

MinIon[®] 73M40 NC010 MINERAL REINFORCED NYLON RESIN

Common features of Minlon® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness /toughness, good high temperature performance, good chemical resistance, paintability, dimensional stability and low warpage. Grades with improved electrical and flammability properties are available within the Zytel® nylon resin product line. In addition, Minlon® nylon resin is available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses.

The good melt stability of Minlon® nylon resin normally enables the recycling of properly handled production waste. If recycling is not possible, we recommend, 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.

Minlon® nylon resin typically is used in demanding applications in the automotive, electrical, electronic, domestic appliances and construction industries.

Minlon® 73M40 NC010 is a 40% mineral reinforced, heat stabilized polyamide 6 resin for injection moulding. It has isotropic properties and low warpage.

Product information

Resin Identification Part Marking Code ISO designation	PA6-MD40 >PA6-MD40< ISO 16396-PA6,MD40,M1GHNR,S14-060		ISO 1043 ISO 11469	
Rheological properties	dry/cond.			
Viscosity number	145 ^[1] /*	cm ³ /g	ISO 307, 1628	
Moulding shrinkage, parallel	0.8/-	%	ISO 294-4, 2577	
Moulding shrinkage, normal	0.8/-	%	ISO 294-4, 2577	
[1]: sulfuric acid 96%				
Typical mechanical properties	dry/cond.			
Tensile modulus	6000/2200	MPa	ISO 527-1/-2	
Tensile stress at break, 5mm/min	87/59	MPa	ISO 527-1/-2	
Tensile strain at break, 5mm/min	10/25	%	ISO 527-1/-2	
Flexural modulus	5900/2400	MPa	ISO 178	
Flexural strength	140/60	MPa	ISO 178	
Tensile creep modulus, 1h	*/1400	MPa	ISO 899-1	
Tensile creep modulus, 1000h	*/850	MPa	ISO 899-1	
Charpy impact strength, 23°C	130/N	kJ/m²	ISO 179/1eU	
Charpy impact strength, -30°C	95/95	kJ/m²	ISO 179/1eU	
Charpy notched impact strength, 23°C	5.5/8	kJ/m ²	ISO 179/1eA	
Charpy notched impact strength, -30°C	4/5	kJ/m ²	ISO 179/1eA	
Izod notched impact strength, 23°C	5/7	kJ/m ²	ISO 180/1A	
Izod notched impact strength, -30°C	4.0/4.5	kJ/m²	ISO 180/1A	
Poisson's ratio	0.35/0.39			



MINERAL REINFORCED NYLON RESIN

Thermal properties	dry/cond.		
Melting temperature, 10°C/min Glass transition temperature, 10°C/min Temperature of deflection under load, 1.8 MPa	221/* 70/- 110/*	°C °C °C	ISO 11357-1/-3 ISO 11357-1/-3 ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa Vicat softening temperature, 50°C/h 50N Coefficient of linear thermal expansion (CLTE), parallel	196/* 210/* 65/*	°C °C E-6/K	ISO 75-1/-2 ISO 306 ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	75/*	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt Specific heat capacity of melt RTI, electrical, 0.75mm RTI, impact, 0.75mm RTI, strength, 0.75mm	0.27 1940 65 65 65	W/(m K) J/(kg K) °C °C °C	ISO 22007-2 ISO 22007-4 UL 746B UL 746B UL 746B
Flammability	dry/cond.		
Burning Behav. at thickness h Thickness tested UL recognition FMVSS Class	HB /* 0.85 /* yes /* SE / NBR	class mm	IEC 60695-11-10 IEC 60695-11-10 UL 94 ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm		mm/min	ISO 3795 (FMVSS 302)
Physical/Other properties	dry/cond.		
Humidity absorption, 2mm Water absorption, 2mm Density Density of melt	1.8/* 5.4/* 1450/- 1280	% % kg/m ³ kg/m ³	Sim. to ISO 62 Sim. to ISO 62 ISO 1183
VDA Properties	dry/cond.		
Thermal desorption analysis of organic emissions Odour Fogging, G-value (condensate)	9 3.5 0.15/*	μg/g class mg	VDA 278 VDA 270 ISO 6452
Injection			
Drying Recommended Drying Temperature Drying Time, Dehumidified Dryer Processing Moisture Content Melt Temperature Optimum Min. melt temperature Max. melt temperature Screw tangential speed Mold Temperature Optimum Min. mould temperature Max. mould temperature Hold pressure range	2 - 4 ≤0.2 27(260 280 ≤0.2 100 7(0 °C 4 h 2 % 0 °C 0 °C 0 °C 2 m/s 0 °C 0 °C 0 °C 0 °C	

Printed: 2025-05-29



MINERAL REINFORCED NYLON RESIN

Hold pressure time Ejection temperature 3 s/mm 155 °C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent
Special characteristics	Platable, Heat stabilised or stable to heat, Low Warpage

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
BMW	GS93016-PA6-MX40	
Ford	WSS-M4D667-B2	
General Motors	GMW8694P-PA6-M40H	Natural
Mercedes-Benz	DBL5403.00 PA66-MD40	
NIO	NIO-SM.51.004	
Renault-Nissan	DP01, No Spec, Special Part Approval, See Your CE Account Manager.	
Renault-Nissan	IP14, No Spec, Special Part Approval, See Your CE Account Manager.	
Stellantis	B62 0300 / 61/207M+/214E/13	CPN5187, 01994_10_00116
Stellantis - Chrysler	MS.50017 / CPN-5187	Natural

Printed: 2025-05-29





MINERAL REINFORCED NYLON RESIN

Viscosity-shear rate







MINERAL REINFORCED NYLON RESIN

Shearstress-shear rate







MINERAL REINFORCED NYLON RESIN

Stress-strain (dry)







MINERAL REINFORCED NYLON RESIN

Stress-strain (cond.)







MINERAL REINFORCED NYLON RESIN

Secant modulus-strain (dry)







MINERAL REINFORCED NYLON RESIN

Secant modulus-strain (cond.)







MINERAL REINFORCED NYLON RESIN

Stress-strain (isochronous) 23°C (cond.)







MINERAL REINFORCED NYLON RESIN

Creep modulus-time 23°C (cond.)







MINERAL REINFORCED NYLON RESIN

Tensile modulus-temperature (dry)





MINERAL REINFORCED NYLON RESIN

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
- X Nitric Acid (40% by mass), 23°C
- X Sulfuric Acid (38% by mass), 23°C
- X Sulfuric Acid (5% by mass), 23°C
- X 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
- ✓ 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

Printed: 2025-05-29

(+) **18816996168** Ponciplastics.com



Minlon[®] 73M40 NC010

MINERAL REINFORCED NYLON RESIN

- Sodium Carbonate solution (20% by mass), 23°C
- Sodium Carbonate solution (2% by mass), 23°C
- X Zinc Chloride solution (50% by mass), 23°C

Other

- Ethyl Acetate, 23°C
- X 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).

X 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).

Printed: 2025-05-29

Page: 14 of 14

Revised: 2025-04-19 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. Colourants or other additives may cause significant variations in data values. Properties of moulded 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 product 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 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 s

© 2025 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. Fortron is a registered trademark of Fortron Industries LLC.