Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR 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® 70G25HSLR is a 25% glass fibre reinforced, heat stabilised, hydrolysis resistant Polyamide 66 resin for injection moulding.

Product information

Resin Identification	PA66-GF25	ISO 1043
Part Marking Code	>PA66-GF25<	ISO 11469
ISO designation	ISO 16396-PA66,GF25,M1CGHRW,S14-080	

Rheological properties

	dry/cond.		
Melt mass-flow rate	25 / *	g/10min	ISO 1133
Melt mass-flow rate, Temperature	275 / *	°C	
Melt mass-flow rate, Load	5 / *	kg	
Viscosity number	150 / *	cm^3/g	ISO 307, 1628
Moulding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.1 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	8500 / 6000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	180 / 120	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3 / 6	%	ISO 527-1/-2
Flexural modulus	8000 / 5500	MPa	ISO 178
Flexural strength	260 / 170	MPa	ISO 178
Charpy impact strength, 23°C	60 / 80	kJ/m^2	ISO 179/1eU
Charpy impact strength, -30°C	60 / -	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	10 / 11	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	10 / -	kJ/m^2	ISO 180/1A
Izod notched impact strength, -40°C	7.0 / 7.0	kJ/m^2	ISO 180/1A
Izod impact strength, 23°C	50 / 80	kJ/m^2	ISO 180/1U
Izod impact strength, -30°C	50 / 50	kJ/m^2	ISO 180/1U
Poisson's ratio	0.34 / 0.35		

Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	262 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	80 / 25	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	252 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	261 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	34 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	29 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	18 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	76 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	88 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	130 / *	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.75mm	105	°C	UL 746B
RTI, electrical, 1.5mm	120	°C	UL 746B
RTI, electrical, 3.0mm	120	°C	UL 746B
RTI, impact, 1.5mm	95	°C	UL 746B
RTI, impact, 3.0mm	95	°C	UL 746B
RTI, strength, 1.5mm	105 / *	°C	UL 746B
RTI, strength, 3.0mm	110	°C	UL 746B

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	3 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
Glow Wire Flammability Index, 1.0mm	650 / -	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.0mm	650 / -	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	750 / -	°C	IEC 60695-2-12
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	29	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Electric Strength, Short Time, 1mm	24 / -	kV/mm	IEC 60243-1

Physical/Other properties

	dry/cond.		
Water absorption, Immersion 24h	1.4 / *	%	Sim. to ISO 62
Density	1320 / -	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	295	°C

Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Min. melt temperature	285	°C
Max. melt temperature	305	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	100	°C
Min. mould temperature	70	°C
Max. mould temperature	120	°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
Special characteristics	Heat stabilised or stable to heat, Hydrolysis resistant

