Product Information

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® FR530 NC010 is a 30% glass reinforced, flame retardant, modified polyethylene terephthalate resin.

Resin Identification	General information	Value	Unit	Test Standard
Rheological properties Value Unit Test Standard		PET-GF30FR(17)	-	ISO 1043
Molding shrinkage, parallel 0.2 % ISO 294-4, 2577 Molding shrinkage, normal 0.8 % ISO 294-4, 2577 Molding shrinkage, normal 1500 Walue Unit Test Standard Tensile Modulus 11500 MPa ISO 527-11-2 Stress at break 135 MPa ISO 527-11-2 Strain at break 2 % ISO 527-11-2 Strain at break 10500 MPa ISO 527-11-2 Tensile creep modulus ISO 899-1 The	Part Marking Code	PET-GF30FR(17)	-	ISO 11469
Molding shrinkage, parallel 0.2 % ISO 294-4, 2577 Molding shrinkage, normal 0.8 % ISO 294-4, 2577 Molding shrinkage, normal 1500 Walue Unit Test Standard Tensile Modulus 11500 MPa ISO 527-11-2 Stress at break 135 MPa ISO 527-11-2 Strain at break 2 % ISO 527-11-2 Strain at break 10500 MPa ISO 157-11-2 Tensile creep modulus ISO 899-1 The	Rheological properties	Value	Unit	Test Standard
Modding shrinkage, normal 0.8 % ISO 294-4, 2577	Molding shrinkage, parallel	0.2	%	ISO 294-4, 2577
Tensile Modulus		0.8	%	ISO 294-4, 2577
Stress at break	Mechanical properties	Value	Unit	Test Standard
Strain at break 2 % ISO 527-1/-2 Flexural Modulus 10500 MPa ISO 178 Tensile creep modulus 11200 MPa 1000h 9700 MPa 1000h 9700 MPa Charpy impact strength ISO 179/1eU 73°F 40 kJ/m² -22°F 9 kJ/m² -22°F 9 kJ/m² Thermal properties Value Unit Test Standard Melting temperature, 18°F/min 252 °C ISO 11357-1/-3 Temp. of deflection under load 252 °C ISO 11357-1/-3 Temp. of deflection under load 252 °C ISO 11357-1/-2 260 psi 225 °C ISO 11357-1/-2 Vicat softening temperature, 90°F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 normal 92 E-6/K ISO 11359-1	Tensile Modulus	11500	MPa	ISO 527-1/-2
Flexural Modulus	Stress at break	135	MPa	ISO 527-1/-2
Tensile creep modulus	Strain at break	2	%	ISO 527-1/-2
1h 11200 MPa 1000h 9700 MPa Charpy impact strength ISO 179/1eU 73°F 40 kJ/m² -22°F 40 kJ/m² Charpy notched impact strength ISO 179/1eA 73°F 10 kJ/m² -22°F 9 kJ/m² Thermal properties Value Unit Test Standard Melting temperature, 18°F/min 252 °C ISO 11357-1/-3 Temp. of deflection under load ISO 75-1/-2 ISO 75-1/-2 260 psi 225 °C ISO 306 65 psi 243 °C Vicat softening temperature, 90°F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-17-2 Coeff. of linear therm. expansion ISO 11359-17-2 ISO 11359-17-2 Normal, -40-23°C 68 E-6/K FA/K Parallel, 40-23°C 22 E-6/K	Flexural Modulus	10500	MPa	ISO 178
1000h 9700 MPa 150 179/1eU 173°F 40 kJ/m² 150 179/1eU 173°F 40 kJ/m² 150 179/1eA 150 179/1eA	Tensile creep modulus			ISO 899-1
Charpy impact strength	1h	11200	MPa	
73°F 40 kJ/m² -22°F 40 kJ/m² Charpy notched impact strength ISO 179/1eA 73°F 10 kJ/m² -22°F 9 kJ/m² Thermal properties Value Unit Test Standard Melting temperature, 18°F/min 252 °C ISO 11357-1/-3 Temp. of deflection under load ISO 75-1/-2 260 psi 225 °C 65 psi 243 °C Vicat softening temperature, 90°F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K So 11359-1/-2 Normal, -40-23°C 22 E-6/K E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	1000h	9700	MPa	
T3°F	Charpy impact strength			ISO 179/1eU
Charpy notched impact strength ISO 179/1eA 73 ° F 10 kJ/m² -22 ° F 9 kJ/m² Thermal properties Value Unit Test Standard Melting temperature, 18 ° F/min 252 ° C ISO 11357-1/-3 Temp. of deflection under load ISO 75-1/-2 260 psi 225 ° C ISO 306 65 psi 243 ° C C Vicat softening temperature, 90° F/h, 11 lbf 220 ° C ISO 306 Ball pressure test 235 ° C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion normal 92 E-6/K ISO 11359-1/-2 Normal, -40-23 ° C 68 E-6/K E-6/K Parallel, -40-23 ° C 22 E-6/K E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Fff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 30mil 155 ° C		40	kJ/m²	
73°F	-22°F	40	kJ/m²	
73°F22°F 10 kJ/m² y kJ/m² Thermal properties Value Unit Test Standard Melting temperature, 18°F/min 252 °C ISO 11357-1/-3 Temp. of deflection under load ISO 75-1/-2 260 psi 225 °C C 65 psi 243 °C C Vicat softening temperature, 90°F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K So 11359-1/-2 Normal, -40-23°C 68 E-6/K E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Charpy notched impact strength			ISO 179/1eA
