

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 | | MPa | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min | | % | ISO 527-1/-2 |
| Flexural modulus | 16700 | | 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 Charpy notched impact strength, 23°C | | kJ/m² kJ/m² | ISO 179/1eU 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 | | °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 | | 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 |

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 Mold wall temperature at least 140 degC

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

Postprocessing

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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).

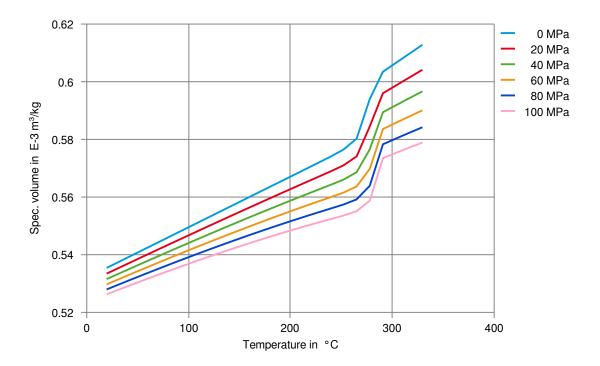
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Specific volume-temperature (pvT)



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