Automotive

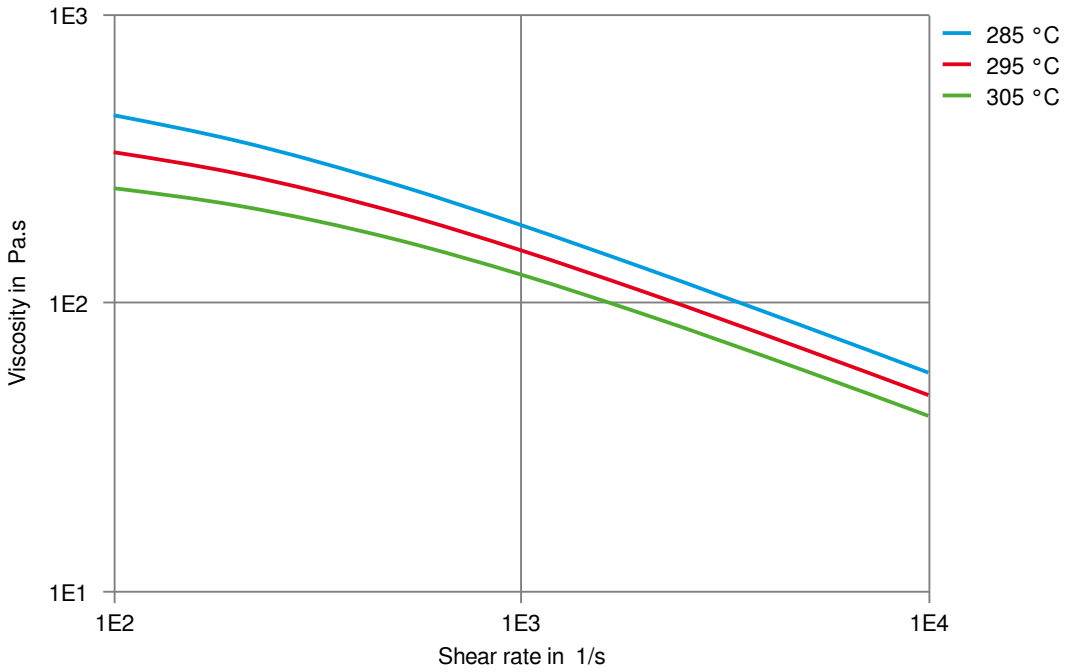
OEM	STANDARD	ADDITIONAL INFORMATION
Ford	WSS-M4D1016-A1	
General Motors	GMW3038P-PA66-GF25H	Black
Hyundai	MS941-03 Type A-5	
Stellantis - Chrysler	MS.50017 / CPN-4367	Black
Valeo	PDTNVB15009	PA66 GF25
Valeo	PDTNVC15009 RevA	PA66 GF25

Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Viscosity-shear rate
(measured on Zytel® 70G25HSLR NC010)

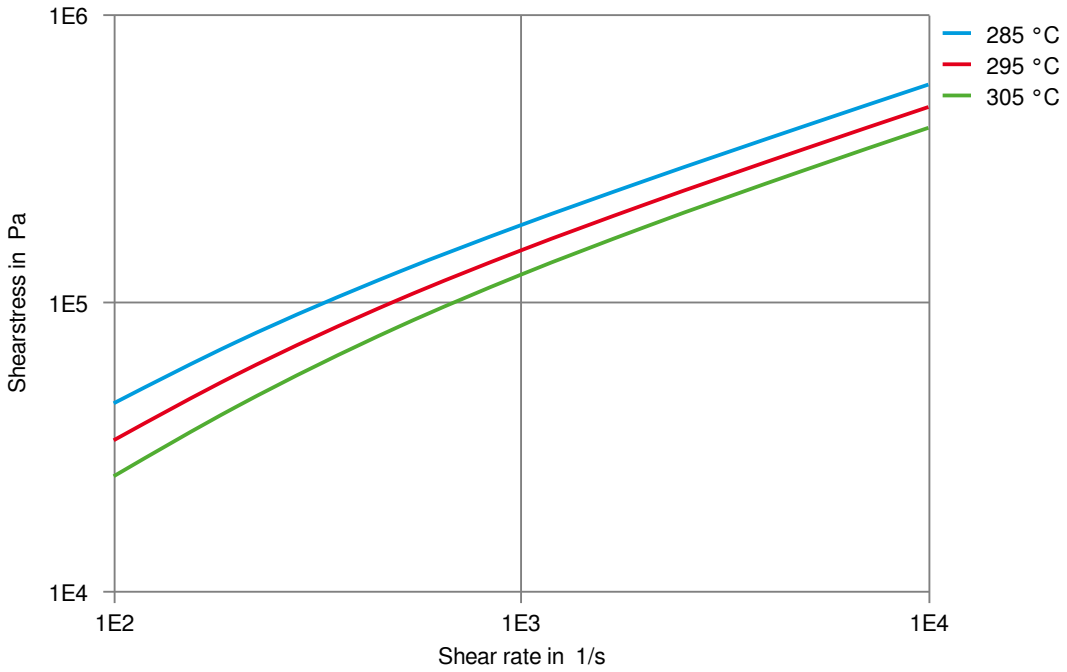


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Shearstress-shear rate
(measured on Zytel® 70G25HSLR NC010)

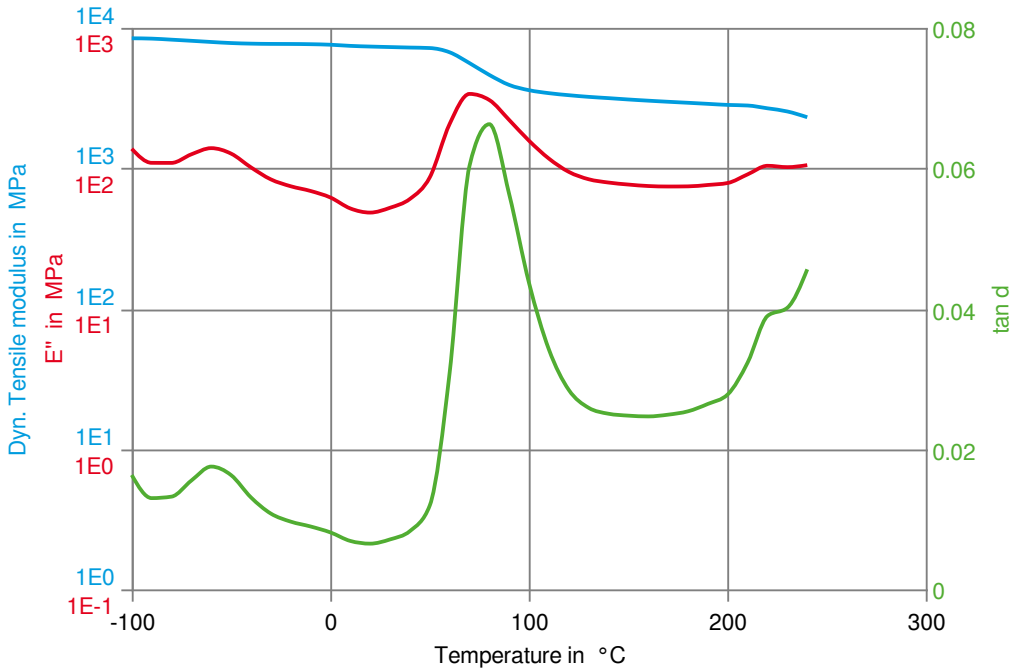


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Dynamic Tensile modulus-temperature (dry)

