Zytel® PC310 NC010

NYLON RESIN

Zytel® PC310 NC010 is a lubricated polyamide 66 resin for injection molding. It has been developed for consideration into applications such as parts for the healthcare industry.

PREMIUM CONTROL for HEALTHCARE APPLICATIONS

This product is manufactured according to Good Manufacturing Practice (GMP) principles and generally accepted in food contact applications in Europe and the USA when meeting applicable use conditions. This product is also tested against selected ISO 10993 parts including 10993-5 and -11 as well as USP class VI and US FDA drug and device master files (DMF and MAF) have been established. For details, individual compliance statements are available from our representative.

Product information

Resin Identification	PA66	ISO 1043
Part Marking Code	>PA66<	ISO 11469
ISO designation	ISO 16396-PA66,,M1G1NR,S14-030	

Rheological properties

	dry/cond.		
Viscosity number	4150[1]/*	in³/lb	ISO 307, 1628
Molding shrinkage, parallel	1.4 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	1.4 / -	%	ISO 294-4, 2577

[1]: Sulfuric acid 96%

Typical mechanical properties

	dry/cond.		
Tensile modulus	450000 / 203000	psi	ISO 527-1/-2
Tensile stress at yield, 50mm/min	12000 / 8000	psi	ISO 527-1/-2
Tensile strain at yield, 50mm/min	4.5 / 25	%	ISO 527-1/-2
Nominal strain at break	25 / >50	%	ISO 527-1/-2
Tensile strain at break, 50mm/min	45 / -	%	ISO 527-1/-2
Flexural modulus	406000 / 174000	psi	ISO 178
Tensile creep modulus, 1h	* / 203000	psi	ISO 899-1
Tensile creep modulus, 1000h	* / 119000	psi	ISO 899-1
Charpy impact strength, 23°C	N / N	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	190 / N	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	2.62 / 7.14	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30°C	2.14 / 1.43	ftlb/in²	ISO 179/1eA
Hardness, Rockwell, M-scale	79 / 59		ISO 2039-2
Hardness, Rockwell, R-scale	121 / 108		ISO 2039-2

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	504 / *	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	140 / 68	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	158 / *	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	392 / *	°F	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	464 / *	°F	ISO 306
Coefficient of linear thermal expansion (CLTE), parallel	0.56 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.611 / *	E-4/°F	ISO 11359-1/-2

Zytel® PC310 NC010

NYLON RESIN

Thermal conductivity of melt	0.16	W/(m K)	ISO 22007-2
Effective thermal diffusivity, flow	5E-8	m^2/s	ISO 22007-4
Specific heat capacity of melt	2790	J/(kg K)	ISO 22007-4

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.0591 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	V-2 / *	class	IEC 60695-11-10
Thickness tested	0.0276 / *	in	IEC 60695-11-10
Oxygen index	28 / *	%	ISO 4589-1/-2

Electrical properties

	dry/cond.		
Relative permittivity, 100Hz	3.8 / 6		IEC 62631-2-1
Relative permittivity, 1MHz	3.5 / 4		IEC 62631-2-1
Dissipation factor, 100Hz	80 / 2100	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	180 / 750	E-4	IEC 62631-2-1
Volume resistivity	1E12 / 1E10	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 1E12	Ohm	IEC 62631-3-2
Electric strength	813 / 711	kV/in	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	2.6 / *	%	Sim. to ISO 62
Water absorption, 2mm	8.5 / *	%	Sim. to ISO 62
Density	0.0412 / -	lb/in^3	ISO 1183
Density of melt	60.6	lb/ft^3	

Film properties

	dry/cond.		
Strain at yield, parallel	4.5 / *	%	ISO 527-3

Injection

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	536	°F
Max. melt temperature	581	°F
Max. screw tangential speed	≤0.4	m/s
Mold Temperature Optimum	158	°F
Min. mold temperature	104	°F
Max. mold temperature	203	°F
Hold pressure range	7250 - 14500	psi
Hold pressure time	0.102	s/mil
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s

Zytel® PC310 NC010

NYLON RESIN

Ejection temperature	374 °F

Characteristics

Processing	Injection Molding
Additives	Release agent

Additional information

Injection molding

POSTPROCESSING

Annealing: 30min at 200°C

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

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

Zytel® PC310 NC010

NYLON RESIN

- ✗ 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

Sterilization methods

- ✓ Ethylene Oxide

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).

Revised: 2025-08-05 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.
Copyright © 2026 Celanese or its affiliates. All rights reserved.
Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates.