

## VECTRA® B230 - LCP

### Description

Exceptional strength and stiffness. Suitable for metal replacement applications. Electrically conductive. 30% carbon fiber reinforced. Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant UL-Listing V-0 at 0.46mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electrical 130°C, mechanical 130°C. UL = Underwriters Laboratories (USA)

Physical properties	Value	Unit	Test Standard
Density	1500	kg/m <sup>3</sup>	ISO 1183
Molding shrinkage, parallel	0	%	ISO 294-4, 2577
Molding shrinkage, normal	0,1	%	ISO 294-4, 2577

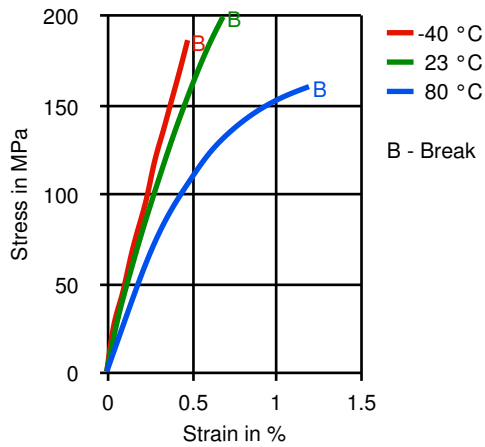
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	31800	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	200	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	0,7	%	ISO 527-2/1A
Flexural modulus, 23°C	25500	MPa	ISO 178
Flexural strength, 23°C	300	MPa	ISO 178
Charpy impact strength, 23°C	15	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	6	kJ/m <sup>2</sup>	ISO 179/1eA
Izod impact notched, 23°C	6	kJ/m <sup>2</sup>	ISO 180/1A
Izod impact unnotched, 23°C	12	kJ/m <sup>2</sup>	ISO 180/1U
Compressive modulus	33000	MPa	ISO 604
Compressive stress at 1% strain	204	MPa	ISO 604
Rockwell hardness	99	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	280	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	235	°C	ISO 75-1, -2
DTUL at 0.45 MPa	250	°C	ISO 75-1, -2
DTUL at 8.0 MPa	186	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 50N	167	°C	ISO 306
Coeff. of linear therm expansion, parallel	0,01	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	0,09	E-4/°C	ISO 11359-2
Flammability at thickness h	V-0	class	UL 94

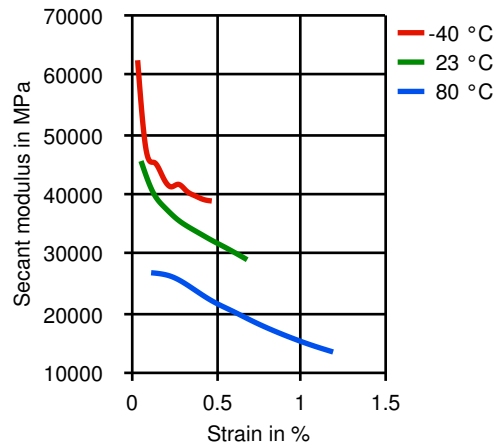
Electrical properties	Value	Unit	Test Standard
Relative permittivity, 1MHz	32	-	IEC 60250
Volume resistivity	1000	Ohm*m	IEC 60093
Surface resistivity	100	Ohm	IEC 60093

**Diagrams**

**Stress-strain**



**Secant modulus-strain**



**Typical injection moulding processing conditions**

	Value	Unit	Test Standard
<b>Pre Drying</b>			
Necessary low maximum residual moisture content	0,01	%	-
Drying time	6 - 8	h	-
Drying temperature	150	°C	-
<b>Temperature</b>			
Hopper temperature	20 - 30	°C	-
Feeding zone temperature	60 - 80	°C	-
Zone1 temperature	270 - 280	°C	-
Zone2 temperature	275 - 285	°C	-
Zone3 temperature	280 - 290	°C	-
Zone4 temperature	285 - 295	°C	-
Nozzle temperature	290 - 300	°C	-
Melt temperature	285 - 300	°C	-
Mold temperature	80 - 120	°C	-
Hot runner temperature	285 - 295	°C	-
<b>Pressure</b>			
Injection pressure	500 - 1500	bar	-
Hold pressure	500 - 1500	bar	-
Back pressure max.	30	bar	-
<b>Speed</b>			
Injection speed	very fast	-	-
<b>Screw Speed</b>			
Screw speed diameter, 16mm	200	RPM	-
Screw speed diameter, 25mm	140	RPM	-
Screw speed diameter, 40mm	80	RPM	-
<b>Other</b>			
Specimen thickness (shrinkage)	3,18	mm	Internal

**Other text information**

**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 ( $\leq 24$  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.

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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.

### Characteristics

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#### Special Characteristics

Anti-static, Electrostatic dissipation, Flame retardant, Light stabilized

#### Processing

Injection molding

#### Product Categories

Specialty

#### Delivery Form

Pellets

### Contact Information

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### General Disclaimer

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