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# FORTRON® 1140L6

## Polyphenylene sulfide

Fortron 1140L6 is an easier flow version of Fortron 1140L4. It offers essentially the same characteristics of 1140L4. Especially used for thin walled parts with long flow lengths. Applications made of this grade include components for pumps and electronics.

## Product information

| | | |
|---|---|---|
| Resin Identification | PPS-GF40 | ISO 1043 |
| Part Marking Code | >PPS-GF40< | ISO 11469 |

## Rheological properties

| | | | |
|---|---|---|---|
| Moulding shrinkage, parallel | 0.3 | % | ISO 294-4, 2577 |
| Moulding shrinkage, normal | 0.6 | % | ISO 294-4, 2577 |

## Typical mechanical properties

| | | | |
|---|---|---|---|
| Tensile modulus | 14700 | MPa | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min | 195 | MPa | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min | 1.9 | % | ISO 527-1/-2 |
| Flexural modulus | 14500 | MPa | ISO 178 |
| Flexural strength | 280 | MPa | ISO 178 |
| Compressive modulus | 14500 | MPa | ISO 604 |
| Compressive strength | 265 | MPa | ISO 604 |
| Charpy impact strength, 23°C | 53 | kJ/m² | ISO 179/1eU |
| Charpy impact strength, -30°C | 53 | kJ/m² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 10 | kJ/m² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 10 | kJ/m² | ISO 179/1eA |
| Izod notched impact strength, 23°C | 10 | kJ/m² | ISO 180/1A |
| Izod notched impact strength, -30°C | 10.0 | kJ/m² | ISO 180/1A |
| Izod impact strength, 23°C | 34 | kJ/m² | ISO 180/1U |
| Izod impact strength, -30°C | 34 | kJ/m² | ISO 180/1U |
| Hardness, Rockwell, M-scale | 100 | | ISO 2039-2 |
| Poisson's ratio | 0.33[C] | | |

[C]: Calculated

## Thermal properties

| | | | |
|---|---|---|---|
| Melting temperature, 10°C/min | 280 | °C | ISO 11357-1/-3 |
| Glass transition temperature, 10°C/min | 90 | °C | ISO 11357-1/-3 |
| Temperature of deflection under load, 1.8 MPa | 270 | °C | ISO 75-1/-2 |
| Temperature of deflection under load, 8 MPa | 215 | °C | ISO 75-1/-2 |
| Coefficient of linear thermal expansion (CLTE), parallel | 26 | E-6/K | ISO 11359-1/-2 |
| Coefficient of linear thermal expansion (CLTE), normal | 42 | E-6/K | ISO 11359-1/-2 |
| Specific heat capacity of melt | 1500 | J/(kg K) | ISO 22007-4 |

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## Flammability

| | | | |
|---|---|---|---|
| Burning Behav. at 1.5mm nom. thickn. | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 1.5 | mm | IEC 60695-11-10 |
| Burning Behav. at thickness h | V-0 | class | IEC 60695-11-10 |
| Thickness tested | 0.38 | mm | IEC 60695-11-10 |
| Glow Wire Flammability Index, 0.4mm | 960 | °C | IEC 60695-2-12 |
| Glow Wire Flammability Index, 1.0mm | 900 | °C | IEC 60695-2-12 |
| Glow Wire Flammability Index, 2.0mm | 900 | °C | IEC 60695-2-12 |
| Glow Wire Ignition Temperature, 1.0mm | 925 | °C | IEC 60695-2-13 |

## Electrical properties

| | | | |
|---|---|---|---|
| Relative permittivity, 1MHz | 4.2 | | IEC 62631-2-1 |
| Dissipation factor, 1MHz | 20 | E-4 | IEC 62631-2-1 |
| Volume resistivity | >1E13 | Ohm.m | IEC 62631-3-1 |
| Surface resistivity | 1.3E14 | Ohm | IEC 62631-3-2 |
| Comparative tracking index | 125 | | IEC 60112 |
| Arc Resistance | 134 | s | UL 746B |

## Physical/Other properties

| | | | |
|---|---|---|---|
| Water absorption, 2mm | 0.02 | % | Sim. to ISO 62 |
| Water absorption, Immersion 24h | 0.02 | % | Sim. to ISO 62 |
| Density | 1600 | kg/m³ | ISO 1183 |

## Injection

| | | |
|---|---|---|
| Drying Recommended | yes | |
| Drying Temperature | 130 | °C |
| Drying Time, Dehumidified Dryer | 2 - 4 | h |
| Processing Moisture Content | ≤0.02 | % |
| Melt Temperature Optimum | 330 | °C |
| Min. melt temperature | 310 | °C |
| Max. melt temperature | 340 | °C |
| Screw tangential speed | 0.2 - 0.3 | m/s |
| Mold Temperature Optimum | 150 | °C |
| Min. mould temperature | 140 | °C |
| Max. mould temperature | 160 | °C |
| Hold pressure range | 30 - 70 | MPa |
| Back pressure | 3 | MPa |
| Ejection temperature | 217 | °C |

## Characteristics

| | |
|---|---|
| Processing | Injection Moulding |
| Delivery form | Pellets |
| Additives | Release agent |
| Special characteristics | Flame retardant, High Flow |

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## Additional information

Injection molding

### Preprocessing

Predrying in a dehumidified air dryer at 130 - 140 degC/3-4 hours is recommended.

### Processing

On injection molding machines with 15-25 D long three-section screws, as are usual in the trade, the FORTRON is processable. A shut-off nozzle is preferred to a free-flow nozzle.

Melt temperature 320-340 degC
Mold wall temperature at least 140 degC

A medium injection rate is normally preferred. All mold cavities must be effectively vented.

### Postprocessing

Tool temperature of at least 135 degC is recommended for parts to achieve maximum crystallizable potential.

Processing Notes

### Pre-Drying

FORTRON should in principle be predried. Because of the necessary low maximum residual moisture content the use of dry air dryers is recommended. The dew point should be =< - 30° C. The time between drying and processing should be as short as possible.

### Storage

For subsequent storage the material should be stored dry in the dryer until processed (<= 60 h).

## Automotive

| OEM | STANDARD | ADDITIONAL INFORMATION |
|---|---|---|
| Chery | Q/SQR S1-172-2023 | |
| Mercedes-Benz | DBL5420 | (5420.00) |

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