

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
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Part Marking Code	>PPS-(GF+MD)60<	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	220 MPa	ISO 178
Compressive strength	220 MPa	ISO 604
Charpy impact strength, 23°C	27 kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	27 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	7 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	7 kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	7 kJ/m ²	ISO 180/1A
Izod notched impact strength, -30°C	7.0 kJ/m ²	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/m³	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 $\leq -30^{\circ}\text{C}$. 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 ($\leq 60\text{ h}$).