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Zytel® FR50 BK153J

NYLON RESIN

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

Product information

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

Rheological properties

	dry/cond.		
Viscosity number	4150[1]/*[DS]	in³/lb	ISO 307, 1628
Molding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / -	%	ISO 294-4, 2577

[DS]: Derived from similar grade

[1]: Sulfuric acid 96%

Typical mechanical properties

	dry/cond.		
Tensile modulus	1.51E6 / -	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	23200 / -	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.6 / -	%	ISO 527-1/-2
Flexural modulus	1.33E6 / -	psi	ISO 178
Flexural strength	34800 / -	psi	ISO 178
Charpy impact strength, 23°C	26.2 / -	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	4.52 / -	ftlb/in²	ISO 179/1eA
Izod notched impact strength, 23°C	5.09 / -	ftlb/in²	ISO 180/1A

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	500[2]/*	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	176 / 68	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	464 / *	°F	ISO 75-1/-2
RTI, electrical, 0.75mm	266	°F	UL 746B
RTI, electrical, 1.5mm	266	°F	UL 746B
RTI, electrical, 3.0mm	266	°F	UL 746B
RTI, impact, 0.75mm	221	°F	UL 746B
RTI, impact, 1.5mm	239	°F	UL 746B
RTI, impact, 3.0mm	239	°F	UL 746B
RTI, strength, 0.75mm	221	°F	UL 746B
RTI, strength, 1.5mm	239 / *	°F	UL 746B
RTI, strength, 3.0mm	248	°F	UL 746B

[2]: 1st heating

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.0591 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.0138 / *	in	IEC 60695-11-10

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UL recognition	yes / *		UL 94
Burning Behav. 5V at thickness h	5VA / *	class	IEC 60695-11-20
Thickness tested	0.0591 / *	in	IEC 60695-11-20
UL recognition	yes / *		UL 94
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
FMVSS Class	DNI		ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Volume resistivity	>1E13 / 2.7E10	Ohm.m	IEC 62631-3-1
Electric strength	610 / 559[DS]	kV/in	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	0.0567 / -	lb/in³	ISO 1183

[3]: thickness 2mm

Injection

Drying Recommended	yes	
Drying Temperature	176	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	554	°F
Min. melt temperature	536	°F
Max. melt temperature	572	°F
Max. screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	212	°F
Min. mold temperature	158	°F
Max. mold temperature	248	°F
Hold pressure range	7250 - 14500	psi
Hold pressure time	0.0762	s/mil
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h²+2	s
Ejection temperature	410	°F

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Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
CATL	MCR0000561	
General Motors	GMW17481P-PA66-GF25	Black
Hyundai	MS941-03 Type A-5 FRV0	

Characteristics

Processing	Injection Molding
Additives	Flame retardant
Special characteristics	Flame retardant

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