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.		
Molding shrinkage, parallel	1.8 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	1.4 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	290000 / -	psi	ISO 527-1/-2
Tensile stress at yield, 50mm/min	7400 / -	psi	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	276000 / 116000	psi	ISO 178
Charpy impact strength, 23°C	128 / N	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	166 / -	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	38.1 / -	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30°C	8.09 / -	ftlb/in²	ISO 179/1eA
Tear strength, parallel	270 / 210	kN/m	ISO 34-1
Tear strength, normal	256 / 204	kN/m	ISO 34-1

Thermal properties

	dry/cond.		
Glass transition temperature, 10°C/min	167 / 68	°F	ISO 11357-1/-3
RTI, electrical, 0.75mm	257	°F	UL 746B
RTI, electrical, 1.5mm	257	°F	UL 746B
RTI, electrical, 3.0mm	257	°F	UL 746B
RTI, impact, 0.75mm	167	°F	UL 746B
RTI, impact, 1.5mm	167	°F	UL 746B
RTI, impact, 3.0mm	167	°F	UL 746B
RTI, strength, 0.75mm	185	°F	UL 746B
RTI, strength, 1.5mm	185 / *	°F	UL 746B
RTI, strength, 3.0mm	185	°F	UL 746B

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	0.0591 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.0319 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Glow Wire Flammability Index, 0.75mm	1380 / -	°F	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	1380 / -	°F	IEC 60695-2-12

Zytel® ST801 BK010

NYLON RESIN

Glow Wire Flammability Index, 3.0mm	1380 / -	°F	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	1340 / -	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	1340 / -	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	1340 / -	°F	IEC 60695-2-13
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	in/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Comparative tracking index, 23 °C	0 / -	PLC	UL 746A
Electric Strength, Short Time, 1mm	787 / -	V/mil	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	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	≤0.3	m/s
Mold Temperature Optimum	176	°F
Min. mold temperature	122	°F
Max. mold temperature	212	°F
Hold pressure range	7250 - 14500	psi
Hold pressure time	0.102	s/mil
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s
Ejection temperature	374	°F

Extrusion

Drying Temperature	176	°F
Drying Time, Dehumidified Dryer	3 - 4	h
Processing Moisture Content	≤0.06	%
Melt Temperature Optimum	536	°F
Melt Temperature Range	527 - 554	°F

Automotive

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

Zytel® ST801 BK010

NYLON RESIN

Characteristics

Processing	Injection Molding
Special characteristics	High impact or impact modified

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).

Revised: 2025-04-23 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.
Copyright © 2026 Celanese or its affiliates. All rights reserved.
Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates.