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Rynite® 530 BK503

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® 530 BK503 is a 30% glass reinforced modified polyethylene terephthalate resin.

Product information

Resin Identification	PET-GF30	ISO 1043
Part Marking Code	>PET-GF30<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0.3	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.9	%	ISO 294-4, 2577
Postmoulding shrinkage, normal, 48h at 80°C	0.45	%	ISO 294-4
Postmoulding shrinkage, parallel, 48h at 80°C	0.1	%	ISO 294-4

Typical mechanical properties

Tensile modulus	10200	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	150	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.1	%	ISO 527-1/-2
Flexural modulus	8940	MPa	ISO 178
Flexural strength	210	MPa	ISO 178
Compressive strength	230	MPa	ISO 604
Charpy impact strength, 23°C	52	kJ/m²	ISO 179/1eU
Charpy impact strength, -40°C	45	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	9.5	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	8.5	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	8	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	9.5	kJ/m²	ISO 180/1A
Izod notched impact strength, -40°C	8.5	kJ/m²	ISO 180/1A
Izod impact strength, 23°C	45	kJ/m²	ISO 180/1U
Izod impact strength, -40°C	35	kJ/m²	ISO 180/1U
Hardness, Rockwell, R-scale	120		ISO 2039-2
Ball indentation hardness, H 961/30	221	MPa	ISO 2039-1
Poisson's ratio	0.34		

Thermal properties

Melting temperature, 10°C/min	250	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	90	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	221	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	244	°C	ISO 75-1/-2
Thermal conductivity, flow	0.29	W/(m K)	ISO 22007-2
RTI, electrical, 0.75mm	140	°C	UL 746B
RTI, electrical, 1.5mm	140	°C	UL 746B

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RTI, electrical, 3.0mm	140	°C	UL 746B
RTI, electrical, 6mm	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, impact, 6mm	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
RTI, strength, 6mm	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	0.81	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Thickness tested	0.75	mm	IEC 60695-11-20
UL recognition	yes		UL 94
Glow Wire Flammability Index, 2.0mm	800	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	900	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 2.0mm	825	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	825	°C	IEC 60695-2-13
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, 2mm	750	°C	IEC 60335-1
Glow Wire Temperature, No Flame, 3mm	825	°C	IEC 60335-1
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	38	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

Relative permittivity, 100Hz	4.5		IEC 62631-2-1
Relative permittivity, 1MHz	4.2		IEC 62631-2-1
Dissipation factor, 100Hz	310	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	152	E-4	IEC 62631-2-1
Surface resistivity	>1E15	Ohm	IEC 62631-3-2
Electric strength	32	kV/mm	IEC 60243-1
Comparative tracking index	250		IEC 60112
Electric Strength, Short Time, 23°C, 2mm	22	kV/mm	IEC 60243-1

Physical/Other properties

Water absorption, Immersion 24h	0.05	%	Sim. to ISO 62
Density	1560	kg/m³	ISO 1183

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VDA Properties

Emission of organic compounds	16	µgC/g	VDA 277
Odour	3	class	VDA 270
Fogging, G-value (condensate)	0	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	285	°C
Min. melt temperature	280	°C
Max. melt temperature	300	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	120	°C
Min. mould temperature	110	°C
Max. mould temperature	130[2]	°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

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
BMW	GS93016-PET-GF30	
Stellantis - Chrysler	MS.50103 / CPN-2621	Black

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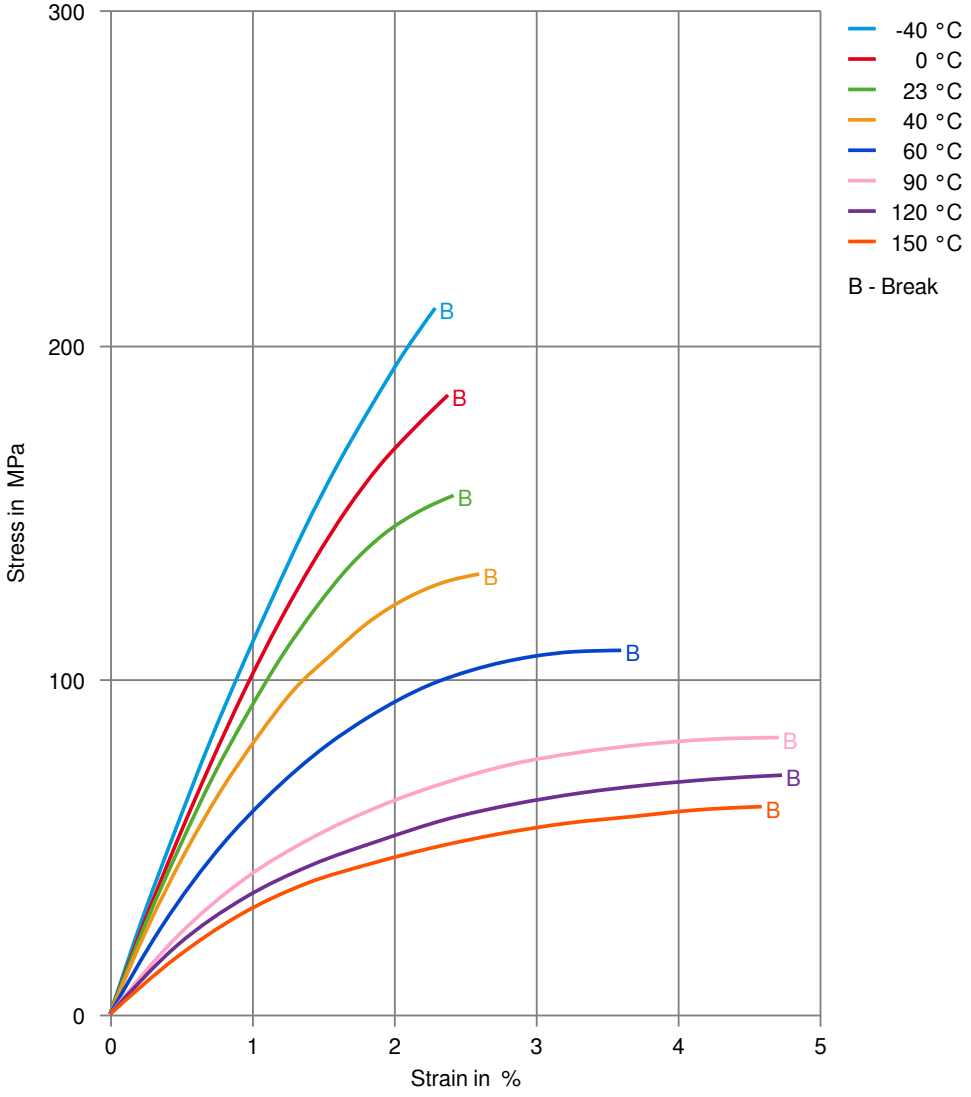
Stress-strain
(measured on Rynite® 530 NC010)



