Celanese
The chemistry inside innovation™

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

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

Typical mechanical properties

Tensile modulus	1.74E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	24700	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.9	%	ISO 527-1/-2
Flexural modulus	1.6E6	psi	ISO 178
Flexural strength	37700	psi	ISO 178
Compressive modulus	1.78E6	psi	ISO 604
Compressive strength	34100	psi	ISO 604
Charpy impact strength, 23°C	16.2	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	16.2	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	4.28	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30°C	4.28	ftlb/in²	ISO 179/1eA
Izod notched impact strength, 23°C	4.28	ftlb/in²	ISO 180/1A
Izod notched impact strength, -30°C	4.28	ftlb/in²	ISO 180/1A
Izod impact strength, 23°C	14.3	ftlb/in²	ISO 180/1U
Izod impact strength, -30°C	14.3	ftlb/in²	ISO 180/1U
Hardness, Rockwell, M-scale	100		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	536[C]	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	194	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	491	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.16	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.289	E-4/°F	ISO 11359-1/-2

[C]: Calculated

Flammability

Burning Behav. at 1.5mm nom. thickn.	V-0	class	IEC 60695-11-10
Thickness tested	0.0591	in	IEC 60695-11-10
Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.0315	in	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	0.0578	lb/in^3	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	212	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.02	%
Melt Temperature Optimum	626	°F
Min. melt temperature	590	°F
Max. melt temperature	644	°F
Max. screw tangential speed	0.2 - 0.3	m/s
Mold Temperature Optimum	302	°F
Min. mold temperature	284	°F
Max. mold temperature	320	°F
Hold pressure range	4350 - 10200	psi
Back pressure	435	psi

Automotive

OEM	ADDITIONAL INFORMATION
General Motors	Black, Special Parts Approval, See Your CE Account Representative for Further Details.
Mercedes-Benz	No Spec, Special Part Approval, See Your CE Account Manager.

Characteristics

Processing	Injection Molding
Special characteristics	Flame retardant, Heat stabilized or stable to heat, Chemical resistant

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

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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.

