



# Rynite® PET

thermoplastic polyester resin

## Rynite® 415HP NC010

Rynite® 415HP NC010 is a 15% glass reinforced modified polyethylene terephthalate with improved for easy, fast processing over a broad molding range with excellent balance of strength, stiffness, and temperature resistance.

Property	Test Method	Units	Value
<b>Mechanical</b>			
Tensile Strength	ASTM D 638	MPa (kpsi)	
-40°C (-40°F)			145 (21.0)
23°C (73°F)			79.0 (11.5)
90°C (194°F)			44.8 (6.5)
150°C (300°F)			35.9 (5.2)
Elongation at Break	ASTM D 638	%	
-40°C (-40°F)			3.0
23°C (73°F)			6.0
90°C (194°F)			13
150°C (300°F)			14
Tensile Modulus	ASTM D 638	MPa (kpsi)	
-40°C (-40°F)			6400 (928)
23°C (73°F)			4220 (612)
90°C (194°F)			1830 (265)
150°C (300°F)			1690 (245)
Shear Strength	ASTM D 732	MPa (kpsi)	40 (5.8)
Poisson's Ratio			0.49
Flexural Modulus	ASTM D 790	MPa (kpsi)	
-40°C (-40°F)			5860 (850)
23°C (73°F)			3600 (525)
90°C (194°F)			1280 (185)
150°C (300°F)			1100 (155)

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

ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.

Test temperatures are 23°C 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.

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001003/001108

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<b>Mechanical</b>			
Flexural Strength	ASTM D 790	MPa (kpsi)	
-40°C (-40°F)			210 (30.5)
23°C (73°F)			93.1 (13.5)
90°C (194°F)			48.3 (7.0)
150°C (300°F)			34.5 (5.0)
Compressive Strength	ASTM D 695	MPa (kpsi)	93 (13.5)
Deformation Under Load	ASTM D 621	%	
23°C (73°F), 27.6MPa (4000psi)			2.2
50°C (122°F), 27.6MPa (4000psi)			4.4
Flexural Fatigue	ASTM D 671	MPa (kpsi)	
Cycles 10E6			20.7 (3)
Flexural Creep Strain	ASTM D 2990	%	
23°C (73°F), 27.6MPa (4000psi)			1.98
60°C (140°F), 27.6MPa (4000psi)			2.94
Izod Impact	ASTM D 256	J/m (ft lb/in)	
-40°C (-40°F)			69 (1.3)
23°C (73°F)			133 (2.5)
Unnotched Impact	ASTM D 4812	J/m (ft lb/in)	
-40°C (-40°F)			640 (12.0)
23°C (73°F)			855 (16.0)
<b>Thermal</b>			
Heat Deflection Temperature	ASTM D 648	°C (°F)	
0.45MPa (66psi)			235 (454)
1.8MPa (264psi)			207 (405)
CLTE, Parallel	ASTM E 831	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.40 (0.22)
23 - 55°C (73 - 130°F)			0.20 (0.11)
23 - 55°C (73 - 130°F), 2.0mm			0.23 (0.13)
55 - 160°C (130 - 320°F)			0.32 (0.18)
CLTE, Normal	ASTM E 831	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.98 (0.54)
23 - 55°C (73 - 130°F)			1.17 (0.65)
23 - 55°C (73 - 130°F), 2.0mm			1.3 (0.72)
55 - 160°C (130 - 320°F)			1.09 (0.61)
Melting Point	ASTM D 3418	°C (°F)	250 (482)
Thermal Conductivity	ASTM C 177	W/m K (Btu in/h ft <sup>2</sup> F)	0.26 (1.8)

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Property	Test Method	Units	Value
<b>Electrical</b>			
Surface Resistivity	ASTM D 257	ohm	1 E13
Volume Resistivity	ASTM D 257	ohm cm	1 E13
Dielectric Strength, Short Time	ASTM D 149	kV/mm (V/mil)	
23°C (73°F), 500 V/s, in oil, 1.6mm (0.062in)			24.0 (610)
23°C (73°F), 500 V/s, in oil, 3.2mm (0.126in)			18.0 (460)
95°C (200°F), 500 V/s, in oil, 1.6mm (0.062in)			15.5 (395)
95°C (200°F), 500 V/s, in oil, 3.2mm (0.126in)			11.0 (280)
150°C (300°F), 500 V/s, in oil, 1.6mm (0.062in)			8.5 (215)
150°C (300°F), 500 V/s, in oil, 3.2mm (0.126in)			6.5 (170)
Dielectric Strength, Step by Step 3.2mm (0.126in)	ASTM D 149	kV/mm (V/mil)	16.5 (420)
Dielectric Constant	ASTM D 150		
1E3 Hz			3.9
1E6 Hz			3.7
Dissipation Factor	ASTM D 150		
1E3 Hz			0.019
1E6 Hz			0.022
Arc Resistance	ASTM D 495	s	60-120
CTI	UL 746A	V	250-400
<b>Flammability</b>			
Other Thickness Rating	UL94		HB
Other Thickness Tested	UL94	mm	0.75
Oxygen Index	ASTM D 2863	%	19
High Amperage Arc Ignition Resistance	UL 746A	arcs	>120
High Voltage Arc Tracking Rate		mm/min	25-80
Hot Wire Ignition	UL 746A	s	>120
<b>Temperature Index</b>			
RTI, Electrical	UL 746B	°C	
0.81mm			140
3.0mm			140
RTI, Mechanical with Impact	UL 746B	°C	
0.81mm			120
3.0mm			120
RTI, Mechanical without Impact	UL 746B	°C	
0.81mm			140
3.0mm			140

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<b>Other</b>			
Specific Gravity	ASTM D 792		1.39
Hardness, Rockwell	ASTM D 785		
Scale M			55
Scale R			110
Coefficient of Friction	ASTM D 1894		
Self			0.42
Self, static			0.42
Steel			0.27
Steel, static			0.27
Taber Abrasion	ASTM D 1044	mg	
CS-17 Wheel, 1kg, 1000 cycles			35
Water Absorption	ASTM D 570	%	
50%RH,23°C,24h			0.24
Mold Shrinkage		%	
Flow, 1.57mm (0.062in)			0.24
Flow, 3.2mm (0.126in)			0.40
Transverse, 1.57mm (0.062in)			0.67
Transverse, 3.2mm (0.126in)			0.95
<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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