Celanese
The chemistry inside innovation™

Zytel® 105F BK010

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® 105F BK010 is a lubricated, fast cycling, weather resistant polyamide 66 resin. Zytel® 105F BK010 contains finely dispersed carbon black.

Product information

Resin Identification	PA66	ISO 1043
Part Marking Code	>PA66<	ISO 11469
ISO designation	ISO 16396-PA66,,M1CG1L1R,S14-030	

Rheological properties

	dry/cond.		
Viscosity number	150[1]/*	cm³/g	ISO 307, 1628
Moulding shrinkage, parallel	1.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.3 / -	%	ISO 294-4, 2577

[1]: Sulfuric acid 96%

Typical mechanical properties

	dry/cond.		
Tensile modulus	3200 / 1500	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	85 / 60	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	4.3 / 25	%	ISO 527-1/-2
Nominal strain at break	24 / >50	%	ISO 527-1/-2
Tensile creep modulus, 1h	* / 1340	MPa	ISO 899-1
Tensile creep modulus, 1000h	* / 600	MPa	ISO 899-1
Charpy impact strength, 23°C	45 / N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	55 / 55	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	6 / 15	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	4 / 3	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	5 / 12	kJ/m²	ISO 180/1A
Izod notched impact strength, -30°C	4.0 / 3.0	kJ/m²	ISO 180/1A
Poisson's ratio	0.37 / 0.43		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	263 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60 / 40	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	70 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	205 / *	°C	ISO 75-1/-2

Celanese
The chemistry inside innovation™

Zytel® 105F BK010

NYLON RESIN

Vicat softening temperature, 50 °C/h 50N	240 / *	°C	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	100 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	110 / *	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.75mm	125	°C	UL 746B
RTI, electrical, 1.5mm	125	°C	UL 746B
RTI, electrical, 3.0mm	125	°C	UL 746B
RTI, electrical, 6mm	125	°C	UL 746B
RTI, impact, 0.75mm	65	°C	UL 746B
RTI, impact, 1.5mm	75	°C	UL 746B
RTI, impact, 3.0mm	75	°C	UL 746B
RTI, impact, 6mm	75	°C	UL 746B
RTI, strength, 0.75mm	65	°C	UL 746B
RTI, strength, 1.5mm	85 / *	°C	UL 746B
RTI, strength, 3.0mm	85	°C	UL 746B
RTI, strength, 6mm	85	°C	UL 746B

Flammability

	dry/cond.		
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	yes / *		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	yes / *		UL 94
Oxygen index	27 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index, 1.0mm	800 / -	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.0mm	900 / -	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	960 / -	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	725 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.0mm	725 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	725 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 2.0mm	725 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	725 / -	°C	IEC 60695-2-13
Glow Wire Temperature, No Flame, 0.75mm	700 / -	°C	IEC 60335-1
Glow Wire Temperature, No Flame, 1mm	700 / -	°C	IEC 60335-1
Glow Wire Temperature, No Flame, 1.5mm	700 / -	°C	IEC 60335-1
Glow Wire Temperature, No Flame, 2mm	700 / -	°C	IEC 60335-1
Glow Wire Temperature, No Flame, 3mm	700 / -	°C	IEC 60335-1
FMVSS Class	SE		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm		mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Relative permittivity, 1MHz	3.6 / 4.6		IEC 62631-2-1
Dissipation factor, 1MHz	300 / 600	E-4	IEC 62631-2-1
Comparative tracking index	600 / -		IEC 60112

Celanese
The chemistry inside innovation™

Zytel® 105F BK010

NYLON RESIN

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	2.7 / *	%	Sim. to ISO 62
Water absorption, 2mm	8.5 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.95 / *	%	Sim. to ISO 62
Density	1140 / -	kg/m³	ISO 1183

VDA Properties

	dry/cond.		
Emission of organic compounds	6.6	µgC/g	VDA 277
Odour	2.5	class	VDA 270
Fogging, G-value (condensate)	0.1 / *	mg	ISO 6452

Injection

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
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

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent
Special characteristics	Light stabilised or stable to light, U.V. stabilised or stable to weather

