Vectra® E130i

Celanese Corporation - Liquid Crystal Polymer

Thursday, December 21, 2023

General Information

Product Description

30% glass fiber, excellent flow, high temperature capability

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 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)

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Glass Fiber		
Additive	• Flame Retardant	• Heat Stabilizer	• UV Stabilizer
Features	• Flame Retardant • Heat Stabilized	• High Flow • UV Stabilized	
Uses	• Automotive Applications	• Lighting Applications	
Automotive Specifications	• BOSCH N28 BN35-X001 Color: Natural & Black	• HYUNDAI MS941-03 Type P-2 FRV0	
Forms	• Pellets		
Processing Method	• Injection Molding	• Lead Free Soldering	

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.61	g/cm³	ISO 1183
Apparent (Bulk) Density	0.71	g/cm³	ISO 60
Molding Shrinkage			ISO 294-4
Across Flow	0.40	%	
Flow	0.10	%	
Water Absorption			ISO 62
Equilibrium, 73°F, 0.0787 in, 50% RH	0.030	%	

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2.32E+6	psi	ISO 527-1
Tensile Stress (Break)	23200	psi	ISO 527-2/5
Tensile Strain (Break)	1.6	%	ISO 527-2/5
Flexural Modulus	2.18E+6	psi	ISO 178
Flexural Stress	31900	psi	ISO 178
Flexural Strain at Break	2.2	%	ISO 178
Compressive Modulus	2.03E+6	psi	ISO 604
Compressive Stress (1% Strain)	13500	psi	ISO 604

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (73°F)	18	ft·lb/in²	ISO 179/1eA
Charpy Unnotched Impact Strength (73°F)	20	ft·lb/in²	ISO 179/1eU
Notched Izod Impact Strength (73°F)	13	ft·lb/in²	ISO 180/1A
Unnotched Izod Impact Strength (73°F)	15	ft·lb/in²	ISO 180/1U

Vectra® E130i
Celanese Corporation - Liquid Crystal Polymer

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	71		ISO 2039-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			ISO 75-2/A
264 psi, Unannealed	518	°F	
Deflection Temperature Under Load			ISO 75-2/C
1160 psi, Unannealed	421	°F	
Melting Temperature [2]	635	°F	ISO 11357-3
CLTE - Flow	3.9E-6	in/in/°F	ISO 11359-2
CLTE - Transverse	1.1E-5	in/in/°F	ISO 11359-2
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	1.0E+14	ohms	IEC 62631-3-2
Volume Resistivity	1.0E+13	ohms·m	IEC 62631-3-1
Electric Strength	810	V/mil	IEC 60243-1
Dielectric Constant (1.00 GHz)	3.80		IEC 61189-2-721
Relative Permittivity			
100 Hz	4.00		IEC 60250
1 kHz	4.30		IEC 60250
1 MHz	3.90		IEC 60250
2.50 GHz [3]	3.90		IEC 61189-2-721
Dissipation Factor			
100 Hz	0.010		IEC 60250
1 kHz	0.0		IEC 60250
1 MHz	0.036		IEC 60250
1.00 GHz	6.0E-3		IEC 61189-2-721
2.50 GHz [3]	6.0E-3		IEC 61189-2-721
Arc Resistance	140	sec	Internal Method
Comparative Tracking Index (CTI) [4]	PLC 4		UL 746A
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating	V-0		UL 94
Oxygen Index	45	%	ISO 4589-2
Additional Information	**Nominal Value**	**Unit**	
Specimen Thickness - shrinkage	0.13	in	

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	302 to 338	°F
Drying Time	4.0 to 6.0	hr
Suggested Max Moisture	0.010	%
Hopper Temperature	68 to 86	°F
Injection Feed Temperature	140 to 176	°F
Rear Temperature	599 to 617	°F
Middle Temperature	608 to 626	°F
Front Temperature	617 to 635	°F
Injection Zone 4 Temperature	626 to 644	°F
Nozzle Temperature	635 to 653	°F
Processing (Melt) Temp	635 to 653	°F
Mold Temperature	176 to 248	°F
Injection Rate	Fast	

Vectra® E130i

Celanese Corporation - Liquid Crystal Polymer

Injection	Nominal Value	Unit
Back Pressure	< 435	psi
Hot Runner	635 to 653	°F
Screw Speed		
0.63 in	200	
0.98 in	140	
1.6 in	80	

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 10°C/min

[3] Printed circuits and boards

[4] 23°C