Celanese
The chemistry inside innovation™

FORTRON® FX55T1 - PPS

Description

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

Physical properties	Value	Unit	Test Standard
Density	**78**	lb/ft^3	ISO 1183
Molding shrinkage, parallel (flow)	**1.5**	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	**1.6**	%	ISO 294-4, 2577

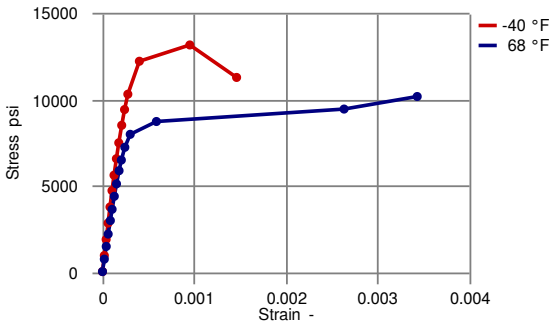
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**333587**	psi	ISO 527-1, -2
Tensile stress at yield, 50mm/min	**7980**	psi	ISO 527-1, -2
Tensile strain at yield, 50mm/min	**6**	%	ISO 527-1, -2
Tensile stress at break, 50mm/min	**7250**	psi	ISO 527-1, -2
Tensile strain at break, 50mm/min	**40**	%	ISO 527-1, -2
Flexural modulus, 23°C	**331000**	psi	ISO 178
Flexural stress at 3.5% strain	**10200**	psi	ISO 178
Charpy impact strength, 23°C	**NB**	ft-lb/in^2	ISO 179/1eU
Charpy notched impact strength, 23°C	**28.5**	ft-lb/in^2	ISO 179/1eA
Charpy notched impact strength, -30°C	**16.6**	ft-lb/in^2	ISO 179/1eA

Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	**536**	°F	ISO 11357-1/-3
DTUL at 1.8 MPa	**212**	°F	ISO 75-1, -2
Vicat softening temperature, 50°C/h 10N	**518**	°F	ISO 306
Vicat softening temperature, 50°C/h 50N	**320**	°F	ISO 306
Coeff. of linear therm expansion, parallel	**0.444**	E-4/°F	ISO 11359-2
Coeff. of linear therm expansion, normal	**0.528**	E-4/°F	ISO 11359-2
Specific heat	**0.564**	BTU/(lb·F)	ASTM E1461

Diagrams

FORTRON® FX55T1 - PPS

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	**212**	°F

Temperature	Value	Unit
Hopper temperature	**68 - 86**	°F
Feeding zone temperature	**167 - 185**	°F
Zone1 temperature	**572 - 590**	°F
Zone2 temperature	**581 - 599**	°F
Zone3 temperature	**590 - 608**	°F
Zone4 temperature	**590 - 608**	°F
Nozzle temperature	**599 - 608**	°F
Melt temperature	**599 - 608**	°F
Mold temperature	**275 - 302**	°F
Hot runner temperature	**599 - 608**	°F

Pressure	Value	Unit
Back pressure max.	**35**	bar

Speed	Value
Injection speed	**slow-medium**

Screw Speed	Value	Unit
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 < -30 °C. The time between drying and processing should be as short as possible.

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Injection molding

Drying – alternate 80°C, approx. 6 hours

Characteristics

Special Characteristics	High viscosity
Product Categories	Impact modified, Unfilled
Processing	Blow molding, Extrusion, Injection molding