DuPont™ Rynite® FR530 NC010

THERMOPLASTIC POLYESTER RESIN

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.

General information	Value	Unit	Test Standard
Resin Identification	PET-GF30FR(17)	-	ISO 1043
Part Marking Code	PET-GF30FR(17)	-	ISO 11469
Rheological properties	**Value**	**Unit**	**Test Standard**
Molding shrinkage, parallel	0.2	%	ISO 294-4, 2577
Molding shrinkage, normal	0.8	%	ISO 294-4, 2577
Mechanical properties	**Value**	**Unit**	**Test Standard**
Tensile Modulus	11500	MPa	ISO 527-1/-2
Stress at break	135	MPa	ISO 527-1/-2
Strain at break	2	%	ISO 527-1/-2
Flexural Modulus	10500	MPa	ISO 178
Tensile creep modulus			ISO 899-1
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
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	
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	
60mil	155	°C	
120mil	155	°C	

To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.

North America **Asia Pacific** **Europe/Middle East/Africa**

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RTI, impact			UL 746B
15mil	155	°C	
30mil	155	°C	
60mil	155	°C	
120mil	155	°C	
RTI, strength			UL 746B
15mil	155	°C	
30mil	155	°C	
60mil	155	°C	
120mil	155	°C	
Flammability	**Value**	**Unit**	**Test Standard**
Burning Behav. at 60mil nom. thickn.	V-0	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.35	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. 5V at thickness h	5VA	class	IEC 60695-11-20
Thickness tested	1.5	mm	IEC 60695-11-20
UL recognition	yes	-	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	°C	
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)
Electrical properties	**Value**	**Unit**	**Test Standard**
Relative permittivity			IEC 62631-2-1
100Hz	4.8	-	
1MHz	4.3	-	
Dissipation factor			IEC 62631-2-1
100Hz	70	E-4	
1MHz	126	E-4	
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	1E14	Ohm	IEC 62631-3-2
Electric strength	39	kV/mm	IEC 60243-1
Comparative tracking index			
Comparative tracking index	200	-	IEC 60112
CTI, 23°C	2	PLC	UL 746A
Other properties	**Value**	**Unit**	**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	h	-
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 America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

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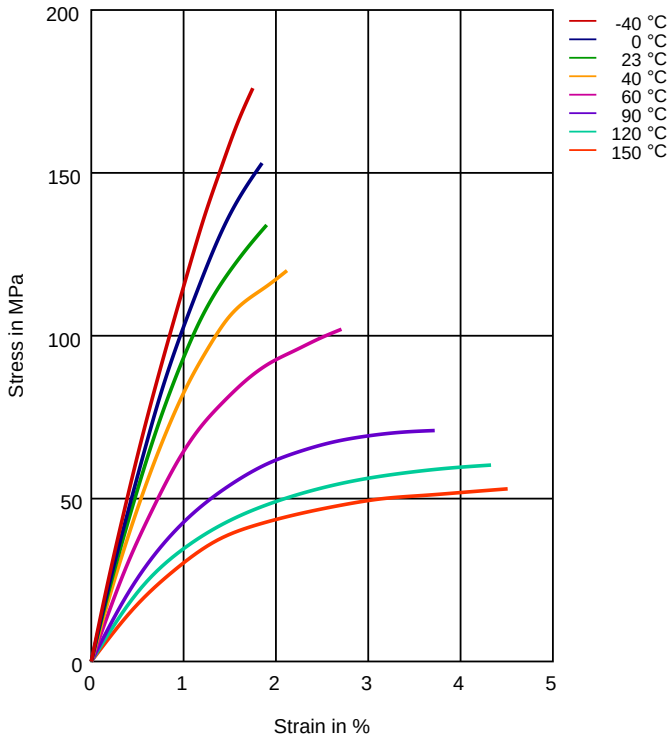
Diagrams

Stress-strain



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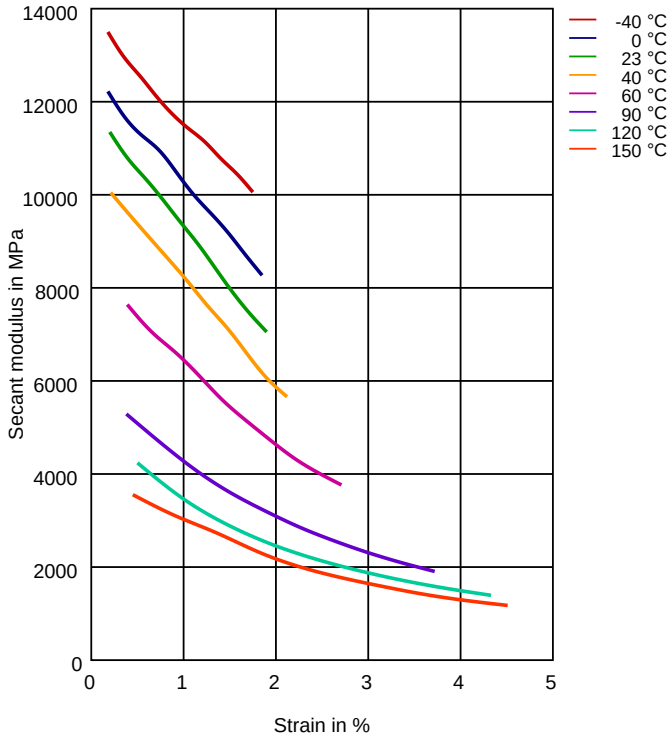
Secant modulus-strain



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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