



## **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® FR7026V0F BK001 is an unreinforced, flame retardant, heat stabilized, polyamide 66 resin for injection molding. It does not contain elemental phosphorous or heavy metals and uses an halogen free flame retardant package. Compliant with UL 746H/C-IC

#### Product information

Product information			
Resin Identification	PA66-FR(30)	ISO 1043	
Part Marking Code	>PA66-FR(30)<		ISO 11469
ISO designation	ISO 16396-PA66	6,FR(30),M1CF1G1R,S14-040	
Rheological properties	dry/cond.		
Moulding shrinkage, parallel	0.9/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.0/-	%	ISO 294-4, 2577
Typical mechanical properties	dry/cond.		
Tensile modulus	3700/2000	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	*/55	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	*/20	%	ISO 527-1/-2
Tensile stress at break, 5mm/min	80/*	MPa	ISO 527-1/-2
Nominal strain at break	*/30	%	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5/*	%	ISO 527-1/-2
Charpy impact strength, 23°C	80/110	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	3.2/7	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	3/2	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	4.4/-	kJ/m²	ISO 180/1A
Ball indentation hardness, H 358/30	-/110	MPa	ISO 2039-1
Poisson's ratio	0.36/0.4		
Thermal properties	dry/cond.		
Melting temperature, 10 ° C/min	260/*	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	80/20	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	80/*	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	230/*	°C	ISO 75-1/-2
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Sim. to ISO 62

ISO 1183

# Zytel® FR7026V0F BK001

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Ball pressure test Thermal conductivity of melt Specific heat capacity of melt RTI, electrical, 0.75mm RTI, electrical, 1.5mm RTI, impact, 0.75mm RTI, impact, 1.5mm RTI, impact, 1.5mm RTI, impact, 1.5mm RTI, strength, 0.75mm RTI, strength, 1.5mm RTI, strength, 3.0mm RTI, strength, 3.0mm [DS]: Derived from similar grade	220/- <sup>[DS]</sup> 0.17 2590 130 130 130 95 95 110 110/* 110	°C W/(m K) J/(kg K) °C °C °C °C °C °C	IEC 60695-10-2 ISO 22007-2 ISO 22007-4 UL 746B
Flammability	dry/cond.		
Burning Behav. at 1.5mm nom. thickn. Thickness tested UL recognition Burning Behav. at thickness h Thickness tested UL recognition Oxygen index Glow Wire Flammability Index, 0.4mm Glow Wire Flammability Index, 0.75mm Glow Wire Flammability Index, 1.5mm Glow Wire Flammability Index, 3.0mm Glow Wire Ignition Temperature, 0.75mm Glow Wire Ignition Temperature, 0.4mm Glow Wire Ignition Temperature, 1.5mm Glow Wire Ignition Temperature, 3.0mm FMVSS Class [DS]: Derived from similar grade	V-0/* 1.5/* yes/* V-0/* 0.4/* yes/* 39/* 960/- 960/- 960/- 960/- 960/- 960/- 960/- DNI <sup>[DS]</sup>	class mm class mm % °C °C °C °C °C °C	IEC 60695-11-10 IEC 60695-11-10 UL 94 IEC 60695-11-10 IEC 60695-11-10 UL 94 ISO 4589-1/-2 IEC 60695-2-12 IEC 60695-2-12 IEC 60695-2-12 IEC 60695-2-12 IEC 60695-2-13
Electrical properties	dry/cond.		
Surface resistivity Electric strength Comparative tracking index Comparative tracking index, 23°C	*/>1E15 31/30 600/- 0/-	Ohm kV/mm PLC	IEC 62631-3-2 IEC 60243-1 IEC 60112 UL 746A
Physical/Other properties	dry/cond.		
Humidity absorption, 2mm Water absorption, 2mm	2.5/* 8/*	% %	Sim. to ISO 62 Sim. to ISO 62

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1.8<sup>[1]</sup>/\*

1160/-

kg/m<sup>3</sup>

Revised: 2025-04-30 Source: Celanese Materials Database

Water absorption, Immersion 24h

Density

[1]: wall thickness 2mm





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# Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	280	°C
Min. melt temperature	270	°C
Max. melt temperature	290	°C
Screw tangential speed	≤0.2	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	3	s/mm
Ejection temperature	210	°C

## Characteristics

Processing Injection Moulding

Delivery form Pellets

Additives Release agent, Flame retardant, Non-halogenated/Red phosphorous free flame

retardant

Special characteristics Flame retardant

## **Automotive**

OEM STANDARD ADDITIONAL INFORMATION

Stellantis B62 0300 / 61/U4/223E/211M/C2B/C4 01378\_20\_04251

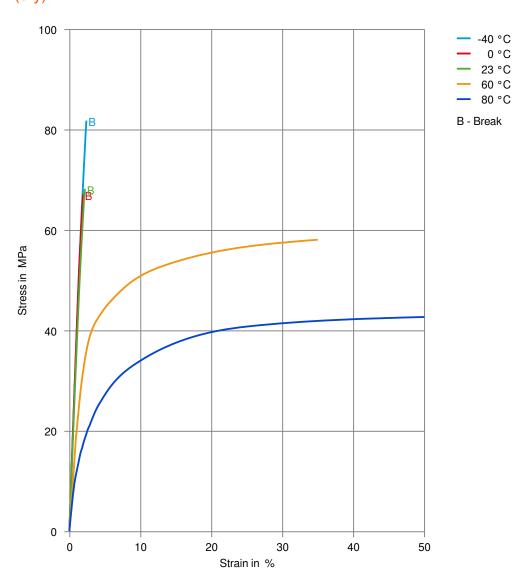
VW Group VW 50127 PA66-FR(30)
VW Group VW 50133 PA66-1-A

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Stress-strain (dry)

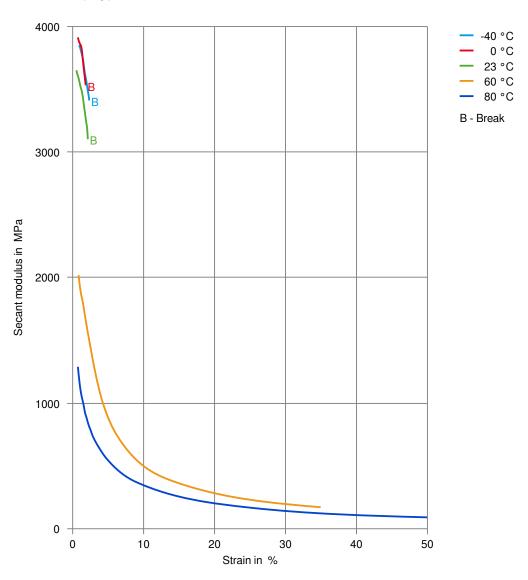


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Secant modulus-strain (dry)



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## **NYLON RESIN**

## 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
- X Hydrochloric Acid (36% by mass), 23°C
- X Nitric Acid (40% by mass), 23°C
- X Sulfuric Acid (38% by mass), 23°C
- X Sulfuric Acid (5% by mass), 23°C
- X Chromic Acid solution (40% by mass), 23°C

#### Bases

- X 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
- X SAE 10W40 multigrade motor oil, 130°C
- X 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
- ✓ 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

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- ✓ Sodium Carbonate solution (20% by mass), 23°C
- ✓ Sodium Carbonate solution (2% by mass), 23°C
- X Zinc Chloride solution (50% by mass), 23°C

#### Other

- ✓ Ethyl Acetate, 23°C
- X Hydrogen peroxide, 23°C
- X 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
- X 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).

x 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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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, 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 e

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