

VECTRA® E115i | LCP | Glass Reinforced

Description

15% glass reinforced

Chemical abbreviation according to ISO 1043-1 : LCP
Inherently flame retardant.
FDA compliant

UL-Listing V-0 black at 0.75mm thickness per UL 94 flame testing.

UL = Underwriters Laboratories (USA)

Physical properties

	Value	Unit	Test Standard
Density	1460	kg/m ³	ISO 1183
Mold shrinkage - parallel	-0.2	%	ISO 294-4
Mold shrinkage - normal	0.5	%	ISO 294-4

Mechanical properties

	Value	Unit	Test Standard
Tensile modulus (1mm/min)	14000	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	175	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	2.3	%	ISO 527-2/1A
Flexural modulus (23°C)	14000	MPa	ISO 178
Flexural strength (23°C)	210	MPa	ISO 178
Unnotched impact str (Izod) @ 23°C	101	kJ/m ²	ISO 180/1U
Notched impact strength (Izod) @ 23°C	40.0	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	252	°C	ISO 75-1/-2
DTUL @ 0.45 MPa	298	°C	ISO 75-1/-2
Vicat softening temperature B50 (50°C/h 50N)	202	°C	ISO 306
Flammability at thickness h	V-0	class	UL94
thickness tested (h)	0.75	mm	UL94
UL recognition (h)	UL	-	UL94

Electrical properties

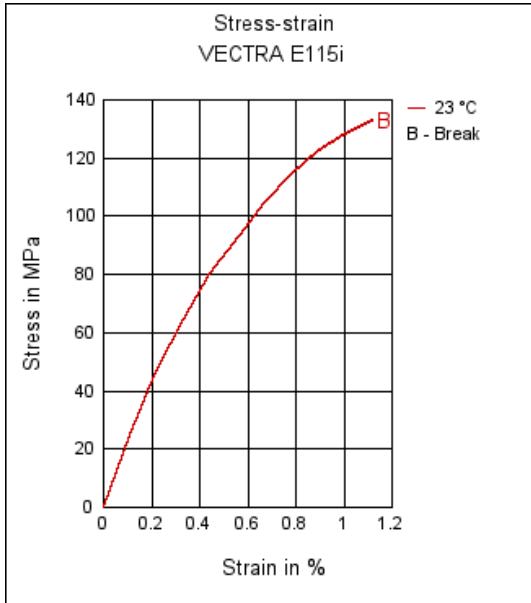
	Value	Unit	Test Standard
Relative permittivity at 2.05 GHz	3.94	-	IPC TM-650 2.5.5.13
Dissipation factor at 2.05 GHz	50	E-4	IPC TM-650 2.5.5.13
Volume resistivity	>1E14	Ohm*m	IEC 60093
Surface resistivity	>1E15	Ohm	IEC 60093
Electric strength	33	kV/mm	IEC 60243-1

Test specimen production

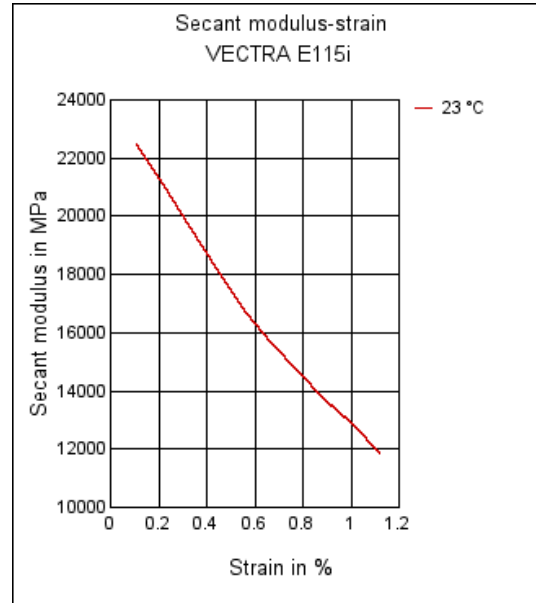
	Value	Unit	Test Standard
Injection molding melt temperature	340	°C	ISO 294
Injection molding mold temperature	100	°C	ISO 294
Injection molding flow front velocity	150	mm/s	ISO 294
Injection molding hold pressure	69	MPa	ISO 294

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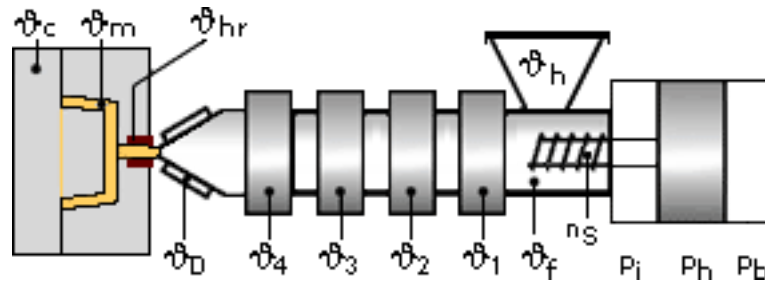
Stress-strain



Secant modulus-strain



Typical injection moulding processing conditions



Pre Drying:

Necessary low maximum residual moisture content: 0.01%

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.

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 ($\leq 24\text{ h}$).

Drying time: 6 h

Drying temperature: 150 - 150 °C

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Temperature:

	ϑ _{Manifold}	ϑ _{Mold}	ϑ _{Melt}	ϑ _{Nozzle}	ϑ _{Zone4}	ϑ _{Zone3}	ϑ _{Zone2}	ϑ _{Zone1}	ϑ _{Feed}	ϑ _{Hopper}
min (°C)	335	80	335	335	330	325	320	315	60	20
max (°C)	345	120	355	350	360	355	340	335	80	30

Pressure:

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

Speed:

Injection speed: high

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

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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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We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed (+49 (0) 69 30516299 for Europe, +1 859-372-3244 for the Americas and +86 21 3861 9266 for Asia) for additional technical information. Visit our web site for the appropriate Safety Data Sheets (SDS) before attempting to process our products. Feel free to call Customer Services for additional assistance.

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