



Rynite® PET

thermoplastic polyester resin

Rynite® FR945 NC010

Rynite® FR945 NC010 is a flame retardant, 45% mineral/glass reinforced modified polyethylene terephthalate. Recognized by UL as UL94V-0 at 0.8mm(0.03in). Has a 150C temperature index. Low warpage, high stiffness, and economical price.

Property	Test Method	Units	Value
Mechanical			
Tensile Strength	ASTM D 638	MPa (kpsi)	
-40C (-40F)			139 (20.2)
23C (73F)			104 (15.1)
90C (194F)			51.0 (7.4)
150C (300F)			31.7 (4.6)
Elongation at Break	ASTM D 638	%	
-40C (-40F)			1.4
23C (73F)			1.4
90C (194F)			4.0
150C (300F)			5.0
Tensile Modulus	ASTM D 638	MPa (kpsi)	
-40C (-40F)			16400 (2380)
23C (73F)			12300 (1780)
90C (194F)			5900 (857)
150C (300F)			2450 (355)
Shear Strength	ASTM D 732	MPa (kpsi)	48.3 (7.0)
Poisson's Ratio			0.38
Flexural Modulus	ASTM D 790	MPa (kpsi)	
-40C (-40F)			14500 (2100)
23C (73F)			11700 (1690)
90C (194F)			4480 (650)
150C (300F)			2900 (420)

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)			210 (30.5)
23C (73F)			154 (22.3)
90C (194F)			95.2 (13.8)
150C (300F)			9.7 (9.69)
Compressive Strength	ASTM D 695	MPa (kpsi)	168 (24.4)
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			38.0 (5.5)
Flexural Creep Strain	ASTM D 2990	%	
23C (73F), 27.6MPa (4000psi)			0.46
60C (140F), 27.6MPa (4000psi)			0.87
125C (257F), 27.6MPa (4000psi)			1.83
Izod Impact	ASTM D 256	J/m (ft lb/in)	
-40C (-40F)			43 (0.8)
23C (73F)			48 (0.9)
Unnotched Impact	ASTM D 4812	J/m (ft lb/in)	
-40C (-40F)			285 (5.3)
23C (73F)			375 (7.0)
Thermal			
Heat Deflection Temperature	ASTM D 648	°C (°F)	
0.45MPa (66psi)			237 (459)
1.8MPa (264psi)			200 (392)
CLTE, Parallel	ASTM E 831	E-4/C (E-4/F)	
-40 - 23C (-40 - 73F)			0.17 (0.09)
23 - 55C (73 - 130F)			0.13 (0.07)
55 - 160C (130 - 320F)			0.03 (0.02)
CLTE, Normal	ASTM E 831	E-4/C (E-4/F)	
-40 - 23C (-40 - 73F)			0.49 (0.27)
23 - 55C (73 - 130F)			0.65 (0.36)
55 - 160C (130 - 320F)			0.82 (0.46)
Melting Point	ASTM D 3418	°C (°F)	250 (482)
Thermal Conductivity	ASTM C 177	W/m K (Btu in/h ft2 F)	2.4 (1.65)

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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)			24.5 (620)
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)			23.0 (585)
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)			13.0 (330)
150C (300F), 500 V/s, in oil, 3.2mm (0.126in)			10.5 (265)
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			4.0
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	250-400
Flammability			
Rating @ Thickness	UL94		V-0
Thickness Tested	UL94	mm	0.75
Limited Oxygen Index	ASTM D 2863	%	33
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			150
RTI, Mechanical with Impact	UL 746B	°C	
0.81mm			150
RTI, Mechanical without Impact	UL 746B	°C	
0.81mm			150

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Other			
Specific Gravity	ASTM D 792		1.85
Hardness, Rockwell	ASTM D 785		
Scale M			95
Scale R			120
Coefficient of Friction	ASTM D 1894		
Self, static			0.20
Steel, static			0.20
Taber Abrasion		mg	
CS-17 Wheel, 1kg, 1000 cycles			81
Water Absorption	ASTM D 570	%	
50%RH,23C,24h			0.05
Mold Shrinkage		%	
Flow, 1.57mm (0.062in)			0.22
Flow, 3.2mm (0.126in)			0.35
Transverse, 1.57mm (0.062in)			0.71
Transverse, 3.2mm (0.126in)			0.70
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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