



# Rynite® 935 NC010

## 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 NC010 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	0.3 %	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	85 MPa	ISO 527-1/-2
Strain at break	2 %	ISO 527-1/-2
Flexural Modulus	9100 MPa	ISO 178
Compressive strength	140 MPa	ISO 604
Shear Strength	55 MPa	ASTM D 732
Tensile creep modulus, 1h	9350 MPa	ISO 899-1
Tensile creep modulus, 1000h	7690 MPa	ISO 899-1
Charpy impact strength, 23°C	25 kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength, -30°C	20 kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 23°C	6 kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	4 kJ/m <sup>2</sup>	ISO 179/1eA
Hardness, Rockwell, M-scale	75 -	ISO 2039-2
Hardness, Rockwell, R-scale	115 -	ISO 2039-2
Poisson's ratio	0.34 -	



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### 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	235 °C	ISO 75-1/-2
Vicat softening temperature, 50°C/h, 50N	205 °C	ISO 306
CLTE, Parallel, -40-23°C	26 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	16 E-6/K	ISO 11359-1/-2
CLTE, Normal, -40-23°C	53 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	52 E-6/K	ISO 11359-1/-2
Thermal conductivity solid	0.26 W/(m K)	
Thermal conductivity of melt	0.32 W/(m K)	
Eff. thermal diffusivity	1.4E-7 m <sup>2</sup> /s	
Spec. heat capacity of melt	1790 J/(kg K)	
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
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	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
Oxygen index	21 %	ISO 4589-1/-2
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
Glow Wire Temperature, No Flame, 0.75mm	750 °C	IEC 60335-1
Glow Wire Temperature, No Flame, 1mm	750 °C	IEC 60335-1
Glow Wire Temperature, No Flame, 1.5mm	750 °C	IEC 60335-1
Glow Wire Temperature, No Flame, 3mm	850 °C	IEC 60335-1
FMVSS Class	B -	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80 mm/min	ISO 3795 (FMVSS 302)

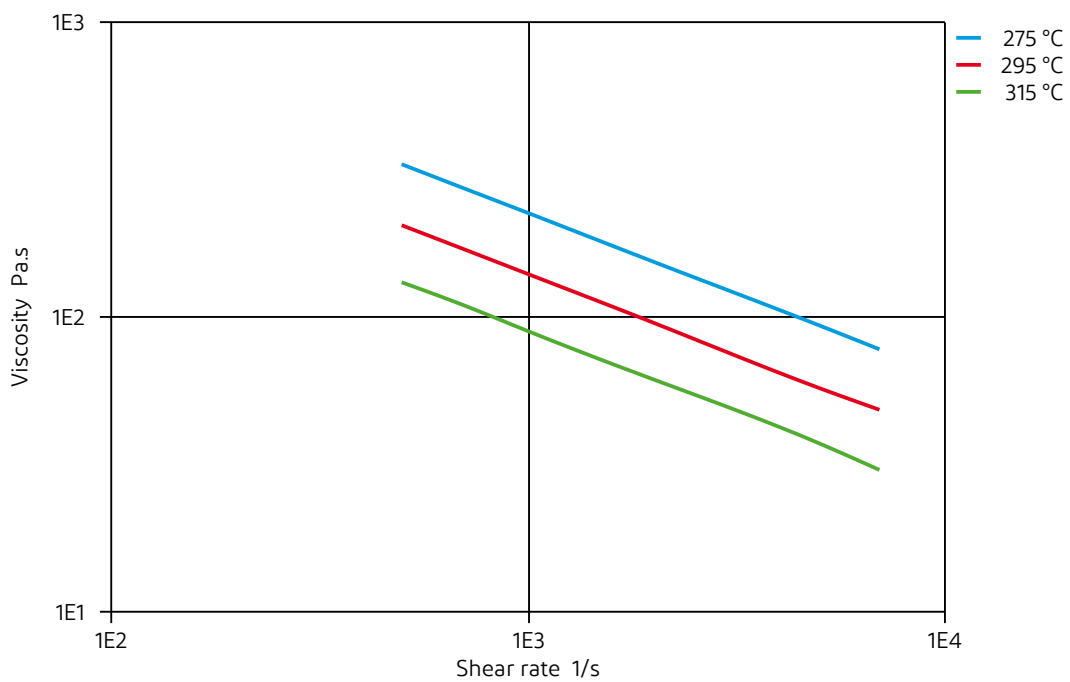




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THERMOPLASTIC POLYESTER RESIN