Thermal properties Value Unit Test Standard Melting temperature, 18°F/min 252°C ISO 11357-1/-3 Temp. of deflection under load ISO 75-1/-2 260 psi 225°C °C 65 psi 243°C °C Vicat softening temperature, 90°F/h, 11 lbf 220°C ISO 306 Ball pressure test 235°C IEC 60309 Coeff. of linear therm. expansion, parallel 19°E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 ISO 11359-1/-2 normal 92°E-6/K FOK ISO 11359-1/-2 Normal, -40-23°C 68°E-6/K FOK ISO 11359-1/-2 Thermal conductivity of melt 0.24°W/(m/K) - Spec. heat capacity of melt 0.24°W/(m/K) - Spec. heat capacity of melt 1720°J/(kg/K) - RTI, electrical UL 746B 15mil 155°C C 30mil 155°C C		10	kJ/m²	
Melting temperature, 18°F/min 252 °C ISO 11357-1/-3 Temp. of deflection under load ISO 75-1/-2 260 psi 225 °C 65 psi 65 psi 243 °C Vicat softening temperature, 90°F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K Normal, -40-23°C 68 E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) Spec. heat capacity of melt 1720 J/(kg K) Fff. thermal diffusivity 1.1E-7 m²/s RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	-22°F	9	kJ/m²	
Melting temperature, 18° F/min 252 °C ISO 11357-1/-3 Temp. of deflection under load ISO 75-1/-2 260 psi 225 °C 65 psi 65 psi 243 °C Vicat softening temperature, 90° F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K Normal, -40-23°C 68 E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) Spec. heat capacity of melt 1720 J/(kg K) Fff. thermal diffusivity 1.1E-7 m²/s RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Thermal properties	Value	Unit	Test Standard
Temp. of deflection under load ISO 75-1/-2 260 psi 225 °C 65 psi 243 °C Vicat softening temperature, 90°F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K F-6/K Normal, -40-23°C 68 E-6/K F-6/K Parallel, -40-23°C 22 E-6/K F-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C		252	°C	ISO 11357-1/-3
65 psi 243 °C Vicat softening temperature, 90°F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K Normal, -40-23°C 68 E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C				ISO 75-1/-2
Vicat softening temperature, 90°F/h, 11 lbf 220 °C ISO 306 Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K Normal, -40-23°C 68 E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	260 psi	225	°C	
Ball pressure test 235 °C IEC 60309 Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K Normal, -40-23°C 68 E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	65 psi	243	°C	
Coeff. of linear therm. expansion, parallel 19 E-6/K ISO 11359-1/-2 Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K Normal, -40-23°C 68 E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) Spec. heat capacity of melt 1720 J/(kg K) Eff. thermal diffusivity 1.1E-7 m²/s RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Vicat softening temperature, 90°F/h, 11 lbf	220	°C	ISO 306
Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K Normal, -40-23°C 68 E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Ball pressure test	235	°C	IEC 60309
Coeff. of linear therm. expansion ISO 11359-1/-2 normal 92 E-6/K Normal, -40-23°C 68 E-6/K Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Coeff. of linear therm. expansion, parallel	19	E-6/K	ISO 11359-1/-2
Normal, -40-23 ° C 68 E-6/K Parallel, -40-23 ° C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Coeff. of linear therm. expansion			ISO 11359-1/-2
Parallel, -40-23°C 22 E-6/K Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	normal	92	E-6/K	
Thermal conductivity of melt 0.24 W/(m K) - Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Normal, -40-23°C	68	E-6/K	
Spec. heat capacity of melt 1720 J/(kg K) - Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Parallel, -40-23°C	22	E-6/K	
Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C	Thermal conductivity of melt	0.24	W/(m K)	-
Eff. thermal diffusivity 1.1E-7 m²/s - RTI, electrical UL 746B 15mil 155 °C 30mil 155 °C		1720	J/(kg K)	-
15mil 155 °C 30mil 155 °C				-
30mil 155 °C	RTI, electrical			UL 746B
		155	°C	
60mil 155 °C	30mil	155	°C	
	60mil	155	°C	
120mil 155 °C				