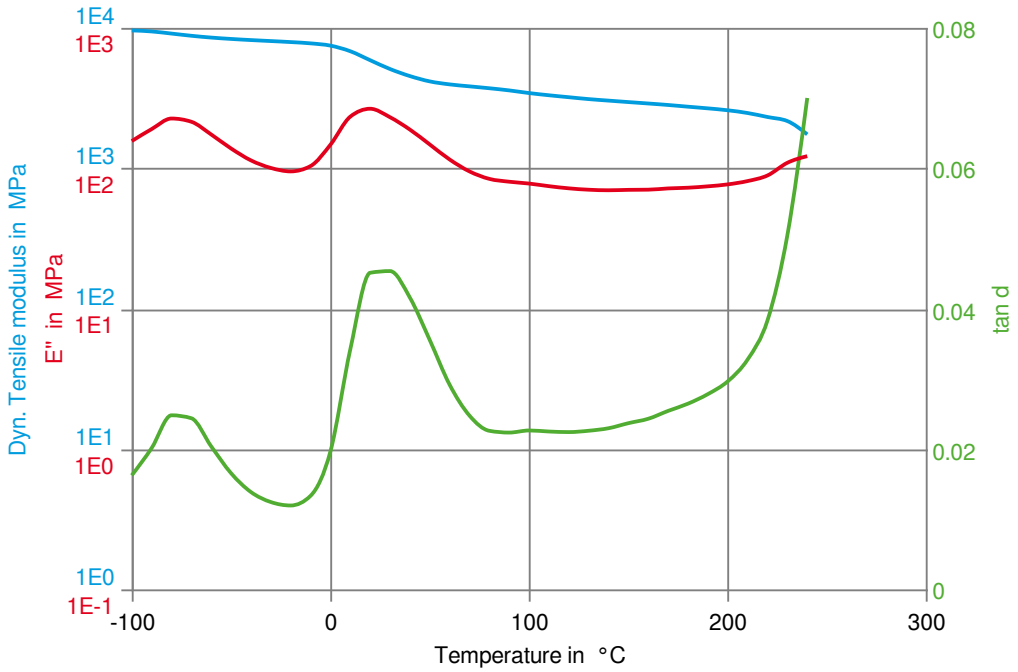


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Dynamic Tensile modulus-temperature (cond.)

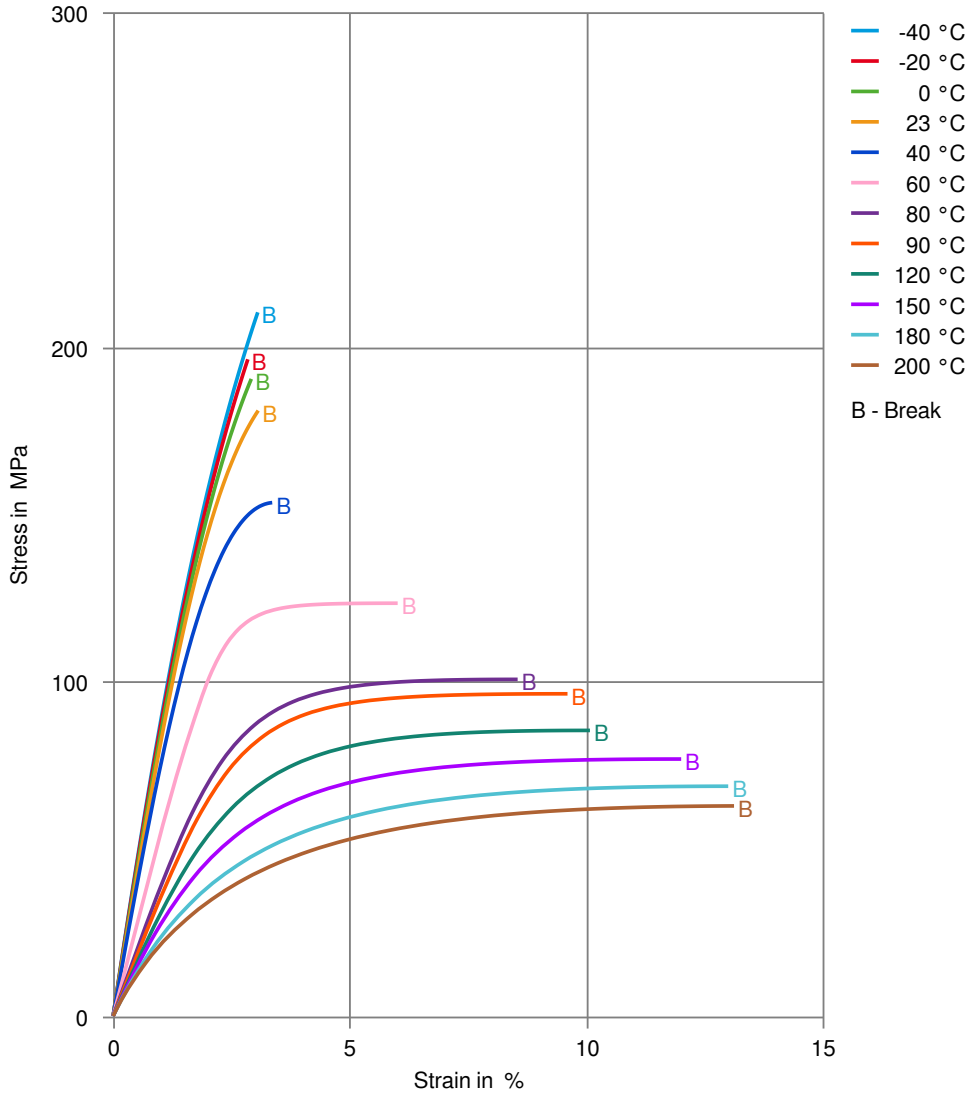


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Stress-strain (dry)

