Fortron® 4184L4

Celanese Corporation - Polyphenylene Sulfide

Tuesday, November 5, 2019

General Information

Product Description

Fortron 4184L4 is the strongest and toughest glass/mineral reinforced product available. It offers excellent heat resistance at high loads and good chemical resistance. The electrical properties are excellent and the product is inherently flame-retardant. This product also offers low creep resistance and good rigidity due to the mineral content. Applications made of this grade include electronic components (i.e. bobbins, connectors and solenoid valves).

General			
Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Glass\Mineral		
Features	• Chemical Resistant • Creep Resistant • Flame Retardant	• Good Electrical Properties • Good Heat Resistance • Good Stiffness	• Good Strength • Good Toughness
Uses	• Bobbins • Connectors	• Electrical/Electronic Applications • Valves/Valve Parts	
RoHS Compliance	• Contact Manufacturer		

ASTM & ISO Properties [1]

Physical	Nominal Value	Unit	Test Method
Density	1.80	g/cm³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.60	%	
Flow	0.30	%	
Water Absorption (Saturation, 73°F)	0.020	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	2.41E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	23900	psi	ISO 527-2/1A/5
Tensile Strain (Break)	1.4	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	2.35E+6	psi	ISO 178
Flexural Stress	36300	psi	ISO 178
Compressive Modulus	2.35E+6	psi	ISO 604
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	3.3	ft·lb/in²	
73°F	3.3	ft·lb/in²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	14	ft·lb/in²	
73°F	14	ft·lb/in²	
Notched Izod Impact Strength			ISO 180/1A
-22°F	3.3	ft·lb/in²	
73°F	3.3	ft·lb/in²	
Unnotched Izod Impact Strength			ISO 180/1U
-22°F	13	ft·lb/in²	
73°F	13	ft·lb/in²	

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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 [2]	194	°F	ISO 11357-2
Melting Temperature [2]	536	°F	ISO 11357-3
CLTE - Flow	1.3E-5	in/in/°F	ISO 11359-2
CLTE - Transverse	1.8E-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	690	V/mil	IEC 60243-1
Relative Permittivity (1 MHz)	4.70		IEC 60250
Dissipation Factor (1 MHz)	2.0E-3		IEC 60250
Comparative Tracking Index	150	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating			UL 94
0.030 in	V-0		
0.06 in	V-0		
Fill Analysis	**Nominal Value**	**Unit**	
Specific Heat Capacity of Melt	0.382	Btu/lb/°F	

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

Injection Notes

Feeding zone temperature: 60 to 80°C
Zone4 temperature: 330 to 340°C
Hot runner temperature: 330 to 340°C

Notes

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

[2] 10°C/min