

DuPont™ Zytel® 151L NC010

NYLON RESIN

Product Information

DuPont™ Zytel® LCPA long chain polyamide resins provide an innovative and growing portfolio of flexible polymers with excellent thermal, chemical, and hydrolysis resistance. The diverse selection of Zytel® LCPA grades is targeted for a range of performance characteristics, balancing temperature resistance, flexibility and low permeation.

Zytel® 151L NC010 is a lubricated polyamide 612 resin.

General information	Value	Unit	Test Standard
Resin Identification	PA612	-	ISO 1043
Part Marking Code	PA612	-	ISO 11469
Rheological properties	dry / cond	Unit	Test Standard
Viscosity number	95 ^[1] / *	cm ³ /g	ISO 307, 1157, 1628
Molding shrinkage, parallel	1.3 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	1.4 / -	%	ISO 294-4, 2577
Mold Shrinkage, Flow, 3.2mm (0.125in)	1.1 / *	%	-
Mold Shrinkage, Transverse, 3.2mm (0.125in)	1.1 / *	%	-
1: sulphuric acid 96%			
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	2400 / 1700	MPa	ISO 527-1/-2
Yield stress	62 / 54	MPa	ISO 527-1/-2
Yield strain	4.5 / 18	%	ISO 527-1/-2
Nominal strain at break	17 / >50	%	ISO 527-1/-2
Flexural Modulus	2100 / 1440	MPa	ISO 178
Charpy impact strength			ISO 179/1eU
73°F	N / N	kJ/m ²	
-22°F	N / 40	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
73°F	3.5 / 4	kJ/m ²	
-22°F	3.5 / 3	kJ/m ²	
Izod notched impact strength			ISO 180/1A
73°F	4 / 4.5	kJ/m ²	
-22°F	4.5 / 3	kJ/m ²	
Hardness, Rockwell, R-scale	114 / -	-	ISO 2039-2
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 18°F/min	218 / *	°C	ISO 11357-1/-3
Glass transition temperature, 18°F/min	65 / 50	°C	ISO 11357-1/-2
Temp. of deflection under load			ISO 75-1/-2
260 psi	62 / *	°C	
65 psi	135 / *	°C	
Vicat softening temperature, 90°F/h, 11 lbf	181 / *	°C	ISO 306
Coeff. of linear therm. expansion, parallel	110 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion			ISO 11359-1/-2
normal	120 / *	E-6/K	
Normal, -40-23°C	90 / *	E-6/K	
Normal, 55-160°C	180 / *	E-6/K	
Parallel, -40-23°C	90 / *	E-6/K	
Parallel, 55-160°C	160 / *	E-6/K	
Thermal conductivity of melt	0.18	W/(m K)	-
Spec. heat capacity of melt	2750	J/(kg K)	-
RTI, electrical			UL 746B
30mil	105 / *	°C	
60mil	105 / *	°C	
120mil	105	°C	

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® 151L NC010

NYLON RESIN

RTI, impact			UL 746B
30mil	65	°C	
60mil	65 / *	°C	
120mil	65	°C	
RTI, strength			UL 746B
30mil	65	°C	
60mil	65 / *	°C	
120mil	65	°C	
Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 60mil 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	0.85 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94
Oxygen index	27 / *	%	ISO 4589-1/-2
Flammability, 3.0mm	V-2 / *	-	IEC 60695-11-10
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)
Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity			IEC 60250
100Hz	3.6 / 5.1	-	
1MHz	3.2 / 4	-	
Dissipation factor			IEC 60250
100Hz	135 / 700	E-4	
1MHz	160 / 400	E-4	
Volume resistivity	1E13 / 1E11	Ohm*m	IEC 60093
Surface resistivity	* / 1E12	Ohm	IEC 60093
Electric strength	30 / 30	kV/mm	IEC 60243-1
Comparative tracking index	600 / -	-	IEC 60112
Electric Strength, Short Time, 2mm	21.9 / 21.2	kV/mm	IEC 60243-1
Other properties	dry / cond	Unit	Test Standard
Humidity absorption, 80mil	1.3 / *	%	Sim. to ISO 62
Water absorption, 80mil	3 / *	%	Sim. to ISO 62
Density	1060 / -	kg/m ³	ISO 1183
Density of melt	900	kg/m ³	-
Film Properties	dry / cond	Unit	Test Standard
Strain at yield, parallel	4.5 / *	%	ISO 527-3
VDA Properties	Value	Unit	Test Standard
Emission of organic compounds	3.1	µgC/g	VDA 277
Odor test	4.5	class	VDA 270
Injection	Value	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	80	°C	-
Drying Time, Dehumidified Dryer	2 - 4	h	-
Processing Moisture Content	≤0.15	%	-
Melt Temperature Optimum	250	°C	-
Min. melt temperature	230	°C	-
Max. melt temperature	290	°C	-
Mold Temperature Optimum	70	°C	-
Min. mold temperature	50	°C	-
Max. mold temperature	90	°C	-
Extrusion	Value	Unit	Test Standard
Drying Temperature	75 - 80	°C	-
Drying Time, Dehumidified Dryer	3 - 4	h	-
Processing Moisture Content	≤0.06	%	-
Melt Temperature Optimum	240	°C	-

