Celanese
The chemistry inside innovation™

FORTRON® 1120L4

Polyphenylene sulfide

Fortron 1120L4 is a 20% glass fiber reinforced injection molding grade exhibiting excellent heat and chemical resistance, inherent flame retardancy, high hardness and stiffness at elevated temperatures.

Product information

Resin Identification	PPS-GF20		ISO 1043
Part Marking Code	>PPS-GF20<		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	1.24E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	17400	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.8	%	ISO 527-1/-2
Flexural modulus	1.16E6	psi	ISO 178
Flexural strength	24700	psi	ISO 178
Izod notched impact strength, 23°C	3.33	ftlb/in²	ISO 180/1A
Izod impact strength, 23°C	16.6	ftlb/in²	ISO 180/1U
Hardness, Rockwell, M-scale	100		ISO 2039-2
Poisson's ratio	0.42		

Thermal properties

Temperature of deflection under load, 1.8 MPa	491	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.14	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.294	E-4/°F	ISO 11359-1/-2

Flammability

Burning Behav. at 1.5mm nom. thickn.	V-0	class	IEC 60695-11-10
FMVSS Class	SE		ISO 3795 (FMVSS 302)

Physical/Other properties

Water absorption, 2mm	0.02	%	Sim. to ISO 62
Density	0.0531	lb/in³	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

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Min. mold temperature	284 °F
Max. mold temperature	320 °F
Hold pressure range	4350 - 10200 psi
Back pressure	435 psi
Ejection temperature	383 °F

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 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.

