

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® PLS93G35DH1 is a 35% glass fibre reinforced, SHIELD protected polyamide 6 for injection moulding. It provides exceptional welding resistance and excellent heat resistance.

Product information

Resin Identification Part Marking Code ISO designation	PA6-GF35 >PA6-GF35< ISO 16396-PA6,GF35,M1CGHR,S14-120		ISO 1043 ISO 11469
Rheological properties	dry/cond.		
Moulding shrinkage, parallel Moulding shrinkage, normal	0.2/- 0.7/-	% %	ISO 294-4, 2577 ISO 294-4, 2577
Typical mechanical properties	dry/cond.		
Tensile modulus Tensile stress at break, 5mm/min Tensile strain at break, 5mm/min Charpy impact strength, 23°C Charpy notched impact strength, 23°C Charpy notched impact strength, -30°C Poisson's ratio	12000/6500 200/120 3.5/7 100/90 80/80 15/- 13/- 0.33/0.35	MPa MPa % kJ/m ² kJ/m ² kJ/m ²	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 179/1eU ISO 179/1eU ISO 179/1eA ISO 179/1eA
Thermal properties	dry/cond.		
Melting temperature, 10°C/min Glass transition temperature, 10°C/min Temperature of deflection under load, 1.8 MPa Coefficient of linear thermal expansion (CLTE), parallel	224/* 70/15 205/* 7/*	°C °C °C E-6/K	ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2 ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal Thermal conductivity of melt Specific heat capacity of melt	100/* 0.28 2100	E-6/K W/(m K) J/(kg K)	ISO 11359-1/-2 ISO 22007-2 ISO 22007-4

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Zytel[®] PLS93G35DH1 BK549

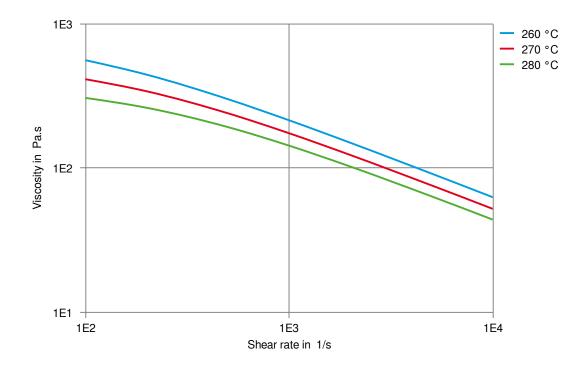
ZYTEL® PLUS & XT NYLON RESIN

Flammability Burning Behav. at 1.5mm nom. thickn. Thickness tested FMVSS Class Burning rate, Thickness 1 mm	dry/cond. HB / * 1.5 / * B <80	class mm mm/min	IEC 60695-11-10 IEC 60695-11-10 ISO 3795 (FMVSS 302) ISO 3795 (FMVSS 302)	
Electrical properties	dry/cond.			
Volume resistivity Surface resistivity Comparative tracking index	>1E13/7E11 */6E13 550/-	Ohm.m Ohm	IEC 62631-3-1 IEC 62631-3-2 IEC 60112	
Physical/Other properties	dry/cond.			
Humidity absorption, 2mm Density Density of melt	2/* 1400/- 1240	% kg/m³ kg/m³	Sim. to ISO 62 ISO 1183	
Injection				
Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Min. melt temperature Max. melt temperature Screw tangential speed Mold Temperature Optimum Min. mould temperature Max. mould temperature Hold pressure range Hold pressure time Ejection temperature	2 - 4 ≤0.2 270 260 280 ≤0.2 100 70 120 50 - 100	% °C °C °C m/s °C °C °C MPa s/mm		
Characteristics				
Processing	Injection Moulding			
Delivery form	Pellets			
Additives	Release agent			
Special characteristics	Heat stabilised or stable to heat			





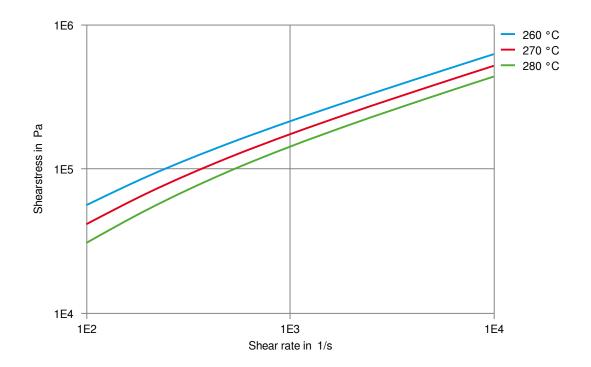
Viscosity-shear rate







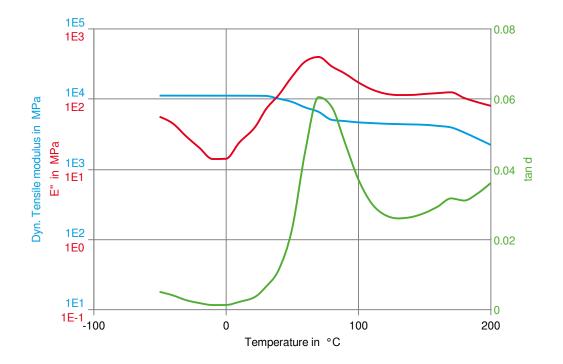
Shearstress-shear rate







Dynamic Tensile modulus-temperature (dry)



