

# Rynite® RE19051 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® RE19051 BK507 is a 40% Glass/Mineral Reinforced, Flame Retardant, Modified Polyethylene Terephthalate Resin.

### Product information

Resin Identification	PET-(GF+MD)40FR(16)	ISO 1043
Part Marking Code	>PET-(GF+MD)40FR(16)<	ISO 11469

### Rheological properties

Moulding shrinkage, parallel	0.2 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.9 %	ISO 294-4, 2577

### Typical mechanical properties

Tensile modulus	11000 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	110 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.7 %	ISO 527-1/-2
Flexural modulus	9700 MPa	ISO 178
Flexural strength	170 MPa	ISO 178
Charpy notched impact strength, 23°C	6.5 kJ/m <sup>2</sup>	ISO 179/1eA
Poisson's ratio	0.34	

### Thermal properties

Melting temperature, 10°C/min	247 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	214 °C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	23 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	23 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	14 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	61 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	78 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	110 E-6/K	ISO 11359-1/-2
RTI, electrical, 0.75mm	155 °C	UL 746B
RTI, electrical, 1.5mm	155 °C	UL 746B
RTI, electrical, 3.0mm	155 °C	UL 746B
RTI, impact, 0.75mm	155 °C	UL 746B
RTI, impact, 1.5mm	155 °C	UL 746B
RTI, impact, 3.0mm	155 °C	UL 746B
RTI, strength, 0.75mm	155 °C	UL 746B
RTI, strength, 1.5mm	155 °C	UL 746B
RTI, strength, 3.0mm	155 °C	UL 746B

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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
UL recognition	yes	UL 94
Burning Behav. at thickness h	V-0 class	IEC 60695-11-10
Thickness tested	0.81 mm	IEC 60695-11-10
UL recognition	yes	UL 94
Burning Behav. 5V at thickness h	5VA class	IEC 60695-11-20
Thickness tested	1.5 mm	IEC 60695-11-20
UL recognition	yes	UL 94
FMVSS Class	B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80 mm/min	ISO 3795 (FMVSS 302)

### Electrical properties

Volume resistivity	5E12 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2

### Physical/Other properties

Density	1730 kg/m <sup>3</sup>	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 <sup>[1]</sup> %
Melt Temperature Optimum	280 °C
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 <sup>[2]</sup> °C
Hold pressure range	≥80 MPa
Hold pressure time	4 s/mm
Back pressure	As low as possible MPa
Ejection temperature	170 °C

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

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

### Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Flame retardant
Special characteristics	Flame retardant