Fortron® 1140L4 FC

Celanese Corporation - Polyphenylene Sulfide

Tuesday, November 5, 2019

General Information

Product Description

Fortron 1140L4 FC is a 40% glass-reinforced grade that is the strongest and toughest product available designed for use in food contact and/or drinking water applications. It exhibits excellent heat and chemical resistance, good electrical properties and is inherently flame-retardant. The high hardness and rigidity at elevated temperatures allows for good load bearing performance. This product has good weldability due to the modest filler level. Applications made of this grade are electronical components (i.e. bobbins, lamp housings, brush holders) and various other components requiring strength and resistance to aggressive chemicals (i.e. automotive heaters, pumps, valves, fuel rails, microwave oven rings and distillartion column packings).

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Europe	• Latin America • North America	
Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight		
Features	• Chemical Resistant • Flame Retardant • Food Contact Acceptable • Good Electrical Properties	• High Hardness • High Heat Resistance • High Stiffness • High Strength	• Ultra High Toughness • Weldable
Uses	• Automotive Applications • Electrical/Electronic Applications	• Housings • Non-specific Food Applications	• Pump Parts • Valves/Valve Parts
RoHS Compliance	• Contact Manufacturer		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.65	g/cm³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.40 to 0.60	%	
Flow	0.20 to 0.60	%	
Water Absorption (Saturation, 73°F)	0.020	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	2.13E+6	psi	ISO 527-2/1A/1
Tensile Stress (Break)	28300	psi	ISO 527-2/1A/5
Tensile Strain (Break)	1.9	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	2.10E+6	psi	ISO 178
Flexural Stress [2]	41300	psi	ISO 178
Compressive Modulus	2.18E+6	psi	ISO 604
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	4.8	ft·lb/in²	
73°F	4.8	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	25	ft·lb/in²	
73°F	25	ft·lb/in²	
Notched Izod Impact Strength			ISO 180/1A
-22°F	4.8	ft·lb/in²	
73°F	4.8	ft·lb/in²	

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Impact	Nominal Value	Unit	Test Method
Unnotched Izod Impact Strength			ISO 180/1U
-22°F	16	ft·lb/in²	
73°F	16	ft·lb/in²	
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (M-Scale)	100		ISO 2039-2
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature (264 psi, Unannealed)	518	°F	ISO 75-2/A
Heat Deflection Temperature (1160 psi, Unannealed)	419	°F	ISO 75-2/C
Glass Transition Temperature [3]	194	°F	ISO 11357-2
Melting Temperature [3]	536	°F	ISO 11357-3
CLTE - Flow	1.4E-5	in/in/°F	ISO 11359-2
CLTE - Transverse	2.3E-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	710	V/mil	IEC 60243-1
Relative Permittivity (1 MHz)	4.10		IEC 60250
Dissipation Factor (1 MHz)	2.0E-3		IEC 60250
Comparative Tracking Index	125	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating			UL 94
0.015 in	V-0		
0.06 in	V-0		
0.12 in	5VA		
Oxygen Index	47	%	ISO 4589-2
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Specific Heat Capacity of Melt	0.359	Btu/lb/°F	Internal Method
Additional Information	**Nominal Value**	**Unit**	**Test Method**
Specimen Thickness - Shrinkage	0.13	in	Internal Method

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	266 to 284	°F
Drying Time	3.0 to 4.0	hr
Suggested Max Moisture	0.020	%
Hopper Temperature	68 to 86	°F
Rear Temperature	554 to 572	°F
Middle Temperature	590 to 608	°F
Front Temperature	626 to 644	°F
Nozzle Temperature	590 to 626	°F
Processing (Melt) Temp	626 to 644	°F
Mold Temperature	284 to 320	°F
Injection Rate	Fast	
Back Pressure	< 435	psi

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Injection Notes
Manifold Temperature: 330 to 340°C
Zone 4 Temperature: 330 to 340°C
Feed Temperature: 60 to 80°C
Hot Runner Temperature: 330 to 340°C

Notes

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

[2] Break

[3] 10°C/min