Celanese
The chemistry inside innovation™

Rynite® 550HTE BK503

THERMOPLASTIC POLYESTER RESIN

Rynite® 550HTE BK503 is a 50% glass reinforced modified polyethylene terephthalate resin with excellent high temperature dielectric properties

Product information

Resin Identification	PET-GF50		ISO 1043
Part Marking Code	>PET-GF50<		ISO 11469

Rheological properties

Melt volume-flow rate	6.5	cm^3/10min	ISO 1133
Temperature	280	°C	
Load	10	kg	
Viscosity number	57	cm^3/g	ISO 307, 1157, 1628
Moulding shrinkage, parallel	0.2	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7	%	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	18000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	190	MPa	ISO 527-1/-2
Strain at break, 5mm/min	1.8	%	ISO 527-1/-2
Flexural Modulus	16000	MPa	ISO 178
Flexural Strength	280	MPa	ISO 178
Charpy impact strength, 23°C	65	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	11	kJ/m^2	ISO 179/1eA
Poisson's ratio	0.33		

Thermal properties

Melting temperature, 10°C/min	251	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	95	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	235	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	16	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	81	E-6/K	ISO 11359-1/-2

Electrical properties

Electric strength	30	kV/mm	IEC 60243-1

Other properties

Density	1750	kg/m^3	ISO 1183
Density of melt	1560	kg/m^3	Internal

Rynite® 550HTE BK503

THERMOPLASTIC POLYESTER RESIN

Injection

Drying Recommended	yes		
Drying Temperature	120	°C	
Drying Time, Dehumidified Dryer	4 - 6	h	
Processing Moisture Content	≤0.01[1]	%	
Melt Temperature Optimum	285	°C	Internal
Min. melt temperature	280	°C	
Max. melt temperature	300	°C	
Min. mould temperature	120	°C	
Max. mould temperature	140[2]	°C	

[1]: At levels above 0.01%, strength and toughness will decrease, even though parts may not exhibit surface defects.

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

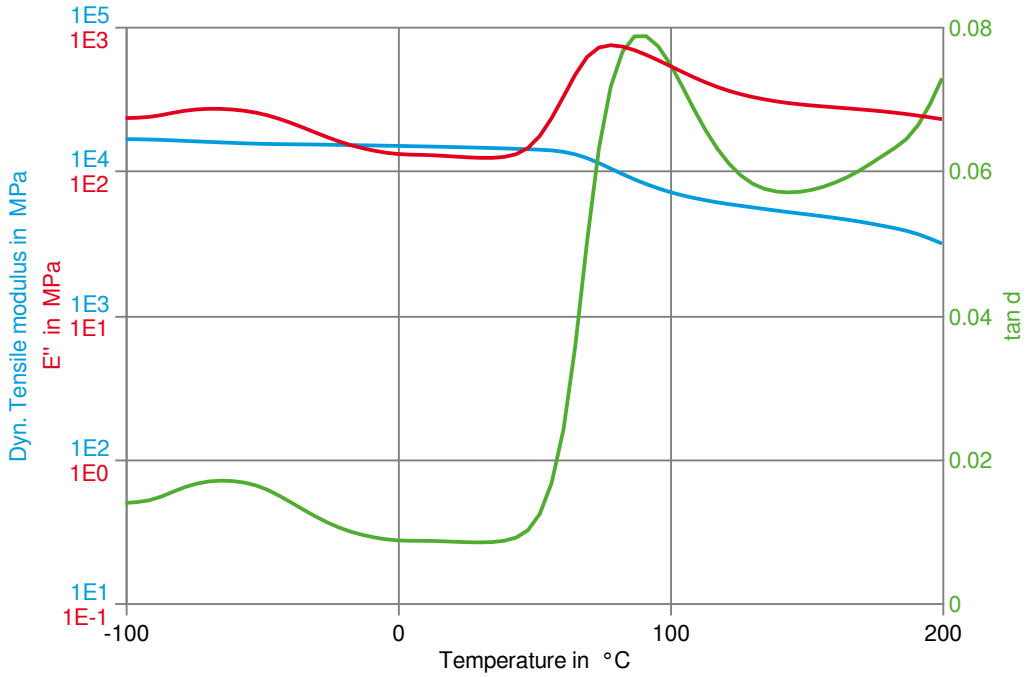
Additional information

Injection molding	When lower mold temperatures are used, the initial warpage and shrinkage will be lower, but the surface appearance will be poorer and the dimensional change may be greater when parts are subsequently heated. Higher temperature settings for the rear of the barrel will minimize glass fiber attrition, though overall barrel residence time should be considered.

Rynite® 550HTE BK503

THERMOPLASTIC POLYESTER RESIN

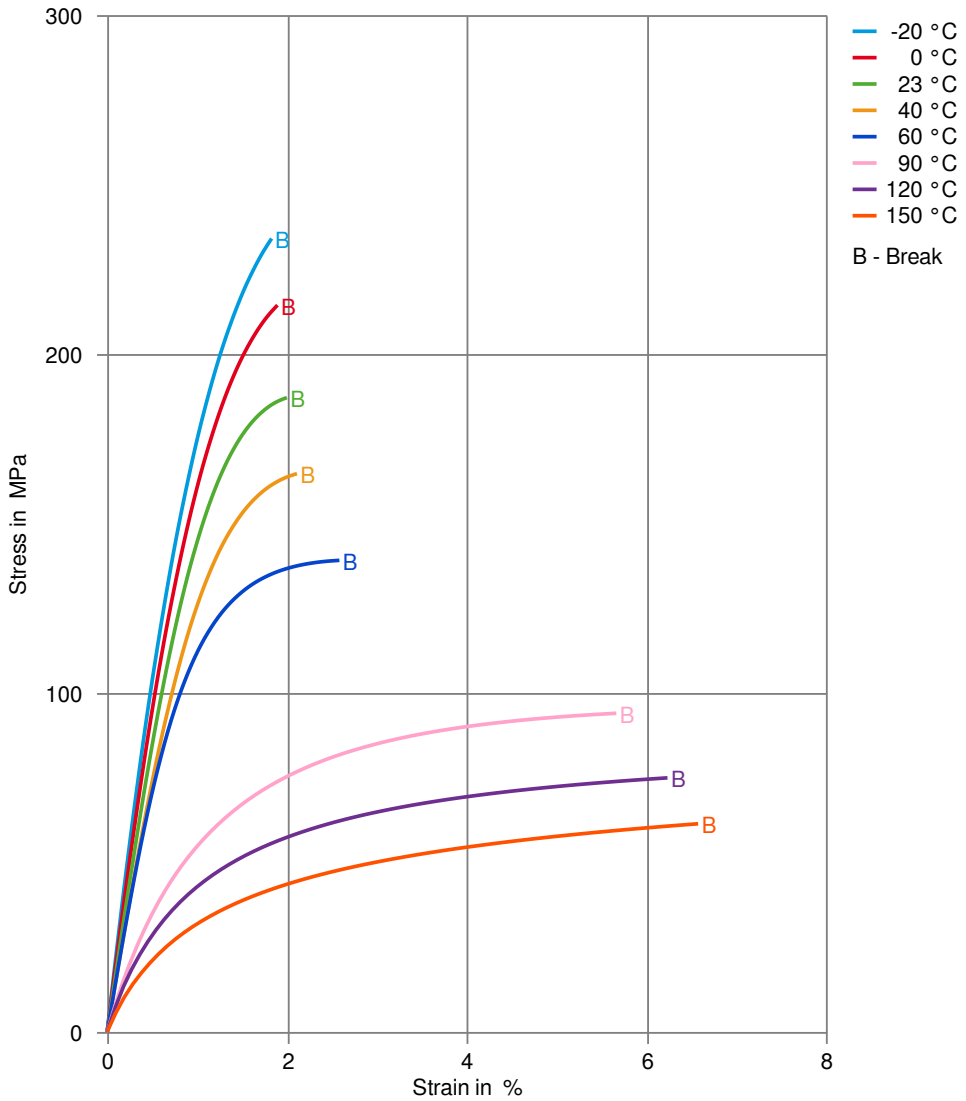
Dynamic Tensile modulus-temperature



Rynite® 550HTE BK503

THERMOPLASTIC POLYESTER RESIN

