

DuPont™ Rynite® FR531 NC010

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® FR531 NC010 is a 45% glass/mineral reinforced, flame retardant, modified polyethylene terephthalate resin, with improved CTI performance.

General information	Value	Unit	Test Standard
Resin Identification	PET-(GF+XD)38FR(17)	-	ISO 1043
Part Marking Code	PET-(GF+XD)38FR(17)	-	ISO 11469
Rheological properties	Value	Unit	Test Standard
Moulding shrinkage, parallel	0.1	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7	%	ISO 294-4, 2577
Mechanical properties	Value	Unit	Test Standard
Tensile Modulus	12600	MPa	ISO 527-1/-2
Stress at break	129	MPa	ISO 527-1/-2
Strain at break	1.6	%	ISO 527-1/-2
Poisson's ratio	0.33	-	ISO 527-1/-2
Charpy impact strength, 23°C	36	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	10	kJ/m ²	ISO 179/1eA
Thermal properties	Value	Unit	Test Standard
Melting temperature, 10°C/min	247	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	218	°C	ISO 75-1/-2
RTI, electrical			UL 746B
0.75mm	155	°C	
1.5mm	155	°C	
3mm	155	°C	
RTI, impact			UL 746B
0.75mm	155	°C	
1.5mm	155	°C	
3mm	155	°C	
RTI, strength			UL 746B
0.75mm	155	°C	
1.5mm	155	°C	
3mm	155	°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
Thickness tested	0.75	mm	IEC 60695-11-10
UL recognition	yes	-	UL 94
Burning Behav. 5V at thickness h	5VA	class	IEC 60695-11-20
Thickness tested	2	mm	IEC 60695-11-20
UL recognition	yes	-	UL 94

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

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Glow Wire Flammability Index			IEC 60695-2-12
0.75mm	960	°C	
1.5mm	960	°C	
2mm	960	°C	
3mm	960	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.75mm	900	°C	
1.5mm	900	°C	
2mm	900	°C	
3mm	875	°C	
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)
Electrical properties	Value	Unit	Test Standard
Relative permittivity			IEC 62631-2-1
100Hz	4.6	-	
1MHz	4.3	-	
Dissipation factor			IEC 62631-2-1
100Hz	43.7	E-4	
1MHz	135	E-4	
Volume resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface resistivity	1E13	Ohm	IEC 62631-3-2
Electric strength	34	kV/mm	IEC 60243-1
Comparative tracking index			
Comparative tracking index	325	-	IEC 60112
CTI, 23°C	2	PLC	UL 746A
Other properties	Value	Unit	Test Standard
Density	1830	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	280	°C	-
Min. melt temperature	270	°C	-
Max. melt temperature	290	°C	-
Max. screw tangential speed	0.2	m/s	-
Mold Temperature Optimum	110	°C	-
Min. mould temperature	100	°C	-
Max. mould temperature	120 ^[2]	°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. 2: (6mm - 1mm thickness)

Characteristics

Processing	• Injection Moulding
Delivery form	• Pellets
Regional Availability	• Europe • Asia Pacific • Near East/Africa

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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