Viscosity-shear rate

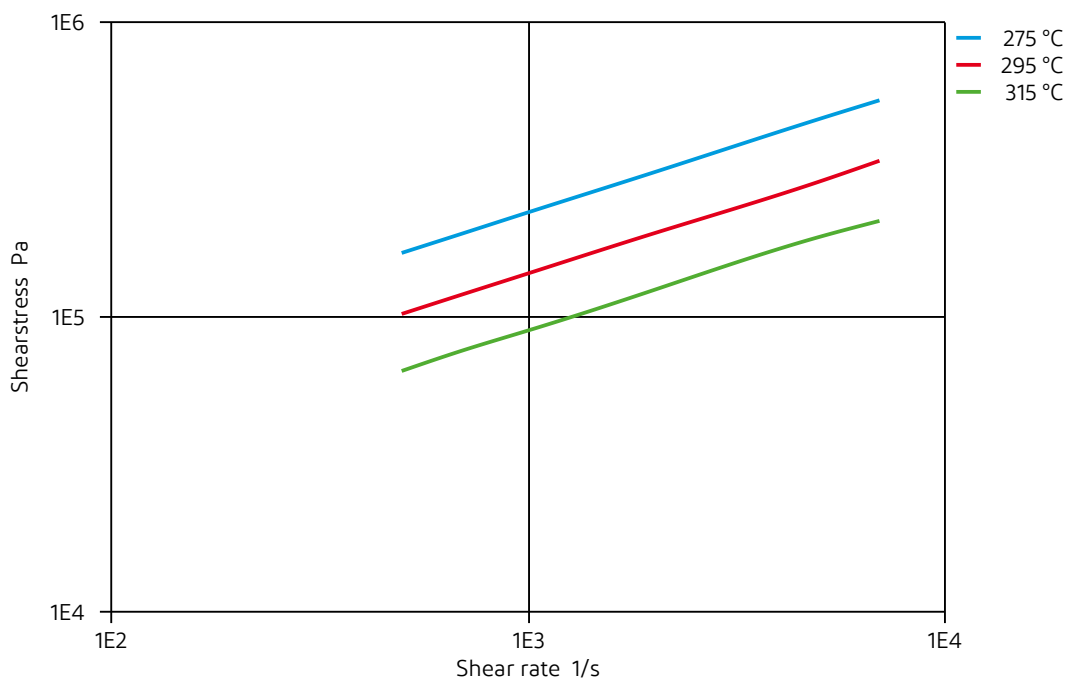




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THERMOPLASTIC POLYESTER RESIN

