

FORTRON® 6160B4 - PPS

Description

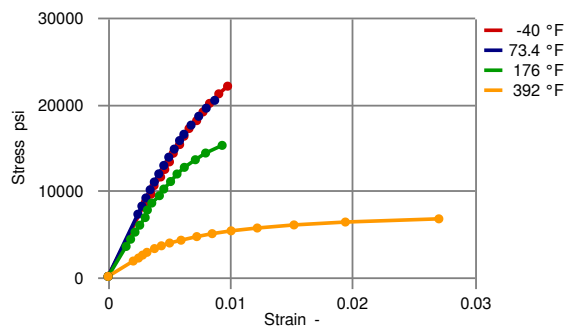
60% Mineral/Glass reinforced PPS for electrical applications to reduce contact corrosion.

Fortron 6160B4 has excellent heat and chemical resistance as well as good electrical properties. This product is inherently flame-retardant and offers high hardness and rigidity. 6160B4 has demonstrated excellent performance in hot runner systems and superior contact corrosion resistance. Applications include electronic components (i.e. molded in lead frames, contacts or pins).

Physical properties	Value	Unit	Test Standard
Density	119	lb/ft ³	ISO 1183
Molding shrinkage, parallel (flow)	0.2	%	ISO 294-4, 2577
Molding shrinkage, transverse normal	0.6	%	ISO 294-4, 2577
Water absorption, 23°C-sat	0.02	%	Sim. to ISO 62
Mechanical properties	Value	Unit	Test Standard
Tensile modulus	2.51E6	psi	ISO 527-1, -2
Tensile stress at break, 5mm/min	21000	psi	ISO 527-1, -2
Tensile strain at break, 5mm/min	1	%	ISO 527-1, -2
Flexural modulus, 23°C	2.42E6	psi	ISO 178
Flexural stress at break	31900	psi	ISO 178
Charpy impact strength, 23°C	12.8	ft-lb/in ²	ISO 179/1eU
Charpy impact strength, -30°C	12.8	ft-lb/in ²	ISO 179/1eU
Charpy notched impact strength, 23°C	3.33	ft-lb/in ²	ISO 179/1eA
Charpy notched impact strength, -30°C	3.33	ft-lb/in ²	ISO 179/1eA
Izod impact notched, 23°C	3.33	ft-lb/in ²	ISO 180/1A
Izod impact notched, -30°C	3.33	ft-lb/in ²	ISO 180/1A
Rockwell hardness (M-Scale)	100	M-Scale	ISO 2039-2
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	536	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	194	°F	ISO 11357-1,-2,-3
DTUL at 1.8 MPa	518	°F	ISO 75-1, -2
DTUL at 8.0 MPa	428	°F	ISO 75-1, -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)	0.0319	in	UL 94
Electrical properties	Value	Unit	Test Standard
Dielectric constant (Dk), 1MHz	4.9	-	IEC 60250
Dissipation factor, 1MHz	10	E-4	IEC 60250
Volume resistivity, 23°C	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity, 23°C	>1E15	Ohm	IEC 62631-3-2
Electric strength, 23°C (AC)	660	kV/in	IEC 60243-1
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



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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	Mineral/Glass reinforced
Processing	Injection molding
Delivery Form	Pellets

