



Rynite® 545 BK504

THERMOPLASTIC POLYESTER RESIN

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 BK504 is a 45% glass reinforced modified polyethylene terephthalate resin.

Product information

Resin Identification	PET-GF45	ISO 1043
Part Marking Code	>PET-GF45<	ISO 11469

Rheological properties

Viscosity number	55 cm ³ /g	ISO 307, 1157, 1628
Moulding shrinkage, parallel	0.2 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.8 %	ISO 294-4, 2577

Typical mechanical properties

Tensile Modulus	15500 MPa	ISO 527-1/-2
Stress at break	175 MPa	ISO 527-1/-2
Strain at break	1.9 %	ISO 527-1/-2
Flexural Modulus	14000 MPa	ISO 178
Charpy impact strength, 23°C	60 kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	11 kJ/m ²	ISO 179/1eA
Poisson's ratio	0.33 -	

Thermal properties

Melting temperature, 10°C/min	249 °C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	230 °C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	17 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	85 E-6/K	ISO 11359-1/-2
RTI, electrical, 0.75mm	140 °C	UL 746B
RTI, electrical, 1.5mm	140 °C	UL 746B
RTI, electrical, 3mm	140 °C	UL 746B
RTI, impact, 0.75mm	140 °C	UL 746B
RTI, impact, 1.5mm	140 °C	UL 746B
RTI, impact, 3mm	140 °C	UL 746B
RTI, strength, 0.75mm	140 °C	UL 746B
RTI, strength, 1.5mm	140 °C	UL 746B



Rynite[®] 545 BK504

THERMOPLASTIC POLYESTER RESIN

RTI, strength, 3mm	140 °C	UL 746B
Flammability		
Burning Behav. at 1.5mm nom. thickn. Thickness tested	HB class 1.5 mm	IEC 60695-11-10 IEC 60695-11-10
UL recognition	yes -	UL 94
Burning Behav. at thickness h Thickness tested	HB class 0.75 mm	IEC 60695-11-10 IEC 60695-11-10
UL recognition	yes -	UL 94
Glow Wire Flammability Index, 3mm	900 °C	IEC 60695-2-12
Glow Wire Ignition Temperature, 3mm	825 °C	IEC 60695-2-13
FMVSS Class	B -	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80 mm/min	ISO 3795 (FMVSS 302)
Electrical properties		
Relative permittivity, 100Hz	4.5 -	IEC 62631-2-1
Relative permittivity, 1MHz	4.2 -	IEC 62631-2-1
Dissipation factor, 100Hz	214 E-4	IEC 62631-2-1
Dissipation factor, 1MHz	136 E-4	IEC 62631-2-1
Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	1E15 Ohm	IEC 62631-3-2
Electric strength	32 kV/mm	IEC 60243-1
Comparative tracking index	225 -	IEC 60112
Other properties		
Density	1700 kg/m ³	ISO 1183
VDA Properties		
Fogging, G-value (condensate)	mg	ISO 6452
Injection		
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	280 °C	
Max. melt temperature	300 °C	
Max. screw tangential speed	0.2 m/s	
Mold Temperature Optimum	120 °C	
Min. mould temperature	110 °C	
Max. mould temperature	130 ^[2] °C	
Hold pressure range	≥80 MPa	



Rynite® 545 BK504

THERMOPLASTIC POLYESTER RESIN

Hold pressure time	4 s/mm
Back pressure	As low as MPa possible
Ejection temperature	170 °C

[1]: At levels above 0.02%, strength and toughness will decrease, even though parts may not exhibit surface defects.
[2]: (6mm - 1mm thickness)

The information set forth herein is furnished free of charge, is based on technical data that DuPont believes to be reliable, and represents typical values that fall within the normal range of properties. This information relates only to the specific material designated and may not be valid for such material used in combination with other materials or in other processes. It is intended for use by persons having technical skill, at their own discretion and risk. This information should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards and comply with applicable law. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents.

CAUTION: Do not use DuPont materials in medical applications involving implantation in the human body or contact with internal body fluids or tissues unless the material has been provided from DuPont under a written contract or other acknowledgement that is consistent with the DuPont policy regarding medical applications and expressly acknowledges the contemplated use. For further information, please contact your DuPont representative.

DuPont's sole warranty is that our products will meet our standard sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, DUPONT SPECIFICALLY DISCLAIMS ANY OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR NON-INFRINGEMENT. DUPONT DISCLAIMS LIABILITY FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.