

FORTRON® 6160B4

Polyphenylene sulfide

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).

Product information

Resin Identification	PPS-(GF+MD)6		ISO 1043	
Part Marking Code	0 PPS-(GF+MD)6>	0<	ISO 11469	
Rheological properties				
Moulding shrinkage, parallel	0.2	%	ISO 294-4, 2577	
Moulding shrinkage, normal	0.6	%	ISO 294-4, 2577	
Typical mechanical properties				
Tensile modulus	17300	MPa	ISO 527-1/-2	
Tensile stress at break, 5mm/min	145	MPa	ISO 527-1/-2	
Tensile strain at break, 5mm/min	1	%	ISO 527-1/-2	
Flexural modulus	16700	MPa	ISO 178	
Flexural strength		MPa	ISO 178	
Compressive strength		MPa	ISO 604	
Charpy impact strength, 23°C		kJ/m²	ISO 179/1eU	
Charpy impact strength, -30°C		kJ/m²	ISO 179/1eU	
Charpy notched impact strength, 23°C		kJ/m²	ISO 179/1eA	
Charpy notched impact strength, -30°C		kJ/m²	ISO 179/1eA	
Izod notched impact strength, 23°C		kJ/m²	ISO 180/1A	
Izod notched impact strength, -30°C		kJ/m²	ISO 180/1A	
Hardness, Rockwell, M-scale	100		ISO 2039-2	
Poisson's ratio	0.33 ^[C]			
[C]: Calculated				
Thermal properties				
Melting temperature, 10 ° C/min	280	°C	ISO 11357-1/-3	
Glass transition temperature, 10°C/min	90	°C	ISO 11357-1/-3	
Temperature of deflection under load, 1.8 MPa	270	°C	ISO 75-1/-2	
Temperature of deflection under load, 8 MPa	220	°C	ISO 75-1/-2	
Flammability				
Burning Behav. at 1.5mm nom. thickn.	V-0	class	IEC 60695-11-10	
Thickness tested	1.5	mm	IEC 60695-11-10	
Burning Behav. at thickness h	V-0	class	IEC 60695-11-10	
Thickness tested	0.81	mm	IEC 60695-11-10	

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Electrical properties

Relative permittivity, 1MHz	4.9	IEC 62631-2-1
Dissipation factor, 1MHz	10 E-4	IEC 62631-2-1
Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Electric strength	26 kV/mm	IEC 60243-1
Comparative tracking index	175	IEC 60112

Physical/Other properties

Water absorption, 2mm	0.02 %	Sim. to ISO 62	
Density	1900 kg/m ³	ISO 1183	

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	MPa
Ejection temperature	219	°C

Characteristics

Processing Injection Moulding

Delivery form Pellets

Special characteristics Flame retardant, Heat stabilised or stable to heat, Chemical resistant

Additional information

Injection molding Preprocessing

Predrying in a dehumidified air dryer at 130 - 140 degC/3-4 hours is recommended.

Processing

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

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Mold wall temperature at least 140 degC

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

Postprocessing

Tool temperature of at least 135 degC is recommended for parts to achieve maximum crystallizable potential.

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.

Storage

For subsequent storage the material should be stored dry in the dryer until processed (<= 60 h).

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