Revised: 2017-08-10

Page: 2 of 9

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® 151L NC010

NYLON RESIN

Melt Temperature Range 235 - 250 °C -

Characteristics

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

Processing Texts

Other extrusion

Melt Viscosity

@235 °C, 1000s-1 = 70 Pa.s

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

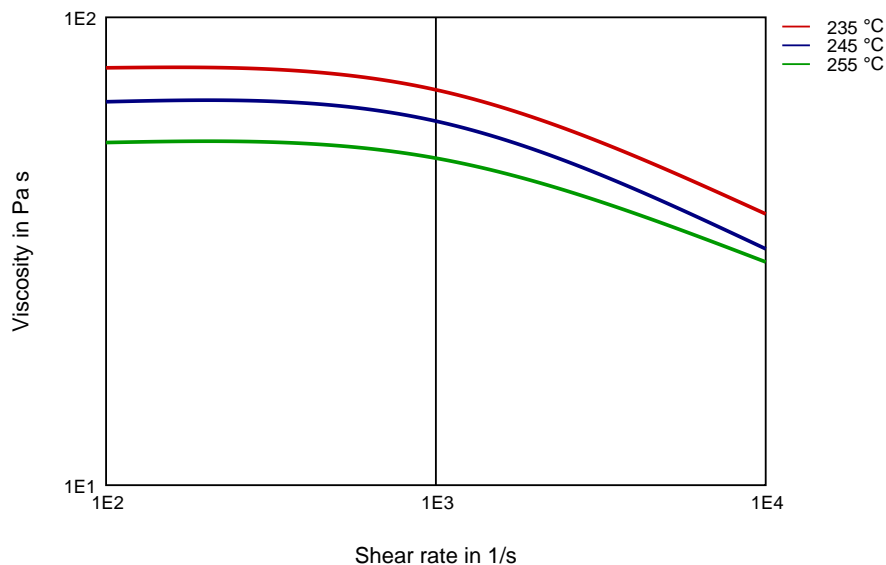


DuPont™ Zytel® 151L NC010

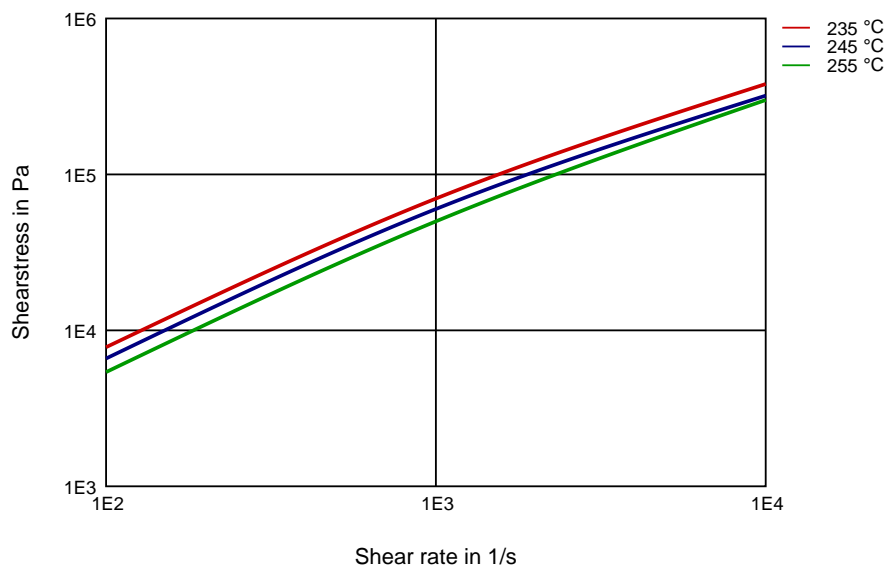
NYLON RESIN

Diagrams

Viscosity-shear rate



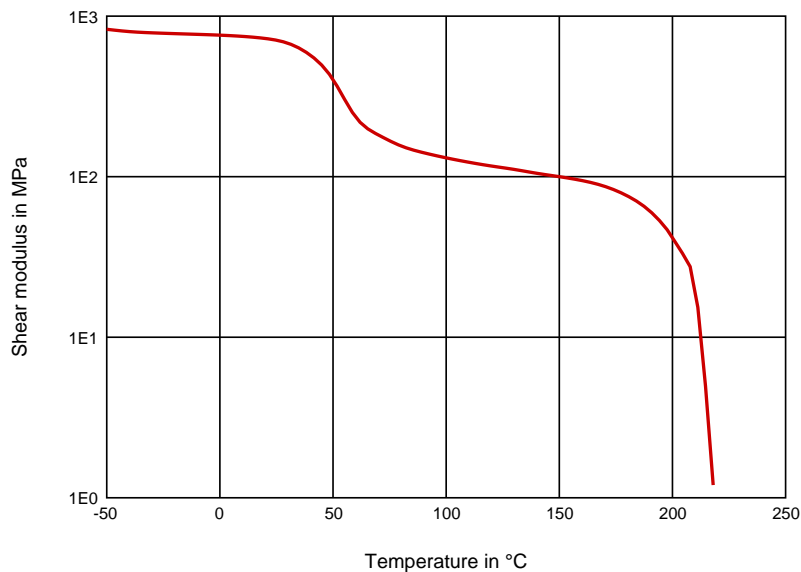
Shearstress-shear rate



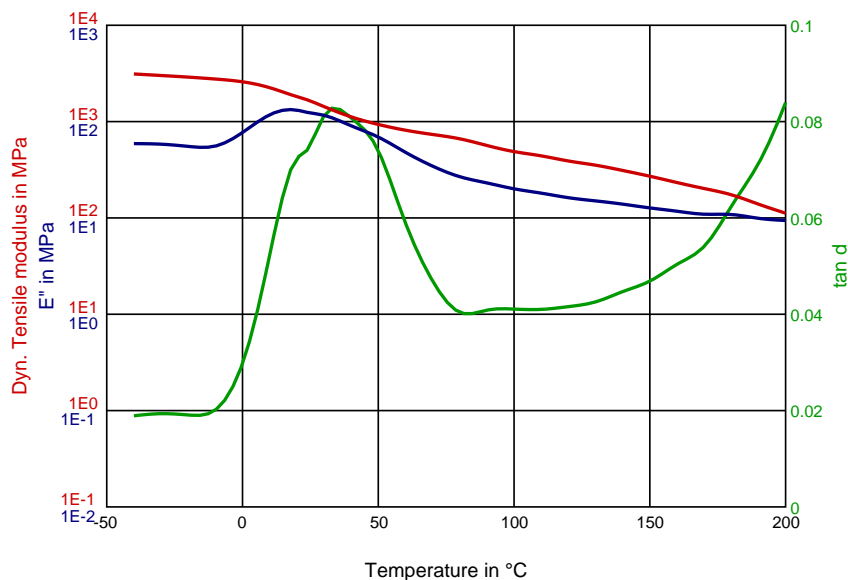
DuPont™ Zytel® 151L NC010

NYLON RESIN

Dynamic Shear modulus-temperature (dry)



