

# FORTRON® 1130L4

## Polyphenylene sulfide

Fortron 1130L4 is a 30% glass-reinforced PPS that has excellent heat and chemical resistance. It is inherently flame-retardant and exhibits high hardness and a good balance of strength and stiffness. Especially used for thin walled parts requiring long flow lengths. This grade also exhibits excellent weldability in secondary operations due to its low filler content.

### Product information

Resin Identification	PPS-GF30	ISO 1043
Part Marking Code	>PPS-GF30<	ISO 11469

### Rheological properties

Moulding shrinkage, parallel	0.3 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.7 %	ISO 294-4, 2577

### Typical mechanical properties

Tensile modulus	12000 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	170 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.9 %	ISO 527-1/-2
Flexural modulus	11000 MPa	ISO 178
Flexural strength	260 MPa	ISO 178
Compressive modulus	12300 MPa	ISO 604
Compressive strength	235 MPa	ISO 604
Charpy impact strength, 23°C	34 kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	34 kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	9 kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	9 kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength, 23°C	9 kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength, -30°C	9.0 kJ/m <sup>2</sup>	ISO 180/1A
Izod impact strength, 23°C	30 kJ/m <sup>2</sup>	ISO 180/1U
Izod impact strength, -30°C	30 kJ/m <sup>2</sup>	ISO 180/1U
Hardness, Rockwell, M-scale	100	ISO 2039-2
Poisson's ratio	0.33 <sup>[C]</sup>	

[C]: Calculated

### Thermal properties

Melting temperature, 10°C/min	280 <sup>[C]</sup> °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	255 °C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	29 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	52 E-6/K	ISO 11359-1/-2

[C]: Calculated

### 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	0.8 mm	IEC 60695-11-10

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### Electrical properties

Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Arc Resistance	127 s	UL 746B

### Physical/Other properties

Water absorption, 2mm	0.02 %	Sim. to ISO 62
Water absorption, Immersion 24h	0.03 %	Sim. to ISO 62
Density	1600 kg/m <sup>3</sup>	ISO 1183

### Injection

Drying Recommended	yes
Drying Temperature	100 °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

### 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.

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Processing Notes

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## 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  $\leq -30^{\circ}\text{C}$ . 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 ( $\leq 60\text{ h}$ ).