

VECTRA® E530i | LCP | Mineral Reinforced

Description

Very easy flowing grade with very good heat resistance. Good impact strength and mechanical properties. 30 % mineral filled platable grade.

Chemical abbreviation according to ISO 1043-1 : LCP

Inherently flame retardant

FDA compliant.

UL-Listing V-0 in natural and black at 1.5mm 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	1650	kg/m ³	ISO 1183
Mold shrinkage - parallel	0.2	%	ISO 294-4
Mold shrinkage - normal	1.1	%	ISO 294-4

Mechanical properties	Value	Unit	Test Standard
Tensile modulus (1mm/min)	11500	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	150	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	3.5	%	ISO 527-2/1A
Flexural modulus (23°C)	11700	MPa	ISO 178
Flexural strength (23°C)	165	MPa	ISO 178
Charpy impact strength @ 23°C	84	kJ/m ²	ISO 179/1eU
Charpy notched impact strength @ 23°C	29	kJ/m ²	ISO 179/1eA
Unnotched impact str (Izod) @ 23°C	22	kJ/m ²	ISO 180/1U
Notched impact strength (Izod) @ 23°C	20	kJ/m ²	ISO 180/1A
Rockwell hardness	43	M-Scale	ISO 2039-2

Thermal properties	Value	Unit	Test Standard
Melting temperature (10°C/min)	335	°C	ISO 11357-1,-2,-3
DTUL @ 1.8 MPa	235	°C	ISO 75-1/-2
Coeff.of linear therm. expansion (parallel)	0.02	E-4/°C	ISO 11359-2
Coeff.of linear therm. expansion (normal)	0.34	E-4/°C	ISO 11359-2
Limiting oxygen index (LOI)	40	%	ISO 4589
Flammability at thickness h	V-0	class	UL94

Electrical properties	Value	Unit	Test Standard
Relative permittivity - 1 MHz	3.2	-	IEC 60250
Dissipation factor - 1 MHz	257	E-4	IEC 60250
Volume resistivity	1E10	Ohm*m	IEC 60093
Surface resistivity	>1E15	Ohm	IEC 60093
Electric strength	44	kV/mm	IEC 60243-1
Comparative tracking index CTI	225	-	IEC 60112

Test specimen production	Value	Unit	Test Standard
Injection molding melt temperature	340	°C	ISO 294
Injection molding mold temperature	100	°C	ISO 294

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Drying temperature: 170 - 170 °C

Temperature:

	ϕ _{Manifold}	ϕ _{Mold}	ϕ _{Melt}	ϕ _{Nozzle}	ϕ _{Zone4}	ϕ _{Zone3}	ϕ _{Zone2}	ϕ _{Zone1}	ϕ _{Feed}	ϕ _{Hopper}
min (°C)	335	80	335	335	330	325	320	315	60	20
max (°C)	345	120	345	345	340	335	330	325	80	30

Pressure:

	Inj press	Hold press	Back pressure
min (bar)	500	500	0
max (bar)	1500	1500	30

Speed:

Injection speed: very fast

Screw speed

Screw diameter (mm)	16	25	40	55	75
Screw speed (RPM)	200	140	80	-	-

Special Info:

When using short metering strokes an accumulator is recommended to get short injection times

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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General Disclaimer

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Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use.

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