

Rynite® FR530 BK507

THERMOPLASTIC POLYESTER RESIN

Common features of Rynite® thermoplastic polyester include mechanical and physical properties such as excellent balance of strength and stiffness, dimensional stability, creep resistance, heat resistance, high surface gloss and good inherent electrical properties at elevated temperature. It can be processed over a broad temperature range and has excellent flow properties.

Rynite® thermoplastic polyester resins are typically used in demanding applications in the automotive, electrical and electronics, appliances where they successfully replace metals and thermosets, as well as other thermoplastic polymers.

Rynite® FR530 BK507 is a 30% glass reinforced, flame retardant, modified polyethylene terephthalate resin.

Product information

Resin Identification	PET- GF30FR(17)	ISO 1043
Part Marking Code	>PET-GF30FR(17)<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0.2 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.8 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	11300 MPa	ISO 527-1/-2
Stress at break, 5mm/min	130 MPa	ISO 527-1/-2
Strain at break, 5mm/min	1.9 %	ISO 527-1/-2
Flexural Modulus	10500 MPa	ISO 178
Flexural Strength	200 MPa	ISO 178
Charpy impact strength, 23°C	40 kJ/m ²	ISO 179/1eU
Charpy impact strength, -40°C	30 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	9 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -40°C	8 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.33	

Thermal properties

Melting temperature, 10°C/min	252 °C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	90 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	220 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	243 °C	ISO 75-1/-2
Ball pressure test	230 °C	IEC 60695-10-2
Coeff. of linear therm. expansion, parallel, -40-23°C	19 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	22 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	17 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	68 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	96 E-6/K	ISO 11359-1/-2



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Coeff. of linear therm. expansion, normal, 55-160 °C	125	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.4mm	155	°C	UL 746B
RTI, electrical, 0.75mm	155	°C	UL 746B
RTI, electrical, 1.5mm	155	°C	UL 746B
RTI, electrical, 3mm	155	°C	UL 746B
RTI, impact, 0.4mm	155	°C	UL 746B
RTI, impact, 0.75mm	155	°C	UL 746B
RTI, impact, 1.5mm	155	°C	UL 746B
RTI, impact, 3mm	155	°C	UL 746B
RTI, strength, 0.4mm	155	°C	UL 746B
RTI, strength, 0.75mm	155	°C	UL 746B
RTI, strength, 1.5mm	155	°C	UL 746B
RTI, strength, 3mm	155	°C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	V-0 class	UL 94
Thickness tested	1.5 mm	UL 94
UL recognition	yes	UL 94
Burning Behav. at thickness h	V-0 class	UL 94
Thickness tested	0.35 mm	UL 94
UL recognition	yes	UL 94
Burning Behav. 5V at thickness h	5VA class	UL 94
Thickness tested	1.5 mm	UL 94
UL recognition	yes	UL 94
Oxygen index	33 %	ISO 4589-1/-2
Glow Wire Flammability Index, 0.75mm	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 1mm	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 2mm	960 °C	IEC 60695-2-12
Glow Wire Flammability Index, 3mm	960 °C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	800 °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	800 °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 2mm	850 °C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3mm	925 °C	IEC 60695-2-13
FMVSS Class	DNI	ISO 3795 (FMVSS 302)
Railway classification	R23	EN 45545-2
Railway classification rating	HL1	EN 45545-2

Electrical properties

Relative permittivity, 100Hz	4.1	IEC 62631-2-1
Relative permittivity, 1MHz	3.7	IEC 62631-2-1
Dissipation factor, 100Hz	309 E-4	IEC 62631-2-1
Dissipation factor, 1MHz	127 E-4	IEC 62631-2-1



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Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	1E14 Ohm	IEC 62631-3-2
Electric strength	39 ^[DS] kV/mm	IEC 60243-1
Comparative tracking index	200	IEC 60112
Comparative tracking index	2 PLC	UL 746A
[DS]: Derived from similar grade		

Other properties

Humidity absorption, 2mm	0.15 ^[DS] %	Sim. to ISO 62
Water absorption, 2mm	0.75 ^[DS] %	Sim. to ISO 62
Density	1680 kg/m³	ISO 1183
[DS]: Derived from similar grade		

