

Fortron® 1140L4

Polyphenylene Sulfide
Celanese Corporation

PROSPECTOR®

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Technical Data

Product Description

Fortron 1140L4 is a 40% glass-reinforced grade that is the strongest and toughest product available. 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 electrical 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 distillation column packings).

General

Material Status	• Commercial: Active
Literature ¹	• Technical Datasheet (English)
UL Yellow Card ²	• E107854-237735 • E107854-237738 • E107854-237739
Search for UL Yellow Card	• Celanese Corporation • Fortron®
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight
Features	• Chemical Resistant • Flame Retardant • Good Electrical Properties • Good Heat Resistance • Good Strength • High Hardness • High Stiffness • High Strength • High Toughness • Weldable
Uses	• Appliance Components • Automotive Applications • Bobbins • Electrical/Electronic Applications • Fuel Lines • Housings • Pump Parts • Valves/Valve Parts
RoHS Compliance	• Contact Manufacturer
Multi-Point Data	• Isochronous Stress vs. Strain (ISO 11403-1) • Isothermal Stress vs. Strain (ISO 11403-1) • Shear Modulus vs. Temperature (ISO 11403-1)

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.65 g/cm ³	1.65 g/cm ³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.60 %	0.60 %	
Flow	0.30 %	0.30 %	
Water Absorption (Saturation, 73°F (23°C))	0.020 %	0.020 %	ISO 62
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	2.13E+6 psi	14700 MPa	ISO 527-2/1A
Tensile Stress (Break)	28300 psi	195 MPa	ISO 527-2/1A/5
Tensile Strain (Break)	1.9 %	1.9 %	ISO 527-2/1A/5
Flexural Modulus (73°F (23°C))	2.10E+6 psi	14500 MPa	ISO 178
Flexural Stress	41300 psi	285 MPa	ISO 178
Compressive Modulus	2.18E+6 psi	15000 MPa	ISO 604



Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	4.8 ft·lb/in ²	10 kJ/m ²	
73°F (23°C)	4.8 ft·lb/in ²	10 kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F (-30°C)	25 ft·lb/in ²	53 kJ/m ²	
73°F (23°C)	25 ft·lb/in ²	53 kJ/m ²	
Notched Izod Impact Strength			ISO 180/1A
-22°F (-30°C)	4.8 ft·lb/in ²	10 kJ/m ²	
73°F (23°C)	4.8 ft·lb/in ²	10 kJ/m ²	
Unnotched Izod Impact Strength			ISO 180/1U
-22°F (-30°C)	16 ft·lb/in ²	34 kJ/m ²	
73°F (23°C)	16 ft·lb/in ²	34 kJ/m ²	
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (M-Scale)	100	100	ISO 2039-2
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Heat Deflection Temperature			
264 psi (1.8 MPa), Unannealed	518 °F	270 °C	ISO 75-2/A
1160 psi (8.0 MPa), Unannealed	419 °F	215 °C	ISO 75-2/C
Glass Transition Temperature ⁴	194 °F	90.0 °C	ISO 11357-2
Melting Temperature ⁴	536 °F	280 °C	ISO 11357-3
CLTE			ISO 11359-2
Flow	1.4E-5 in/in/°F	2.6E-5 cm/cm/°C	
Transverse	2.3E-5 in/in/°F	4.2E-5 cm/cm/°C	
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	6.6E+11 ohms	6.6E+11 ohms	IEC 60093
Volume Resistivity	> 1.0E+15 ohms·cm	> 1.0E+15 ohms·cm	IEC 60093
Electric Strength	710 V/mil	28 kV/mm	IEC 60243-1
Relative Permittivity (1 MHz)	4.10	4.10	IEC 60250
Dissipation Factor (1 MHz)	2.0E-3	2.0E-3	IEC 60250
Comparative Tracking Index	125 V	125 V	IEC 60112
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating			UL 94
0.015 in (0.38 mm)	V-0	V-0	
0.06 in (1.5 mm)	V-0	V-0	
0.12 in (3.0 mm)	5VA	5VA	
Oxygen Index	47 %	47 %	ISO 4589-2
Fill Analysis	Nominal Value (English)	Nominal Value (SI)	
Specific Heat Capacity of Melt	0.359 Btu/lb/°F	1500 J/kg/°C	
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	266 to 284 °F	130 to 140 °C	
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr	
Suggested Max Moisture	0.020 %	0.020 %	
Hopper Temperature	68 to 86 °F	20 to 30 °C	
Rear Temperature	554 to 572 °F	290 to 300 °C	
Middle Temperature	590 to 608 °F	310 to 320 °C	
Front Temperature	626 to 644 °F	330 to 340 °C	
Nozzle Temperature	590 to 626 °F	310 to 330 °C	
Processing (Melt) Temp	626 to 644 °F	330 to 340 °C	
Mold Temperature	284 to 320 °F	140 to 160 °C	
Injection Rate	Fast	Fast	
Back Pressure	< 435 psi	< 3.00 MPa	



Injection Notes

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

Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

³ Typical properties: these are not to be construed as specifications.

⁴ 10°C/min



Where to Buy

Supplier**Celanese Corporation**

Florence, KY USA

Telephone: 800-833-4882**Web:** <http://www.celanese.com/engineered-materials>

Distributor**ALBIS Plastic***ALBIS Plastic is a global distribution and compounding company. Contact ALBIS Plastic for availability of individual products per country.***Telephone:** +49-40-78105-0**Web:** <http://www.albis.com/>**Availability:** China, Hong Kong**Amco Polymers****Telephone:** 800-262-6685**Web:** <http://www.amcopolymers.com/>**Availability:** North America**Channel Prime Alliance****Telephone:** 800-247-8038**Web:** <http://www.channelpa.com/>**Availability:** North America**Entec Polymers****Telephone:** 800-375-5440**Web:** <http://www.entecpolymers.com/>**Availability:** North America**ESSE International - OMYA***ESSE International - OMYA is a Pan European distribution company. Contact ESSE International - OMYA for availability of individual products by country.***Telephone:** +33-1-30-80-56-56**Web:** <http://www.omya.com>**Availability:** Spain, Switzerland**RESINEX Group***RESINEX is a Pan European distribution company. Contact RESINEX for availability of individual products by country.***Telephone:** +32-14-672511**Web:** <http://www.resinex.com/>**Availability:** Europe