

VECTRA® E130i - LCP
Description

High temperature capability, easiest flow. Suitable where very thin walls are required. Used for broad range of SMT applications, with minimal dimensional change. 30% glass filled. Chemical abbreviation according to ISO 1043-1 : LCP Inherently flame retardant FDA compliant UL-Listing V-0 in natural and black at .2mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electrical 240°C, mechanical 240°C at 0.75mm. UL = Underwriters Laboratories (USA)

Physical properties	Value	Unit	Test Standard
Density	1610	kg/m ³	ISO 1183
Molding shrinkage, parallel	0.1	%	ISO 294-4, 2577
Molding shrinkage, normal	0.4	%	ISO 294-4, 2577
Humidity absorption, 23°C/50%RH	0.03	%	ISO 62

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	15000	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	150	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	1.6	%	ISO 527-2/1A
Flexural modulus, 23°C	13500	MPa	ISO 178
Flexural strength, 23°C	220	MPa	ISO 178
Flexural strain at break	2.2	%	ISO 178
Charpy impact strength, 23°C	43	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	22	kJ/m ²	ISO 179/1eA
Izod impact notched, 23°C	20	kJ/m ²	ISO 180/1A
Izod impact unnotched, 23°C	31	kJ/m ²	ISO 180/1U
Compressive modulus	14000	MPa	ISO 604
Compressive stress at 1% strain	93	MPa	ISO 604
Rockwell hardness	71	M-Scale	ISO 2039-2

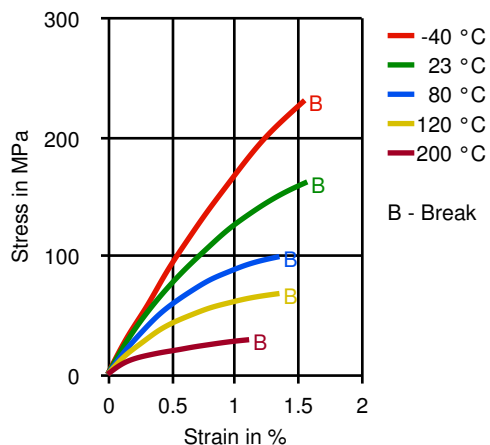
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	335	°C	ISO 11357-1/-3
DTUL at 1.8 MPa	276	°C	ISO 75-1, -2
DTUL at 8.0 MPa	216	°C	ISO 75-1, -2
Vicat softening temperature, 50°C/h 50N	195	°C	ISO 306
Coeff. of linear therm expansion, parallel	0.07	E-4/°C	ISO 11359-2
Coeff. of linear therm expansion, normal	0.2	E-4/°C	ISO 11359-2
Limiting oxygen index (LOI)	45	%	ISO 4589-1/-2
Flammability at thickness h	V-0	class	UL 94

Electrical properties	Value	Unit	Test Standard
Relative permittivity, 100Hz	4	-	IEC 60250
Relative permittivity, 1MHz	3.3	-	IEC 60250
Dissipation factor, 100Hz	100	E-4	IEC 60250
Dissipation factor, 1MHz	250	E-4	IEC 60250
Volume resistivity	1E13	Ohm*m	IEC 60093
Surface resistivity	1E14	Ohm	IEC 60093
Electric strength	32	kV/mm	IEC 60243-1
Comparative tracking index	175	-	IEC 60112
Arc resistance	140	s	Internal

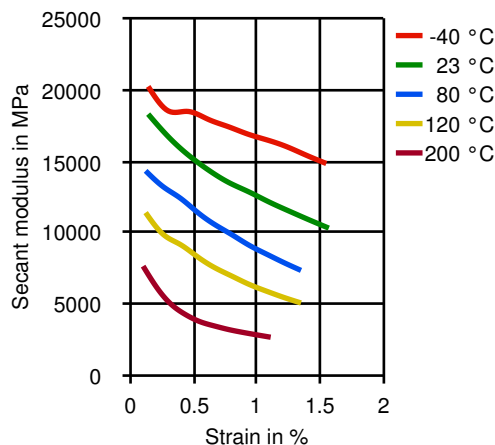
VECTRA® E130i - LCP

Diagrams

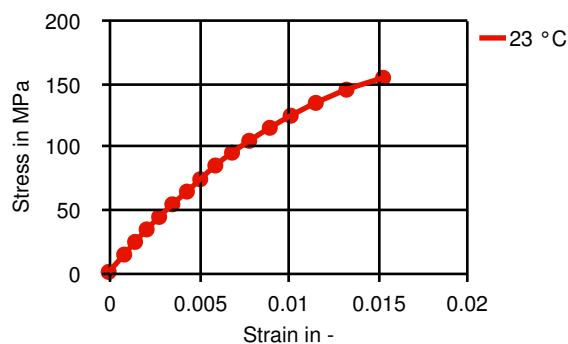
Stress-strain



Secant modulus-strain



True Stress-strain



Typical injection moulding processing conditions

	Value	Unit	Test Standard
Pre Drying			
Necessary low maximum residual moisture content	0.01	%	-
Drying time	4 - 6	h	-
Drying temperature	150 - 170	°C	-
Temperature	Value	Unit	Test Standard
Hopper temperature	20 - 30	°C	-
Feeding zone temperature	60 - 80	°C	-
Zone1 temperature	315 - 325	°C	-
Zone2 temperature	320 - 330	°C	-
Zone3 temperature	325 - 335	°C	-
Zone4 temperature	330 - 340	°C	-
Nozzle temperature	335 - 345	°C	-
Melt temperature	335 - 345	°C	-
Mold temperature	80 - 120	°C	-
Hot runner temperature	335 - 345	°C	-
Pressure	Value	Unit	Test Standard
Injection pressure	500 - 1500	bar	-
Hold pressure	500 - 1500	bar	-
Back pressure max.	30	bar	-
Speed	Value	Unit	Test Standard
Injection speed	very fast	-	-
Screw Speed	Value	Unit	Test Standard
Screw speed diameter, 16mm	200	RPM	-
Screw speed diameter, 25mm	140	RPM	-
Screw speed diameter, 40mm	80	RPM	-

VECTRA® E130i - LCP

Other	Value	Unit	Test Standard
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 $\leq -40^{\circ}$ 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.

Characteristics

Special Characteristics

Flame retardant, Light stabilized

Processing

Injection molding

Product Categories

Glass reinforced

Delivery Form

Pellets

Contact Information

Americas

8040 Dixie Highway
Florence, KY 41042 USA
Product Information Service
t: +1-800-833-4882
t: +1-859-372-3244
Customer Service
t: +1-800-526-4960
t: +1-859-372-3214
e: info-engineeredmaterials-am@celanese.com

Asia

4560 Jinke Road
Zhang Jiang Hi Tech Park
Shanghai 201203 PRC
Customer Service
t: +86 21 3861 9266
f: +86 21 3861 9599
e: info-engineeredmaterials-asia@celanese.com

Europe

Am Unisys-Park 1
65843 Sulzbach, Germany
Product Information Service
t: +49-800-86427-531
t: +49-(0)-69-45009-1011
e: info-engineeredmaterials-eu@celanese.com

General Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. 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. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. 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

VECTRA® E130i - LCP

trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products. The products mentioned herein are not intended for use in medical or dental implants.

Trademark

© 2014 Celanese or its affiliates. All rights reserved. (Published 27.July.2016). Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC.