

Zytel® ST801 BK010

NYLON RESIN

Zytel® ST801 BK010 is an Unreinforced, Super Toughened, Polyamide 66

Product information

Resin Identification	PA66-HI	ISO 1043
Part Marking Code	>PA66-HI<	ISO 11469
ISO designation	ISO 16396-PA66-I,,M1CG1L1R,S14-020	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	1.8 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.4 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	2000 / -	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	51 / -	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	5.5 / -	%	ISO 527-1/-2
Nominal strain at break	31 / -	%	ISO 527-1/-2
Flexural modulus	1900 / 800	MPa	ISO 178
Charpy impact strength, 23°C	270 / N	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	350 / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	80 / -	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	17 / -	kJ/m ²	ISO 179/1eA
Poisson's ratio	0.4 / -		
Tear strength, parallel	270 / 210	kN/m	ISO 34-1
Tear strength, normal	260 / 200	kN/m	ISO 34-1

Thermal properties

	dry/cond.		
Glass transition temperature, 10°C/min	75 / 20	°C	ISO 11357-1/-3
RTI, electrical, 0.75mm	125	°C	UL 746B
RTI, electrical, 1.5mm	125	°C	UL 746B
RTI, electrical, 3.0mm	125	°C	UL 746B
RTI, impact, 0.75mm	75	°C	UL 746B
RTI, impact, 1.5mm	75	°C	UL 746B
RTI, impact, 3.0mm	75	°C	UL 746B
RTI, strength, 0.75mm	85	°C	UL 746B
RTI, strength, 1.5mm	85 / *	°C	UL 746B
RTI, strength, 3.0mm	85	°C	UL 746B

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.81 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
Glow Wire Flammability Index, 0.75mm	750 / -	°C	IEC 60695-2-12

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Glow Wire Flammability Index, 1.5mm	750/-	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	750/-	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	725/-	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	725/-	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	725/-	°C	IEC 60695-2-13
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Comparative tracking index, 23°C	0/-	PLC	UL 746A
Electric Strength, Short Time, 1mm	31/-	kV/mm	IEC 60243-1

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	2/*	%	Sim. to ISO 62
Water absorption, 2mm	6.5/*	%	Sim. to ISO 62

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	≤0.3 m/s
Mold Temperature Optimum	80 °C
Min. mould temperature	50 °C
Max. mould temperature	100 °C
Hold pressure range	50 - 100 MPa
Hold pressure time	4 s/mm
Ejection temperature	190 °C

Extrusion

Drying Temperature	80 °C
Drying Time, Dehumidified Dryer	3 - 4 h
Processing Moisture Content	≤0.06 %
Melt Temperature Optimum	280 °C
Melt Temperature Range	275 - 290 °C

Characteristics

Processing	Injection Moulding
Special characteristics	High impact or impact modified

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Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
BMW	GS93016-PA66	(Highly Impact Resistant)
Ford	WSK-M4D666-A	
Stellantis - Chrysler	MS.50017 / CPN-2345	Black

Chemical Media Resistance

Acids

- ✓ Acetic Acid (5% by mass), 23°C
- ✓ Citric Acid solution (10% by mass), 23°C
- ✓ Lactic Acid (10% by mass), 23°C
- ✗ Hydrochloric Acid (36% by mass), 23°C
- ✗ Nitric Acid (40% by mass), 23°C
- ✗ Sulfuric Acid (38% by mass), 23°C
- ✗ Sulfuric Acid (5% by mass), 23°C
- ✗ Chromic Acid solution (40% by mass), 23°C

Alcohols

- ✓ Isopropyl alcohol, 23°C
- ✓ Methanol, 23°C
- ✓ Ethanol, 23°C

Standard Fuels

- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C

Other

- ✓ Water, 23°C
- ✓ Water, 90°C

Symbols used:

- ✓ possibly resistant
Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).
- ✗ not recommended - see explanation
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).