Vectra® MT1305

Celanese Corporation - Liquid Crystal Polymer

Sunday, November 3, 2019

General Information

Product Description

Vectra® MT1305 VF3001 (natural) is a 15% glass reinforced, easy flow LCP grade for injection molding.

Vectra® MT1305 VF3001 (natural) is a special grade developed for medical industry applications and complies with:

- Food Contact Substance Notification (FCN) No. 742 of the Food and Drug Administration (FDA) and is listed in the Drug Master File (DMF 8464) and the Device Master File (MAF 315)
- the corresponding EU and national registry regulatory requirements
- biocompatibility in tests corresponding to USP 23 Class VI/ISO 10993
- low residual monomers
- no animal products

Provides easier flow than MT1310 VF3001 (natural)
Slightly tougher, but may warp slightly more than MT1310 in some parts
Chemical abbreviation according to ISO 1043-1 : LCP
Inherently flame retardant
UL-Listing V-0 in natural and black at 0.44mm thickness per UL 94 flame testing. Relative-Temperature-Index (RTI) according to UL 746B: electricals 240°C, mechanicals 220°C at 0.85mm. UL = Underwriters Laboratories (USA)

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Glass Fiber, 15% Filler by Weight		
Features	• Flame Retardant • Food Contact Acceptable	• Good Flow • No Animal Derived Components	
Uses	• Medical/Healthcare Applications		
Agency Ratings	• DMF 8464 • FDA FCN 742	• ISO 10993 • MAF 315	• USP XXIII, Class VI
RoHS Compliance	• Contact Manufacturer		
Processing Method	• Injection Molding		
Resin ID (ISO 1043)	• LCP		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.50	g/cm³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.40	%	
Flow	0.10	%	
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	1.74E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	29000	psi	ISO 527-2/1A/5
Tensile Strain (Break)	3.1	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	1.80E+6	psi	ISO 178
Flexural Stress (73°F)	36300	psi	ISO 178
Compressive Modulus	1.45E+6	psi	ISO 604
Compressive Stress (1% Strain)	12300	psi	ISO 604

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Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (73°F)	20	ft·lb/in²	ISO 179/1eA
Charpy Unnotched Impact Strength (73°F)	23	ft·lb/in²	ISO 179/1eU
Notched Izod Impact Strength (73°F)	21	ft·lb/in²	ISO 180/1A
Unnotched Izod Impact Strength (73°F)	29	ft·lb/in²	ISO 180/1U
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	80		ISO 2039-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature (66 psi, Unannealed)	482	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	446	°F	ISO 75-2/A
Heat Deflection Temperature (1160 psi, Unannealed)	315	°F	ISO 75-2/C
Vicat Softening Temperature	324	°F	ISO 306/B50
Melting Temperature [2]	536	°F	ISO 11357-3
CLTE - Flow	5.6E-6	in/in/°F	ISO 11359-2
CLTE - Transverse	1.0E-5	in/in/°F	ISO 11359-2
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	1.0E+15	ohms·cm	IEC 60093
Electric Strength	860	V/mil	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	3.50		
1 MHz	3.00		
Dissipation Factor			IEC 60250
100 Hz	0.020		
1 MHz	0.018		
Arc Resistance	135	sec	Internal Method
Comparative Tracking Index	200	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating	V-0		UL 94

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 to 86	°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 Rate	Fast	
Back Pressure	< 435	psi

Injection Notes

Feeding zone temperature: 60 to 80°C
Zone4 temperature: 285 to 295°C
Hot runner temperature: 285 to 295°C

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Notes

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

[2] 10°C/min