Rynite® FR533NH BK507 (PRELIMINARY)

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

Product information

Resin Identification	PET-GF33FR(40)	ISO 1043
Part Marking Code	>PET-GF33FR(40)<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0.4	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7	%	ISO 294-4, 2577

Typical mechanical properties

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
Charpy notched impact strength, 23°C	9	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	9	kJ/m²	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	240	°C	ISO 75-1/-2
CLTE, Parallel, -40-23°C	16	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	18	E-6/K	ISO 11359-1/-2
CLTE, Parallel, 55-160°C	12	E-6/K	ISO 11359-1/-2
CLTE, Normal, -40-23°C	54	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	78	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, Normal, 55-160°C	93	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.4mm	155	°C	UL 746B
RTI, electrical, 0.75mm	155	°C	UL 746B
RTI, electrical, 1.5mm	155	°C	UL 746B

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RTI, electrical, 3mm	155	°C	UL 746B
RTI, impact, 0.75mm	160	°C	UL 746B
RTI, impact, 1.5mm	170	°C	UL 746B
RTI, impact, 3mm	170	°C	UL 746B
RTI, strength, 0.75mm	160	°C	UL 746B
RTI, strength, 1.5mm	170	°C	UL 746B
RTI, strength, 3mm	170	°C	UL 746B

Flammability

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
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

Volume resistivity	1E13	Ohm.m	IEC 62631-3-1
Electric strength	31	kV/mm	IEC 60243-1

Other properties

Density	1600	kg/m³	ISO 1183

Injection

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

Additives	Flame retardant, Non-halogenated/Red phosphorous free flame retardant

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