

FORTRON® 1130L4 - PPS

Description

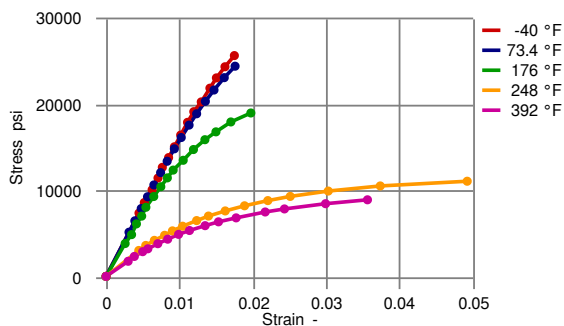
30% Glass reinforced, excellent flow, good weldability, V-0

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.

Physical properties	Value	Unit	Test Standard
Density	98.6	lb/ft ³	ISO 1183
Molding shrinkage, parallel (flow)	0.3	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.7	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0.02	%	Sim. to ISO 62
Mechanical properties	Value	Unit	Test Standard
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, 23°C	1.6E6	psi	ISO 178
Flexural stress at break	37700	psi	ISO 178
Charpy impact strength, 23°C	16.2	ft-lb/in ²	ISO 179/1eU
Charpy impact strength, -30°C	16.2	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	4.28	ft-lb/in ²	ISO 179/1eA
Charpy notched impact strength, -30°C	4.28	ft-lb/in ²	ISO 179/1eA
Izod impact notched, 23°C	4.28	ft-lb/in ²	ISO 180/1A
Izod impact notched, -30°C	4.28	ft-lb/in ²	ISO 180/1A
Izod impact unnotched, 23°C	14.3	ft-lb/in ²	ISO 180/1U
Izod impact unnotched, -30°C	14.3	ft-lb/in ²	ISO 180/1U
Compressive modulus	1.79E6	psi	ISO 604
Rockwell hardness (M-Scale)	100	M-Scale	ISO 2039-2
Thermal properties	Value	Unit	Test Standard
Glass transition temperature, 10°C/min	194	°F	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	491	°F	ISO 75-1, -2
Coeff. of linear therm expansion, parallel	0.161	E-4/°F	ISO 11359-2
Coeff. of linear therm expansion, normal	0.289	E-4/°F	ISO 11359-2
Flammability @1.6mm nom. thickn.	V-0	class	UL 94
thickness tested (1.6)	0.1	in	UL 94
Flammability at thickness h	V-0	class	UL 94
thickness tested (h)	0.0315	in	UL 94
Electrical properties	Value	Unit	Test Standard
Volume resistivity, 23°C	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity, 23°C	>1E15	Ohm	IEC 62631-3-2
Comparative tracking index	PLC 4	-	UL 746



True Stress-strain



Typical injection moulding processing conditions

Pre Drying	Value	Unit	
Necessary low maximum residual moisture content	0.02	%	
Drying time	3 - 4	h	
Drying temperature	266 - 284	°F	
Temperature	Value	Unit	
Hopper temperature	68 - 86	°F	
Feeding zone temperature	140 - 176	°F	
Zone1 temperature	554 - 572	°F	
Zone2 temperature	590 - 608	°F	
Zone3 temperature	626 - 644	°F	
Zone4 temperature	626 - 644	°F	
Nozzle temperature	590 - 626	°F	
Melt temperature	626	°F	
Mold temperature	284 - 320	°F	
Hot runner temperature	626 - 644	°F	
Pressure	Value	Unit	
Back pressure max.	30	bar	
Speed	Value		
Injection speed	fast		
Screw Speed	Value	Unit	
Screw speed diameter, 25mm	120	RPM	
Screw speed diameter, 40mm	75	RPM	
Screw speed diameter, 55mm	50	RPM	
Other	Value	Unit	Test Standard
Specimen thickness (shrinkage)	0.125	in	Internal



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Other text information

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.

Longer pre-drying times/storage

For subsequent storage the material should be stored dry in the dryer until processed ($\leq 60\text{ h}$).

Injection molding

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.

Injection Molding Preprocessing

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

Injection Molding Postprocessing

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

Characteristics

Special Characteristics	Chemical resistant, Flame retardant, Heat resistant
Product Categories	Glass reinforced
Processing	Injection molding
Delivery Form	Pellets
Additives	Lubricants

Other Approvals

OEM	Specification	Additional Information
Mercedes-Benz Group (Daimler)		No spec listed