Dynamic 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

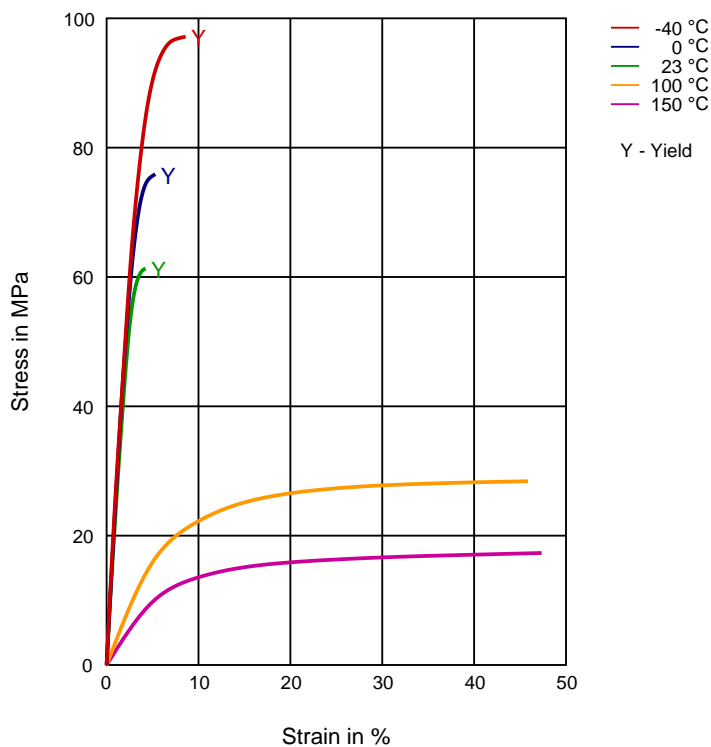
Tel: +41 22 717 51 11



DuPont™ Zytel® 151L NC010

NYLON RESIN

Stress-strain (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

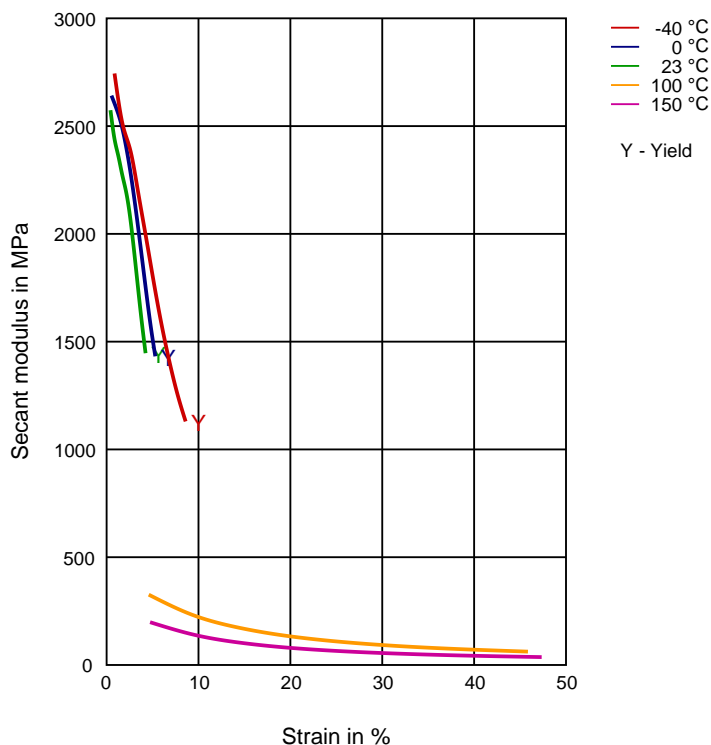
Tel: +41 22 717 51 11



DuPont™ Zytel® 151L NC010

NYLON RESIN

Secant modulus-strain (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

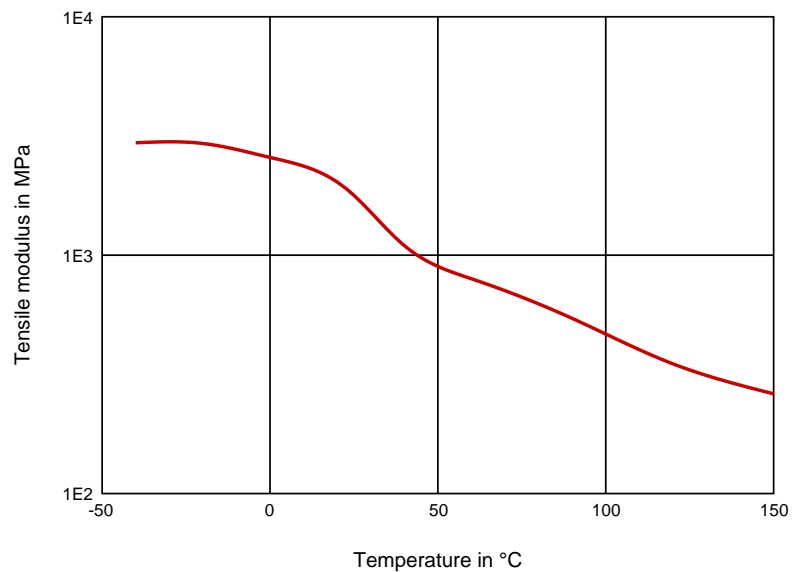
Tel: +41 22 717 51 11



DuPont™ Zytel® 151L NC010

NYLON RESIN

Tensile modulus-temperature (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® 151L NC010

NYLON RESIN

Chemical Media Resistance

Other

- ✓ Water (23°C)
- ✗ 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).

✗ 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.

Copyright © 2017 DuPont or its affiliates. All Rights Reserved. The DuPont Oval Logo, DuPont™, The miracles of science™ and all products denoted with ® or ™ are registered trademarks or trademarks of E.I. du Pont de Nemours and Company or its affiliates.

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

