



### **NYLON RESIN**

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, we recommend, 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® BM7300THS is an unreinforced, heat stabilized, lubricated, toughened polyamide 6 for blow molding.

#### **Product information**

Resin Identification Part Marking Code	PA6-HI >PA6-HI<		ISO 1043 ISO 11469	
ISO designation	ISO 16396-PA6			
Rheological properties	dry/cond.			
Moulding shrinkage, parallel	1.1/-	%	ISO 294-4, 2577	
Moulding shrinkage, normal	1.1/-	%	ISO 294-4, 2577	
Melt viscosity, @ 1000 sec-1, 280°C	440/*	Pa.s	ISO 11443	
Typical mechanical properties	dry/cond.			
Tensile modulus	2200/600	MPa	ISO 527-1/-2	
Tensile stress at yield, 50mm/min	60/-	MPa	ISO 527-1/-2	
Tensile strain at yield, 50mm/min	4.2/-	%	ISO 527-1/-2	
Nominal strain at break	>50/-	%	ISO 527-1/-2	
Charpy impact strength, 23°C	N/N	kJ/m²	ISO 179/1eU	
Charpy impact strength, -30°C	$N/N^{[A]}$	kJ/m²	ISO 179/1eU	
Charpy notched impact strength, 23°C	80/150	kJ/m²	ISO 179/1eA	
Charpy notched impact strength, -30°C	22/21	kJ/m²	ISO 179/1eA	
Charpy notched impact strength, -40°C	15/14	kJ/m²	ISO 179/1eA	
Izod notched impact strength, 23°C	38/120	kJ/m²	ISO 180/1A	
Izod notched impact strength, -30°C	18.0/20.0	kJ/m²	ISO 180/1A	
Poisson's ratio	0.39/0.47			
[A]: Assessed				
Thermal properties	dry/cond.			
Melting temperature, 10°C/min	220/*	°C	ISO 11357-1/-3	
Glass transition temperature, 10°C/min	60/10	°C	ISO 11357-1/-3	
Temperature of deflection under load, 1.8 MPa	52/*	°C	ISO 75-1/-2	
Temperature of deflection under load, 0.45 MPa	100/*	°C	ISO 75-1/-2	

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### **NYLON RESIN**

#### Flammability

FMVSS Class B ISO 3795 (FMVSS 302) Burning rate, Thickness 1 mm <80 mm/min ISO 3795 (FMVSS 302)

dry/cond.

### Physical/Other properties

1090/- kg/m<sup>3</sup> ISO 1183

### Injection

Density

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	270	°C
Min. melt temperature	260	°C
Max. melt temperature	280	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	70	°C
Min. mould temperature	50	°C
Max. mould temperature	100	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	3	s/mm

### Extrusion

Drying Temperature	80	$^{\circ}\mathrm{C}$
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.06	%
Melt Temperature Range	235 - 250	°C

### **Blow Molding**

Drying Recommended	yes	
Drying Temperature	100 - 110	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.03	%
Melt Temperature Optimum	245	°C
Melt Temperature Range	255 - 265	°C
Swell ratio	2.4	
Mold Temperature Optimum	80	°C
Mold Temperature Range	80 - 110	°C