Shearstress-shear rate

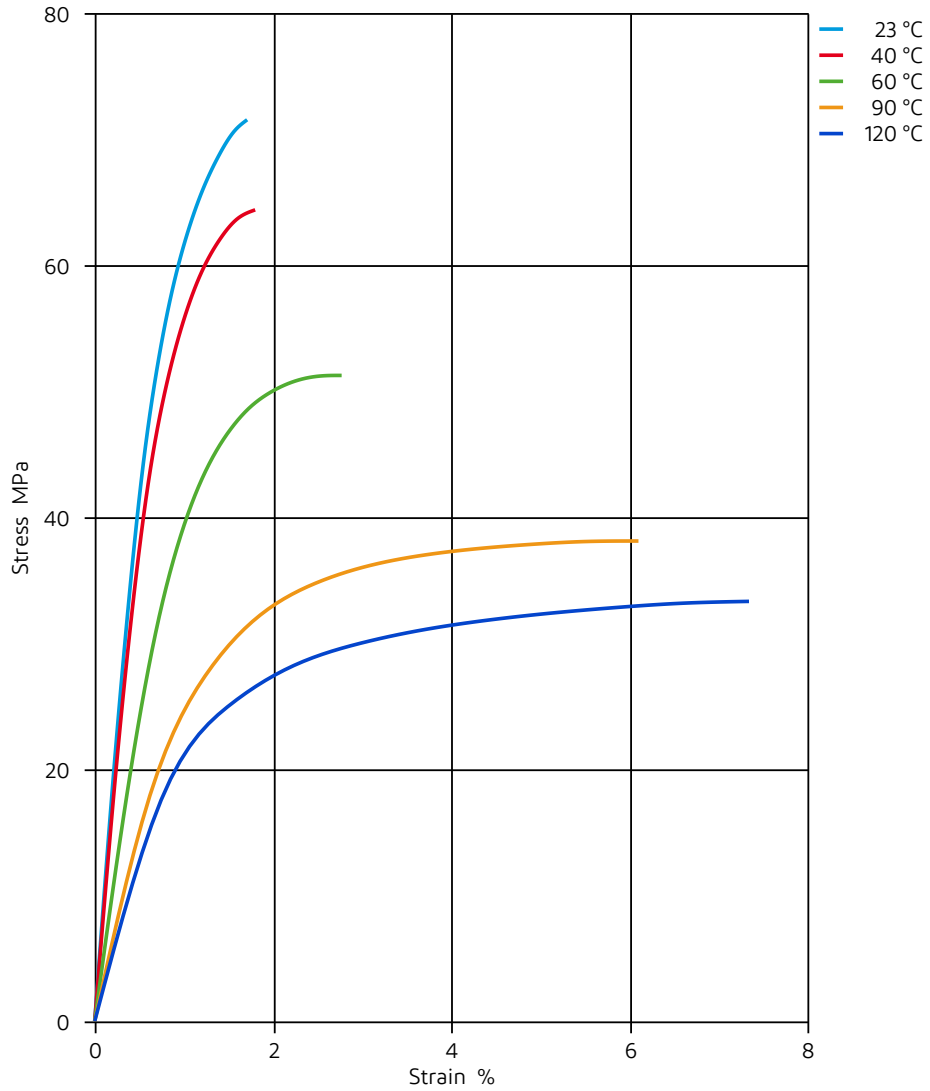




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THERMOPLASTIC POLYESTER RESIN

