

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.

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i roduct imormation			
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
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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		ISO 178
Flexural strength		MPa	ISO 178
Compressive modulus	12300		ISO 604
Compressive strength		MPa	ISO 604
Charpy impact strength, 23°C		kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C		kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C		kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C		kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C		kJ/m²	ISO 180/1A
Izod notched impact strength, -30°C		kJ/m²	ISO 180/1A
Izod impact strength, 23°C		kJ/m²	ISO 180/1U
Izod impact strength, -30 °C		kJ/m²	ISO 180/1U
Hardness, Rockwell, M-scale	100		ISO 2039-2
Poisson's ratio	0.33 ^[C]		
[C]: Calculated			
Thermal properties			
·	280 ^[C]	°C	ISO 11357-1/-3
Melting temperature, 10°C/min		°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min Temperature of deflection under load, 1.8 MPa	255		ISO 75-1/-2
Coefficient of linear thermal expansion		E-6/K	ISO 11359-1/-2
(CLTE), parallel	29	E-0/IX	130 11339-1/-2
Coefficient of linear thermal expansion (CLTE),	52	E-6/K	ISO 11359-1/-2
normal	52	L-0/IX	130 11339-1/-2
[C]: Calculated			
Flammability			
Burning Behav. at 1.5mm nom. thickn.	V-n	class	IEC 60695-11-10
Thickness tested		mm	IEC 60695-11-10
Burning Behav. at thickness h		class	IEC 60695-11-10
Thickness tested		mm	IEC 60695-11-10
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Printed: 2024-09-04 Page: 1 of 4

Revised: 2024-06-13 Source: Celanese Materials Database



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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 ³	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.

Printed: 2024-09-04 Page: 2 of 4

Revised: 2024-06-13 Source: Celanese Materials Database



Polyphenylene sulfide

Processing Notes

Printed: 2024-09-04 Page: 3 of 4

Revised: 2024-06-13 Source: Celanese Materials Database



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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 =< - 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).

Printed: 2024-09-04 Page: 4 of 4

Revised: 2024-06-13 Source: Celanese Materials Database

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