### Characteristics

Processing Injection Moulding, Blow Moulding

Delivery form Pellets

Special characteristics Heat stabilised or stable to heat

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### **NYLON RESIN**

### **Automotive**

OEM STANDARD ADDITIONAL INFORMATION

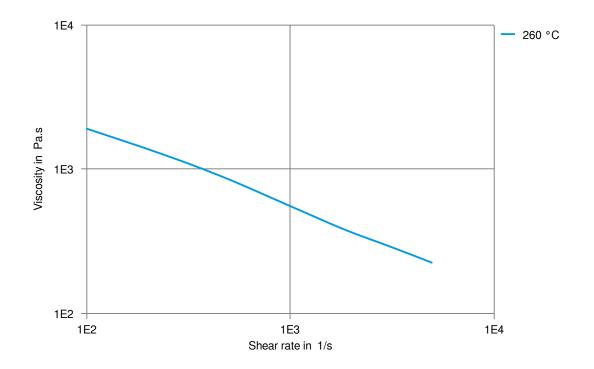
Mercedes-Benz DBL5408.21 PA6-HI

Stellantis B62 0300 / 61/213M+/215E+/11/H115 + S62 01994\_15\_00068

 VW Group
 000 15130 °C A6-004

 VW Group
 VW 50134 PA6-2-A

### Viscosity-shear rate

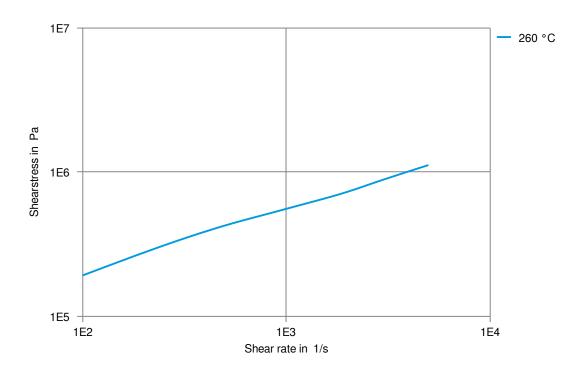


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Shearstress-shear rate

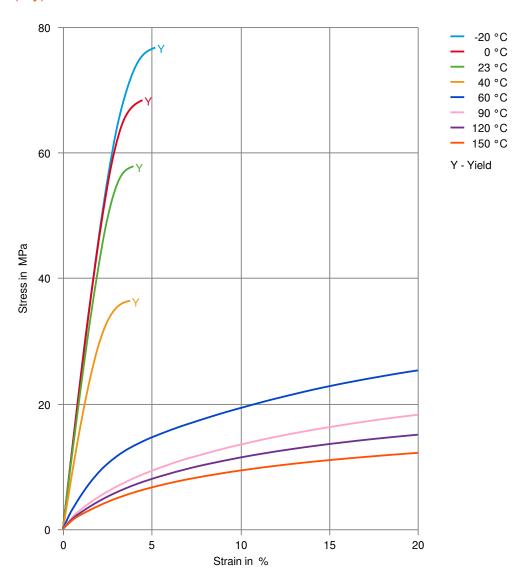


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Stress-strain (dry)

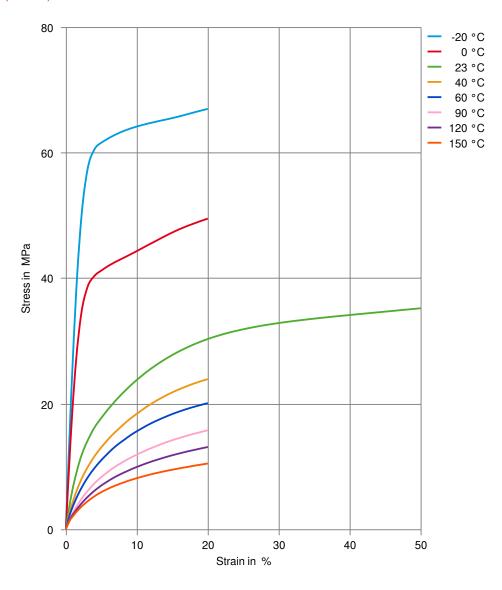


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Stress-strain (cond.)

