Zytel® FR50 BK153J

NYLON RESIN

Zytel® FR50 BK153J is a 25% Glass Reinforced, Flame Retardant, Polyamide 66

Product information

Resin Identification	PA66-GF25FR(17)	ISO 1043
Part Marking Code	>PA66-GF25FR(17)<	ISO 11469
ISO designation	ISO 16396-PA66,GF25 FR(17),M1CF1GR,S14-100	

Rheological properties

	dry/cond.		
Viscosity number	150[1]/*[DS]	cm^3/g	ISO 307, 1628
Moulding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7 / -	%	ISO 294-4, 2577

[DS]: Derived from similar grade

[1]: Sulfuric acid 96%

Typical mechanical properties

	dry/cond.		
Tensile modulus	10400 / -	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	160 / -	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.6 / -	%	ISO 527-1/-2
Flexural modulus	9160 / -	MPa	ISO 178
Flexural strength	240 / -	MPa	ISO 178
Charpy impact strength, 23°C	55 / -	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	9.5 / -	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	11 / -	kJ/m^2	ISO 180/1A
Poisson's ratio	0.34 / -		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	260[2]/*	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	80 / 20	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	240 / *	°C	ISO 75-1/-2
RTI, electrical, 0.75mm	130	°C	UL 746B
RTI, electrical, 1.5mm	130	°C	UL 746B
RTI, electrical, 3.0mm	130	°C	UL 746B
RTI, impact, 0.75mm	105	°C	UL 746B
RTI, impact, 1.5mm	115	°C	UL 746B
RTI, impact, 3.0mm	115	°C	UL 746B
RTI, strength, 0.75mm	105	°C	UL 746B
RTI, strength, 1.5mm	115 / *	°C	UL 746B
RTI, strength, 3.0mm	120	°C	UL 746B

[2]: 1st heating

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Flammability

	dry/cond.		
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	0.35 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. 5V at thickness h	5VA / *	class	IEC 60695-11-20
Thickness tested	1.5 / *	mm	IEC 60695-11-20
UL recognition	yes / *		UL 94
FMVSS Class	DNI		ISO 3795 (FMVSS 302)
Hot Wire Ignition, 0.75mm	300 / *	s	UL 746A
Hot Wire Ignition, 1.5mm	300 / *	s	UL 746A
Hot Wire Ignition, 3mm	300 / *	s	UL 746A

Electrical properties

	dry/cond.		
Volume resistivity	>1E13 / 2.7E10	Ohm.m	IEC 62631-3-1
Electric strength	24 / 22[DS]	kV/mm	IEC 60243-1
Comparative tracking index	275 / -		IEC 60112
Comparative tracking index, 23 °C	2 / -	PLC	UL 746A
High Amperage Arc Ignition Resistance, 0.75 mm	166 / *	arcs	UL 746A
High Amperage Arc Ignition Resistance, 1.5 mm	171 / *	arcs	UL 746A
High Amperage Arc Ignition Category, 1.5 mm	187 / *	class	UL 746A

[DS]: Derived from similar grade

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.3 / *	%	Sim. to ISO 62
Water absorption, 2mm	3.4 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.6[3] / *	%	Sim. to ISO 62
Density	1570 / -	kg/m³	ISO 1183

[3]: thickness 2mm

Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
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	70	°C
Max. mould temperature	120	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	3	s/mm
Ejection temperature	210	°C

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Characteristics

Additives	Flame retardant

Revised: 2024-03-28 Source: Celanese Materials Database