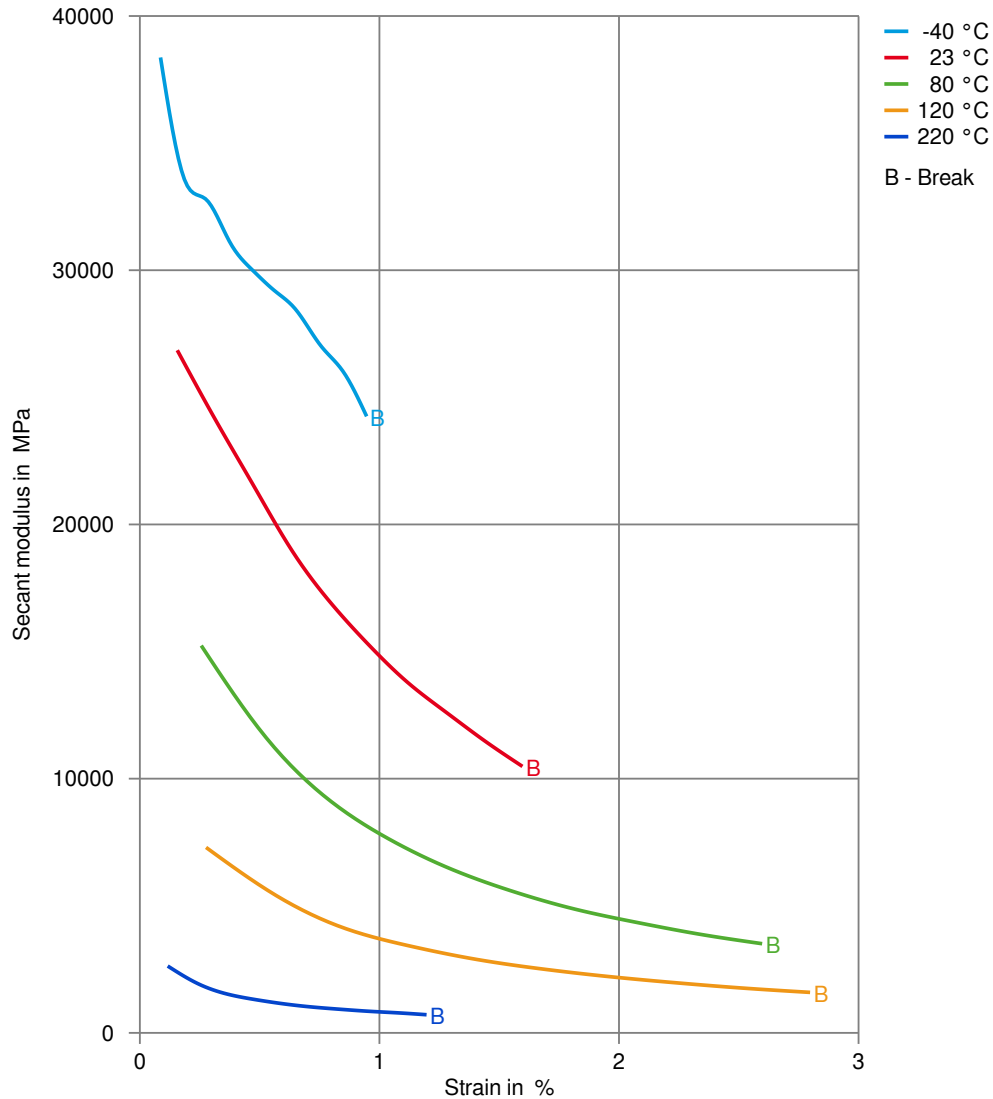
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Stress-strain



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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 $\leq -40^{\circ}\text{C}$. 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 ($\leq 24\text{ h}$).

Injection molding

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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 A-grades should be dried at 150°C for a minimum of 4 hours in a desiccant dryer.