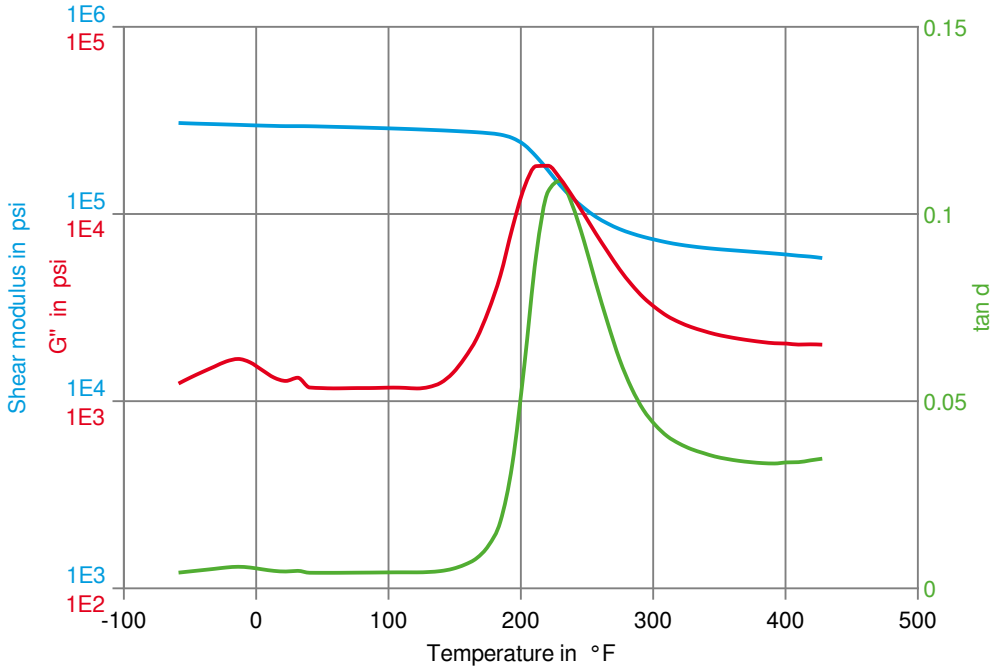
Storage

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

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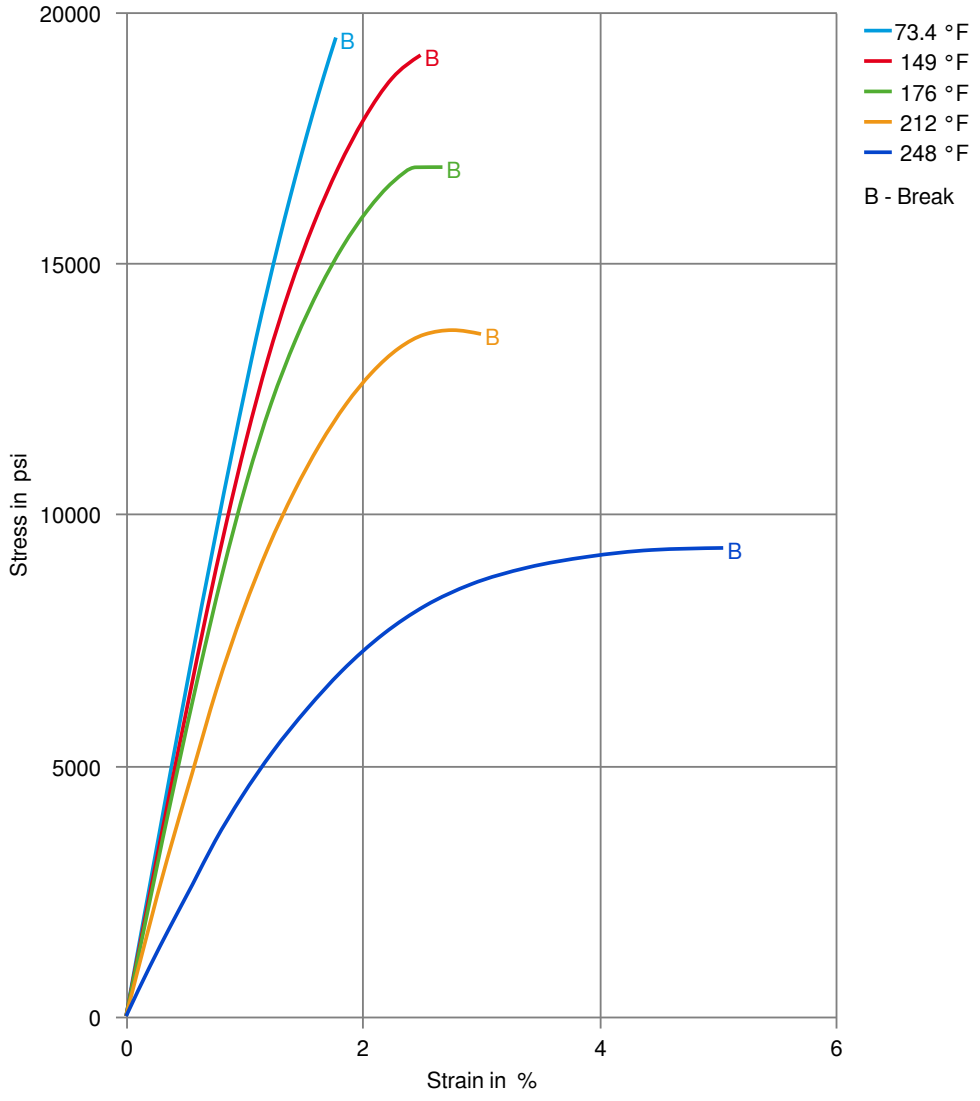
Dynamic Shear modulus-temperature



