DuPont™ Rynite® FR533NH BK507 (Preliminary Data)

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® FR533NH BK507 is a 33% glass reinforced, modified polyethylene terephthalate resin using a non-halogenated flame retardant.

General information	Value	Unit	Test Standard
Resin Identification	PET-GF33FR(40)	-	ISO 1043
Part Marking Code	PET-GF33FR(40)	-	ISO 11469
Rheological properties	**Value**	**Unit**	**Test Standard**
Moulding shrinkage, parallel	0.4	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7	%	ISO 294-4, 2577
Mechanical properties	**Value**	**Unit**	**Test Standard**
Tensile Modulus	12900	MPa	ISO 527-1/-2
Stress at break	82	MPa	ISO 527-1/-2
Strain at break	0.9	%	ISO 527-1/-2
Flexural Modulus	13100	MPa	ISO 178
Flexural Strength	137	MPa	ISO 178
Poisson's ratio	0.33	-	ISO 527-1/-2
Charpy notched impact strength			ISO 179/1eA
23°C	9	kJ/m²	
-40°C	9	kJ/m²	
Thermal properties	**Value**	**Unit**	**Test Standard**
Melting temperature, 10°C/min	249	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	240	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	18	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion			ISO 11359-1/-2
normal	78	E-6/K	
Normal, -40-23°C	54	E-6/K	
Normal, 55-160°C	93	E-6/K	
Parallel, -40-23°C	16	E-6/K	
Parallel, 55-160°C	12	E-6/K	
RTI, electrical			UL 746B
0.4mm	155	°C	
0.75mm	155	°C	
1.5mm	155	°C	
3mm	155	°C	
RTI, impact			UL 746B
0.75mm	160	°C	
1.5mm	170	°C	
3mm	170	°C	
RTI, strength			UL 746B
0.75mm	160	°C	
1.5mm	170	°C	
3mm	170	°C	
Flammability	**Value**	**Unit**	**Test Standard**
Burning Behav. at 1.5mm nom. thickn.	V-0	class	IEC 60695-11-10
Thickness tested	1.5	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. at thickness h	V-0	class	IEC 60695-11-10

To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.

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Thickness tested	0.4	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. 5V at thickness h	5VA	class	IEC 60695-11-20
Thickness tested	0.75	mm	IEC 60695-11-20
UL recognition	yes	-	UL 94
Electrical properties	**Value**	**Unit**	**Test Standard**
Volume resistivity	1E13	Ohm*m	IEC 62631-3-1
Electric strength	31	kV/mm	IEC 60243-1
Other properties	**Value**	**Unit**	**Test Standard**
Density	1600	kg/m³	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	280	°C	-
Min. melt temperature	270	°C	-
Max. melt temperature	280	°C	-
Min. mould temperature	120	°C	-
Max. mould temperature	140[2]	°C	-

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

Characteristics			
Processing	• Injection Moulding		
Delivery form	• Pellets		
Special characteristics	• Heat stabilised or stable to heat		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

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 (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2.0mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data 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. 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 in medical applications involving permanent implantation in the human body. For other medical applications, discuss with your DuPont customer representative and read Medical Caution H-50103-5.

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