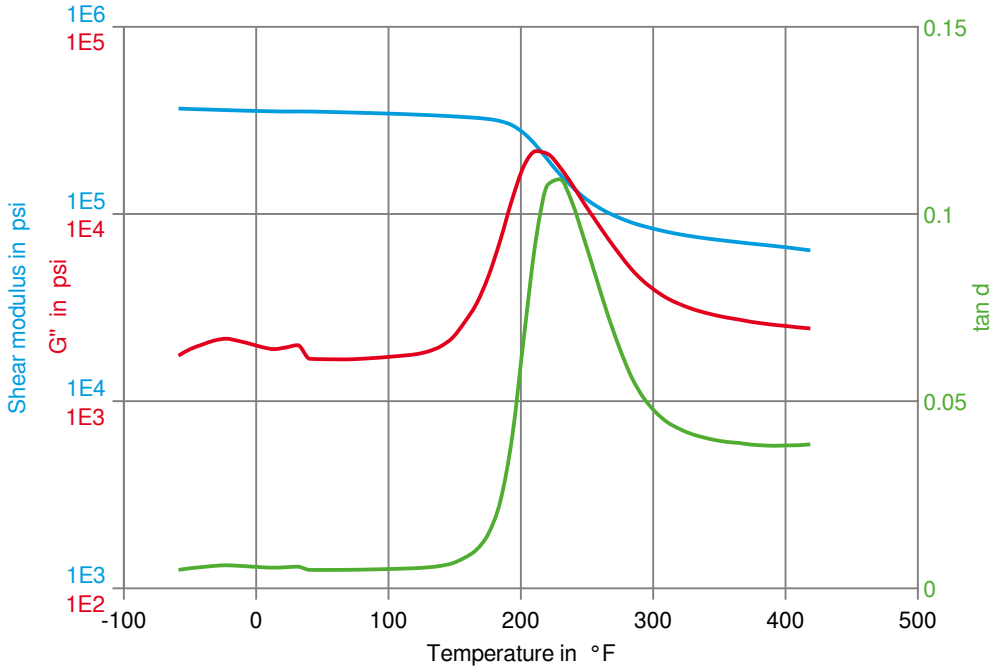
Storage

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

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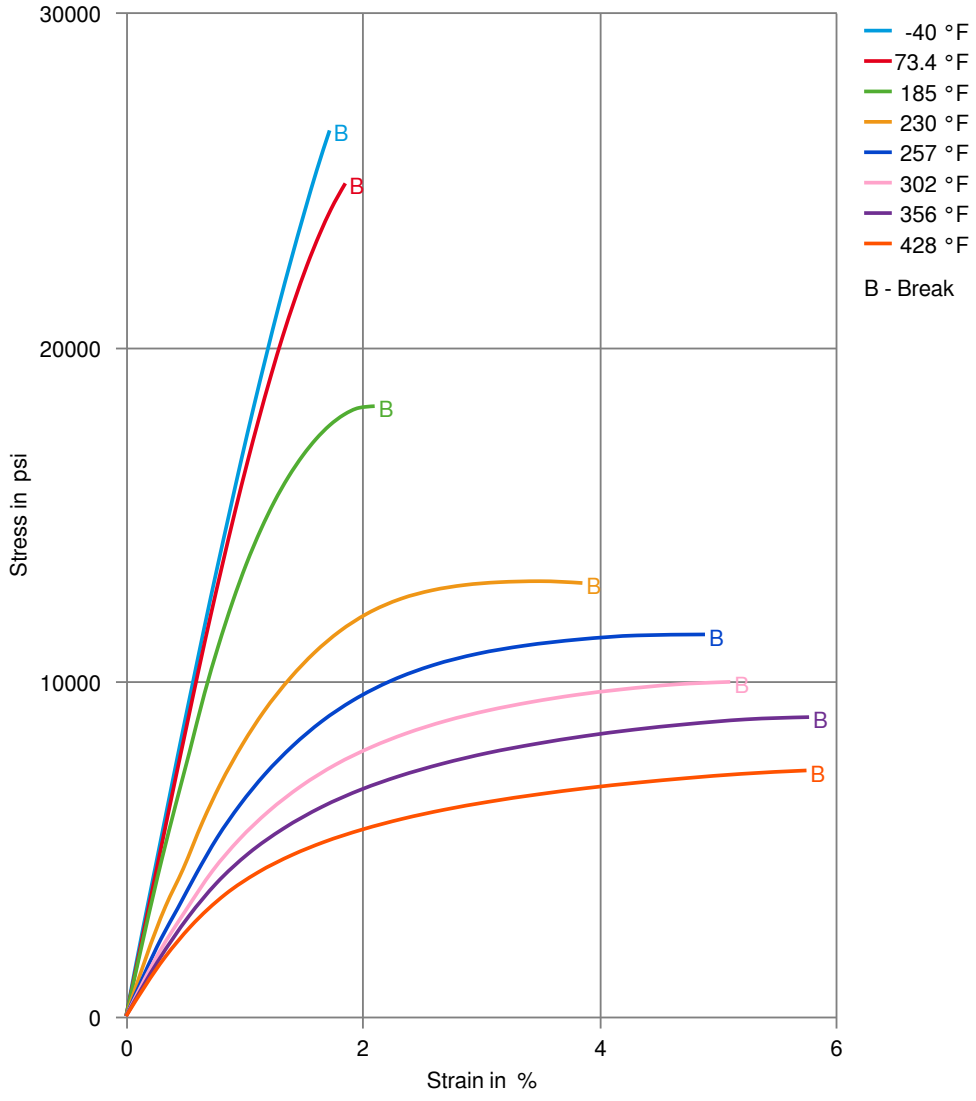
Dynamic Shear modulus-temperature



