

DuPont™ Zytel® 80G14A NC010A

NYLON RESIN

Product Information

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, DuPont recommends, 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® 80G14A NC010A is a 14% glass fiber reinforced, toughened, high flow polyamide 66 resin. It offers outstanding performance in injection molding applications.

Product information	Value	Unit	Test Standard
Resin Identification	PA66-IGF14	-	ISO 1043
Part Marking Code	PA66-IGF14	-	ISO 11469
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.4 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.8 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	696182 / 493129	psi	ISO 527-1/-2
Stress at break	15700 / 9570	psi	ISO 527-1/-2
Strain at break	3.8 / 10	%	ISO 527-1/-2
Flexural Modulus	638000 / -	psi	ISO 178
Tensile creep modulus			ISO 899-1
1h	* / 450000	psi	
1000h	* / 363000	psi	
Charpy impact strength			ISO 179/1eU
73°F	33.3 / 36.2	ftlb/in ²	
-22°F	42.8 / 33.8	ftlb/in ²	
Charpy notched impact strength			ISO 179/1eA
73°F	6.18 / 8.09	ftlb/in ²	
-22°F	4.76 / 3.33	ftlb/in ²	
-40°F	- / 2.85	ftlb/in ²	
Izod notched impact strength			ISO 180/1A
73°F	6.18 / -	ftlb/in ²	
-40°F	2.85 / -	ftlb/in ²	
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 18°F/min	505 / *	°F	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
260 psi	464 / *	°F	
65 psi	496 / *	°F	
Vicat softening temperature, 90°F/h, 11 lbf	419 / *	°F	ISO 306
Coeff. of linear therm. expansion, parallel	2.22E-5 / *	in/in/°F	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	6.67E-5 / *	in/in/°F	ISO 11359-1/-2
Thermal conductivity of melt	0.19	W/(m K)	-
Spec. heat capacity solid	1240	J/(kg K)	-
Spec. heat capacity of melt	2350	J/(kg K)	-
Eff. thermal diffusivity	8.09E-8	m ² /s	-
Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 60mil nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	0.0591 / *	in	IEC 60695-11-10
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11



DuPont™ Zytel® 80G14A NC010A

NYLON RESIN

Thickness tested	0.0295 / *	in	IEC 60695-11-10	
Oxygen index	21 / *	%	ISO 4589-1/-2	DS
FMVSS Class	B	-	ISO 3795 (FMVSS 302)	
Burning rate, Thickness 1 mm	1.73	in/min	ISO 3795 (FMVSS 302)	DS
DS: Derived from similar grade				
Electrical properties	dry / cond	Unit	Test Standard	
Relative permittivity			IEC 62631-2-1	
100Hz	3.8 / 7.3	-		
1MHz	3.5 / 3.9	-		
Dissipation factor			IEC 62631-2-1	
100Hz	270 / 180	E-4		
1MHz	580 / 580	E-4		
Volume resistivity	>1E13 / 1E10	Ohm*m	IEC 62631-3-1	
Surface resistivity	* / 1E14	Ohm	IEC 62631-3-2	
Electric strength	914 / 927	kV/in	IEC 60243-1	
Comparative tracking index	600 / -	-	IEC 60112	
Other properties	dry / cond	Unit	Test Standard	
Humidity absorption, 80mil	1.8 / *	%	Sim. to ISO 62	
Water absorption, 80mil	6.2 / *	%	Sim. to ISO 62	
Density	1.19 / -	g/cm ³	ISO 1183	
VDA Properties	Value	Unit	Test Standard	
Emission of organic compounds	3.9	µgC/g	VDA 277	
Odor test	4.5	class	VDA 270	
Injection	dry / cond	Unit	Test Standard	
Drying Recommended	yes		-	
Drying Temperature	≥176	°F	-	
Drying Time, Dehumidified Dryer	2 - 4	h	-	
Processing Moisture Content	≤0.2	%	-	
Melt Temperature Optimum	563	°F	-	
Min. melt temperature	545	°F	-	
Max. melt temperature	581	°F	-	
Max. screw tangential speed	0.2 / *	m/s	-	
Mold Temperature Optimum	176	°F	-	
Min. mold temperature	122	°F	-	
Max. mold temperature	212	°F	-	
Hold pressure range	7250 - 14500	psi	-	
Hold pressure time	0.0762	s/mil	-	
Ejection temperature	410	°F	-	

Characteristics

Processing	• Injection Molding		
Delivery form	• Pellets		
Additives	• Release agent		
Regional Availability	• North America	• Asia Pacific	• Near East/Africa
	• Europe	• South and Central America	• Global

