VECTRA® MT1310

Celanese Corporation - Liquid Crystal Polymer

Friday, March 06, 2015

General Information

Product Description

The Standard for the Industry. Excellent balance of properties, including easy flow, easy processing, thermal stability, chemical resistance, mechanical and electrical properties. Suitable for vapor phase surface mount electrical and electronic devices. 30% glass reinforced

Chemical abbreviation according to ISO 1043-1 : LCP
Inherently flame retardant
Celanese has established at the FDA a drug master file (DMF no.8468) and a Device Master File (MAF no.315) for Vectra MT1310. These are to assist our customers with their end use FDA petitions. Vectra MT1310 has been tested and complies with USP Class VI.

General			
Material Status	• Commercial: Active		
Availability	• Europe	• North America	
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight		
Features	• Flame Retardant • Good Chemical Resistance	• Good Flow • Good Processability	• Good Thermal Stability
Uses	• Electrical/Electronic Applications		
Agency Ratings	• DMF 8468	• MAF 315	• USP Class VI
RoHS Compliance	• Contact Manufacturer		
Resin ID (ISO 1043)	• LCP		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.62	g/cm³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.40	%	
Flow	0.20	%	
Water Absorption (Equilibrium, 73°F, 50% RH)	0.040	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	2.18E+6	psi	ISO 527-2/1A/1
Tensile Stress (Break)	27600	psi	ISO 527-2/1A/5
Tensile Strain (Break)	2.1	%	ISO 527-2/1A/5
Tensile Creep Modulus (1 hr)	1.83E+6	psi	ISO 899-1
Tensile Creep Modulus (1000 hr)	1.58E+6	psi	ISO 899-1
Flexural Modulus (73°F)	2.10E+6	psi	ISO 178
Flexural Stress (73°F)	40600	psi	ISO 178
Compressive Modulus	2.10E+6	psi	ISO 604
Compressive Stress (1% Strain)	14500	psi	ISO 604
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (73°F)	12	ft·lb/in²	ISO 179/1eA
Charpy Unnotched Impact Strength (73°F)	16	ft·lb/in²	ISO 179/1eU
Notched Izod Impact Strength (73°F)	11	ft·lb/in²	ISO 180/1A
Unnotched Izod Impact Strength (73°F)	14	ft·lb/in²	ISO 180/1U
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	85		ISO 2039-2

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Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (66 psi, Unannealed)	482	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	455	°F	ISO 75-2/A
Heat Deflection Temperature (1160 psi, Unannealed)	374	°F	ISO 75-2/C
Vicat Softening Temperature	320	°F	ISO 306/B50
Melting Temperature [2]	536	°F	ISO 11357-3
CLTE - Flow	3.3E-6	in/in/°F	ISO 11359-2
CLTE - Transverse	1.3E-5	in/in/°F	ISO 11359-2
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	> 1.0E+15	ohm	IEC 60093
Volume Resistivity	1.0E+15	ohm·cm	IEC 60093
Electric Strength	790	V/mil	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	4.20		
1 MHz	3.70		
Dissipation Factor			IEC 60250
100 Hz	0.016		
1 MHz	0.018		
Arc Resistance	140	sec	Internal Method
Comparative Tracking Index	175	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating	V-0		UL 94
Oxygen Index	45	%	ISO 4589-2

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	302	°F
Drying Time	4.0 to 6.0	hr
Suggested Max Moisture	0.010	%
Hopper Temperature	68.0 to 86.0	°F
Rear Temperature	518 to 536	°F
Middle Temperature	527 to 545	°F
Front Temperature	536 to 554	°F
Nozzle Temperature	554 to 572	°F
Processing (Melt) Temp	545 to 563	°F
Mold Temperature	176 to 248	°F
Injection Pressure	7250 to 21800	psi
Injection Rate	Fast	
Holding Pressure	7250 to 21800	psi
Back Pressure	0.00 to 435	psi

Injection Notes

Manifold Temperature: 285 to 295°C
Zone 4 Temperature: 285 to 295°C
Feed Temperature: 60 to 80°C

Notes

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

[2] 10°C/min