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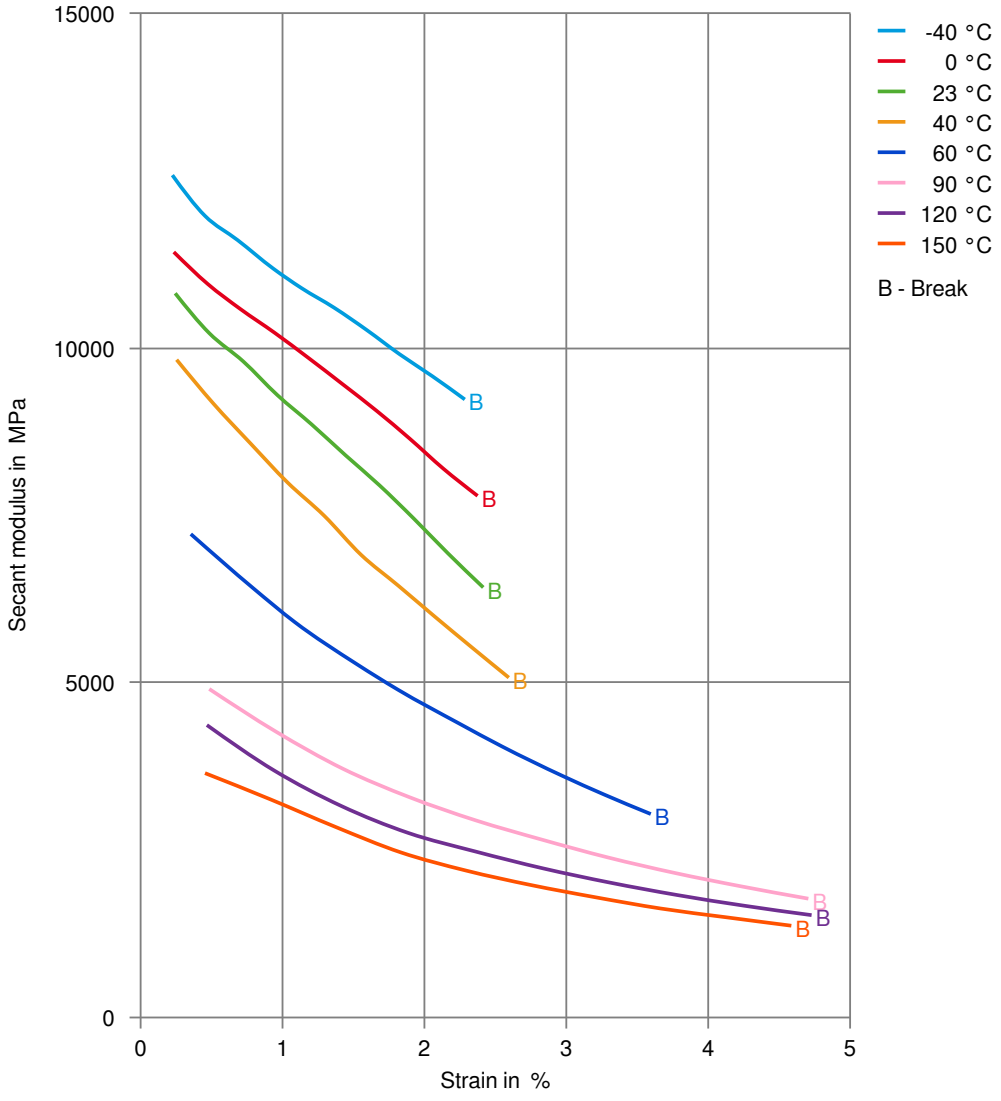
Secant modulus-strain
(measured on Rynite® 530 NC010)



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Chemical Media Resistance

Mineral oils

✗ SAE 80/90 hypoid-gear oil, 130 °C

Symbols used:

✔ possibly resistant
Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

✗ not recommended - see explanation
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

Revised: 2025-04-19 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.
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