

DuPont™ Rynite® 415HP BK503

THERMOPLASTIC POLYESTER RESIN

Product Information

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 BK503 is a 15% glass reinforced, toughened modified polyethylene terephthalate resin improved for easy, fast processing over a broad moulding range.

General information	Value	Unit	Test Standard
Resin Identification	PET-IGF15	-	ISO 1043
Part Marking Code	PET-IGF15	-	ISO 11469
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	4500	MPa	ISO 527-1/-2
Stress at break	80	MPa	ISO 527-1/-2
Strain at break	5	%	ISO 527-1/-2
Flexural Modulus	4000	MPa	ISO 178
Poisson's ratio	0.36	-	ISO 527-1/-2
Charpy impact strength, 23°C	55	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	11	kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	11	kJ/m ²	ISO 180/1A
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	250	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	190	°C	ISO 75-1/-2
RTI, electrical			UL 746B
0.75mm	140	°C	
1.5mm	140	°C	
3mm	140	°C	
RTI, impact			UL 746B
0.75mm	120	°C	
1.5mm	120	°C	
3mm	120	°C	
RTI, strength			UL 746B
0.75mm	140	°C	
1.5mm	140	°C	
3mm	140	°C	
Flammability	Value	Unit	Test Standard
Burning Behav. at 1.5mm nom. thickn.	HB	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. at thickness h	HB	class	IEC 60695-11-10
Thickness tested	0.75	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Glow Wire Flammability Index			IEC 60695-2-12
0.75mm	675	°C	
1mm	675	°C	
1.5mm	675	°C	
2mm	675	°C	
3mm	700	°C	

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

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Glow Wire Ignition Temperature			IEC 60695-2-13
0.75mm	625	°C	
1mm	625	°C	
1.5mm	625	°C	
2mm	650	°C	
3mm	700	°C	
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<100	mm/min	ISO 3795 (FMVSS 302)
Electrical properties	Value	Unit	Test Standard
Relative permittivity			IEC 62631-2-1
100Hz	4.4	-	
1MHz	3.9	-	
Dissipation factor			IEC 62631-2-1
100Hz	423	E-4	
1MHz	225	E-4	
Volume resistivity	1E12	Ohm*m	IEC 62631-3-1
Surface resistivity	1E14	Ohm	IEC 62631-3-2
Electric strength	34	kV/mm	IEC 60243-1
Comparative tracking index	350	-	IEC 60112
Other properties	Value	Unit	Test Standard
Density	1390	kg/m ³	ISO 1183
Injection	Value	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	≥120	°C	-
Drying Time, Dehumidified Dryer	4 - 6	h	-
Processing Moisture Content	≤0.02 ^[1]	%	-
Melt Temperature Optimum	285	°C	-
Min. melt temperature	270	°C	-
Max. melt temperature	290	°C	-
Max. screw tangential speed	0.2	m/s	-
Mold Temperature Optimum	95	°C	-
Min. mould temperature	75	°C	-
Max. mould temperature	95	°C	-
Hold pressure range	≥80	MPa	-
Hold pressure time	4	s/mm	-
Back pressure	As low as possible		-
Ejection temperature	170	°C	-

1: At levels above 0.02%, strength and toughness will decrease, even though parts may not exhibit surface defects.

Characteristics

Processing	• Injection Moulding		
Regional Availability	• North America	• Asia Pacific	• Near East/Africa
	• Europe	• South and Central America	• Global

Processing Texts

Injection molding

PREPROCESSING

Drying recommended = Yes
 Drying temperature = 120°C
 Drying time, dehumidified dryer = 4 h

Processing moisture content ≤ 0.02 %
 At levels above 0.02%, strength and toughness will decrease, even though parts may not exhibit surface defects.

PROCESSING

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Melt temperature optimum = 285 °C
Melt temperature range = 280-300 °C

Mold temperature range = 75-95 °C (6mm - 1mm thickness)

When lower mold temperatures are used, the initial shrinkage and warpage will be lower, but the surface appearance may be poorer and the dimensional change may be greater when the parts are subsequently heated.

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 4mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2mm, all ASTM properties measured at 3.2mm, and test temperatures are 23 °C unless otherwise stated.

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