

DuPont™ Zytel® FR7026V0F NC010

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® FR7026V0F NC010 is an unreinforced, flame retardant, Non-Halogenated, heat stabilized, polyamide 66 resin for injection molding. It does not contain elemental phosphorous or heavy metals and uses an halogen free flame retardant package.

General information	Value	Unit	Test Standard
Resin Identification	PA66-FR(30)	-	ISO 1043
Part Marking Code	PA66-FR(30)	-	ISO 11469
Rheological properties	dry / cond	Unit	Test Standard
Viscosity number	160 / *	cm ³ /g	ISO 307, 1157, 1628
Molding shrinkage, parallel	0.9 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	3800 / 1800	MPa	ISO 527-1/-2
Yield stress	* / 60	MPa	ISO 527-1/-2
Yield strain	* / 21	%	ISO 527-1/-2
Nominal strain at break	* / 30	%	ISO 527-1/-2
Stress at break	80 / *	MPa	ISO 527-1/-2
Strain at break	10 / *	%	ISO 527-1/-2
Charpy impact strength, 73°F	80 / 110	kJ/m ²	ISO 179/1eU
Charpy notched impact strength			ISO 179/1eA
73°F	3.5 / 7	kJ/m ²	
-22°F	3 / 2	kJ/m ²	
Izod notched impact strength, 73°F	4.4 / -	kJ/m ²	ISO 180/1A
Ball indentation hardness, H 358/30	- / 110	MPa	ISO 2039-1
DS: Derived from similar grade			DS
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 18°F/min	260 / *	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
260 psi	80 / *	°C	
65 psi	230 / *	°C	
Ball pressure test	220 / -	°C	IEC 60309
Thermal conductivity of melt	0.17	W/(m K)	-
Spec. heat capacity of melt	2590	J/(kg K)	-
RTI, electrical			UL 746B
30mil	130 / *	°C	
60mil	130 / *	°C	
120mil	130	°C	
RTI, impact			UL 746B
30mil	95	°C	
60mil	95 / *	°C	
120mil	95	°C	

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

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RTI, strength			UL 746B
30mil	110	°C	
60mil	110 / *	°C	
120mil	110	°C	

DS: Derived from similar grade

Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 60mil nom. thickn.	V-0 / *	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-0 / *	class	IEC 60695-11-10
Thickness tested	0.82 / *	mm	IEC 60695-11-10
UL recognition	yes / *	-	UL 94
Oxygen index	39 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index			IEC 60695-2-12
15mil	960 / -	°C	
30mil	960 / -	°C	
60mil	960 / -	°C	
120mil	960 / -	°C	
Glow Wire Ignition Temperature			
15mil	960 / -	°C	IEC 60695-2-12
30mil	960 / -	°C	IEC 60695-2-13
60mil	960 / -	°C	IEC 60695-2-13
120mil	960 / -	°C	IEC 60695-2-13
Flammability, 3.0mm	V-0 / *	-	IEC 60695-11-10
FMVSS Class	DNI	-	ISO 3795 (FMVSS 302)
Electrical properties	dry / cond	Unit	Test Standard
Surface resistivity	* / >1E15	Ohm	IEC 62631-3-2 A
Electric strength	31 / -	kV/mm	IEC 60243-1
Comparative tracking index			
Comparative tracking index	600 / -	-	IEC 60112
CTI, 23°C	0 / -	PLC	UL 746A
1: based on CTI and similar values for FR grades A: Assessed			
Other properties	dry / cond	Unit	Test Standard
Humidity absorption, 80mil	2.4 / *	%	Sim. to ISO 62
Water absorption, 80mil	8 / *	%	Sim. to ISO 62
Density	1160 / -	kg/m ³	ISO 1183
Density of melt	1030	kg/m ³	-
VDA Properties	Value	Unit	Test Standard
Odor test	5	class	VDA 270
Injection	dry / cond	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	≥80	°C	-
Drying Time, Dehumidified Dryer	2 - 4	h	-
Processing Moisture Content	≤0.2	%	-
Melt Temperature Optimum	280	°C	-
Min. melt temperature	270	°C	-
Max. melt temperature	290	°C	-
Max. screw tangential speed	0.2 / *	m/s	-
Mold Temperature Optimum	70	°C	-
Min. mold temperature	50	°C	-
Max. mold temperature	90	°C	-
Hold pressure range	50 - 100	MPa	-
Hold pressure time	3	s/mm	-
Ejection temperature	210	°C	-

