



Zytel® 70G43HSLA BK099

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® 70G43HSLA BK099 is a 43% glass fiber reinforced, heat stabilized, black polyamide 66 resin for injection moulding.

Product information

Resin Identification Part Marking Code ISO designation	PA66-GF43 >PA66-GF43< ISO 16396-PA66,GF43,M1CGHR,S10-140		ISO 1043 ISO 11469
Rheological properties	dry/cond.		
Melt mass-flow rate	35/*	g/10min	ISO 1133
Melt mass-flow rate, Temperature	275/*	°C	
Melt mass-flow rate, Load	5/*	kg	
Viscosity number	110 ^[1] /*	cm ³ /g	ISO 307, 1628
Moulding shrinkage, parallel	0.3/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.9/-	%	ISO 294-4, 2577
[1]: 90% formic acid			
Typical mechanical properties	dry/cond.		
Tancila modulus	14000/11000	MPa	ISO 527-1/-2

Typical mean properties	a. y, 00.1a.		
Tensile modulus	14000/11000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	230/180	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5/3.5	%	ISO 527-1/-2
Flexural modulus	13000/10000	MPa	ISO 178
Flexural strength	340/260	MPa	ISO 178
Charpy impact strength, 23°C	90/95	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	85/90	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	16/18	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	16/14	kJ/m²	ISO 179/1eA
Puncture energy, 23°C	4.4/-	J	ISO 6603-2
Izod notched impact strength, 23°C	14/16	kJ/m²	ISO 180/1A
Ball indentation hardness, H 961/30	290/-	MPa	ISO 2039-1
Poisson's ratio	0.33/0.34		
Multiaxial Impact, Total Energy, 4.5m/s, 2mm	4.4/-	J	ISO 6603-2

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Thermal properties	dry/cond.		
Melting temperature, 10°C/min	262/*	°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	255/*	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	258/*	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	20/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm, expansion, parallel, 55-160°C	9/* 61/*	E-6/K E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C Coeff. of linear therm. expansion, normal, 55-160°C	130/*	E-6/K	ISO 11359-1/-2 ISO 11359-1/-2
Thermal conductivity of melt	0.25	W/(m K)	ISO 22007-2
TGA curve	available	, ()	ISO 11359-1/-2
Flammability	dry/cond.		
Oxygen index	24/*	%	ISO 4589-1/-2
FMVSS Class	В		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	27	mm/min	ISO 3795 (FMVSS 302)
Electrical properties	dry/cond.		
Dissipation factor, 100Hz	130/-	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	150/-	E-4	IEC 62631-2-1
Volume resistivity	>1E13/-	Ohm.m	IEC 62631-3-1
Electric strength	25/-	kV/mm	IEC 60243-1
Comparative tracking index	600/-		IEC 60112
Physical/Other properties	dry/cond.		
Humidity absorption, 2mm	1.5/*	%	Sim. to ISO 62
Water absorption, 2mm	4.7/*	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.9 ^[2] /*	% (a) /ma3	Sim. to ISO 62
Density	1490/-	kg/m³	ISO 1183
[2]: wall thickness 2mm			
Injection			
Drying Recommended	yes		
Drying Temperature		°C	
Drying Time, Dehumidified Dryer	2 - 4		
Processing Moisture Content Melt Temperature Optimum	≤0.2 295		
Min. melt temperature		°C	
Max. melt temperature		°C	
Screw tangential speed	≤0.2	m/s	
Mold Temperature Optimum		°C	
Min. mould temperature		°C	
Max. mould temperature		°C	
Hold pressure time	50 - 100		
Hold pressure time Ejection temperature		s/mm °C	
Ljourn temperature	210	J	

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Characteristics

Processing Injection Moulding

Delivery form Pellets

Additives Release agent

Special characteristics Heat stabilised or stable to heat

Automotive

OEM STANDARD ADDITIONAL INFORMATION

General Motors GMW3038P-PA66-GF45H Black
General Motors GMW3038P-PA66-GF45J Black