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RTI, impact			UL 746B
15mil	155	°C	
30mil	155	°C	
60mil	155	°C	
120mil	155	°Č	
RTI, strength			UL 746B
15mil	155	°C	01.100
30mil	155	°Č	
60mil	155	°C	
120mil	155	°C	
Flammability	Value		Test Standard
Burning Behav. at 60mil nom. thickn.		class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
		class	IEC 60695-11-10
Burning Behav. at thickness h			
Thickness tested	0.35	mm	IEC 60695-11-10
UL recognition	yes		UL 94
Burning Behav. 5V at thickness h		class	IEC 60695-11-20
Thickness tested	1.5	mm	IEC 60695-11-20
UL recognition	,	-	UL 94
Oxygen index	33	%	ISO 4589-1/-2
Glow Wire Flammability Index			IEC 60695-2-12
30mil	960	°C	
40mil	960	°C	
80mil	960	°C	
120mil	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
30mil	800	°C	
40mil	800	°C	
60mil	800	°C	
80mil	850	°C	
120mil	925	°Č	
FMVSS Class		-	ISO 3795 (FMVSS 302)
Electrical properties	Value	Unit	Test Standard
Relative permittivity	ratae	Offic	IEC 62631-2-1
100Hz	4.8	_	120 02031 2 1
1MHz	4.3		
Dissipation factor	7.3		IEC 62631-2-1
100Hz	70	E-4	IEC 02031-2-1
1MHz	126		
			IEC 42424-2-4
Volume resistivity	>1E13		IEC 62631-3-1
Surface resistivity	1E14		IEC 62631-3-2
Electric strength	39	kV/mm	IEC 60243-1
Comparative tracking index			
Comparative tracking index	200	-	IEC 60112
CTI, 23°C		PLC	UL 746A
Other properties	Value		Test Standard
Humidity absorption, 80mil	0.15		Sim. to ISO 62
Water absorption, 80mil	0.75		Sim. to ISO 62
Density	1680	kg/m³	ISO 1183
Injection	Value	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	≥120	°C	-
Drying Time, Dehumidified Dryer	4 - 6		-
Processing Moisture Content	≤0.02 ^[1]	%	-
Melt Temperature Optimum	280	°C	-
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Min. melt temperature	270	°C	-	
Max. melt temperature	290	°C	-	
Max. screw tangential speed	0.2	m/s	-	
Mold Temperature Optimum	110	°C	-	
Min. mold temperature	100	°C	-	
Max. mold temperature	120 ^[2]	°C	-	
Hold pressure range	≥80	MPa	-	
Hold pressure time	4	s/mm	-	
Back pressure	As low as possible		-	
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 Molding 		
Delivery form	• Pellets		
Additives	Release agent		
Regional Availability	North AmericaEurope	Asia PacificSouth and Central America	Near East/AfricaGlobal

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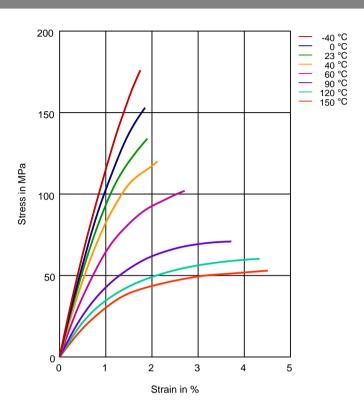
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Diagrams

Stress-strain



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Europe/Middle East/Africa

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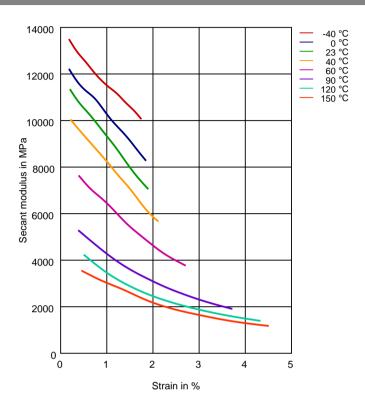
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Secant modulus-strain



Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

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