DuPont™ Rynite® PET

thermoplastic polyester resin

PRELIMINARY DATA

Rynite® 545 NC010

Rynite® 545 NC010 is a 45% glass reinforced modified polyethylene terephthalate with greater strength and stiffness, excellent dimensional stability, and creep resistance.

Property	Test Method	Units	Value
Identification			
Resin Identification	ISO 1043		PET-GF45
Part Marking Code	ISO 11469		>PET-GF45<
Mechanical			
Stress at Break	ISO 527	MPa (kpsi)	
-40°C (-40°F)			233 (34)
23°C (73°F)			182 (26.4)
Strain at Break	ISO 527	%	
-40°C (-40°F)			2.0
23°C (73°F)			2
Tensile Modulus	ISO 527	MPa (kpsi)	
-40°C (-40°F)			15255 (2214)
23°C (73°F)			15500 (2248)
Tensile Creep Modulus	ISO 899	MPa (kpsi)	
1h			15600 (2262)
1000h			13300 (1929)

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.

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Property	Test Method	Units	Value
Mechanical			
Poissons Ratio			0.39
Flexural Modulus	ISO 178	MPa (kpsi)	
-40°C (-40°F)			15200 (2204)
23°C (73°F)			13500 (1957)
93°C (200°F)			5500 (797)
150°C (300°F)			4000 (580)
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m^2	
-30°C (-22°F)			11
23°C (73°F)			11
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m^2	
-30°C (-22°F)			40
23°C (73°F)			60
Thermal			
Deflection Temperature	ISO 75-1/-2	°C (°F)	
0.45MPa			250 (482)
1.80MPa			226 (439)
8.00MPa			180 (356)
Melting Temperature	ISO 11357-1/-3	°C (°F)	
10°C/min			252 (486)
CLTE, Parallel	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.18 (0.10)
23 - 55°C (73 - 130°F)			0.13 (0.07)
55 - 160°C (130 - 320°F)			0.05 (0.03)
CLTE, Normal	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.54 (0.30)
23 - 55°C (73 - 130°F)			0.71 (0.39)
55 - 160°C (130 - 320°F)			0.95 (0.53)

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Property	Test Method	Units	Value
Thermal			
Vicat Softening Temperature	ISO 306	°C (°F)	
50N			230 (446)
Electrical			
Surface Resistivity	IEC 60093	ohm	1E14
Volume Resistivity	IEC 60093	ohm m	1E13
Electric Strength	IEC 60243-1	kV/mm (V/mil)	
1.0mm			32 (815)
Relative Permittivity	IEC 60250		
1E2 Hz			4.5
1E6 Hz			4.4
Dissipation Factor	IEC 60250	E-4	
1E2 Hz			70
1E6 Hz			110
Arc Resistance	UL 746A	s	
Plate 4mm			126
CTI	IEC 60112	V	250
CTI	UL 746A	V	
3.0mm			>200
Flammability			
Flammability Classification	IEC 60695-11-10		
0.75mm			HB75
1.5mm			HB75
3.0mm			HB40
Flammability Classification	UL94		
0.75mm			HB
1.5mm			HB
3.0mm			HB

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Flammability			
Oxygen Index	ISO 4589-1/-2	%	20
Glow Wire Flammability Index	IEC 60695-2-12	°C	
2.0mm			750
3.0mm			850
High Amperage Arc Ignition Resistance	UL 746A	arcs	
0.81mm			69
1.5mm			71
3.0mm			71
High Voltage Arc Tracking Rate		mm/min	10-25
Hot Wire Ignition	UL 746A	s	
0.81mm			>60
1.5mm			>60
3.0mm			120
Temperature Index			
RTI, Electrical	UL 746B	°C	
0.81mm			140
1.5mm			140
3.0mm			140
RTI, Impact	UL 746B	°C	
0.81mm			140
1.5mm			140
3.0mm			140
RTI, Strength	UL 746B	°C	
0.81mm			140
1.5mm			140
3.0mm			140

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Property	Test Method	Units	Value
Other			
Density	ISO 1183	kg/m^3 (g/cm^3)	1690 (1.69)
Hardness, Rockwell	ISO 2039/2		
Scale M			100
Scale R			120
Water Absorption	ISO 62, Similar to	%	
Equilibrium 50%RH			0.14
Saturation, immersed			0.62
Molding Shrinkage	ISO 294-4	%	
Normal, 2.0mm			0.85
Parallel, 2.0mm			0.25
Processing			
Melt Temperature Range		°C (°F)	280-300 (535-570)
Melt Temperature Optimum		°C (°F)	285 (545)
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			9
90MPa, 5x0.50mm			36
90MPa, 5x0.75mm			69
90MPa, 5x1.00mm			112

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