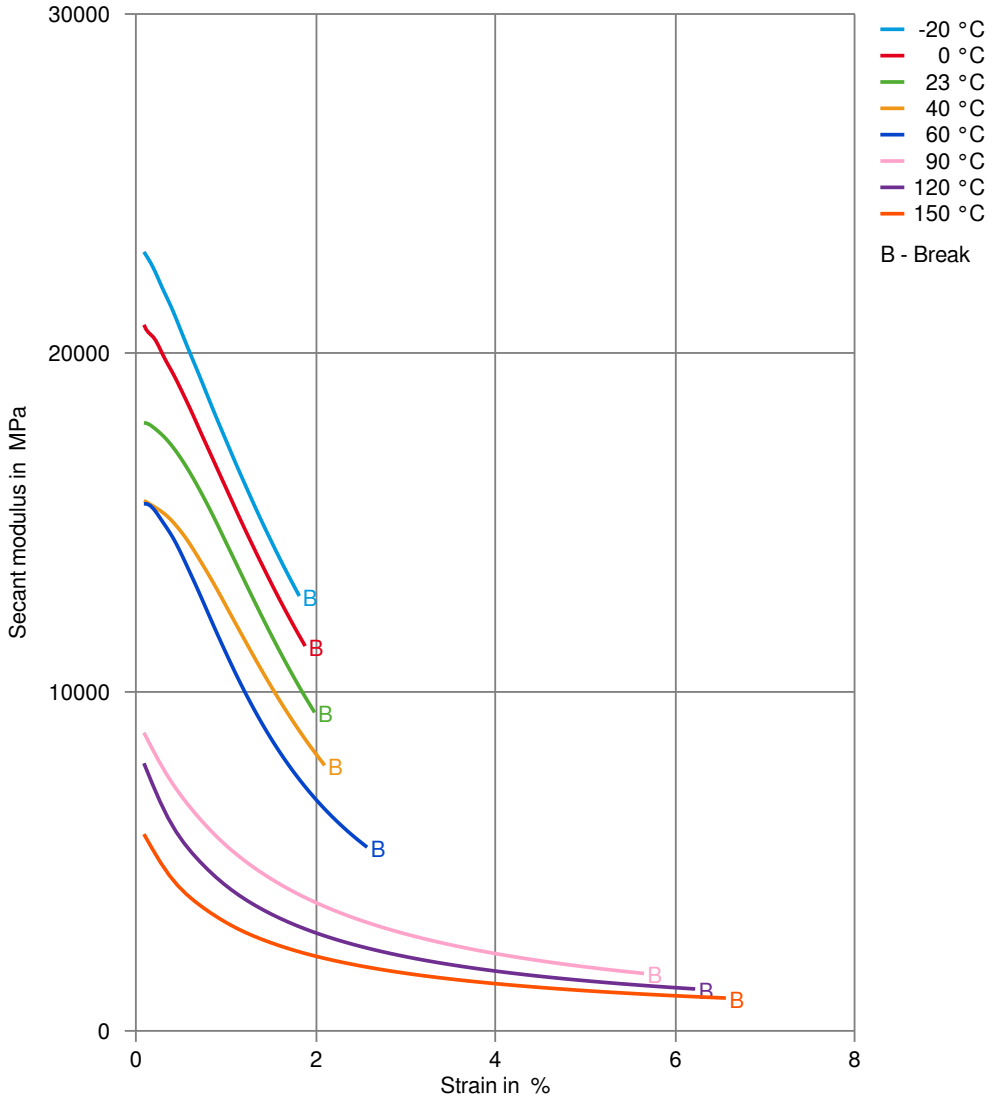
Stress-strain



Rynite® 550HTE BK503

THERMOPLASTIC POLYESTER RESIN

Secant modulus-strain



Rynite® 550HTE BK503

THERMOPLASTIC POLYESTER RESIN

Tensile modulus-temperature