



# Rynite<sup>®</sup> PET

thermoplastic polyester resin

## Rynite<sup>®</sup> 545 NC010

Rynite<sup>®</sup> 545 NC010 is a 45% glass reinforced modified polyethylene terephthalate with greater strength and stiffness, excellent dimensional stability, and creep resistance.

Property	Test Method	Units	Value
<b>Mechanical</b>			
Tensile Strength	ASTM D 638	MPa (kpsi)	
-40C (-40F)			242 (35.1)
23C (73F)			186 (27.0)
90C (194F)			91.7 (13.3)
150C (300F)			66.9 (9.6)
Elongation at Break	ASTM D 638	%	
-40C (-40F)			1.7
23C (73F)			2.1
90C (194F)			4.5
150C (300F)			6.0
Tensile Modulus	ASTM D 638	MPa (kpsi)	
-40C (-40F)			16400 (2380)
23C (73F)			15500 (2250)
90C (194F)			8410 (1220)
150C (300F)			5100 (740)
Shear Strength	ASTM D 732	MPa (kpsi)	86.5 (12.5)
Poisson's Ratio			0.39
Flexural Modulus	ASTM D 790	MPa (kpsi)	
-40C (-40F)			17900 (2600)
23C (73F)			15200 (2200)
90C (194F)			5510 (800)
150C (300F)			4000 (580)
Flexural Strength	ASTM D 790	MPa (kpsi)	
-40C (-40F)			324 (47.0)
23C (73F)			283 (41.0)
90C (194F)			141 (20.5)
150C (300F)			96.5 (14.0)

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.

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

Shrinkage generated per ISO 294-4 based on 60 X 60mm end-gated plaques or ASTM D 955 based on 76 X 127mm (3 X 5in) end-gated plaques.

Rynite<sup>®</sup> is a DuPont registered trademark.

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# Product Information

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<b>Mechanical</b>			
Compressive Strength	ASTM D 695	MPa (kpsi)	235 (34.0)
Deformation Under Load	ASTM D 621	%	
23C (73F), 27.6MPa (4000psi)			0.4
50C (122F), 27.6MPa (4000psi)			1.2
Flexural Fatigue	ASTM D 671	MPa (kpsi)	
Cycles 10E6			51.0 (7.4)
Flexural Creep Strain	ASTM D 2990	%	
23C (73F), 27.6MPa (4000psi)			0.32
60C (140F), 27.6MPa (4000psi)			0.70
125C (257F), 27.6MPa (4000psi)			1.14
Izod Impact	ASTM D 256	J/m (ft lb/in)	
-40C (-40F)			123 (2.3)
23C (73F)			117 (2.2)
Unnotched Impact	ASTM D 4812	J/m (ft lb/in)	
-40C (-40F)			800 (15.0)
23C (73F)			1000 (19.0)
<b>Thermal</b>			
Heat Deflection Temperature	ASTM D 648	°C (°F)	
0.45MPa (66psi)			248 (478)
1.8MPa (264psi)			226 (440)
CLTE, Parallel	ASTM E 831	E-4/C (E-4/F)	
-40 - 23C (-40 - 73F)			0.18 (0.10)
23 - 55C (73 - 130F)			0.13 (0.07)
55 - 160C (130 - 320F)			0.05 (0.03)
CLTE, Normal	ASTM E 831	E-4/C (E-4/F)	
-40 - 23C (-40 - 73F)			0.54 (0.30)
23 - 55C (73 - 130F)			0.71 (0.39)
55 - 160C (130 - 320F)			0.95 (0.53)
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)	0.32 (2.2)

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Property	Test Method	Units	Value
<b>Electrical</b>			
Surface Resistivity	ASTM D 257	ohm	1 E14
Volume Resistivity	ASTM D 257	ohm cm	1 E15
Dielectric Strength, Short Time	ASTM D 149	kV/mm (V/mil)	
23C (73F), 500 V/s, in oil, 1.6mm (0.062in)			24.5 (620)
23C (73F), 500 V/s, in oil, 3.2mm (0.126in)			20.0 (510)
95C (200F), 500 V/s, in oil, 1.6mm (0.062in)			22.5 (570)
95C (200F), 500 V/s, in oil, 3.2mm (0.126in)			17.5 (445)
150C (300F), 500 V/s, in oil, 1.6mm (0.062in)			16.0 (405)
150C (300F), 500 V/s, in oil, 3.2mm (0.126in)			12.5 (320)
Dielectric Strength, Step by Step 3.2mm (0.126in)	ASTM D 149	kV/mm (V/mil)	17.5 (445)
Dielectric Constant	ASTM D 150		
1E3 Hz			4.0
1E6 Hz			3.9
Dissipation Factor	ASTM D 150		
1E3 Hz			0.005
1E6 Hz			0.011
Arc Resistance	ASTM D 495	s	120-180
CTI	UL 746A	V	250-400
<b>Flammability</b>			
Rating @ Thickness	UL94		HB
Thickness Tested	UL94	mm	0.75
Limited Oxygen Index	ASTM D 2863	%	20
High Amperage Arc Ignition Resistance	UL 746A	arcs	60-120
High Voltage Arc Tracking Rate		mm/min	10-25
Hot Wire Ignition	UL 746A	s	>120
<b>Temperature Index</b>			
RTI, Electrical 0.81mm	UL 746B	°C	140
RTI, Mechanical with Impact 0.81mm	UL 746B	°C	140
RTI, Mechanical without Impact 0.81mm	UL 746B	°C	140

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<b>Other</b>			
Specific Gravity	ASTM D 792		1.70
Hardness, Rockwell	ASTM D 785		
Scale M			95
Scale R			120
Coefficient of Friction	ASTM D 1894		
Self, static			0.17
Steel, static			0.2
Taber Abrasion		mg	
CS-17 Wheel, 1kg, 1000 cycles			44
Water Absorption	ASTM D 570	%	
50%RH,23C,24h			0.04
Mold Shrinkage		%	
Flow, 1.57mm (0.062in)			0.15
Flow, 3.2mm (0.126in)			0.20
Transverse, 1.57mm (0.062in)			0.67
Transverse, 3.2mm (0.126in)			0.75
<b>Processing</b>			
Melt Temperature Range		°C (°F)	280-300 (535-570)
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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