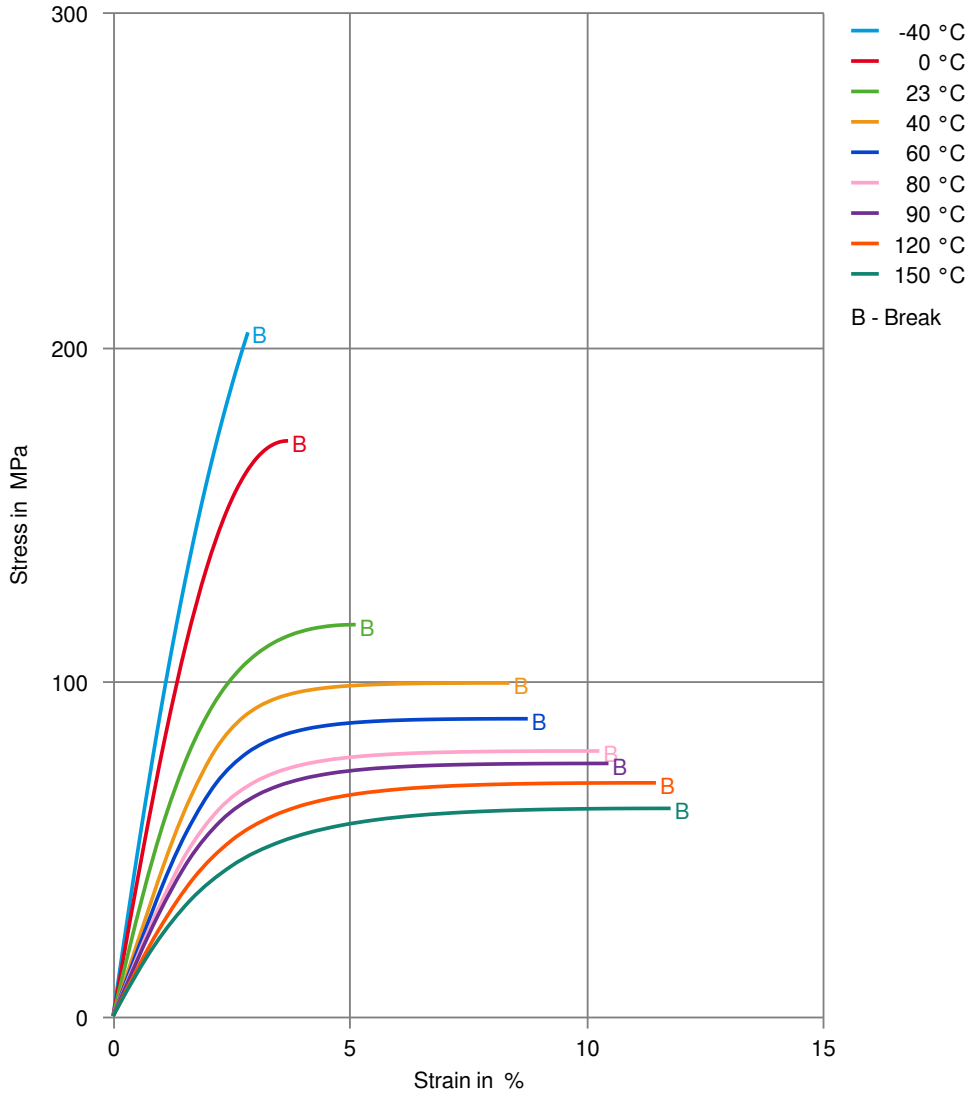


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Stress-strain (cond.)