## Stress-strain

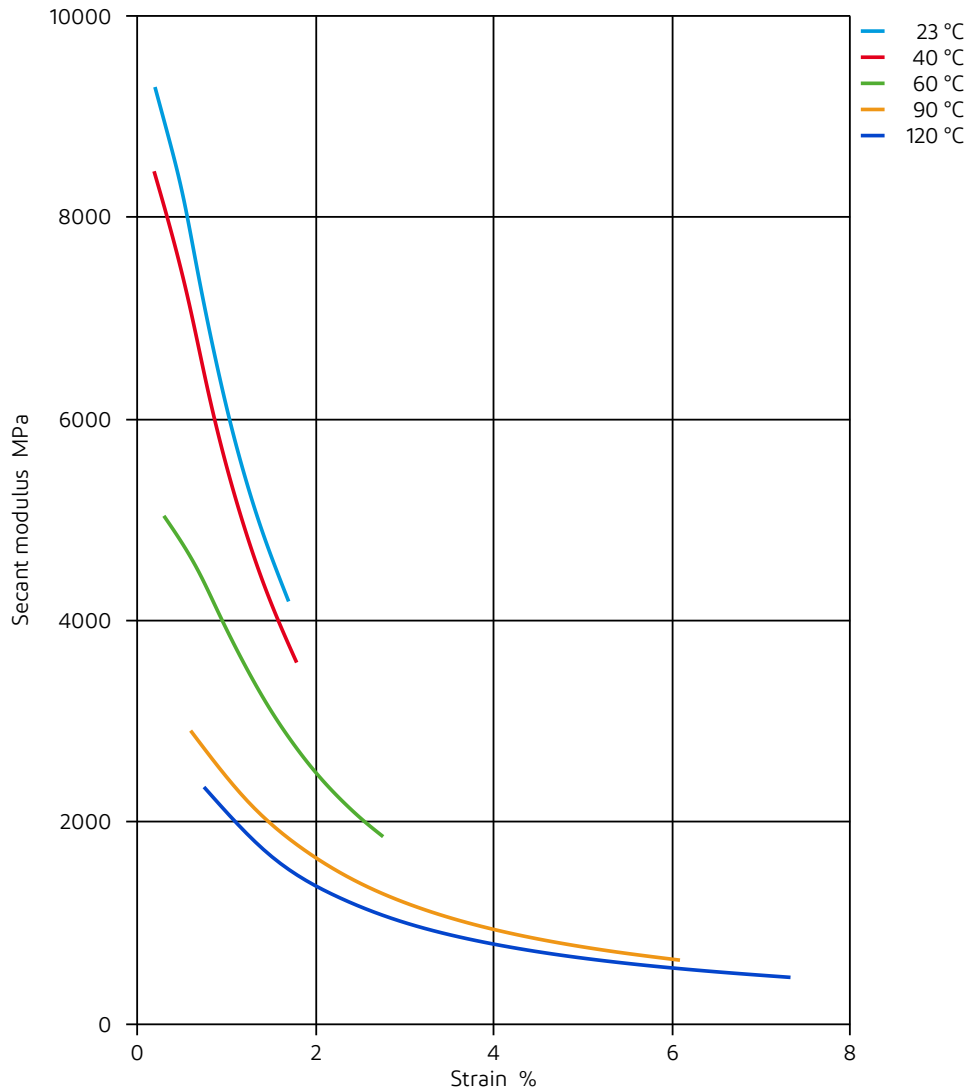




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THERMOPLASTIC POLYESTER RESIN

