



# Rynite® PET

thermoplastic polyester resin

## Rynite® FR330 NC010

Rynite® FR330 NC010 is a flame retardant, 30% glass reinforced modified polyethylene terephthalate. Recognized as UL94V-0 at 0.8mm(0.03in). Has a 140C temp. index. Excellent balance of electrical and mechanical properties. High temp. resistance and flow.

Property	Test Method	Units	Value
<b>Mechanical</b>			
Tensile Strength	ASTM D 638	MPa (kpsi)	
-40C (-40F)			193 (28.0)
23C (73F)			138 (20.0)
90C (194F)			72.4 (10.5)
150C (300F)			44.8 (6.5)
Elongation at Break	ASTM D 638	%	
-40C (-40F)			1.9
23C (73F)			2.1
90C (194F)			3.5
150C (300F)			4.0
Tensile Modulus	ASTM D 638	MPa (kpsi)	
-40C (-40F)			12500 (1810)
23C (73F)			11000 (1590)
90C (194F)			5580 (809)
150C (300F)			3890 (564)
Shear Strength	ASTM D 732	MPa (kpsi)	60.0 (8.7)
Poisson's Ratio			0.40
Flexural Modulus	ASTM D 790	MPa (kpsi)	
-40C (-40F)			11000 (1600)
23C (73F)			10300 (1500)
90C (194F)			4650 (674)
150C (300F)			2650 (384)

Contact DuPont for MSDS, general guides and/or additional information about ventilation, handling, purging, drying, etc.

Mechanical properties measured at 23°C (73°F) unless otherwise stated.

Shrinkage based on 76 X 127mm (3 X 5in) end-gated plaques.

970114TB11

The data listed here fall within the normal range of product properties but they should not be used to establish specification limits nor used alone as the basis of design.

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CAUTION: Do not use in medical applications involving permanent implantation in the human body.

For other medical applications, see "DuPont Medical Caution Statement", H-50102.

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Property	Test Method	Units	Value
<b>Mechanical</b>			
Flexural Strength	ASTM D 790	MPa (kpsi)	
-40C (-40F)			262 (38.0)
23C (73F)			200 (29.0)
90C (194F)			107 (15.5)
150C (300F)			69.0 (10.0)
Compressive Strength	ASTM D 695	MPa (kpsi)	200 (29.0)
Deformation Under Load	ASTM D 621	%	
23C (73F), 27.6MPa (4000psi)			0.3
50C (122F), 27.6MPa (4000psi)			1.7
Flexural Fatigue	ASTM D 671	MPa (kpsi)	
23C (73F), Cycles 10E6			41.3 (6.0)
Flexural Creep Strain	ASTM D 2990	%	
23C (73F), 27.6MPa (4000psi)			0.37
60C (140F), 27.6MPa (4000psi)			0.87
125C (257F), 27.6MPa (4000psi)			1.59
Izod Impact	ASTM D 256	J/m (ft lb/in)	
-40C (-40F)			85 (1.6)
23C (73F)			91 (1.7)
Unnotched Impact	ASTM D 4812	J/m (ft lb/in)	
-40C (-40F)			535 (10.0)
23C (73F)			695 (13.0)
<b>Thermal</b>			
Heat Deflection Temperature	ASTM D 648	°C (°F)	
0.45MPa (66psi)			247 (477)
1.8MPa (264psi)			222 (432)
CLTE, Flow	ASTM E 831	E-4/K (E-4/F)	
-40 to 23C (-40 to 73F)			0.21 (0.12)
23 to 55C (73 to 130F)			0.16 (0.09)
55 to 160C (163 to 320F)			0.06 (0.03)
CLTE, Transverse	ASTM E 831	E-4/K (E-4/F)	
-40 to 23C (-40 to 73F)			0.62 (0.34)
23 to 55C (73 to 130F)			0.76 (0.42)
55 to 160C (163 to 320F)			0.72 (0.40)
Melting Point	ASTM D 3418	°C (°F)	254 (489)
Thermal Conductivity	ASTM C 177	W/m K (Btu in/h ft <sup>2</sup> F)	0.25 (1.7)
<b>Electrical</b>			
Surface Resistivity	ASTM D 257	ohm	1 E13
Volume Resistivity	ASTM D 257	ohm cm	1 E15
Dielectric Strength, Short Time	ASTM D 149	kV/mm (V/mil)	
23C (73F), 500V/s, in oil, 1.6mm (0.062in)			25.0 (635)
23C (73F), 500V/s, in oil, 3.2mm (0.125in)			18.0 (460)
95C (200F), 500V/s, in oil, 1.6mm (0.062in)			23.5 (600)
95C (200F), 500V/s, in oil, 3.2mm (0.125in)			18.0 (460)
150C (300F), 500V/s, in oil, 1.6mm (0.062in)			13.0 (330)
150C (300F), 500V/s, in oil, 3.2mm (0.125in)			9.0 (230)

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<b>Electrical</b>			
Dielectric Strength, Step by Step 3.2mm (0.125in)	ASTM D 149	kV/mm (V/mil)	16.0 (405)
Dielectric Constant	ASTM D 150		
1E3 Hz			3.3
1E6 Hz			3.3
Dissipation Factor	ASTM D 150		
1E3 Hz			0.005
1E6 Hz			0.014
Arc Resistance	ASTM D 495	s	60-120
CTI	UL 746A	V	175-250
<b>Flammability</b>			
UL94 Rating at Min. Thickness	UL94		V-0
UL94 Min. Thickness Tested	UL94	mm (in)	0.8 (0.032)
UL94 5V Rating	UL94		5V
UL94 5V Min. Thickness Tested	UL94	mm (in)	1.5 (0.06)
Limited Oxygen Index	ASTM D 2863	%	29
High Amperage Arc Ignition Resistance	UL 746A	arcs	60-120
High Voltage Arc Tracking Rate		mm/min	80-150
Hot Wire Ignition	UL 746A	s	>120
<b>Temperature Index</b>			
Temperature Index, Electrical 0.81mm (0.032in)	UL 746B	°C	140
Temperature Index, Mechanical with Impact 0.81mm (0.032in)	UL 746B	°C	140
Temperature Index, Mechanical without Impact 0.81mm (0.032in)	UL 746B	°C	140
<b>Other</b>			
Specific Gravity	ASTM D 792		1.65
Hardness, Rockwell	ASTM D 785		
Scale M			95
Scale R			120
Coefficient of Friction	ASTM D 1894		
Self, static			0.24
Steel, static			0.18
Taber Abrasion		mg	
CS-17 Wheel, 1kg, 1000 cycles			88
Water Absorption	ASTM D 570	%	
50%RH,23C,24h			0.07
Mold Shrinkage		%	
Flow, 1.57mm (0.062in)			0.16
Flow, 3.2mm (0.125in)			0.25
Transverse, 1.57mm (0.062in)			0.69
Transverse, 3.2mm (0.125in)			0.75
<b>Processing</b>			
Melt Temperature Range		°C (°F)	270-290 (520-555)
Mold Temperature Range		°C (°F)	>95 (>205)
Drying Time, Dehumidified Dryer		h	4
Drying Temperature		°C (°F)	120 (250)
Processing Moisture Content		%	<0.02

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