Hyundai MS211-66 Type C

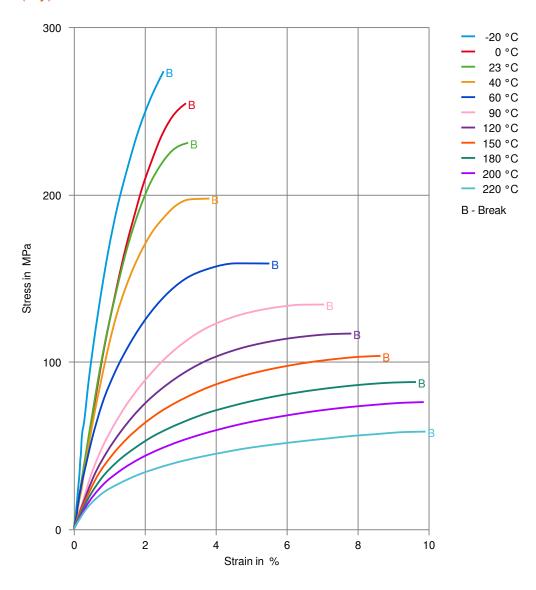
Stellantis - Chrysler MS.50017 / CPN-2508 Black

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Stress-strain (dry)

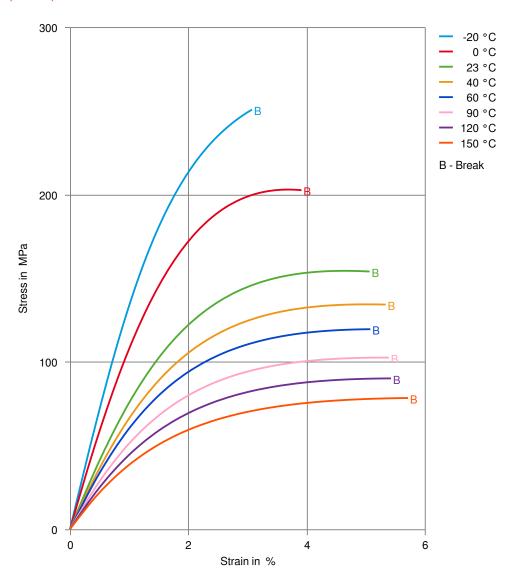


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Stress-strain (cond.)

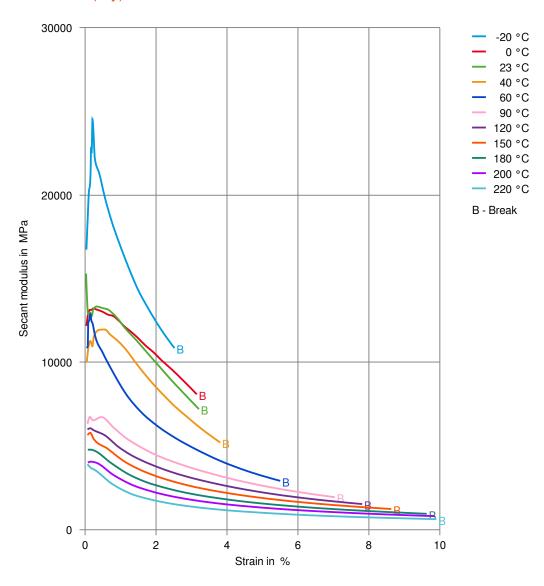


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Secant modulus-strain (dry)

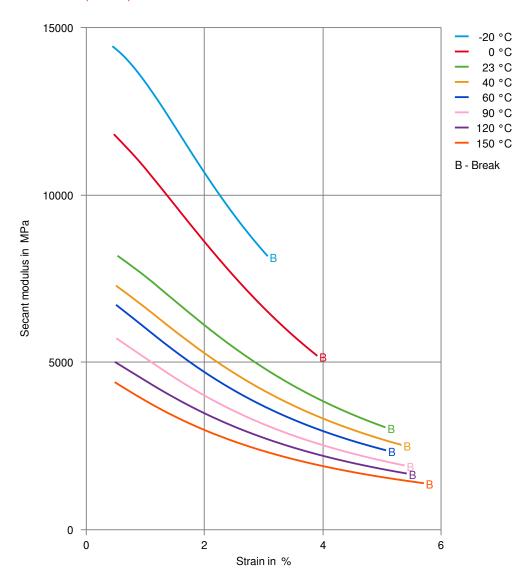


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Secant modulus-strain (cond.)



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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
- ✓ 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
- ✓ 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
- ✓ 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).

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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Revised: 2025-04-30 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, 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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