## Secant modulus-strain

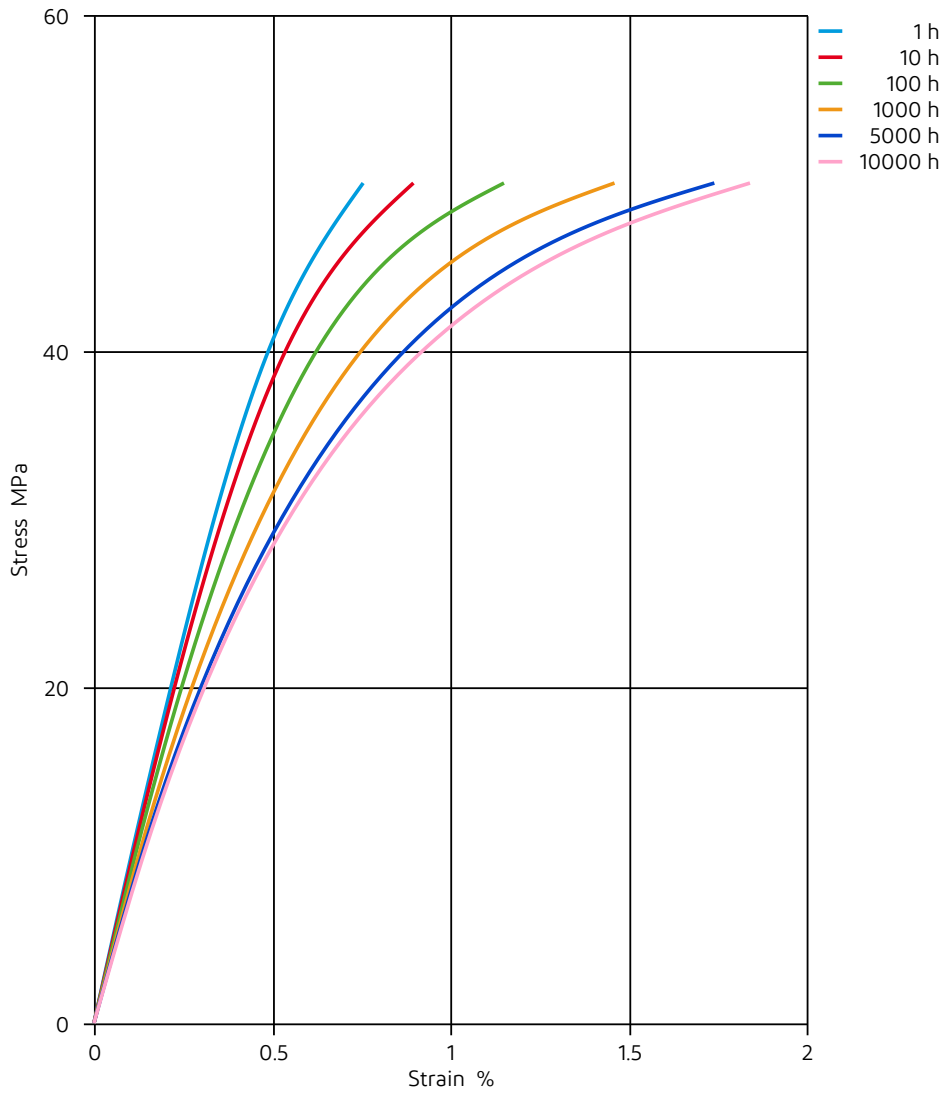




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THERMOPLASTIC POLYESTER RESIN

Stress-strain (isochronous) 23°C



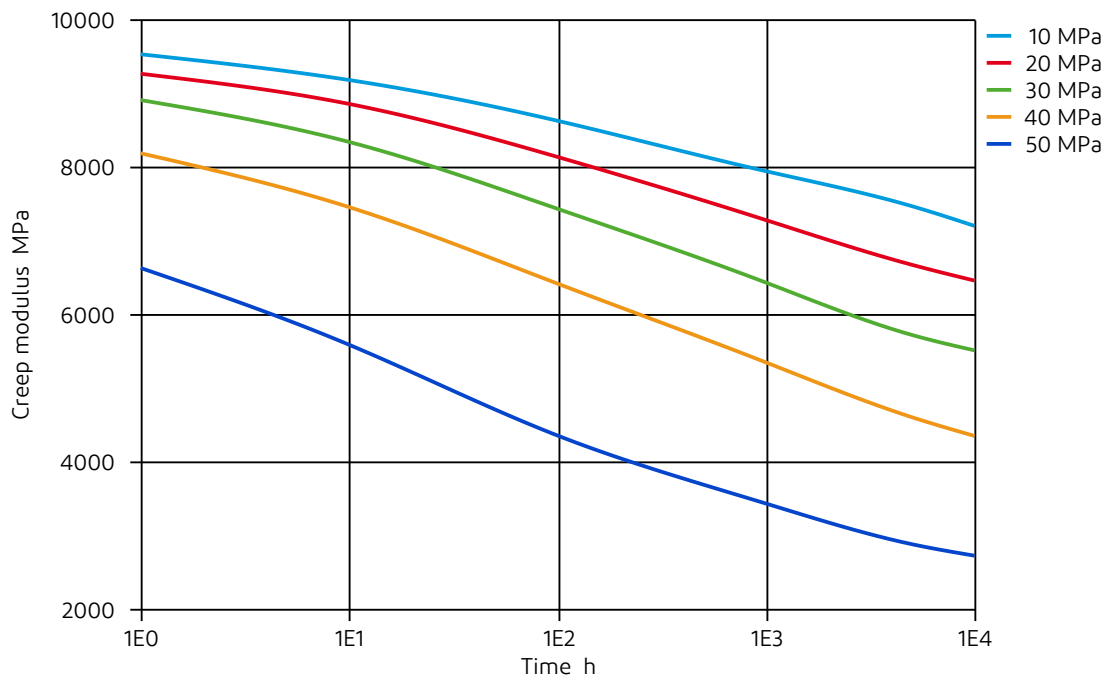




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THERMOPLASTIC POLYESTER RESIN

Creep modulus-time 23°C



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