



Polyphenylene sulfide

FORTRON ICE 504L is a 40% glass fiber reinforced polyphenylene sulfide, that belongs to our new generation of Fortron® PPS.

This new technology allows optimization of molding conditions with faster cycle times. Due to the faster crystallization of the material at a higher temperature, the option of mold wall temperature reduction can be subject of advanced process optimization. The potential for optimization of Fortron® ICE by cycle time reduction is possible by standard cavity surface temperatures of 140 °C. The potential for lowering the mold temperature must be checked individually and it depends on process and part design.

Product information

Resin Identification Part Marking Code	PPS-GF40 >PPS-GF40<		ISO 1043 ISO 11469
Rheological properties			
Moulding shrinkage, parallel Moulding shrinkage, normal	0.3 0.6		ISO 294-4, 2577 ISO 294-4, 2577
Typical mechanical properties			
Tensile modulus Tensile stress at break, 5mm/min Tensile strain at break, 5mm/min Flexural modulus Flexural strength Compressive modulus Compressive strength Charpy impact strength, 23°C Charpy impact strength, -30°C Charpy notched impact strength, 23°C Charpy notched impact strength, -30°C Izod notched impact strength, 23°C Izod notched impact strength, -30°C Izod impact strength, -30°C Izod impact strength, -30°C Hardness, Rockwell, M-scale Poisson's ratio	1.9 15000 290 15000 265 53 53 10 10 10 34	MPa % MPa MPa	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 178 ISO 178 ISO 604 ISO 604 ISO 179/1eU ISO 179/1eU ISO 179/1eA ISO 180/1A ISO 180/1A ISO 180/1U ISO 180/1U ISO 2039-2
[C]: Calculated Thermal properties			
Melting temperature, 10°C/min Glass transition temperature, 10°C/min Temperature of deflection under load, 1.8 MPa Temperature of deflection under load, 8 MPa Coefficient of linear thermal expansion (CLTE), parallel Coefficient of linear thermal expansion (CLTE),	270 215 26	°C	ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 75-1/-2 ISO 11359-1/-2
normal Specific heat capacity of melt	1500	J/(kg K)	ISO 22007-4

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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
Oxygen index	47	%	ISO 4589-1/-2
Glow Wire Flammability Index, 1.0mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.0mm	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.0mm	825	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 2.0mm	825	°C	IEC 60695-2-13

Electrical properties

2.001.104. p. 0p0.1.00			
Relative permittivity, 1MHz	4.1		IEC 62631-2-1
Dissipation factor, 1MHz	20 E-4	4	IEC 62631-2-1
Volume resistivity	1E14 ^[OT] Or		IEC 62631-3-1
Volume resistivity, at high temperature	1E10 ^[OT] Oh		IEC 62631-3-1
Temperature	220 ^[OT] °C)	
Surface resistivity	>1E15 Oh		IEC 62631-3-2
Surface resistivity, at high temperature	1E10 ^[OT] Or		IEC 62631-3-2
Temperature	220 ^[OT] °C	•	
Electric strength, Direct Current	40 ^[OT] kV		IEC 60243-2
Electric strength, DC, high temperature	27 ^[OT] kV		IEC 60243-2
Temperature	220 ^[OT] °C)	
Comparative tracking index	125		IEC 60112
[OT]: One time tested			

Physical/Other properties

Water absorption, 2mm	0.02 %	Sim. to ISO 62
Density	1650 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	140	°C
Min. mould temperature	125	°C
Max. mould temperature	160	°C
Hold pressure range	30 - 70	MPa
Back pressure	3	MPa
Ejection temperature	232	°C

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Characteristics

Processing Injection Moulding

Delivery form Pellets

Additives Release agent, Nucleated

Special characteristics Flame retardant, Heat stabilised or stable to heat, Chemical resistant

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).

Automotive

OEM STANDARD ADDITIONAL INFORMATION

General Motors GMW17521P-PPS-GF40 Hyundai MS244-02 Type A-2

Renault IP03a, No Spec, Special Part Approval, See

Your CE Account Manager.

Stellantis MS.50152 / PPS.GF40.14000T.7C.GR-ICE CPN3502 BLACK

Stellantis - Chrysler MS-DB-570 / CPN-3502 Black

VW Group VW 50137

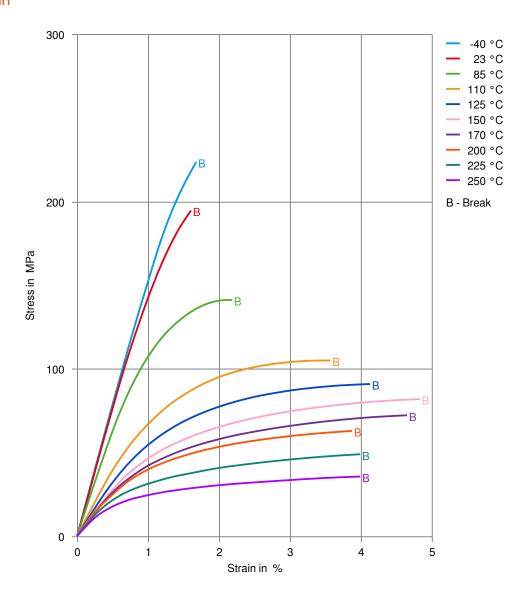
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Stress-strain



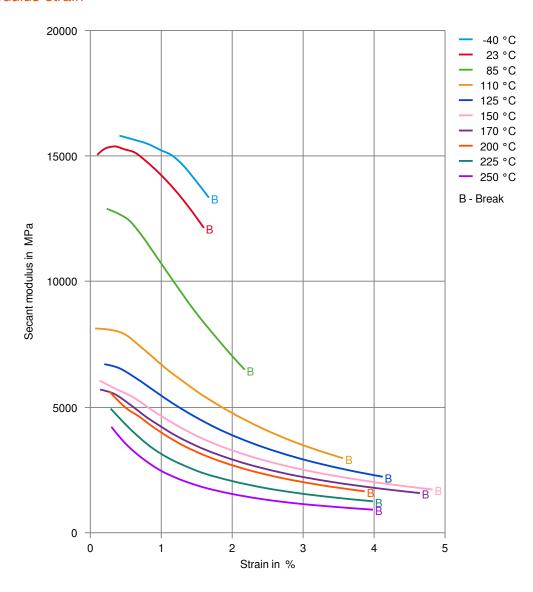
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Secant modulus-strain



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