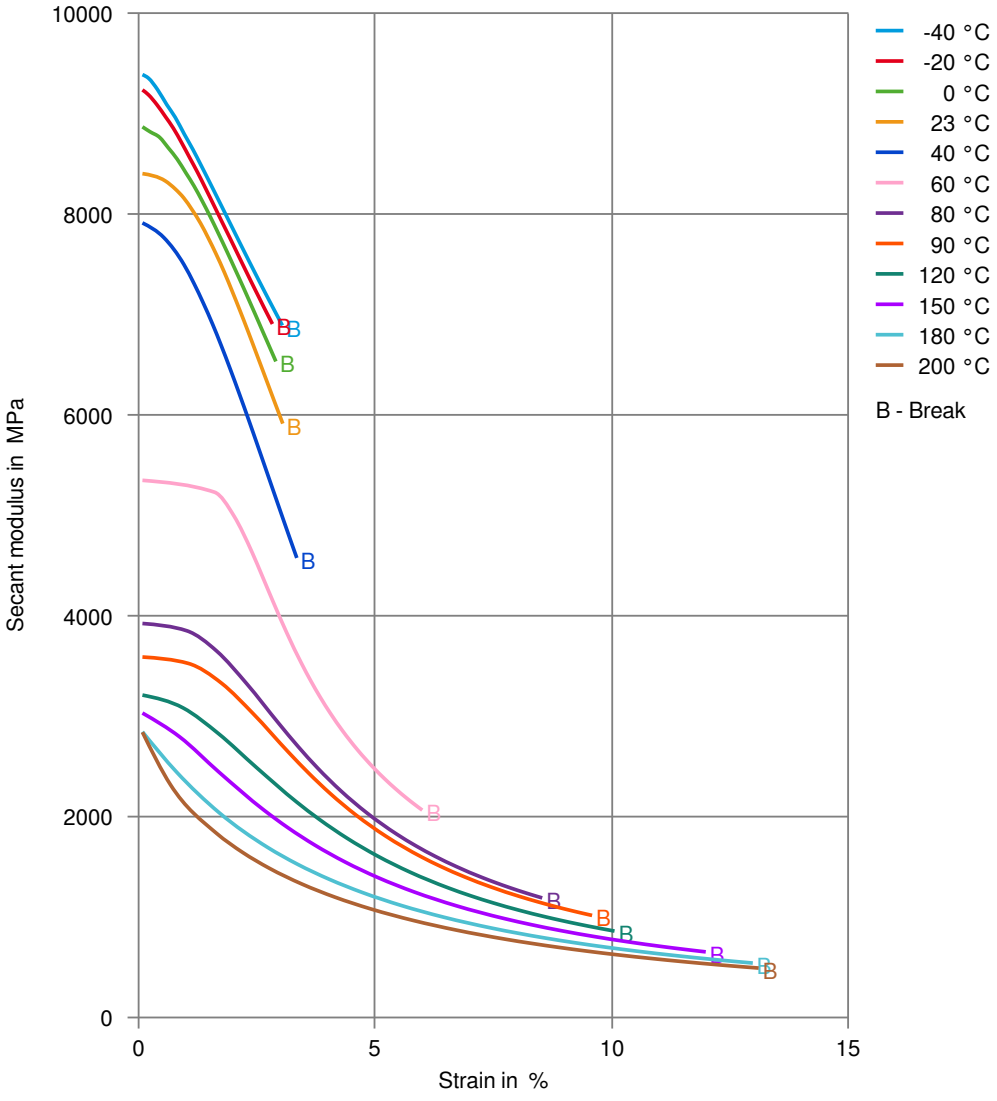


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Secant modulus-strain (dry)

