

Rynite® RE5231 BK533

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® RE5231 BK533 is a 35% glass/mica reinforced modified polyethylene terephthalate resin with excellent electrical properties.

Product information

Resin Identification	PET-(GF+MD)3 5	ISO 1043
Part Marking Code	>PET-(GF+MD)35<	ISO 11469

Rheological properties

Moulding shrinkage, parallel	0.3 %	ISO 294-4, 2577
Moulding shrinkage, normal	0.6 %	ISO 294-4, 2577

Typical mechanical properties

Tensile modulus	10000 MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	90 MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2 %	ISO 527-1/-2
Flexural modulus	8800 MPa	ISO 178
Flexural strength	140 MPa	ISO 178
Charpy impact strength, 23°C	35 kJ/m ²	ISO 179/1eU
Poisson's ratio	0.34	

Thermal properties

Melting temperature, 10°C/min	250 °C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	216 °C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	20 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	29 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	24 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	46 E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	79 E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	93 E-6/K	ISO 11359-1/-2

Flammability

Burning Behav. at thickness h	HB class	IEC 60695-11-10
Thickness tested	0.75 mm	IEC 60695-11-10
FMVSS Class	B	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80 mm/min	ISO 3795 (FMVSS 302)

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Electrical properties

Volume resistivity	>1E13 Ohm.m	IEC 62631-3-1
Surface resistivity	>1E15 Ohm	IEC 62631-3-2
Electric strength	50 kV/mm	IEC 60243-1

Physical/Other properties

Density	1600 kg/m ³	ISO 1183
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Injection

Drying Recommended	yes
Drying Temperature	120 °C
Drying Time, Dehumidified Dryer	4 - 6 h
Processing Moisture Content	≤0.01 ^[1] %
Melt Temperature Optimum	290 °C
Min. melt temperature	280 °C
Max. melt temperature	300 °C
Screw tangential speed	≤0.2 m/s
Mold Temperature Optimum	100 °C
Min. mould temperature	85 °C
Max. mould temperature	110 ^[2] °C
Hold pressure range	≥80 MPa
Hold pressure time	4 s/mm
Back pressure	As low as possible
Ejection temperature	200 °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

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Stellantis - Chrysler	MS.50103 / CPN-3425	Black