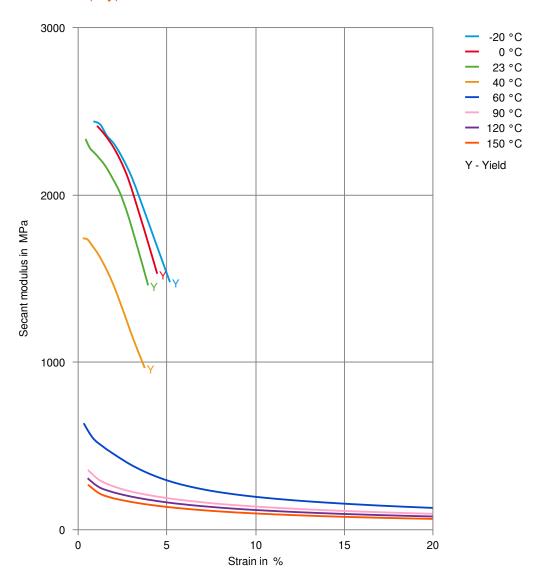


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Secant modulus-strain (dry)

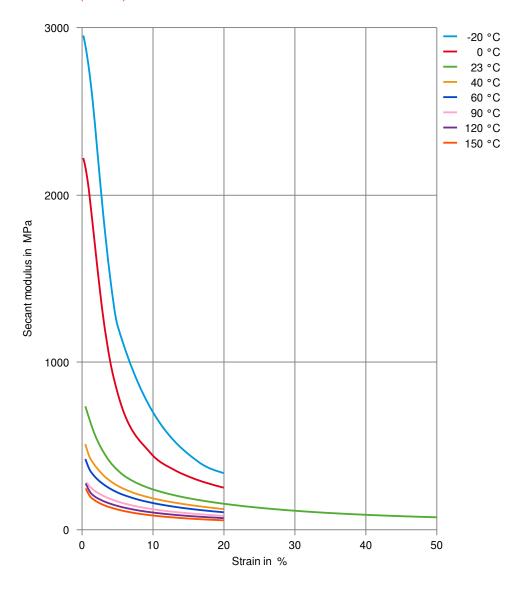


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Secant modulus-strain (cond.)

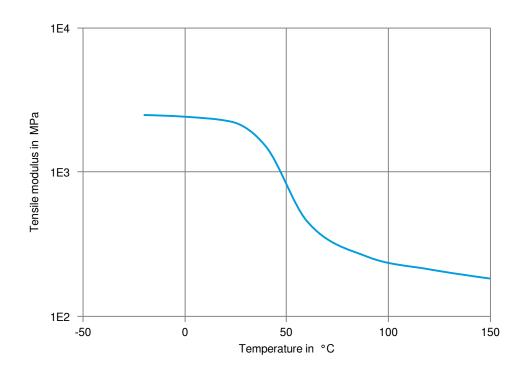


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Tensile modulus-temperature (dry)

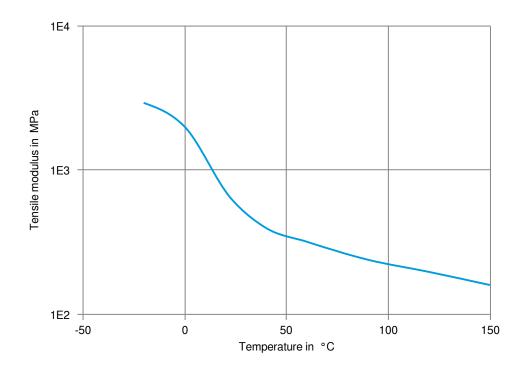


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Tensile modulus-temperature (cond.)



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## Zytel® BM7300THS BK317

#### Chemical Media Resistance

#### **Alcohols**

✓ Ethanol, 23°C

#### Hydrocarbons

- ✓ Toluene, 23°C
- ✓ iso-Octane, 23°C

#### Mineral oils

- ✓ SAE 10W40 multigrade motor oil, 23°C
- ✓ SAE 10W40 multigrade motor oil, 130°C
- ✓ Motor oil OS206 304 Ref.Eng.Oil, ISP, 135°C

#### Standard Fuels

✓ ISO 1817 Liquid 3 - M3E7, 60°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).

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Revised: 2025-04-22 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. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design 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, pr

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