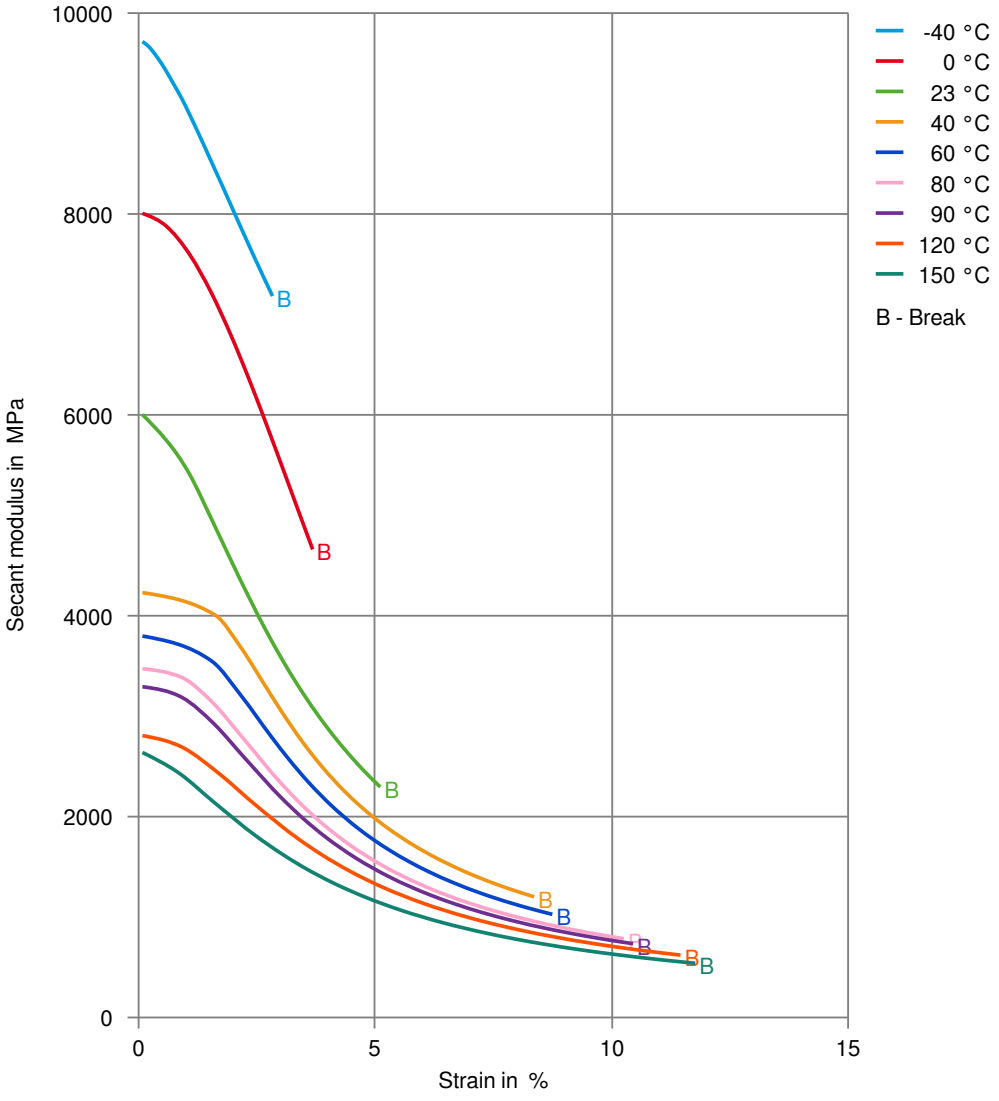


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Secant modulus-strain (cond.)