Injection

Drying Recommended	yes	
Drying Temperature	120 °C	
Drying Time, Dehumidified Dryer	4 - 6 h	
Processing Moisture Content	≤0.02 ^[1] %	
Melt Temperature Optimum	280 °C	Internal
Min. melt temperature	270 °C	
Max. melt temperature	290 °C	
Screw tangential speed	≤0.2 m/s	
Mold Temperature Optimum	110 °C	
Min. mould temperature	100 °C	
Max. mould temperature	120 ^[2] °C	
Hold pressure range	≥80 MPa	
Hold pressure time	4 s/mm	
Back pressure	As low as possible	
Ejection temperature	170 °C	Internal

[1]: At levels above 0.02%, strength and toughness will decrease, even though parts may not exhibit surface defects.

[2]: (6mm - 1mm thickness)

Characteristics

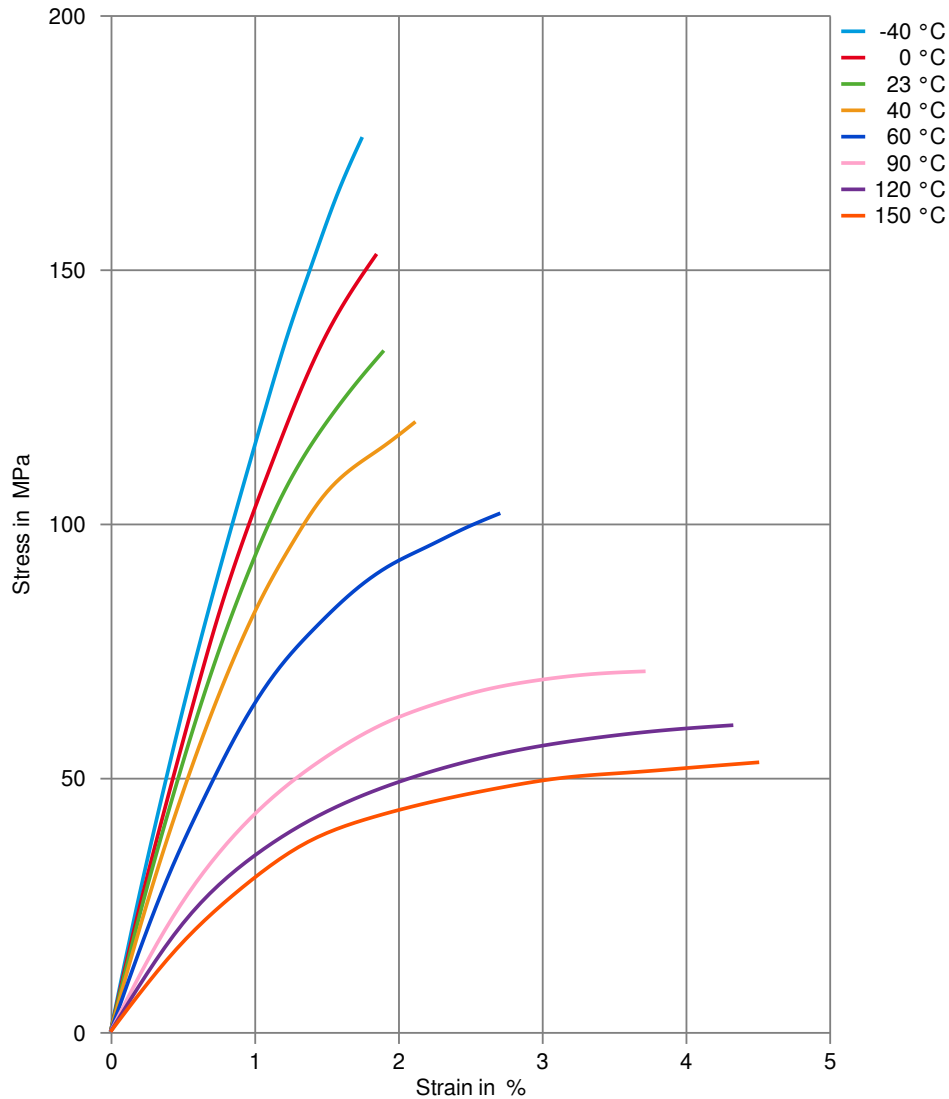
Additives	Flame retardant
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Stress-strain
(measured on Rynite® FR530 NC010)



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THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain
(measured on Rynite® FR530 NC010)

