Rynite® PET

thermoplastic polyester resin

Rynite® FR530 NC010

Rynite® FR530 NC010 is a flame retardant, 30% glass reinforced modified polyethylene terephthalate. Recognized by UL as UL94V-0 at 0.35mm(0.014in). Has a 150C temp. index. Outstanding balance of properties and excellent flow characteristics.

Property	Test Method	Units	Value
Mechanical			
Tensile Strength	ASTM D 638	MPa (kpsi)	
-40C (-40F)			193 (28.0)
23C (73F)			138 (20.0)
90C (194F)			72.4 (10.5)
150C (300F)			44.8 (6.5)
Elongation at Break	ASTM D 638	%	
-40C (-40F)			1.9
23C (73F)			2.1
90C (194F)			3.5
150C (300F)			4.0
Tensile Modulus	ASTM D 638	MPa (kpsi)	
-40C (-40F)			12500 (1810)
23C (73F)			11000 (1590)
90C (194F)			5580 (809)
150C (300F)			3890 (564)
Shear Strength	ASTM D 732	MPa (kpsi)	60.0 (8.7)
Poisson's Ratio			0.40
Flexural Modulus	ASTM D 790	MPa (kpsi)	
-40C (-40F)			11000 (1600)
23C (73F)			10300 (1500)
90C (194F)			4650 (674)
150C (300F)			2650 (384)

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 plagues 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)			262 (38.0)
23C (73F)			200 (29.0)
90C (194F)			107 (15.5)
150C (300F)			69.0 (10.0)
Compressive Strength	ASTM D 695	MPa (kpsi)	200 (29.0)
Deformation Under Load	ASTM D 621	%	
23C (73F), 27.6MPa (4000psi)			0.5
50C (122F), 27.6MPa (4000psi)			1.2
Flexural Fatigue	ASTM D 671	MPa (kpsi)	
Cycles 10E6			41.3 (6.0)
Flexural Creep Strain	ASTM D 2990	%	
23C (73F), 27.6MPa (4000psi)			0.46
60C (140F), 27.6MPa (4000psi)			1.01
125C (257F), 27.6MPa (4000psi)			1.86
Izod Impact	ASTM D 256	J/m (ft lb/in)	
-40C (-40F)			80 (1.5)
23C (73F)			91 (1.7)
Unnotched Impact	ASTM D 4812	J/m (ft lb/in)	
-40C (-40F)			535 (10.0)
23C (73F)			585 (11.0)
Thermal			
Heat Deflection Temperature	ASTM D 648	°C (°F)	
0.45MPa (66psi)			246 (475)
1.8MPa (264psi)			224 (435)
CLTE, Parallel	ASTM E 831	E-4/C (E-4/F)	
-40 - 23C (-40 - 73F)			0.22 (0.12)
23 - 55C (73 - 130F)			0.19 (0.11)
55 - 160C (130 - 320F)			0.10 (0.06)
CLTE, Normal	ASTM E 831	E-4/C (E-4/F)	
-40 - 23C (-40 - 73F)			0.68 (0.38)
23 - 55C (73 - 130F)			0.92 (0.51)
55 - 160C (130 - 320F)			0.98 (0.54)
Melting Point	ASTM D 3418	°C (°F)	254 (489)
Thermal Conductivity	ASTM C 177	W/m K (Btu in/h ft2 F)	0.25 (1.7)
Electrical			
Surface Resistivity	ASTM D 257	ohm	1 E14
Volume Resistivity	ASTM D 257	ohm cm	1 E15

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Property	Test Method	Units	Value
Electrical			
Dielectric Strength, Short Time	ASTM D 149	kV/mm (V/mil)	
23C (73F), 500 V/s, in oil, 1.6mm (0.062in)			25.0 (635)
23C (73F), 500 V/s, in oil, 3.2mm (0.126in)			18.0 (460)
95C (200F), 500 V/s, in oil, 1.6mm (0.062in)			23.5 (600)
95C (200F), 500 V/s, in oil, 3.2mm (0.126in)			18.0 (460)
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)			9.0 (230)
Dielectric Strength, Step by Step	ASTM D 149	kV/mm (V/mil)	
3.2mm (0.126in)			14.0 (355)
Dielectric Constant	ASTM D 150		
1E3 Hz			3.8
1E6 Hz			3.7
Dissipation Factor	ASTM D 150		
1E3 Hz			0.011
1E6 Hz			0.018
Arc Resistance	ASTM D 495	s	60-120
CTI	UL 746A	V	250-400
Flammability			
Rating @ Thickness	UL94		V-0
Thickness Tested	UL94	mm	0.35
5V Rating	UL94		5V
5V Min. Thickness Tested	UL94	mm	1.5
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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Property	Test Method	Units	Value
Other			
Specific Gravity	ASTM D 792		1.67
Hardness, Rockwell	ASTM D 785		
Scale M			95
Scale R			120
Coefficient of Friction	ASTM D 1894		
Self, static			0.18
Steel, static			0.19
Taber Abrasion		mg	
CS-17 Wheel, 1kg, 1000 cycles			38
Water Absorption	ASTM D 570	%	
50%RH,23C,24h			0.05
Mold Shrinkage		%	
Flow, 1.57mm (0.062in)			0.16
Flow, 3.2mm (0.126in)			0.25
Transverse, 1.57mm (0.062in)			0.68
Transverse, 3.2mm (0.126in)			0.75
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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