

Rynite® FR515 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® FR515 BK507 is a 15% glass reinforced, flame retardant modified polyethylene terephthalate resin.

Product information

Resin Identification	PET- GF15FR(17)	ISO 1043
Part Marking Code	>PET-GF15FR(17)<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0.3 ^[DS] %	ISO 294-4, 2577
Moulding shrinkage, normal	0.8 ^[DS] %	ISO 294-4, 2577
[DS]: Derived from similar grade		

Typical mechanical properties

Tensile Modulus	6135 MPa	ISO 527-1/-2
Stress at break, 5mm/min	100 MPa	ISO 527-1/-2
Strain at break, 5mm/min	2.2 %	ISO 527-1/-2
Flexural Modulus	6000 MPa	ISO 178
Flexural Strength	160 MPa	ISO 178
Charpy impact strength, 23°C	32 kJ/m ²	ISO 179/1eU
Charpy impact strength, -40°C	20 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	6.2 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -40°C	6 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.35	

Thermal properties

Melting temperature, 10°C/min	254 °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	200 °C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	238 °C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	33 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	29 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	19 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	74 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	95 E-6/K	ISO 11359-1/-2



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Coeff. of linear therm. expansion, normal, 55-160°C
 RTI, electrical, 0.75mm
 RTI, electrical, 1.5mm
 RTI, electrical, 3mm
 RTI, impact, 0.75mm
 RTI, impact, 1.5mm
 RTI, impact, 3mm
 RTI, strength, 0.75mm
 RTI, strength, 1.5mm
 RTI, strength, 3mm

125 E-6/K
 140 °C
 140 °C
 140 °C
 140 °C
 140 °C
 140 °C
 140 °C
 140 °C
 140 °C

ISO 11359-1/-2
 UL 746B
 UL 746B
 UL 746B
 UL 746B
 UL 746B
 UL 746B
 UL 746B
 UL 746B
 UL 746B

Flammability

Burning Behav. at thickness h
 Thickness tested
 UL recognition
 Burning Behav. 5V at thickness h
 Thickness tested
 UL recognition
 Oxygen index
 Glow Wire Flammability Index, 3mm
 Glow Wire Ignition Temperature, 3mm
 FMVSS Class

V-0 class
 0.86 mm
 yes
 5VA class
 1.5 mm
 yes
 32 %
 960 °C
 900 °C
 B

UL 94
 UL 94
 UL 94
 UL 94
 UL 94
 ISO 4589-1/-2
 IEC 60695-2-12
 IEC 60695-2-13
 ISO 3795 (FMVSS 302)
 ISO 3795 (FMVSS 302)

Burning rate, Thickness 1 mm

<80^[1] mm/min

ISO 3795 (FMVSS 302)

[1]: DNI

Electrical properties

Relative permittivity, 100Hz
 Relative permittivity, 1MHz
 Dissipation factor, 100Hz
 Dissipation factor, 1MHz
 Volume resistivity
 Surface resistivity
 Electric strength
 Comparative tracking index
 Comparative tracking index

3.6
 3.5
 229 E-4
 123 E-4
 >1E13 Ohm.m
 1E13 Ohm
 40 kV/mm
 225
 3 PLC

IEC 62631-2-1
 IEC 62631-2-1
 IEC 62631-2-1
 IEC 62631-2-1
 IEC 62631-3-1
 IEC 62631-3-2
 IEC 60243-1
 IEC 60112
 UL 746A

Other properties

Density

1550 kg/m³

ISO 1183



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Injection

Drying Recommended	yes	
Drying Temperature	120 °C	
Drying Time, Dehumidified Dryer	4 - 6 h	
Processing Moisture Content	≤0.02 ^[2] %	
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 ^[3] °C	
Hold pressure range	≥80 MPa	
Hold pressure time	4 s/mm	
Back pressure	As low as possible	
Ejection temperature	170 °C	Internal

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

[3]: (6mm - 1mm thickness)

Characteristics

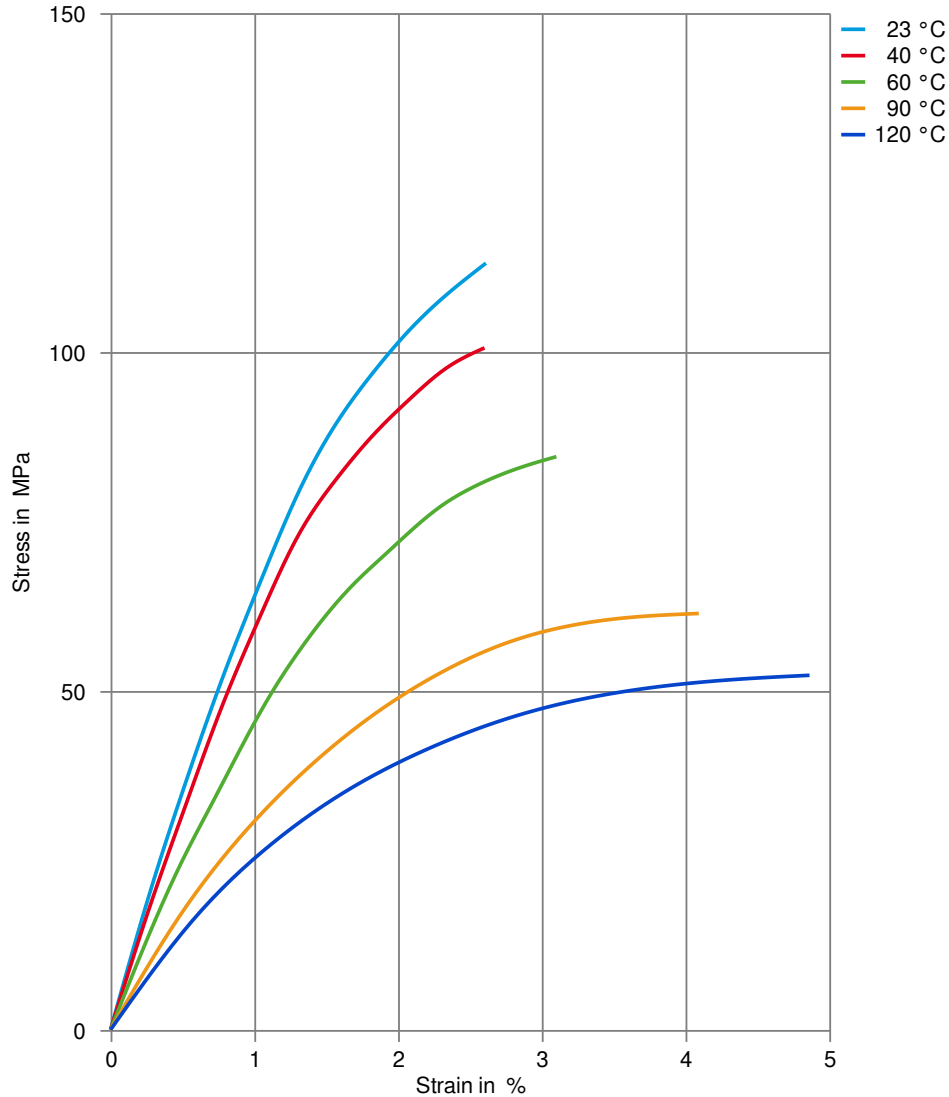
Additives Flame retardant



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Stress-strain
(measured on Rynite® FR515 NC010)



Rynite® FR515 BK507

THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain
(measured on Rynite® FR515 NC010)

