



Rynite® PET

thermoplastic polyester resin

Rynite® FR543 NC010

Rynite® FR543 NC010 is a flame retardant, 43% glass reinforced polyethylene terephthalate. Has a 155C temperature index that is equivalent to many thermosets. Recognized by UL as UL94V-0 at 0.8mm(0.03in).

Property	Test Method	Units	Value
Mechanical			
Tensile Strength	ASTM D 638	MPa (kpsi)	
-40C (-40F)			210 (30.5)
23C (73F)			172 (25.0)
90C (194F)			86.5 (12.5)
150C (300F)			55.2 (8.0)
Elongation at Break	ASTM D 638	%	
-40C (-40F)			1.7
23C (73F)			1.8
90C (194F)			4.3
150C (300F)			5.5
Tensile Modulus	ASTM D 638	MPa (kpsi)	
-40C (-40F)			17100 (2480)
23C (73F)			16500 (2390)
90C (194F)			8210 (1190)
150C (300F)			5050 (732)
Shear Strength	ASTM D 732	MPa (kpsi)	58.6 (8.5)
Poisson's Ratio			0.38
Flexural Modulus	ASTM D 790	MPa (kpsi)	
-40C (-40F)			15200 (2200)
23C (73F)			14500 (2100)
90C (194F)			6890 (1000)
150C (300F)			2900 (450)

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.

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Property	Test Method	Units	Value
Mechanical			
Flexural Strength	ASTM D 790	MPa (kpsi)	
-40C (-40F)			310 (45.0)
23C (73F)			248 (36.0)
90C (194F)			138 (20.0)
150C (300F)			79.3 (11.5)
Compressive Strength	ASTM D 695	MPa (kpsi)	231 (33.5)
Deformation Under Load	ASTM D 621	%	
23C (73F), 27.6MPa (4000psi)			0.1
50C (122F), 27.6MPa (4000psi)			0.3
Flexural Fatigue	ASTM D 671	MPa (kpsi)	
Cycles 10E6			50.2 (7.3)
Flexural Creep Strain	ASTM D 2990	%	
23C (73F), 27.6MPa (4000psi)			0.37
60C (140F), 27.6MPa (4000psi)			0.63
125C (257F), 27.6MPa (4000psi)			1.39
Izod Impact	ASTM D 256	J/m (ft lb/in)	
-40C (-40F)			91 (1.7)
23C (73F)			96 (1.8)
Unnotched Impact	ASTM D 4812	J/m (ft lb/in)	
-40C (-40F)			510 (9.5)
23C (73F)			750 (14.0)
Thermal			
Heat Deflection Temperature	ASTM D 648	°C (°F)	
0.45MPa (66psi)			247 (477)
1.8MPa (264psi)			224 (435)
CLTE, Parallel	ASTM E 831	E-4/C (E-4/F)	
-40 - 23C (-40 - 73F)			0.16 (0.09)
23 - 55C (73 - 130F)			0.11 (0.06)
55 - 160C (130 - 320F)			0.07 (0.04)
CLTE, Normal	ASTM E 831	E-4/C (E-4/F)	
-40 - 23C (-40 - 73F)			0.55 (0.31)
23 - 55C (73 - 130F)			0.79 (0.44)
55 - 160C (130 - 320F)			0.96 (0.53)
Melting Point	ASTM D 3418	°C (°F)	254 (489)
Thermal Conductivity	ASTM C 177	W/m K (Btu in/h ft ² F)	0.22 (1.49)

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Property	Test Method	Units	Value
Electrical			
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), 500 V/s, in oil, 1.6mm (0.062in)			23.5 (600)
23C (73F), 500 V/s, in oil, 3.2mm (0.126in)			17.0 (430)
95C (200F), 500 V/s, in oil, 1.6mm (0.062in)			21.5 (550)
95C (200F), 500 V/s, in oil, 3.2mm (0.126in)			16.0 (405)
150C (300F), 500 V/s, in oil, 1.6mm (0.062in)			13.5 (340)
150C (300F), 500 V/s, in oil, 3.2mm (0.126in)			12.0 (300)
Dielectric Strength, Step by Step	ASTM D 149	kV/mm (V/mil)	
3.2mm (0.126in)			15.0 (380)
Dielectric Constant	ASTM D 150		
1E3 Hz			4.1
1E6 Hz			4.1
Dissipation Factor	ASTM D 150		
1E3 Hz			0.009
1E6 Hz			0.017
Arc Resistance	ASTM D 495	s	120-180
CTI	UL 746A	V	400-600
Flammability			
Rating @ 1.6mm Nominal	UL94		V-0
Thickness Tested	UL94	mm	0.75
5V Rating	UL94		5VA
5V Min. Thickness Tested	UL94	mm	1.5
Limited Oxygen Index	ASTM D 2863	%	35
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
Temperature Index			
RTI, Electrical	UL 746B	°C	
0.81mm			155
RTI, Mechanical with Impact	UL 746B	°C	
0.81mm			155
RTI, Mechanical without Impact	UL 746B	°C	
0.81mm			155

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Other			
Specific Gravity	ASTM D 792		1.79
Hardness, Rockwell	ASTM D 785		
Scale M			95
Scale R			120
Coefficient of Friction	ASTM D 1894		
Self, static			0.18
Steel, static			0.16
Taber Abrasion		mg	
CS-17 Wheel, 1kg, 1000 cycles			69
Water Absorption	ASTM D 570	%	
50%RH,23C,24h			0.06
Mold Shrinkage		%	
Flow, 1.57mm (0.062in)			0.13
Flow, 3.2mm (0.126in)			0.20
Transverse, 1.57mm (0.062in)			0.48
Transverse, 3.2mm (0.126in)			0.65
Processing			
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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