Celanese
The chemistry inside innovation™

FORTRON® FX72T6 - PPS

Description

unreinforced impact modified PPS for injection molding
Fortron® FX72T6 is an unreinforced, impact modified PPS with high flowability and high impact resistance suitable for injection molding.
The mechanical properties reported on this data sheet refer to a mold wall temperature of 135 °C.

Physical properties	Value	Unit	Test Standard
Density	**73.7**	lb/ft³	ISO 1183
Melt flow rate, MFR	**35**	g/10min	ISO 1133
MFR temperature	**590**	°F	ISO 1133
MFR load	**4.76**	lb	ISO 1133
Molding shrinkage, parallel (flow)	**1.3**	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	**1.3**	%	ISO 294-4, 2577

Mechanical properties	Value	Unit	Test Standard
Tensile modulus	**243664**	psi	ISO 527-1, -2
Tensile stress at break, 50mm/min	**5800**	psi	ISO 527-1, -2
Tensile strain at break, 50mm/min	**20**	%	ISO 527-1, -2
Flexural modulus, 23 °C	**247000**	psi	ISO 178
Charpy impact strength, 23 °C	**NB**	ft-lb/in²	ISO 179/1eU
Charpy notched impact strength, 23 °C	**4.76**	ft-lb/in²	ISO 179/1eA
Izod impact notched, 23 °C	**4.76**	ft-lb/in²	ISO 180/1A
Izod impact unnotched, 23 °C	**NB**	ft-lb/in²	ISO 180/1U

Thermal properties	Value	Unit	Test Standard
DTUL at 1.8 MPa	**212**	°F	ISO 75-1, -2
Vicat softening temperature, 50 °C/h 50N	**252**	°F	ISO 306
Limiting oxygen index (LOI)	**48.5**	%	ISO 4589-1/-2
Flammability at thickness h	**V-0**	class	UL 94
thickness tested (h)	**0.1181**	in	UL 94
CLTE below Tg, parallel	**0.483**	E-4/°F	ISO 11359-2
Start Temp	**-22**	°F	ISO 11359-2
End Temp	**158**	°F	ISO 11359-2
CLTE above Tg, parallel	**0.722**	E-4/°F	ISO 11359-2
Start Temp	**230**	°F	ISO 11359-2
End Temp	**392**	°F	ISO 11359-2
CLTE below Tg, normal	**0.539**	E-4/°F	ISO 11359-2
Start Temp	**158**	°F	ISO 11359-2
End Temp	**230**	°F	ISO 11359-2
CLTE above Tg, normal	**0.778**	E-4/°F	ISO 11359-2
Start Temp	**230**	°F	ISO 11359-2
End Temp	**392**	°F	ISO 11359-2

Electrical properties	Value	Unit	Test Standard
Dielectric constant (Dk), 1MHz	**3.1**	-	IEC 60250
Dissipation factor, 1MHz	**3**	E-4	IEC 60250

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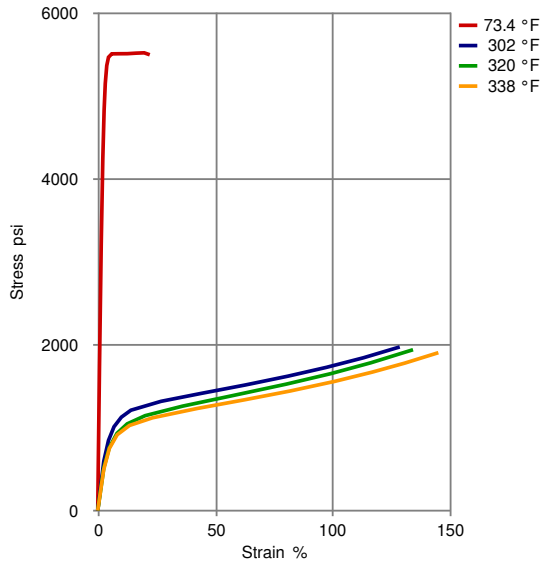
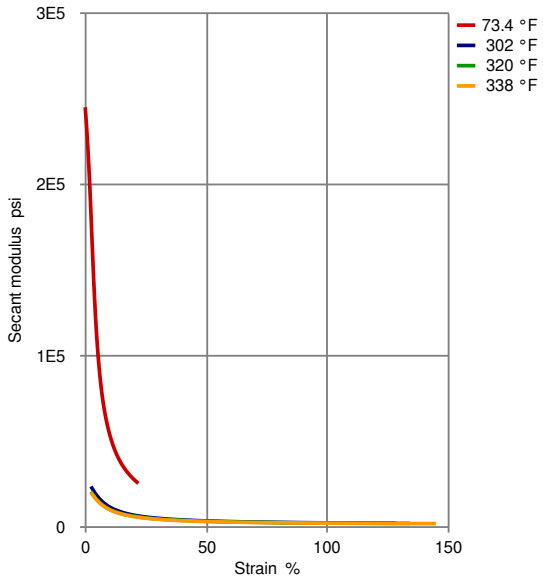
Diagrams

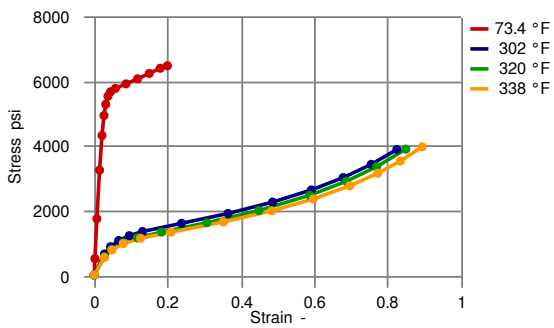
Stress-strain



Secant modulus-strain



True Stress-strain



23 °C yield at 0.18042 strain, 44.074 stress
No yield at 150, 160, 170 °C
Poisson's ratio used is 0.41

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	**140 - 167**	°F
Zone1 temperature	**536 - 572**	°F

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Zone2 temperature	**545 - 581**	°F
Zone3 temperature	**545 - 581**	°F
Zone4 temperature	**554 - 590**	°F
Nozzle temperature	**554 - 608**	°F
Melt temperature	**554 - 608**	°F
Mold temperature	**122 - 275**	°F
Hot runner temperature	**554 - 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.

Injection molding

Injection Molding:

Drying – alternate 80 °C, approx. 6 hours

Mold surface temperature – a wide range of 30 °C to 135 °C is possible. Highest crystallinity will often be achieved at higher mold temperature. Depending on the part design, improved surface appearance and demolding may be achieved at 50 °C to 70 °C.

Characteristics

Special Characteristics	Auto spec approved, High flow
Product Categories	Impact modified
Processing	Injection molding

Other Approvals

OEM	Specification
Ford	WSS-M4D1063-A2