Revised: 2019-03-22

Page: 2 of 8

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11



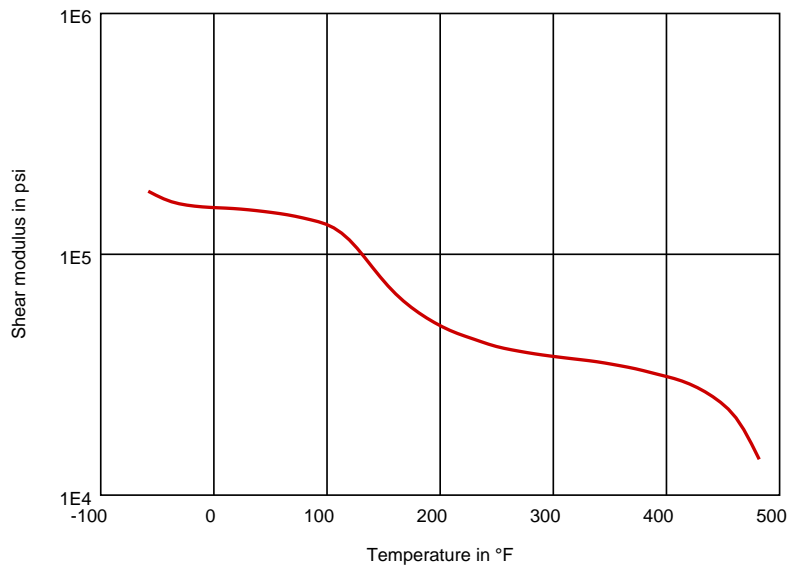
Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® 80G14A NC010A

NYLON RESIN

Diagrams

Dynamic Shear modulus-temperature (dry)



Revised: 2019-03-22

Page: 3 of 8

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

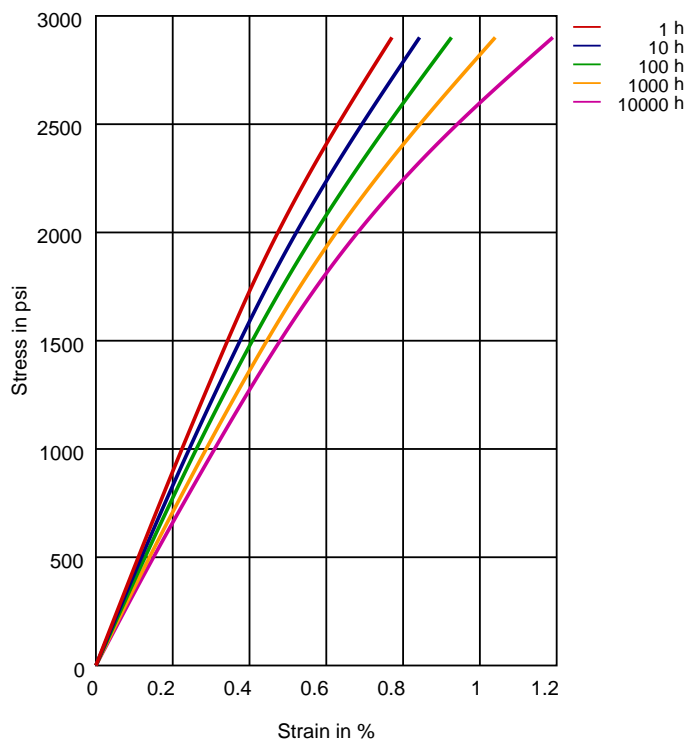
Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.



DuPont™ Zytel® 80G14A NC010A

NYLON RESIN

Stress-strain (isochronous) 73°F(cond.)



