

DuPont™ Zytel® 101L BKB080

NYLON RESIN

Product Information

Common features of Zytel® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness and toughness, good high temperature performance, good electrical and flammability properties, good abrasion and chemical resistance. In addition, Zytel® nylon resins are available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses. Zytel® nylon resin, including most flame retardant grades, offer the ability to be coloured.

The good melt stability of Zytel® nylon resin normally enables the recycling of properly handled production waste. If recycling is not possible, DuPont recommends, as the preferred option, incineration with energy recovery (-31kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Zytel® nylon resin typically is used in demanding applications in the automotive, furniture, domestic appliances, sporting goods and construction industry.

Zytel® 101L BKB080 is a lubricated polyamide 66 resin for injection molding.

General information	Value	Unit	Test Standard
Resin Identification	PA66	-	ISO 1043
Part Marking Code	PA66	-	ISO 11469
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	3100 / 1400	MPa	ISO 527-1/-2
Yield stress	82 / 55	MPa	ISO 527-1/-2
Yield strain	4.3 / 25	%	ISO 527-1/-2
Nominal strain at break	25 / >50	%	ISO 527-1/-2
Strain at Break, 23°C, 50mm/min	45 / -	%	ISO 527-1/-2
Flexural Modulus	2800 / -	MPa	ISO 178
Poisson's ratio	0.37 / 0.43	-	ISO 527-1/-2
Charpy impact strength, 23°C	N / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	5.5 / -	kJ/m ²	ISO 179/1eA
Izod notched impact strength, 23°C	5.5 / -	kJ/m ²	ISO 180/1A
Izod impact strength, 23°C	N / -	kJ/m ²	ISO 180/1U
Ball indentation hardness, H 358/30	180 / 85	MPa	ISO 2039-1 DS
DS: Derived from similar grade			
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 10°C/min	262 / *	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	70 / *	°C	
0.45 MPa	190 / *	°C	
RTI, electrical			UL 746B
0.75mm	130 / *	°C	
1.5mm	130 / *	°C	
3mm	130	°C	
6mm	130	°C	
RTI, impact			UL 746B
0.75mm	75	°C	
1.5mm	75 / *	°C	
3mm	75	°C	
6mm	75	°C	
RTI, strength			UL 746B
0.75mm	85	°C	
1.5mm	85 / *	°C	
3mm	85	°C	
6mm	85	°C	

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

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Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 1.5mm nom. thickn.	V-2 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	UL / *	-	UL 94
Burning Behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.71 / *	mm	IEC 60695-11-10
UL recognition	UL / *	-	UL 94
Glow Wire Flammability Index			IEC 60695-2-12
0.75mm	960 / -	°C	
1.5mm	960 / -	°C	
3mm	960 / -	°C	
Glow Wire Ignition Temperature			IEC 60695-2-13
0.75mm	725 / -	°C	
1.5mm	750 / -	°C	
3mm	800 / -	°C	
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)
Other properties	dry / cond	Unit	Test Standard
Density	1140 / -	kg/m³	ISO 1183
VDA Properties	dry / cond	Unit	Test Standard
Emission of organic compounds	38	µgC/g	VDA 277
Odour	3	class	VDA 270
Fogging, F-value (refraction)	99 / *	%	ISO 6452
Fogging, G-value (condensate)	0.1 / *	mg	ISO 6452
Injection	dry / cond	Unit	Test Standard
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	-
Max. screw tangential speed	0.4 / *	m/s	-
Mold Temperature Optimum	70	°C	-
Min. mould temperature	50	°C	-
Max. mould temperature	90	°C	-
Hold pressure range	50 - 100	MPa	-
Hold pressure time	4	s/mm	-
Ejection temperature	190	°C	-
Extrusion	Value	Unit	Test Standard
Drying Temperature	≤80	°C	-
Drying Time, Dehumidified Dryer	4 - 6	h	-
Melt Temperature Optimum	285	°C	-
Melt Temperature Range	275 - 290	°C	-

Characteristics

Processing	• Injection Moulding		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

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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)

Bases

- ✗ Sodium Hydroxide solution (35% by mass) (23°C)
- ✓ Sodium Hydroxide solution (1% by mass) (23°C)
- ✓ Ammonium Hydroxide solution (10% by mass) (23°C)

Alcohols

- ✓ Isopropyl alcohol (23°C)
- ✓ Methanol (23°C)
- ✓ Ethanol (23°C)

Hydrocarbons

- ✓ n-Hexane (23°C)
- ✓ Toluene (23°C)
- ✓ iso-Octane (23°C)

Ketones

- ✓ Acetone (23°C)

Ethers

- ✓ Diethyl ether (23°C)

Mineral oils

- ✓ SAE 10W40 multigrade motor oil (23°C)
- ✗ SAE 10W40 multigrade motor oil (130°C)
- ✗ SAE 80/90 hypoid-gear oil (130°C)
- ✓ Insulating Oil (23°C)

Standard Fuels

- ✓ ISO 1817 Liquid 1 - E5 (60°C)
- ✓ ISO 1817 Liquid 2 - M15E4 (60°C)
- ✓ ISO 1817 Liquid 3 - M3E7 (60°C)
- ✓ ISO 1817 Liquid 4 - M15 (60°C)
- ✓ Standard fuel without alcohol (pref. ISO 1817 Liquid C) (23°C)
- ✓ Standard fuel with alcohol (pref. ISO 1817 Liquid 4) (23°C)

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- ✓ Diesel fuel (pref. ISO 1817 Liquid F) (23°C)
- ✗ Diesel fuel (pref. ISO 1817 Liquid F) (90°C)
- ✗ Diesel fuel (pref. ISO 1817 Liquid F) (>90°C)

Salt solutions

- ✓ Sodium Chloride solution (10% by mass) (23°C)
- ✗ Sodium Hypochlorite solution (10% by mass) (23°C)
- ✓ Sodium Carbonate solution (20% by mass) (23°C)
- ✓ Sodium Carbonate solution (2% by mass) (23°C)
- ✗ Zinc Chloride solution (50% by mass) (23°C)

Other

- ✓ Ethyl Acetate (23°C)
- ✗ Hydrogen peroxide (23°C)
- ✗ DOT No. 4 Brake fluid (130°C)
- ✗ Ethylene Glycol (50% by mass) in water (108°C)
- ✓ 1% nonylphenoxy-polyethyleneoxy ethanol in water (23°C)
- ✓ 50% Oleic acid + 50% Olive Oil (23°C)
- ✓ Water (23°C)
- ✗ Water (90°C)
- ✗ Phenol solution (5% by mass) (23°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).

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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