Celanese
The chemistry inside innovation™

FORTRON® 0205

Polyphenylene sulfide

0205 is an easy flowing unfilled grade. It demonstrates excellent chemical resistance and thermal stability. Intended for compounding with various fillers. Available standard in pellet (0205P4) and powder 'flake' (0205B4) form.

Product information

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

Rheological properties

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

Typical mechanical properties

Tensile modulus	580000	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	9570	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2	%	ISO 527-1/-2
Flexural modulus	566000	psi	ISO 178
Flexural strength	18900	psi	ISO 178
Izod notched impact strength, 23°C	0.951	ftlb/in²	ISO 180/1A
Izod impact strength, 23°C	14.3	ftlb/in²	ISO 180/1U
Hardness, Rockwell, M-scale	95		ISO 2039-2

Thermal properties

Melting temperature, 10°C/min	536	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	194	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	239	°F	ISO 75-1/-2
Temperature of deflection under load, 8 MPa	203	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.29	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.289	E-4/°F	ISO 11359-1/-2
Specific heat capacity of melt	1830	J/(kg K)	ISO 22007-4

Electrical properties

Volume resistivity	1E9	Ohm.m	IEC 62631-3-1
Electric strength	432	kV/in	IEC 60243-1
Comparative tracking index	100		IEC 60112
Arc Resistance	124	s	UL 746B

Physical/Other properties

Water absorption, 2mm	0.02	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.03	%	Sim. to ISO 62
Density	0.0505	lb/in³	ISO 1183

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Injection

Drying Recommended	yes	
Drying Temperature	230	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.02	%
Melt Temperature Optimum	599	°F
Min. melt temperature	527	°F
Max. melt temperature	608	°F
Max. screw tangential speed	0.2 - 0.3	m/s
Mold Temperature Optimum	302	°F
Min. mold temperature	275	°F
Max. mold temperature	320	°F
Hold pressure range	4350 - 10200	psi
Back pressure	435	psi
Ejection temperature	446	°F

Characteristics

Processing	Injection Molding, Other Extrusion
Special characteristics	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 310-320 degC
Mold wall temperature at least 140 degC

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

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

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

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