To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

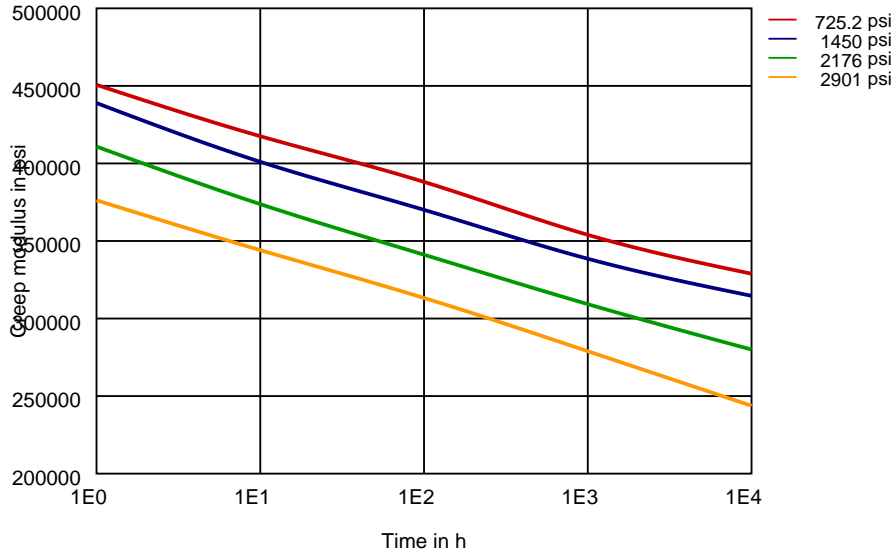
Tel: +41 22 717 51 11



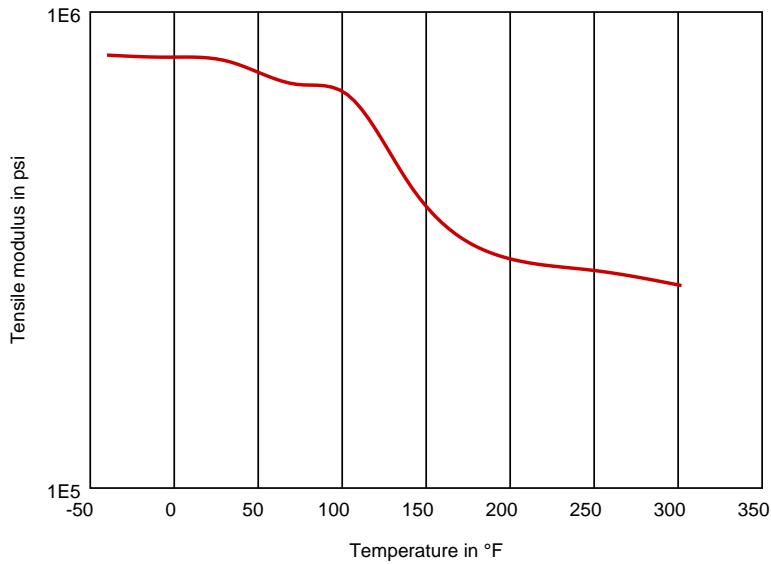
DuPont™ Zytel® 80G14A NC010A

NYLON RESIN

Creep modulus-time 73 °F (cond.)



Tensile modulus-temperature (dry)



To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

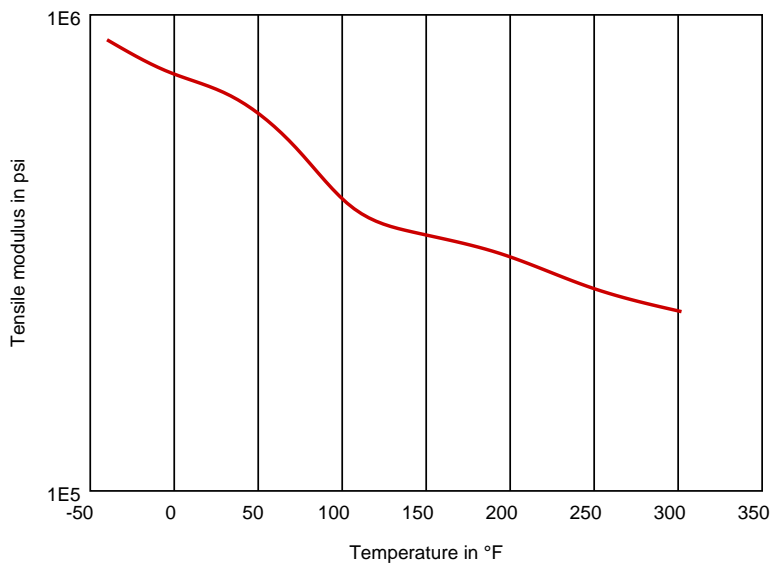
Tel: +41 22 717 51 11



DuPont™ Zytel® 80G14A NC010A

NYLON RESIN

Tensile modulus-temperature (cond.)



Revised: 2019-03-22

Page: 6 of 8

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11

Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.



DuPont™ Zytel® 80G14A NC010A

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)

Revised: 2019-03-22

Page: 7 of 8

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11



Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.

DuPont™ Zytel® 80G14A NC010A

NYLON RESIN

- ✓ 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)
- ✓ 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)

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).

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents. Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, discuss with your DuPont customer representative and read Medical Caution H-50103-5.

DuPont™, the DuPont Oval Logo, and all products, unless otherwise noted, denoted with ™, ® or © are trademarks, service marks or registered trademarks of affiliates of DuPont de Nemours, Inc. © 2019 DuPont de Nemours, Inc. All rights reserved.

Revised: 2019-03-22

Page: 8 of 8

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Tel: +1 302 999-4592

Toll-Free (USA): 800 441-0575

Asia Pacific

Tel: +81 3 5521 8600

Europe/Middle East/Africa

Tel: +41 22 717 51 11



Copyright 2017 DuPont. The DuPont Oval Logo is a trademark or registered trademark of E.I. du Pont de Nemours and Company or its affiliates. All rights reserved.