Rynite® 545 NC010

PET-GF45 Celanese

Product Texts

Common features of Rynite® thermoplastic polyester include mechanical and physical properties such as excellent balance of strength and stiffness, dimensional stability, creep resistance, heat resistance, high surface gloss and good inherent electrical properties at elevated temperature. It can be processed over a broad temperature range and has excellent flow properties.

Rynite® thermoplastic polyester resins are typically used in demanding applications in the automotive, electrical and electronics, appliances where they successfully replace metals and thermosets, as well as other thermoplastic polymers.

Rynite® 545 NC010 is a 45% glass reinforced modified polyethylene terephthalate resin.

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
[C] Molding shrinkage, parallel	**0.2**	%	ISO 294-4, 2577
[C] Molding shrinkage, normal	**0.8**	%	ISO 294-4, 2577
[C] Eff. thermal diffusivity	**1.4E-7**	m²/s	-
[C] Ejection temperature	**170**	°C	-
ASTM Data			
Mold Shrinkage, MD	**0.0015**	mm/mm	ASTM D 955
Mold Shrinkage, TD	**0.0067**	mm/mm	ASTM D 955

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
ISO Data			
[C] Tensile Modulus	**15500**	MPa	ISO 527
[C] Stress at break	**182**	MPa	ISO 527
[C] Strain at break	**2**	%	ISO 527
[C] Tensile creep modulus, 1h	**15600**	MPa	ISO 899-1
[C] Tensile creep modulus, 1000h	**13300**	MPa	ISO 899-1
[C] Charpy impact strength, +23°C	**60**	kJ/m²	ISO 179/1eU
[C] Charpy impact strength, -30°C	**40**	kJ/m²	ISO 179/1eU
[C] Charpy notched impact strength, +23°C	**11**	kJ/m²	ISO 179/1eA
[C] Charpy notched impact strength, -30°C	**11**	kJ/m²	ISO 179/1eA
ASTM Data			
Tensile Modulus	**15510**	MPa	ASTM D 638
Elongation at Break	**2.1**	%	ASTM D 638
Compressive Strength	**235**	MPa	ASTM D 695
Flexural Modulus	**15170**	MPa	ASTM D 790
Flexural Strength	**283**	MPa	ASTM D 790
Rockwell Hardness	**R 120**	-	ASTM D 785
Izod Impact notched, 1/8 in	**112**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**118**	J/m	ASTM D 256
Temperature	**-40**	°C	-

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
ISO Data			
[C] Melting temperature, 10°C/min	**252**	°C	ISO 11357-1/-3
[C] Glass transition temperature, 10°C/min	**90**	°C	ISO 11357-1/-2
[C] Temp. of deflection under load, 1.80 MPa	**226**	°C	ISO 75-1/-2
[C] Temp. of deflection under load, 8.00 MPa	**180**	°C	ISO 75-1/-2
[C] Vicat softening temperature, B	**230**	°C	ISO 306
[C] Coeff. of linear therm. expansion, parallel	**15**	E-6/K	ISO 11359-1/-2
[C] Coeff. of linear therm. expansion, normal	**83**	E-6/K	ISO 11359-1/-2
[C] Burning Behav. at 1.5 mm nom. thickn.	**HB**	class	IEC 60695-11-10
Thickness tested	**1.5**	mm	-
Yellow Card available	**yes**	-	-
[C] Burning Behav. at thickness h	**HB**	class	IEC 60695-11-10
Thickness tested	**0.8**	mm	-

Yellow Card available	**yes**	-	-
[C] Oxygen index	**20**	%	ISO 4589-1/-2
ASTM Data			
UL 94 Flame rating	**HB**	-	UL 94
Thickness tested	**1.5**	mm	-
DTUL @ 66 psi	**248**	°C	ASTM D 648
DTUL @ 264 psi	**226**	°C	ASTM D 648
Melting Temperature	**254**	°C	ASTM D 3418
Limiting Oxygen Index	**20**	%	ASTM D 2863

[C]: CAMPUS

Electrical properties	Value	Unit	Test Standard
ISO Data			
[C] Relative permittivity, 100Hz	**4.5**	-	IEC 62631-2-1
[C] Relative permittivity, 1MHz	**4.4**	-	IEC 62631-2-1
[C] Dissipation factor, 100Hz	**70**	E-4	IEC 62631-2-1
[C] Dissipation factor, 1MHz	**110**	E-4	IEC 62631-2-1
[C] Volume resistivity	**1E13**	Ohm*m	IEC 62631-3-1
[C] Surface resistivity	**1E14**	Ohm	IEC 62631-3-2
[C] Electric strength	**32**	kV/mm	IEC 60243-1
[C] Comparative tracking index	**250**	-	IEC 60112
ASTM Data			
Dissipation Factor, 1 MHz	**0.005**	-	ASTM D 150
Dielectric Constant, 1 MHz	**4**	-	ASTM D 150
Surface Resistivity	**1E14**	Ohm	ASTM D 257
Volume Resistivity	**1E15**	Ohm*cm	ASTM D 257

[C]: CAMPUS

Other properties	Value	Unit	Test Standard
[C] Water absorption	**0.62**	%	Sim. to ISO 62
[C] Humidity absorption	**0.14**	%	Sim. to ISO 62
[C] Density	**1690**	kg/m³	ISO 1183
Water Absorption, 24hr	**0.04**	%	ASTM D 570
Density	**1700**	kg/m³	ASTM D 792

[C]: CAMPUS

Material specific properties	Value	Unit	Test Standard
ISO Data			
[C] Viscosity number	**55**	cm³/g	ISO 307, 1157, 1628

[C]: CAMPUS

Characteristics

Processing
Injection Molding

Delivery form
Pellets, Natural Color

Additives
Release agent

Special Characteristics
Heat stabilized or stable to heat

Features
Creep Resistance, Weldable

Applications
Automotive, Electrical and Electronical

Regional Availability
North America, Europe, Asia Pacific, South and Central America, Near East/Africa