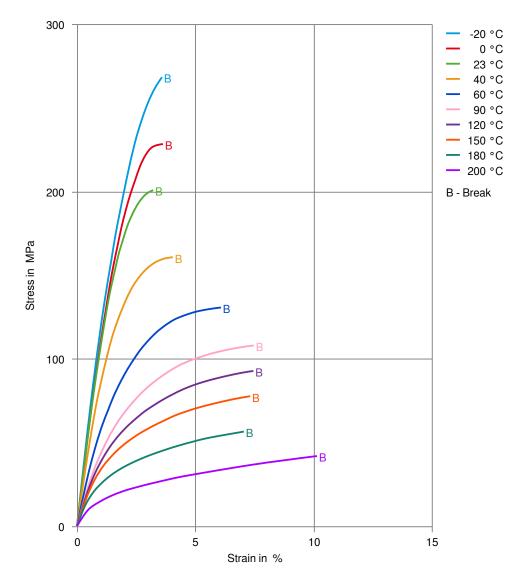




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ZYTEL® PLUS & XT NYLON RESIN

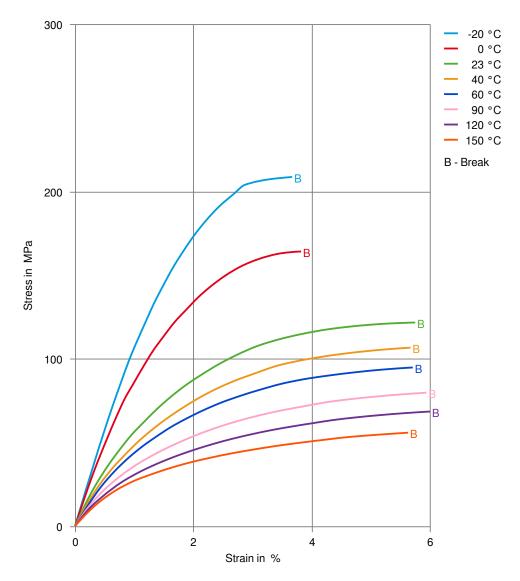
Stress-strain (dry)







Stress-strain (cond.)

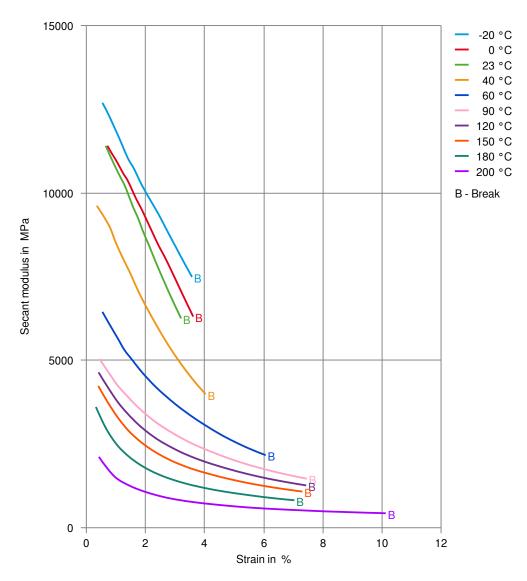






ZYTEL® PLUS & XT NYLON RESIN

Secant modulus-strain (dry)

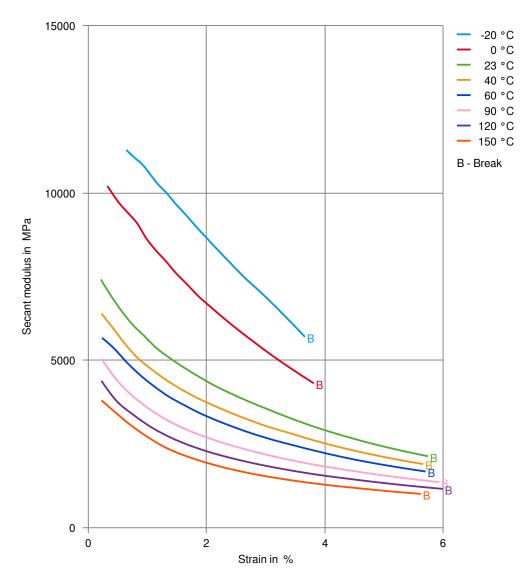






ZYTEL® PLUS & XT NYLON RESIN

Secant modulus-strain (cond.)

