

Rynite® 935 BK505

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® 935 BK505 is a 35% mica/glass reinforced modified polyethylene terephthalate resin with low warpage and excellent electrical properties.

Product information

Resin Identification	PET-(MD+GF)3	ISO 1043
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Part Marking Code	>PET-(MD+GF)35<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0.2 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.7 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	10200 MPa	ISO 527-1/-2
Stress at break, 5mm/min	82 MPa	ISO 527-1/-2
Strain at break, 5mm/min	2 %	ISO 527-1/-2
Flexural Modulus	9300 MPa	ISO 178
Flexural Strength	132 MPa	ISO 178
Charpy impact strength, 23°C	25 kJ/m ²	ISO 179/1eU
Charpy impact strength, -40°C	21.5 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	5.5 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	4 kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -40°C	4 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.34	

Thermal properties

Melting temperature, 10°C/min	252 °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	240 °C	ISO 75-1/-2
RTI, electrical, 0.75mm	140 °C	UL 746B
RTI, electrical, 1.5mm	140 °C	UL 746B
RTI, electrical, 3mm	140 °C	UL 746B
RTI, impact, 0.75mm	140 °C	UL 746B
RTI, impact, 1.5mm	140 °C	UL 746B



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RTI, impact, 3mm	140 °C	UL 746B
RTI, strength, 0.75mm	140 °C	UL 746B
RTI, strength, 1.5mm	140 °C	UL 746B
RTI, strength, 3mm	140 °C	UL 746B

Flammability

Burning Behav. at 1.5mm nom. thickn.	HB class	UL 94
Thickness tested	1.5 mm	UL 94
UL recognition	yes	UL 94
Burning Behav. at thickness h	HB class	UL 94
Thickness tested	0.75 mm	UL 94
UL recognition	yes	UL 94
Glow Wire Flammability Index, 0.75mm	775 °C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	775 °C	IEC 60695-2-12
Glow Wire Flammability Index, 3mm	825 °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, 3mm	850 °C	IEC 60695-2-13
FMVSS Class	B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80 mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 1MHz	4	IEC 62631-2-1
Dissipation factor, 1MHz	150 E-4	IEC 62631-2-1
Electric Strength, Short Time, 23°C, 2mm	25 kV/mm	IEC 60243-1

Other properties

Density	1580 kg/m³	ISO 1183
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VDA Properties

Fogging, G-value (condensate)	0.1 mg	ISO 6452
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Injection

Drying Recommended	yes	
Drying Temperature	120 °C	
Drying Time, Dehumidified Dryer	4 - 6 h	
Processing Moisture Content	≤0.02 ^[1] %	
Melt Temperature Optimum	285 °C	Internal
Min. melt temperature	280 °C	
Max. melt temperature	300 °C	
Screw tangential speed	≤0.2 m/s	



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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 MPa

possible

170 °C

Ejection temperature

Internal

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

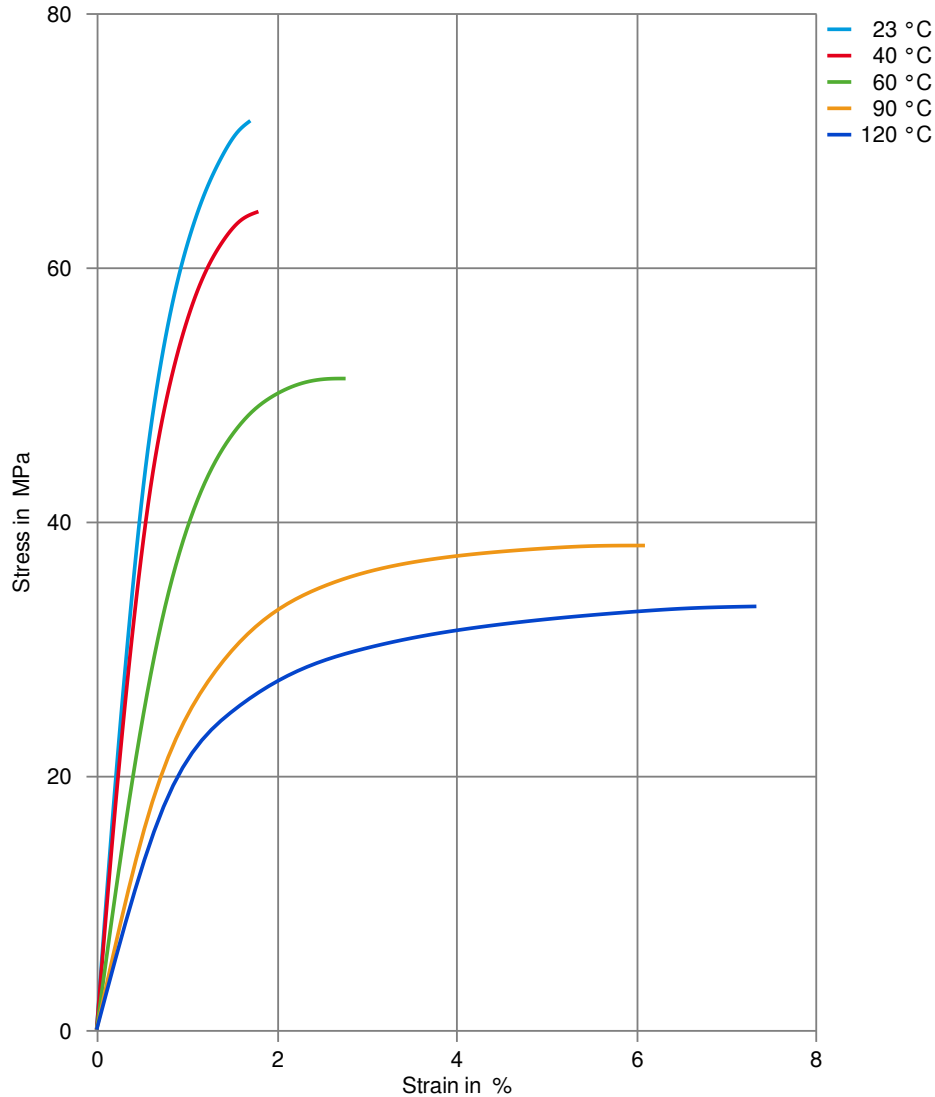
[2]: (6mm - 1mm thickness)



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Stress-strain
(measured on Rynite® 935 NC010)



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THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain
(measured on Rynite® 935 NC010)