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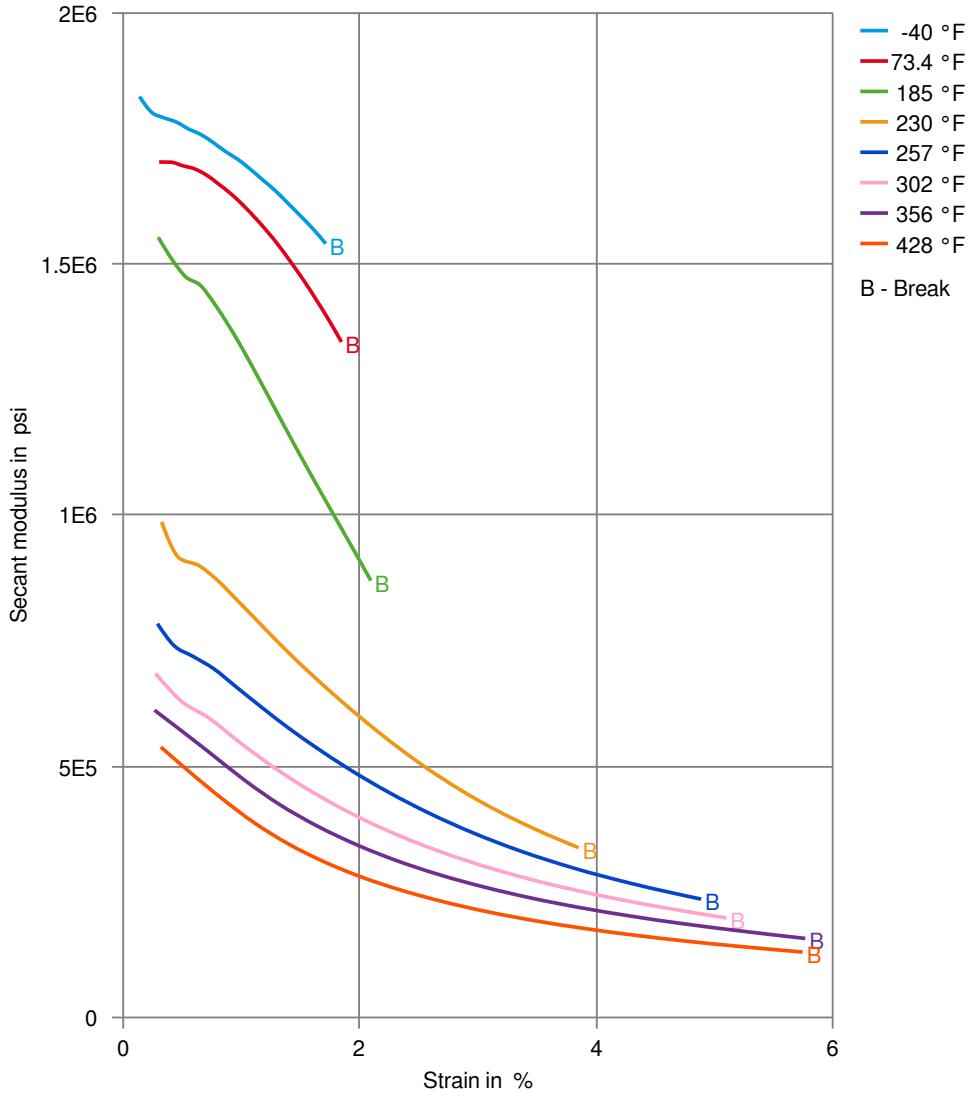
Stress-strain



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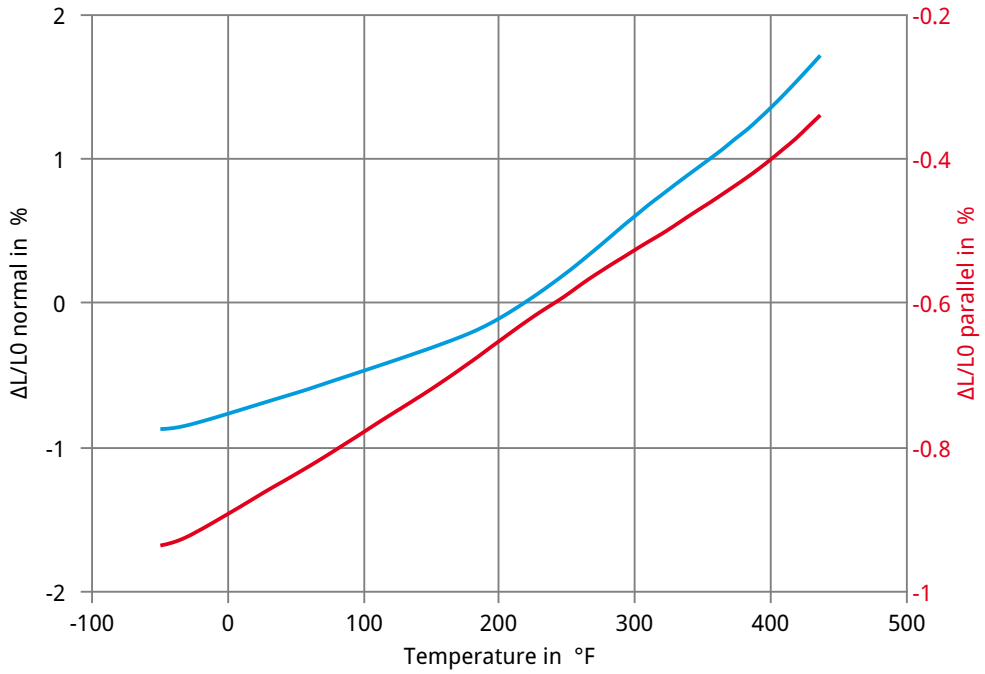
Secant modulus-strain



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Thermal expansion



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