Automotive

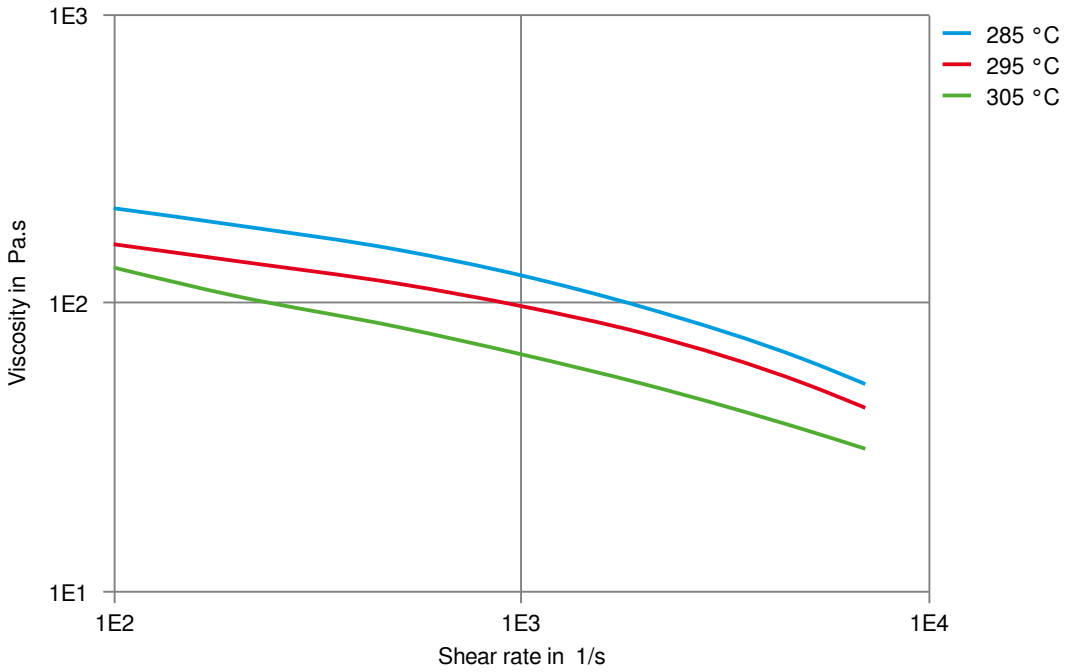
OEM	STANDARD
Mercedes-Benz	DBL5410.00 PA66

Celanese
The chemistry inside innovation™

Zytel® 105F BK010

NYLON RESIN

Viscosity-shear rate

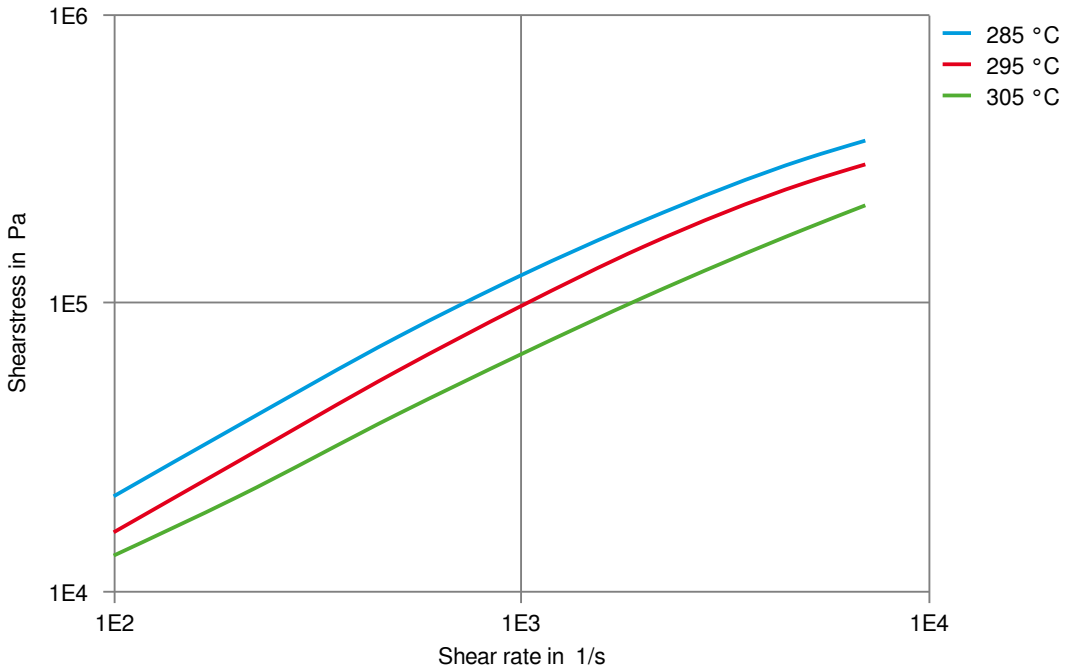


Celanese
The chemistry inside innovation™

Zytel® 105F BK010

NYLON RESIN

Shearstress-shear rate



Revised: 2025-04-18 Source: Celanese Materials Database