

FORTRON® FX55T1

Polyphenylene sulfide

Fortron® FX55T1 is an unreinforced, impact-modified poly(phenylene sulfide) with high melt viscosity suitable for extrusion.

Product information

Resin Identification	PPS	ISO 1043
Part Marking Code	>PPS<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	1.5 %	ISO 294-4, 2577
Moulding shrinkage, normal	1.6 %	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	2300 MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	55 MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	6 %	ISO 527-1/-2
Tensile stress at break, 50mm/min	50 MPa	ISO 527-1/-2
Tensile strain at break, 50mm/min	40 %	ISO 527-1/-2
Flexural modulus	2280 MPa	ISO 178
Flexural stress at 3.5%	70 MPa	ISO 178
Charpy impact strength, 23°C	N kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	60 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	35 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.39 ^[C]	

[C]: Calculated

Thermal properties

Melting temperature, 10°C/min	280 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	100 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	160 °C	ISO 306
Vicat softening temperature, 50°C/h 10N	270 °C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	80 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	95 E-6/K	ISO 11359-1/-2
Thermal conductivity, flow	0.319 ^[OT] W/(m K)	ISO 22007-2
Thermal conductivity, through plane	0.314 ^[OT] W/(m K)	ISO 22007-2
Effective thermal diffusivity, flow	1.7E-7 ^[OT] m ² /s	ISO 22007-4
Effective thermal diffusivity, through plane	1.67E-7 ^[OT] m ² /s	ISO 22007-4
Specific heat capacity of melt	1500 ^[OT] J/(kg K)	ISO 22007-4

[OT]: One time tested

Flammability

Glow Wire Ignition Temperature, 0.75mm	850 °C	IEC 60695-2-13
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Physical/Other properties

Density	1250 kg/m ³	ISO 1183
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Injection

Drying Recommended	yes
Drying Temperature	130 °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	3.5 MPa

Additional information

Injection molding

Processing

Drying – alternate 80 °C, approx. 6 hours

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.