

FORTRON® 0320

Polyphenylene sulfide

0320 exhibits a high melt strength for extrusion processes. The material demonstrates excellent heat and chemical resistance. The intended use of this product is for extruding monofilament/fibers, rod and slab. Available standard in powder 'flake' (0320B0), ground powder (0320B0/100 µm), pellet (0320P0) and crystallized pellet (0320C0) form.

Product information

Resin Identification	PPS	ISO 1043
Part Marking Code	>PPS<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	1.2 %	ISO 294-4, 2577
Moulding shrinkage, normal	1.5 %	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	3500 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	90 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	8 %	ISO 527-1/-2
Flexural modulus	4200 MPa	ISO 178
Flexural strength	140 MPa	ISO 178
Izod notched impact strength, 23°C	2.6 kJ/m ²	ISO 180/1A
Izod notched impact strength, -30°C	2.5 kJ/m ²	ISO 180/1A
Izod impact strength, 23°C	82 kJ/m ²	ISO 180/1U
Izod impact strength, -30°C	53 kJ/m ²	ISO 180/1U
Hardness, Rockwell, M-scale	90	ISO 2039-2
Poisson's ratio	0.37 ^[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	115 °C	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	95 °C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	52 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	53 E-6/K	ISO 11359-1/-2
Specific heat capacity of melt	1830 J/(kg K)	ISO 22007-4

Flammability

Burning Behav. at thickness h	V-0 class	IEC 60695-11-10
Thickness tested	3 mm	IEC 60695-11-10

Electrical properties

Relative permittivity, 1000Hz	2.8	IEC 62631-2-1
Relative permittivity, 1MHz	4.6	IEC 62631-2-1
Dissipation factor, 1MHz	11 E-4	IEC 62631-2-1
Volume resistivity	1E9 Ohm.m	IEC 62631-3-1
Electric strength	18 kV/mm	IEC 60243-1

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Comparative tracking index	125	IEC 60112
Arc Resistance	124 s	UL 746B

Physical/Other properties

Water absorption, 2mm	0.02 %	Sim. to ISO 62
Density	1400 kg/m ³	ISO 1183

Injection

Drying Recommended	yes
Drying Temperature	110 °C
Drying Time, Dehumidified Dryer	2 - 4 h
Processing Moisture Content	≤0.02 %
Melt Temperature Optimum	315 °C
Min. melt temperature	284 °C
Max. melt temperature	320 °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

Processing	Injection Moulding, Film Extrusion, Extrusion, Sheet Extrusion, Other Extrusion
Delivery form	Pellets, Powder
Special characteristics	Flame retardant, Heat stabilised or stable to heat, Chemical resistant

Additional information

Injection molding

Preprocessing

In spite of the minimum moisture absorption a drying of FORTRON is necessary. Predrying in a dehumidified air dryer at 120 degC/3-4 hours is recommended.

Processing

On injection molding machines with 15-25 D long three-section screws, are usual in the trade, the unreinforced FORTRON is processable. A shut-off nozzle is recommended.

Melt temperature 290-320 degC
Mold temperature at least 75 degC

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

Processing Notes

Pre-Drying

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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 ($\leq 60\text{ h}$).