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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)35	ISO 1043
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
Tensile stress at break, 5mm/min	82	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2	%	ISO 527-1/-2
Flexural modulus	9300	MPa	ISO 178
Flexural strength	130	MPa	ISO 178
Charpy impact strength, 23°C	25	kJ/m²	ISO 179/1eU
Charpy impact strength, -40°C	21.5	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	5.5	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	4	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	4	kJ/m²	ISO 179/1eA
Poisson's ratio	0.34		

Thermal properties

Melting temperature, 10°C/min	252	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	200	°C	ISO 75-1/-2
Temperature 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, 3.0mm	140	°C	UL 746B
RTI, impact, 0.75mm	140	°C	UL 746B
RTI, impact, 1.5mm	140	°C	UL 746B
RTI, impact, 3.0mm	140	°C	UL 746B
RTI, strength, 0.75mm	140	°C	UL 746B
RTI, strength, 1.5mm	140	°C	UL 746B
RTI, strength, 3.0mm	140	°C	UL 746B

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Flammability

Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.75	mm	IEC 60695-11-10
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, 3.0mm	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, 3.0mm	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

Physical/Other properties

Density	1580	kg/m³	ISO 1183

VDA Properties

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

Injection

Drying Recommended	yes	
Drying Temperature	120	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.02[1]	%
Melt Temperature Optimum	290	°C
Min. melt temperature	280	°C
Max. melt temperature	300	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	107	°C
Min. mould temperature	95	°C
Max. mould temperature	120[2]	°C
Hold pressure range	≥80	MPa
Hold pressure time	4	s/mm
Back pressure	As low as possible	MPa
Ejection temperature	196	°C

[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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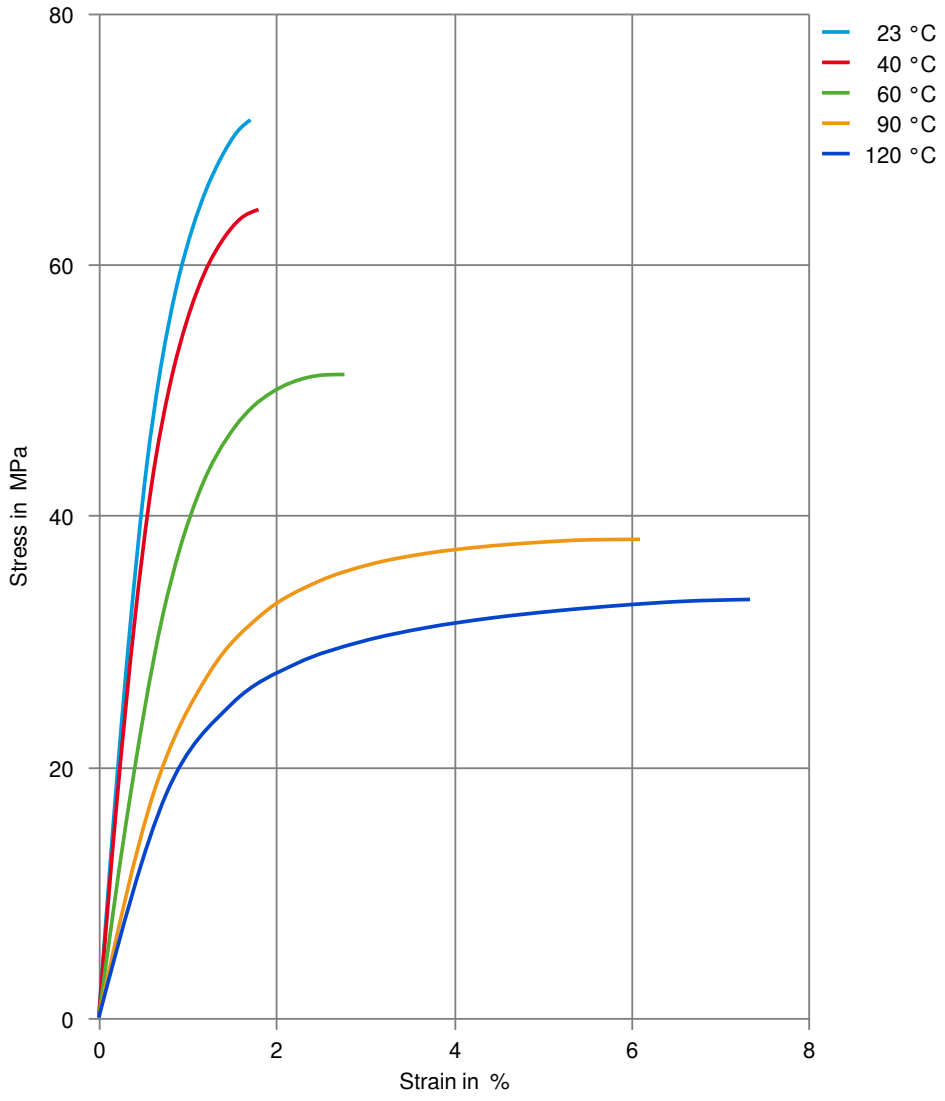
Characteristics

