

FORTRON® 1131L4

Polyphenylene sulfide

Product information

| | | |
|----------------------|------------|-----------|
| Resin Identification | PPS-GF30 | ISO 1043 |
| Part Marking Code | >PPS-GF30< | ISO 11469 |

Rheological properties

| | | |
|------------------------------------|-------------|-----------------|
| Moulding shrinkage range, parallel | 0.3 - 0.7 % | ISO 294-4, 2577 |
| Moulding shrinkage range, normal | 0.5 - 0.8 % | ISO 294-4, 2577 |

Typical mechanical properties

| | | |
|---------------------------------------|-----------------------|--------------|
| Tensile modulus | 12200 MPa | ISO 527-1/-2 |
| Tensile stress at break, 5mm/min | 160 MPa | ISO 527-1/-2 |
| Tensile strain at break, 5mm/min | 1.9 % | ISO 527-1/-2 |
| Flexural modulus | 12000 MPa | ISO 178 |
| Flexural strength | 260 MPa | ISO 178 |
| Charpy impact strength, 23°C | 42 kJ/m ² | ISO 179/1eU |
| Charpy impact strength, -30°C | 42 kJ/m ² | ISO 179/1eU |
| Charpy notched impact strength, 23°C | 8 kJ/m ² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | 8 kJ/m ² | ISO 179/1eA |
| Izod notched impact strength, 23°C | 8 kJ/m ² | ISO 180/1A |
| Izod notched impact strength, -30°C | 8.0 kJ/m ² | ISO 180/1A |
| Izod impact strength, 23°C | 32 kJ/m ² | ISO 180/1U |
| 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 | 265 °C | ISO 75-1/-2 |
| Temperature of deflection under load, 8 MPa | 205 °C | ISO 75-1/-2 |
| Coefficient of linear thermal expansion (CLTE), parallel | 29 E-6/K | ISO 11359-1/-2 |
| Coefficient of linear thermal expansion (CLTE), normal | 62 E-6/K | ISO 11359-1/-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 | 0.38 mm | IEC 60695-11-10 |

Electrical properties

| | | |
|---------------------|-------------|---------------|
| Volume resistivity | >1E13 Ohm.m | IEC 62631-3-1 |
| Surface resistivity | >1E15 Ohm | IEC 62631-3-2 |
| Arc Resistance | 124 s | UL 746B |

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Physical/Other properties

| | | |
|---------------------------------|------------------------|----------------|
| Water absorption, 2mm | 0.02 % | Sim. to ISO 62 |
| Water absorption, Immersion 24h | 0.03 % | Sim. to ISO 62 |
| Density | 1400 kg/m ³ | ISO 1183 |

Injection

| | |
|---------------------------------|---------------|
| Drying Recommended | yes |
| Drying Temperature | 100 °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 |

Characteristics

| | |
|-----------|---------------|
| Additives | Release agent |
|-----------|---------------|

Additional information

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.

The pre-drying conditions can influence the flow (melt viscosity) of the material significantly. The drying temperature can be subject of optimization for flow of the material depending on the injection molding process and the tool- or part design.

Storage

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

Processing Notes

The higher drying conditions result in higher melt viscosity.

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