

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