

## 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® 415HP NC010 is a 15% glass reinforced, toughened modified polyethylene terephthalate resin improved for easy, fast processing over a broad molding range.**

Processing/Physical Characteristics	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Molding shrinkage, parallel	0.3	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	0.8	%	ISO 294-4, 2577
<sup>[C]</sup> Eff. thermal diffusivity	9E-8	m <sup>2</sup> /s	-
<sup>[C]</sup> Ejection temperature	170	°C	-
<b>ASTM Data</b>			
Mold Shrinkage, MD	0.0024	mm/mm	ASTM D 955
Mold Shrinkage, TD	0.0067	mm/mm	ASTM D 955

[C]: CAMPUS

Mechanical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	4700	MPa	ISO 527
<sup>[C]</sup> Stress at break	79	MPa	ISO 527
<sup>[C]</sup> Strain at break	5	%	ISO 527
<sup>[C]</sup> Charpy impact strength, +23°C	55	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy impact strength, -30°C	25	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy notched impact strength, +23°C	11	kJ/m <sup>2</sup>	ISO 179/1eA
<sup>[C]</sup> Charpy notched impact strength, -30°C	8	kJ/m <sup>2</sup>	ISO 179/1eA
<b>ASTM Data</b>			
Tensile Modulus	4220	MPa	ASTM D 638
Tensile Strength	79	MPa	ASTM D 638
Elongation at Break	6	%	ASTM D 638
Compressive Strength	93	MPa	ASTM D 695
Flexural Modulus	3600	MPa	ASTM D 790
Flexural Strength	93.1	MPa	ASTM D 790
Rockwell Hardness	R 110	-	ASTM D 785
Izod Impact notched, 1/8 in	133	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	69	J/m	ASTM D 256
Temperature	-40	°C	-

[C]: CAMPUS

Thermal properties	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melting temperature, 10°C/min	250	°C	ISO 11357-1/-3
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	207	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 0.45 MPa	235	°C	ISO 75-1/-2
<sup>[C]</sup> Vicat softening temperature, B	205	°C	ISO 306
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	20	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, normal	120	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Burning Behav. at 1.5 mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	-
Yellow Card available	yes	-	-
<sup>[C]</sup> Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.8	mm	-
Yellow Card available	yes	-	-

**Rynite® 415HP NC010**

PET-I-GF15

Celanese

<sup>[C]</sup> Burning rate, FMVSS, Thickness 1 mm	<b>33</b>	mm/min	ISO 3795 (FMVSS 302)
<sup>[C]</sup> Oxygen index	<b>19</b>	%	ISO 4589-1/-2
<b>ASTM Data</b>			
UL 94 Flame rating	<b>HB</b>	-	UL 94
Thickness tested	<b>0.75</b>	mm	-
DTUL @ 66 psi	<b>235</b>	°C	ASTM D 648
DTUL @ 264 psi	<b>207</b>	°C	ASTM D 648
Melting Temperature	<b>250</b>	°C	ASTM D 3418
Limiting Oxygen Index	<b>19</b>	%	ASTM D 2863

[C]: CAMPUS

<b>Electrical properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Relative permittivity, 100Hz	<b>4.5</b>	-	IEC 62631-2-1
<sup>[C]</sup> Relative permittivity, 1MHz	<b>3.9</b>	-	IEC 62631-2-1
<sup>[C]</sup> Dissipation factor, 100Hz	<b>654</b>	E-4	IEC 62631-2-1
<sup>[C]</sup> Dissipation factor, 1MHz	<b>236</b>	E-4	IEC 62631-2-1
<sup>[C]</sup> Volume resistivity	<b>1E11</b>	Ohm*m	IEC 62631-3-1
<sup>[C]</sup> Surface resistivity	<b>1E13</b>	Ohm	IEC 62631-3-2
<sup>[C]</sup> Electric strength	<b>38</b>	kV/mm	IEC 60243-1
<sup>[C]</sup> Comparative tracking index	<b>350</b>	-	IEC 60112
<b>ASTM Data</b>			
Dielectric Strength, Short Time	<b>18</b>	kV/mm	ASTM D 149
Dissipation Factor, 1 MHz	<b>0.022</b>	-	ASTM D 150
Dielectric Constant, 1 MHz	<b>3.7</b>	-	ASTM D 150
Surface Resistivity	<b>1E13</b>	Ohm	ASTM D 257
Volume Resistivity	<b>1E11</b>	Ohm*cm	ASTM D 257

[C]: CAMPUS

<b>Other properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
<sup>[C]</sup> Water absorption	<b>2.5</b>	%	Sim. to ISO 62
<sup>[C]</sup> Humidity absorption	<b>0.25</b>	%	Sim. to ISO 62
<sup>[C]</sup> Density	<b>1390</b>	kg/m <sup>3</sup>	ISO 1183
Water Absorption, 24hr	<b>0.24</b>	%	ASTM D 570
Water Absorption, Equilibrium	<b>2.5</b>	%	ASTM D 570
Density	<b>1390</b>	kg/m <sup>3</sup>	ASTM D 792

[C]: CAMPUS

**Characteristics****Processing**

Injection Molding

**Features**

Weldable

**Delivery form**

Pellets, Natural Color

**Applications**

Electrical and Electronical

**Additives**

Release agent

**Regional Availability**

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

**Special Characteristics**

High impact or impact modified, Heat stabilized or stable to heat