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Characteristics

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

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North America

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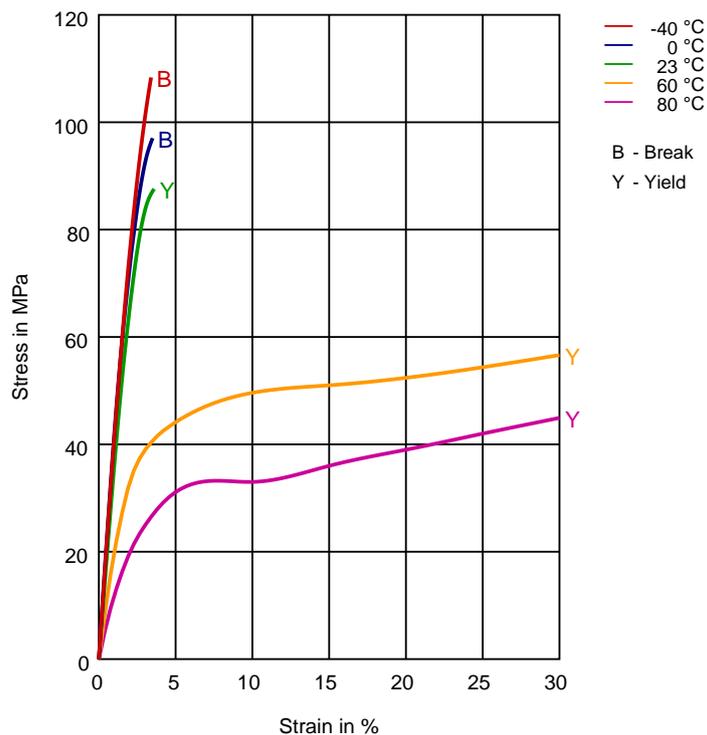
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DuPont™ Zytel® FR7026V0F NC010 NYLON RESIN

Diagrams

Stress-strain (dry)



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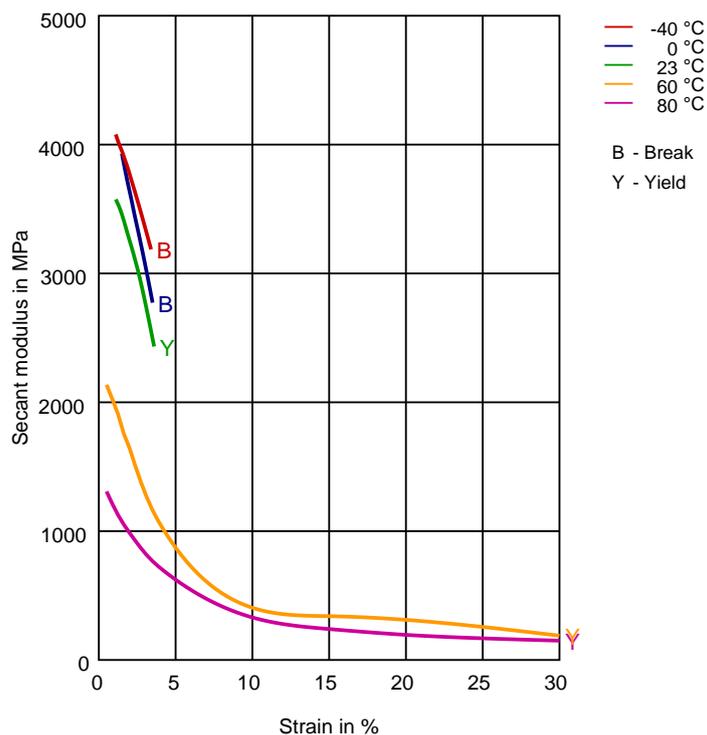
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Secant modulus-strain (dry)



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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)



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- ✓ 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.

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