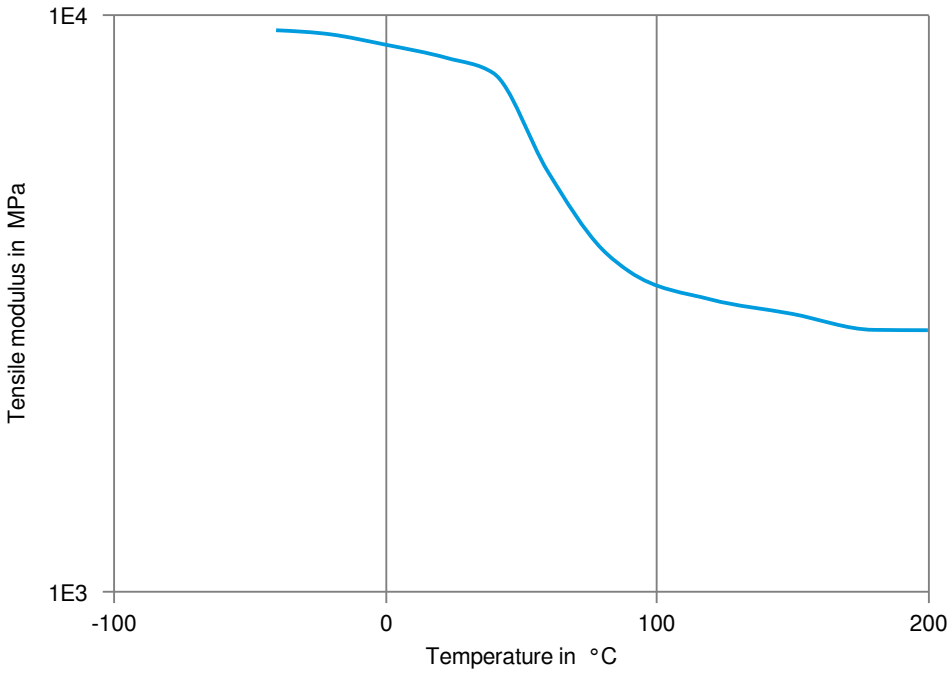


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Tensile modulus-temperature (dry)

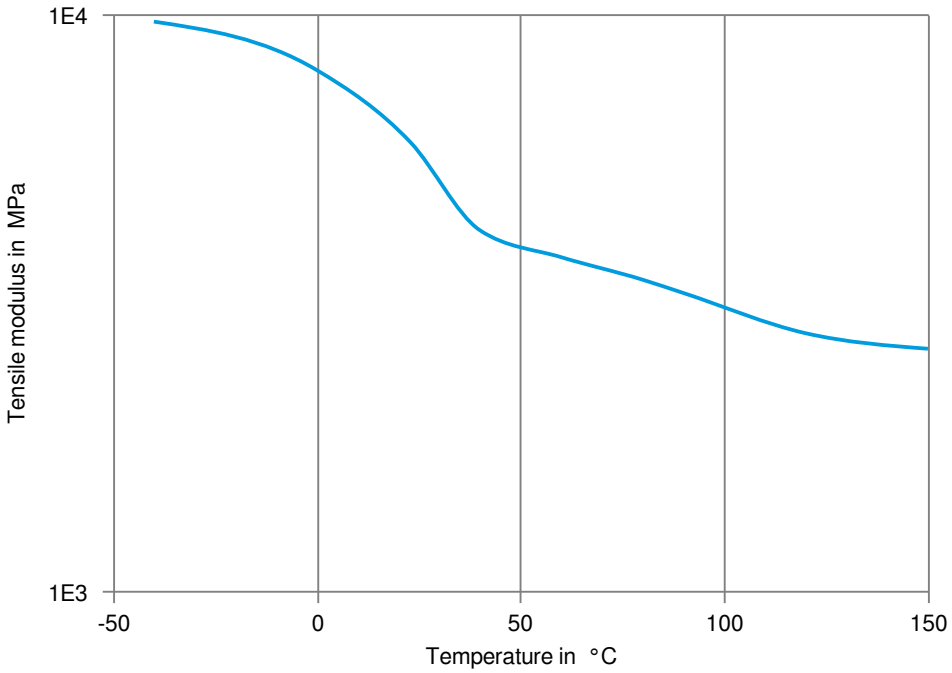


Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

Tensile modulus-temperature (cond.)



Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

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

Bases

- ✘ 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

Celanese
The chemistry inside innovation™

Zytel® 70G25HSLR BK099

NYLON RESIN

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

Other

- ✔ Ethyl Acetate, 23°C
- ✘ 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
- ✘ Coolant Glysantin G48, 1:1 in water, 125°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).

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