

FORTRON® 1141L4 - PPS

Description

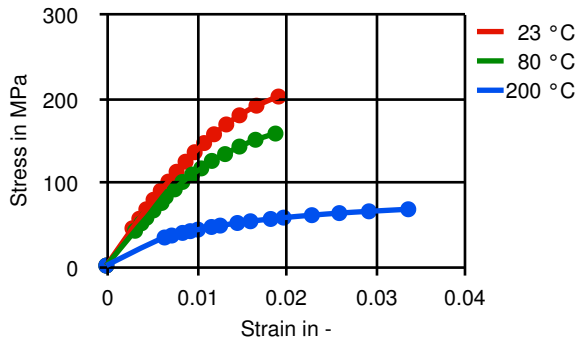
Fortron 1141L4 is a 40% glass-reinforced PPS that has excellent heat and chemical resistance, inherently flame-retardant, high hardness and a good balance of strength and stiffness. This grade exhibits low flash and is typically used in applications with thicker walls and shorter flow lengths.

Physical properties	Value	Unit	Test Standard
Density	1650	kg/m ³	ISO 1183
Molding shrinkage, parallel	0.2 - 0.6	%	ISO 294-4, 2577
Molding shrinkage, normal	0.4 - 0.6	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0.02	%	ISO 62
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	15500	MPa	ISO 527-2/1A
Tensile stress at break, 5mm/min	195	MPa	ISO 527-2/1A
Tensile strain at break, 5mm/min	1.9	%	ISO 527-2/1A
Flexural modulus, 23°C	14800	MPa	ISO 178
Flexural stress at break	290	MPa	ISO 178
Charpy impact strength, 23°C	53	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	53	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	12	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	12	kJ/m ²	ISO 179/1eA
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	280	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	90	°C	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	270	°C	ISO 75-1, -2
Flammability @1.6mm nom. thickn.	V-0	class	UL 94
thickness tested (1.6)	1.5	mm	UL 94
Flammability at thickness h	V-0	class	UL 94
thickness tested (h)	0.38	mm	UL 94

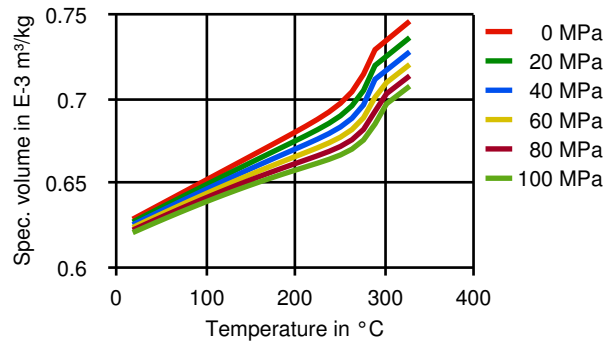
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Diagrams

True Stress-strain



Moldflow Specific volume-temperature (pvT)



Typical injection moulding processing conditions

	Value	Unit	Test Standard
Pre Drying			
Necessary low maximum residual moisture content	0.02	%	-
Drying time	3 - 4	h	-
Drying temperature	100 - 140	°C	-
Temperature	Value	Unit	Test Standard
Hopper temperature	20 - 30	°C	-
Feeding zone temperature	60 - 80	°C	-
Zone1 temperature	290 - 300	°C	-
Zone2 temperature	310 - 320	°C	-
Zone3 temperature	330 - 340	°C	-
Zone4 temperature	330 - 340	°C	-
Nozzle temperature	310 - 330	°C	-
Melt temperature	330	°C	-
Mold temperature	140 - 160	°C	-
Hot runner temperature	330 - 340	°C	-
Pressure	Value	Unit	Test Standard
Back pressure max.	30	bar	-
Speed	Value	Unit	Test Standard
Injection speed	fast	-	-
Screw Speed	Value	Unit	Test Standard
Screw speed diameter, 25mm	120	RPM	-
Screw speed diameter, 40mm	75	RPM	-
Screw speed diameter, 55mm	50	RPM	-

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.

The pre-drying conditions can influence the flow (melt viscosity) of the material significantly. The drying temperature can be subject of optimization for flow of the material depending on the injection molding process and the tool- or part design.

Longer pre-drying times/storage

For subsequent storage the material should be stored dry in the dryer until processed (≤ 60 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

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A medium injection rate is normally preferred. All mold cavities must be effectively vented.

Characteristics

Product Categories

Glass reinforced

Delivery Form

Pellets

Processing

Injection molding

Additives

Release agent

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