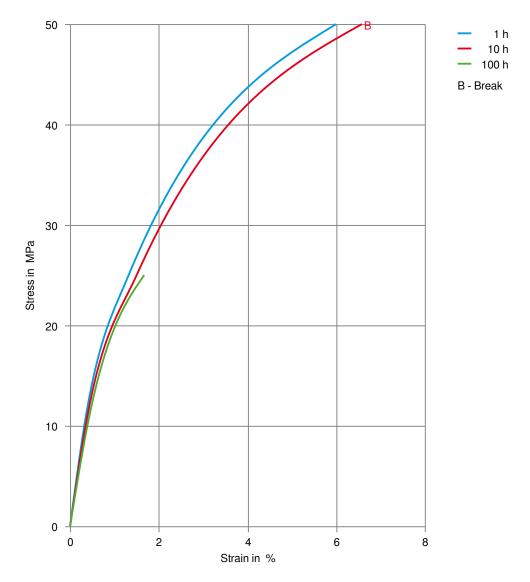






ZYTEL® PLUS & XT NYLON RESIN

Stress-strain (isochronous) 180°C (dry)



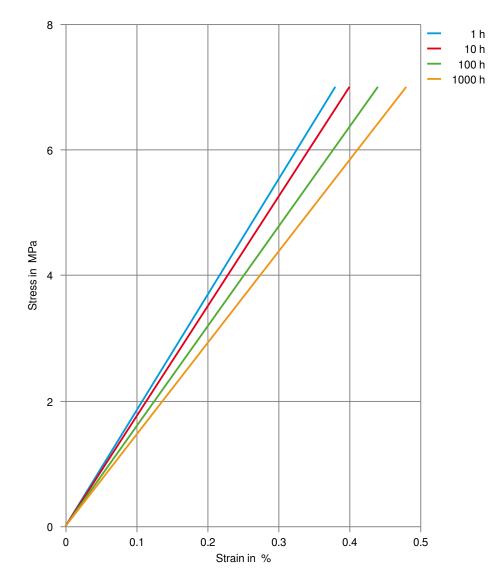




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ZYTEL® PLUS & XT NYLON RESIN

Stress-strain (isochronous) 200 °C (dry)

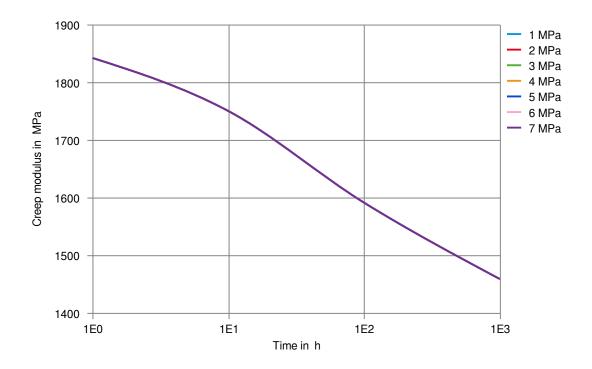






ZYTEL® PLUS & XT NYLON RESIN

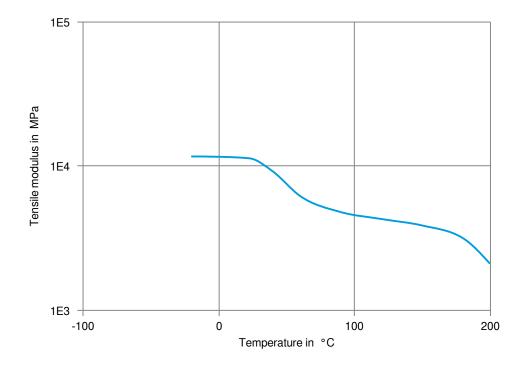
Creep modulus-time 200°C (dry)







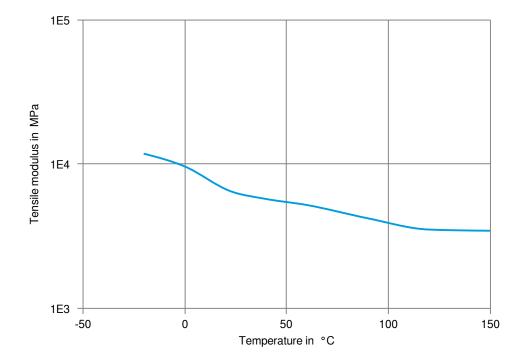
Tensile modulus-temperature (dry)







Tensile modulus-temperature (cond.)





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Zytel[®] PLS93G35DH1 BK549 ZYTEL® PLUS & XT NYLON RESIN

Mineral oils

Mineral oils

✓ SAE 10W40 multigrade motor oil, 130°C

Other

X Water, 90°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 not intended for use in medical or dental implants. Regardless of any such product 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 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 the lowest that texist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the m

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