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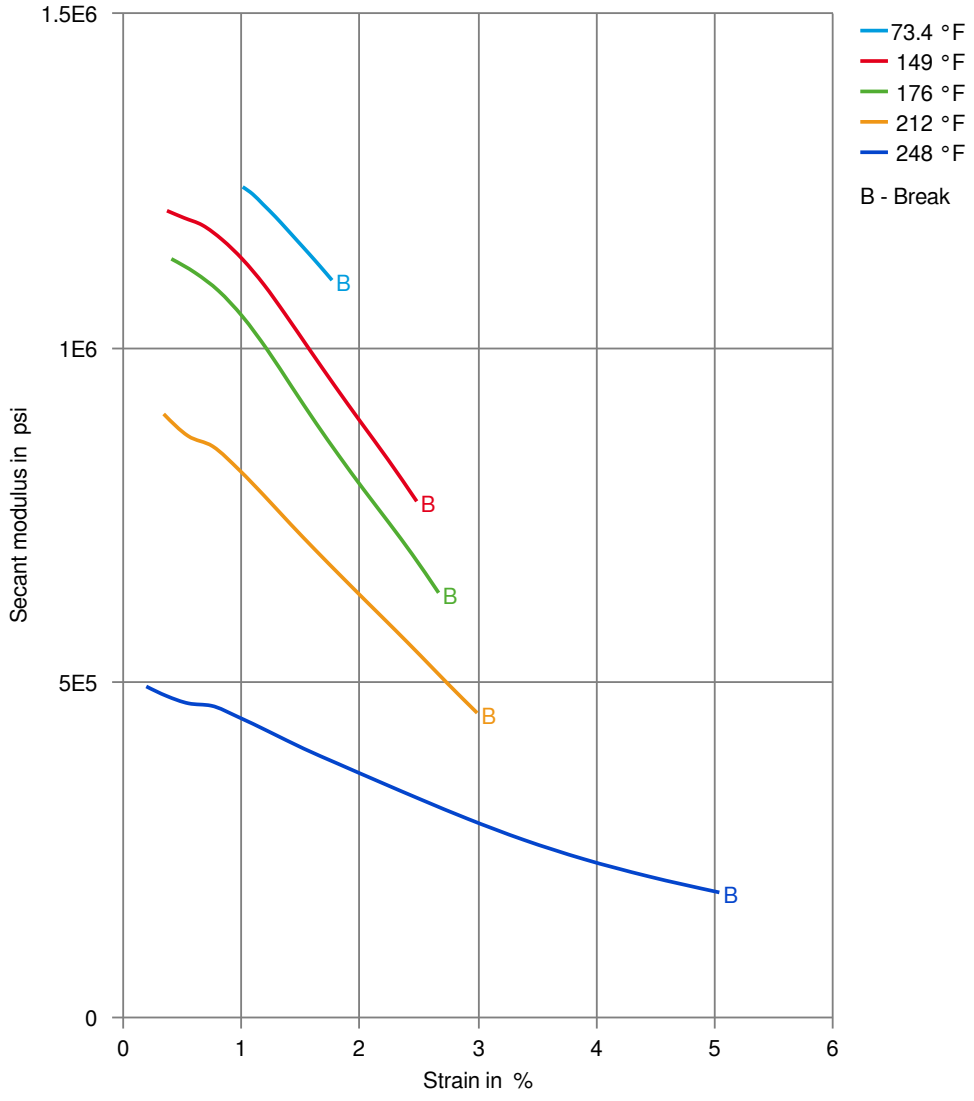
Stress-strain



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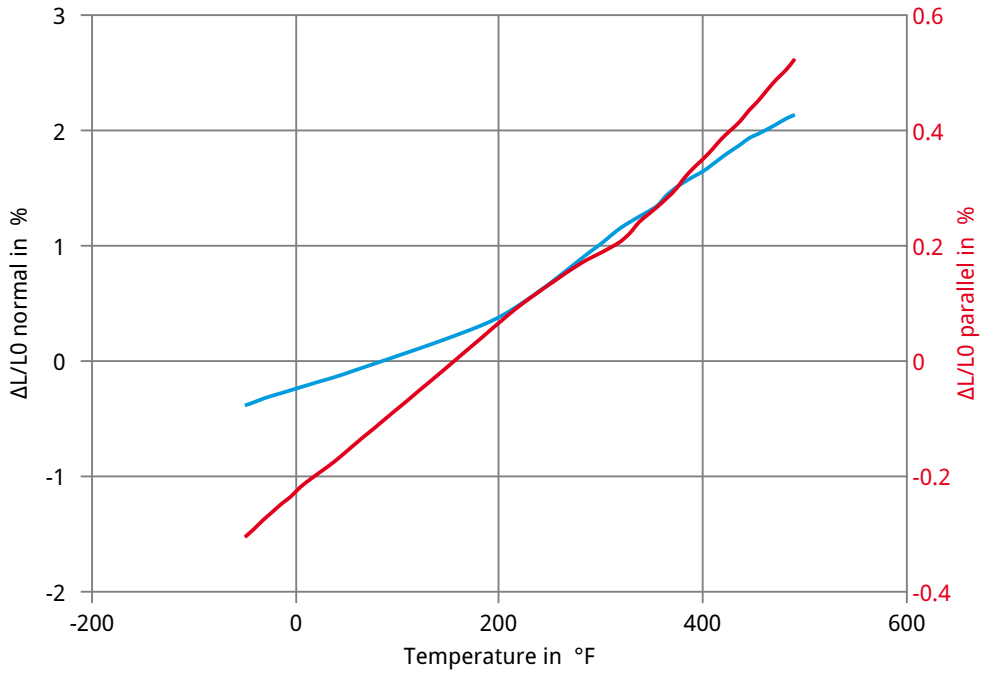
Secant modulus-strain



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Thermal expansion



Revised: 2026-09-08 Source: Celanese Materials Database

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