

DuPont™ Rynite® PET

thermoplastic polyester resin

Rynite® 415HP NC010

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

Property	Test Method	Units	Value
Identification			
Resin Identification	ISO 1043		PET-IGF15
Part Marking Code	ISO 11469		>PET-IGF15<
Mechanical			
Stress at Break	ISO 527	MPa (kpsi)	79 (11.5)
Strain at Break	ISO 527	%	5
Tensile Modulus	ISO 527	MPa (kpsi)	4700 (682)
Shear Strength	ASTM D 732	MPa (kpsi)	40 (5.8)
Poissons Ratio			0.49
Flexural Modulus	ISO 178	MPa (kpsi)	
-40°C (-40°F)			5900 (855)
23°C (73°F)			3550 (515)
93°C (200°F)			1300 (188)
150°C (300°F)			1100 (159)
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

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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Mechanical			
Flexural Fatigue Cycles 10E6	ASTM D 671	MPa (kpsi)	20.7 (3)
Flexural Creep Strain 23°C (73°F), 27.6MPa (4000psi)	ASTM D 2990	%	1.98
60°C (140°F), 27.6MPa (4000psi)			2.94
Notched Izod Impact Strength -30°C (-22°F)	ISO 180/1A	kJ/m ²	7.7
23°C (73°F)			13
Izod Impact -40°C (-40°F)	ASTM D 256	J/m (ft lb/in)	69 (1.3)
23°C (73°F)			133 (2.5)
Unnotched Impact -40°C (-40°F)	ASTM D 4812	J/m (ft lb/in)	640 (12.0)
23°C (73°F)			855 (16.0)
Notched Charpy Impact Strength -30°C (-22°F)	ISO 179/1eA	kJ/m ²	8
23°C (73°F)			11
Unnotched Charpy Impact Strength -30°C (-22°F)	ISO 179/1eU	kJ/m ²	25
23°C (73°F)			55
Thermal			
Deflection Temperature 0.45MPa	ISO 75-1/-2	°C (°F)	238 (460)
1.80MPa			207 (405)
Melting Temperature 10°C/min	ISO 11357-1/-3	°C (°F)	250 (482)

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Thermal			
CLTE, Parallel	ISO 11359-1/-2	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	ISO 11359-1/-2	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)
Thermal Conductivity	ASTM C 177	W/m K (Btu in/h ft² F)	0.26 (1.8)
Vicat Softening Temperature	ISO 306	°C (°F)	
50N			206 (403)
Electrical			
Surface Resistivity	IEC 60093	ohm	1E13
Volume Resistivity	IEC 60093	ohm m	1E11
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 (0.125in)			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 (0.125in)			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 (0.125in)			6.5 (170)
Dielectric Strength, Step by Step	ASTM D 149	kV/mm (V/mil)	
3.2mm (0.125in)			16.5 (420)
Dielectric Constant	ASTM D 150		
1E3 Hz		3.9	
1E6 Hz		3.7	

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Property	Test Method	Units	Value
Electrical			
Dissipation Factor	ASTM D 150		
1E3 Hz			0.019
1E6 Hz			0.022
Arc Resistance	ASTM D 495	s	60-120
Arc Resistance	UL 746A	s	
Plate 4mm			95
CTI	UL 746A	V	
3.0mm			275
Flammability			
Flammability Classification	IEC 60695-11-10		
0.75mm			HB
Flammability Classification	UL94		
0.75mm			HB
Oxygen Index	ASTM D 2863	%	19
Oxygen Index	ISO 4589-1/-2	%	19
Glow Wire Flammability Index	IEC 60695-2-12	°C	
0.75mm			675
1.5mm			675
3.0mm			750
Glow Wire Ignition Temperature	IEC 60695-2-13	°C	
0.75mm			700
1.5mm			700
3.0mm			775
High Amperage Arc Ignition Resistance	UL 746A	arcs	
0.75mm			65
1.5mm			68
3.0mm			197
High Voltage Arc Tracking Rate		mm/min	25-80

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Flammability			
Hot Wire Ignition	UL 746A	s	
0.75mm			22
1.5mm			40
3.0mm			120
Temperature Index			
RTI, Electrical	UL 746B	°C	
0.75mm			140
RTI, Impact	UL 746B	°C	
0.75mm			120
RTI, Strength	UL 746B	°C	
0.75mm			140
Other			
Specific Gravity	ASTM D 792		1.39
Density	ISO 1183	kg/m ³ (g/cm ³)	1390 (1.39)
Hardness, Rockwell	ASTM D 785		
Scale M			55
Scale R			110
Hardness, Rockwell	ISO 2039/2		
Scale M			58
Scale R			111
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

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Other			
Equilibrium 50%RH	ISO 294-4	%	0.25
Saturation, immersed			2.5
Molding Shrinkage			
Normal, 2.0mm			0.85
Normal, Annealed			1.2
Parallel, 2.0mm			0.35
Parallel, Annealed			0.45
Mold Shrinkage			
Flow, 1.57mm (0.062in)			0.24
Flow, 3.2mm (0.125in)			0.40
Transverse, 1.57mm (0.062in)			0.67
Transverse, 3.2mm (0.125in)			0.95
Processing			
Melt Temperature Range		°C (°F)	270-290 (520-555)
Melt Temperature Optimum		°C (°F)	280 (535)
Mold Temperature Range		°C (°F)	>95 (>205)
Mold Temperature Optimum		°C (°F)	110 (230)
Drying Time, Dehumidified Dryer		h	4
Drying Temperature		°C (°F)	120 (250)
Processing Moisture Content		%	<0.02
Snake Flow		mm	
90MPa, 5x0.30mm			14
90MPa, 5x0.50mm			48
90MPa, 5x0.75mm			100
90MPa, 5x1.00mm			159

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