DuPont™ Rynite® PET

thermoplastic polyester resin

PRELIMINARY DATA

Rynite® FR515 NC010

Rynite® FR515 NC010 is a flame retardant 15% glass reinforced modified polyethylene terephthalate. Recognized by UL as UL94V-0 at 0.8mm(0.03in). Has a 140C temp index. Excellent balance of electrical and mechanical prop. High temp. resistance and flow.

Property	Test Method	Units	Value
Identification			
Resin Identification	ISO 1043		PET-GF15FR(17)
Part Marking Code	ISO 11469		>PET-GF15FR(17)<
Mechanical			
Stress at Break	ISO 527	MPa (kpsi)	
-40°C (-40°F)			132 (19.2)
23°C (73°F)			107 (15.5)
Strain at Break	ISO 527	%	
-40°C (-40°F)			2.3
23°C (73°F)			2.6
Tensile Modulus	ISO 527	MPa (kpsi)	
-40°C (-40°F)			7500 (1087)
23°C (73°F)			6800 (986)

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 plagues or ASTM D 955 based on 76 X 127mm (3 X 5in) end-gated plaques

The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

071217/080111

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Property	Test Method	Units	Value
Mechanical			
Poissons Ratio			0.41
Flexural Modulus	ISO 178	MPa (kpsi)	
-40°C (-40°F)			6500 (942)
23°C (73°F)			5940 (861)
93°C (200°F)			2400 (348)
150°C (300°F)			1500 (217)
Flexural Strength	ISO 178	MPa (kpsi)	
-40°C (-40°F)			195 (28)
23°C (73°F)			170 (24)
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m^2	
-40°C (-40°F)			7
-30°C (-22°F)			7
23°C (73°F)			8
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m^2	
-40°C (-40°F)			20
-30°C (-22°F)			35
23°C (73°F)			40
Thermal			
Deflection Temperature	ISO 75-1/-2	°C (°F)	
0.45MPa			240 (464)
1.80MPa			200 (392)
Melting Temperature	ISO 11357-1/-3	°C (°F)	
10°C/min			254 (489)

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Thermal			
CLTE, Parallel	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.33 (0.18)
23 - 55°C (73 - 130°F)			0.18 (0.10)
55 - 160°C (130 - 320°F)			0.12 (0.07)
CLTE, Normal	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.70 (0.39)
23 - 55°C (73 - 130°F)			0.88 (0.49)
55 - 160°C (130 - 320°F)			1.05 (0.58)
Vicat Softening Temperature	ISO 306	°C (°F)	
50N			210 (410)
Electrical			
Surface Resistivity	IEC 60093	ohm	1E13
Volume Resistivity	IEC 60093	ohm m	1E13
Electric Strength	IEC 60243-1	kV/mm (V/mil)	
1.0mm			34 (865)
2000 V/s, in oil, 2.0mm			26 (662)
Relative Permittivity	IEC 60250		
1E2 Hz			3.7
1E6 Hz			3.7
Dissipation Factor	IEC 60250	E-4	
1E2 Hz			90
1E6 Hz			150
Arc Resistance	UL 746A	s	
Plate 4mm			67
CTI	IEC 60112	V	225
CTI	UL 746A	V	
3.0mm			210

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Property	Test Method	Units	Value
Flammability			
Flammability Classification	IEC 60695-11-10		
0.86mm			V-0
3.0mm			V-0
Flammability Classification	UL94		
0.86mm			V-0
1.5mm			V-0
3.0mm			V-0
5V Rating	IEC 60695-11-20		5VA
5V Rating	UL94		5VA
5V Min. Thickness Tested	IEC 60695-11-20	mm	1.5
5V Min. Thickness Tested	UL94	mm	1.5
Oxygen Index	ISO 4589-1/-2	%	32
High Amperage Arc Ignition Resistance	UL 746A	arcs	
0.86mm			142
1.5mm			173
3.0mm			105
High Voltage Arc Tracking Rate		mm/min	>150
Hot Wire Ignition	UL 746A	s	
0.86mm			120
1.5mm			120
3.0mm			120

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Property	Test Method	Units	Value
Temperature Index			
RTI, Electrical	UL 746B	°C	
0.86mm			140
1.5mm			140
3.0mm			140
RTI, Impact	UL 746B	°C	
0.86mm			140
1.5mm			140
3.0mm			140
RTI, Strength	UL 746B	°C	
0.86mm			140
1.5mm			140
3.0mm			140
Other			
Density	ISO 1183	kg/m^3 (g/cm^3)	1530 (1.53)
Hardness, Rockwell	ISO 2039/2		
Scale M			88
Scale R			120
Molding Shrinkage	ISO 294-4	%	
Normal, 2.0mm			0.85
Normal, Annealed			1.15
Parallel, 2.0mm			0.35
Parallel, Annealed			0.45

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Property	Test Method	Units	Value
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)
Injection Speed		s	Fast
Drying Time, Dehumidified Dryer		h	4
Drying Temperature		°C (°F)	120 (250)
Processing Moisture Content		%	<0.02
Hold Pressure Range		MPa (kpsi)	35-140 (5-20)
Snake Flow		mm	
90MPa, 5x0.30mm			14
90MPa, 5x0.50mm			52
90MPa, 5x0.75mm			113
90MPa, 5x1.00mm			181

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