

# DuPont™ Zytel® 7331J NC010 (Preliminary Data)

## 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® 7331J is a lubricated fast cycling polyamide 6 for injection moulding.**

General information	Value	Unit	Test Standard
Resin Identification	PA6	-	-
Part Marking Code	>PA6<	-	ISO 11469
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	2900 / -	MPa	ISO 527-1/-2
Yield stress	80 / -	MPa	ISO 527-1/-2
Yield strain	4 / -	%	ISO 527-1/-2
Nominal strain at break	40 / -	%	ISO 527-1/-2
Strain at Break, 23°C, 50mm/min	40 / -	%	ISO 527-1/-2
Flexural Modulus	2700 / -	MPa	ISO 178
Charpy notched impact strength, 23°C	5 / -	kJ/m <sup>2</sup>	ISO 179/1eA
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 10°C/min	221 / *	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
1.8 MPa	60 / *	°C	
0.45 MPa	155 / *	°C	
Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 1.5mm nom. thickn.	V-2 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
Burning Behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.75 / *	mm	IEC 60695-11-10
Flammability			IEC 60695-11-10
3.0mm	V-2 / *	-	
6.0mm	V-2 / *	-	
Other properties	dry / cond	Unit	Test Standard
Density	1130 / -	kg/m <sup>3</sup>	ISO 1183

### Characteristics

Processing	• Injection Moulding
Delivery form	• Pellets
Regional Availability	• Asia Pacific

### Processing Texts

### Injection molding

#### PREPROCESSING

Drying recommended = Yes, if moisture content of resin exceeds recommended level

Drying temperature = 80°C

Drying time, dehumidified dryer = 2-4 h

Processing moisture content = <0.2 %

Revised: 2009-08-27

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

#### North America

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Melt temperature optimum = 270 °C  
Melt temperature range = 260-280 °C  
Mould temperature optimum = 70 °C  
Mould temperature range = 50-90 °C  
Maximum Screw tangential Speed : 0.4 m/s  
Flow front speed : 150 mm/s  
Hold pressure optimum : 85 MPa  
Hold pressure range : 50-100 MPa  
Back pressure : low  
Hold pressure time : 4 s/mm  
Maximum hold-up time : 15 min

### POSTPROCESSING

Annealing : 30min at 170 °C

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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 4.0mm (Hytrel® measured at 2 mm), IEC Electrical properties measured at 2.0mm, all ASTM properties measured at 3.2mm, and test temperatures are 23°C unless otherwise stated.

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