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	4-5 / -	%	ISO 527-1/-2	
Flexural Modulus	2800 / -	MPa	ISO 178	
Charpy impact strength, 23°C	N / -	kJ/m²	ISO 179/1eU	
Charpy notched impact strength, 23°C	5.5 / -	kJ/m²	ISO 179/1eA	
Izod notched impact strength, 23°C	5.5 / -	kJ/m²	ISO 180/1A	
Izod impact strength, 23°C	N / -	kJ/m²	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	200 / *	°C		
RTI, electrical, 0.75 mm	130 / *	°C	UL 746B	
RTI, impact, 0.75 mm	75	°C	UL 746B	
RTI, strength, 0.75 mm	85	°C	UL 746B	
Flammability	**dry / cond**	**Unit**	**Test Standard**	
Burning Behav. at thickness h	V-2 / *	class	IEC 60695-11-10	
Thickness tested	0.71 / *	mm	IEC 60695-11-10	
Glow Wire Flammability Index			IEC 60695-2-1/2	
0.75mm	960 / -	°C		
1.5mm	960 / -	°C		
3mm	960 / -	°C		
Glow Wire Ignition Temperature			IEC 60695-2-1/3	
0.75mm	725 / -	°C		
1.5mm	750 / -	°C		
3mm	800 / -	°C		
Other properties	**dry / cond**	**Unit**	**Test Standard**	
Density	1140 / -	kg/m³	ISO 1183	

To find out more, visit DuPont Performance Polymers or contact nearest DuPont location.

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Tel: +1 302 999-4592
Toll-Free (USA): 800 441-0575

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VDA Properties	Value	Unit	Test Standard
Emission of organic compounds	38	µgC/g	VDA 277
Odour	3	class	VDA 270
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 4.0mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2.0mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

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