Processing	Injection Moulding
Special characteristics	Low Warpage

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
BMW	GS93016-PET-(MX20+GF15)	
Stellantis - Chrysler	MS.50103 / CPN-3425	Black

Stress-strain (measured on Rynite® 935 NC010)



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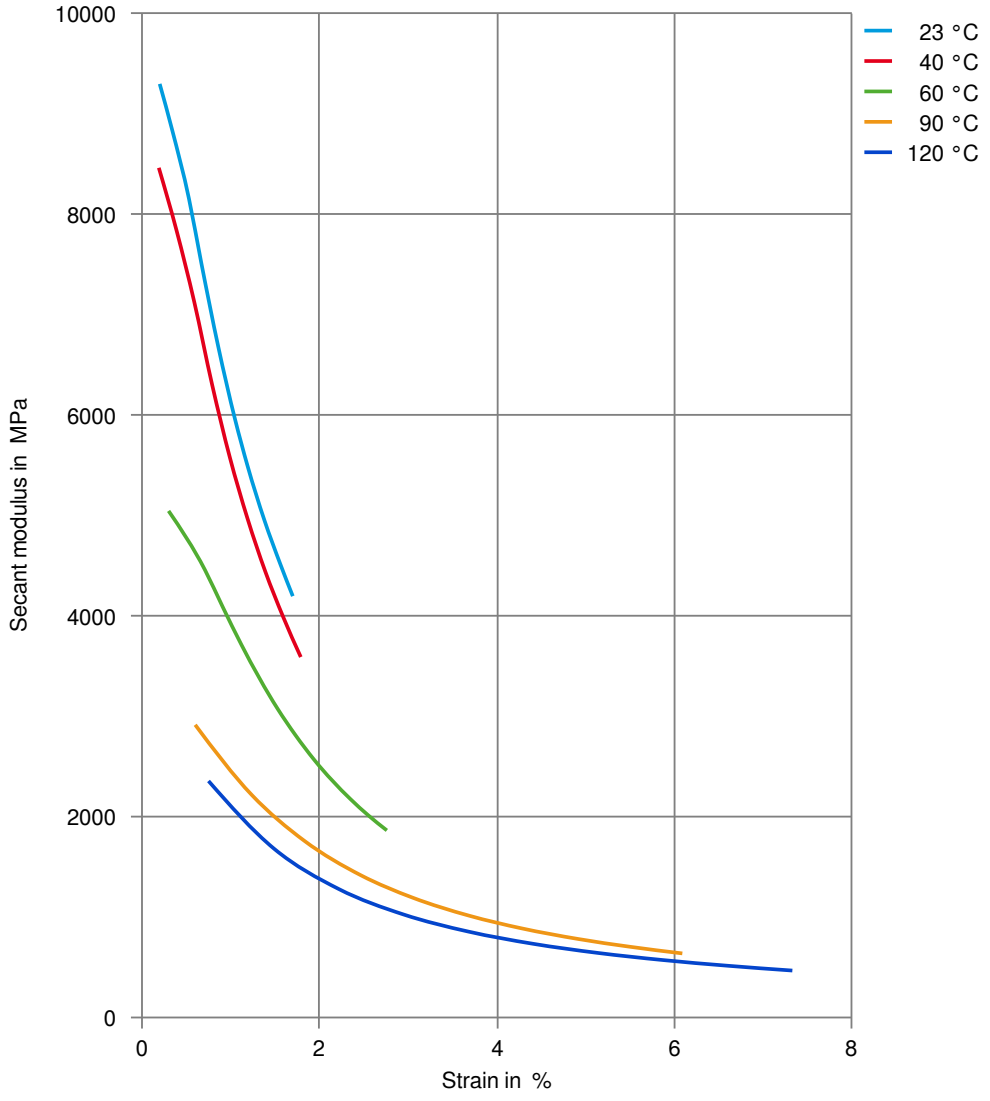
Secant modulus-strain
(measured on Rynite® 935 NC010)



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