DuPont™ Zytel® FG7301 NC010

NYLON RESIN

Product Information			
Zytel® FG7301 NC010 is an Unreinforced Polyamide 6			
General information	Value	Unit	Test Standard
Resin Identification	PA6	-	ISO 1043
Part Marking Code	PA6	-	ISO 11469
Rheological properties	dry / cond	Unit	Test Standard
Viscosity number	4150[1] / *	in³/lb	ISO 307, 1157, 1628
1: Sulfuric acid 96%			
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	420610 / 217557	psi	ISO 527-1/-2
Yield stress	11600 / -	psi	ISO 527-1/-2
Yield strain	4.5 / -	%	ISO 527-1/-2
Nominal strain at break	25 / -	%	ISO 527-1/-2
Strain at Break, 23°C, 50mm/min	50 / -	%	ISO 527-1/-2
Flexural Modulus	334000 / -	psi	ISO 178
Charpy impact strength			ISO 179/1eU
73°F	N / N	ftlb/in²	
-22°F	N / -	ftlb/in²	
-40°F	N / -	ftlb/in²	
Charpy notched impact strength, 73°F	2.85 / -	ftlb/in²	ISO 179/1eA
Izod notched impact strength			ISO 180/1A
73°F	2.85 / -	ftlb/in²	
-40°F	2.85 / -	ftlb/in²	
Izod impact strength, 73°F	- / N	ftlb/in²	ISO 180/1U
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 18°F/min	430 / *	°F	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
260 psi	131 / *	°F	
65 psi	320 / *	°F	
Coeff. of linear therm. expansion, parallel	3.89E-5 / *	in/in/°F	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	5.56E-5 / *	in/in/°F	ISO 11359-1/-2
Flammability	Value	Unit	Test Standard
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<100	in/min	ISO 3795 (FMVSS 302)
Electrical properties	dry / cond	Unit	Test Standard
Relative permittivity, 1MHz	3.5 / 7	-	IEC 60250
Volume resistivity	1E13 / -	Ohm*m	IEC 60093
Other properties	dry / cond	Unit	Test Standard
Humidity absorption, 80mil	3 / *	%	Sim. to ISO 62
Water absorption, 80mil	9.5 / *	%	Sim. to ISO 62
Density	1.13 / -	g/cm³	ISO 1183
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	518	°F	-
Min. melt temperature	500	°F	-
Max. melt temperature	536	°F	-
Max. screw tangential speed	0.2 / *	m/s	-
Mold Temperature Optimum	158	°F	-
Min. mold temperature	122	°F	-
Max. mold temperature	194	°F	-

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
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Europe/Middle East/Africa
Tel: +41 22 717 51 11

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Hold pressure range	7250 - 14500	psi	-
Hold pressure time	0.102	s/mil	-

Characteristics			
Processing	• Injection Molding • Film Extrusion	• Profile Extrusion • Sheet Extrusion	• Other Extrusion • Coating
Delivery form	• Pellets		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

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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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