Celanese
The chemistry inside innovation™

FORTRON® 0309

Polyphenylene sulfide

0309 exhibits a good balance of flow and melt strength for extrusion processes. The material demonstrates excellent heat and chemical resistance. The intended use of this product is for extruding monofilament/fibers. Available in powder (0309B4) and high melv viscoity (0309B4 HMV) forms.

Product information

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

Typical mechanical properties

Tensile stress at break, 5mm/min	13100	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	8	%	ISO 527-1/-2
Flexural modulus	609000	psi	ISO 178
Flexural strength	21000	psi	ISO 178
Hardness, Rockwell, M-scale	90		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	0.294	E-4/°F	ISO 11359-1/-2
Specific heat capacity of melt	1830	J/(kg K)	ISO 22007-4

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	457	kV/in	IEC 60243-1
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	0.0505	lb/in^3	ISO 1183

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	543	°F
Max. melt temperature	608	°F

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Max. screw tangential speed	0.2 - 0.3	m/s
Mold Temperature Optimum	302	°F
Min. mold temperature	284	°F
Max. mold temperature	320	°F
Hold pressure range	4350 - 10200	psi
Back pressure	435	psi

Characteristics

Processing	Injection Molding, Film Extrusion, Extrusion, Sheet Extrusion, Other Extrusion
Special characteristics	Flame retardant, Heat stabilized or stable to heat

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.

Storage

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

Chemical Media Resistance

Salt solutions

✔ Sodium Hypochlorite solution (10% by mass), 23°C

Symbols used:

✔ possibly resistant
Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

✘ not recommended - see explanation
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

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