

# Nylene® 421 HS

## TECHNICAL DATASHEET

TDS Ref # 107 Reviewed: 4/24/2018

### DESCRIPTION

- Impact modified, heat stabilized nylon 6 injection molding resin.
- Nylene 421 HS has the inherent heat and chemical resistance typical of nylon 6 resins, while having higher toughness for uses where impact may occur during service
- Suitable for applications and uses which require higher toughness and flexibility

PROPERTIES	TEST METHOD	UNIT	VALUE
<b>PHYSICAL PROPERTIES</b>			
Mold Shrinkage	n/a	in/in	0.014
Specific Gravity	D792	n/a	1.06
<b>MECHANICAL PROPERTIES</b>			
Elongation	D638	%	50
Flexural Modulus	D790	psi (MPa)	250,000 (1725)
Notched Izod @ 23°C	D256	ft. lb./ in. (J/m)	12.0 (642)
Tensile Strength	D638	psi (MPa)	7,200 (50)
<b>THERMAL PROPERTIES</b>			
DTUL @ 264 psi/1.82 MPa	D648	°F (°C)	135 (57)
Melt Point	D3418	°F (°C)	420 (215)

### NOTES

- Testing conducted on dry-as-molded specimens at 73°F (22.8°C)

### PROCESSING CONSIDERATIONS: PA 6 IMPACT MODIFIED

°F (°C)	Rear Zone	440-500 (227-260)	<b>Melt Temperature:</b> Melt Temperature: Nylene® PA6 melts at 428°F, (220°C) actual melt temperatures of 440-560°F (227-293°C) are permissible, depending on residence time and shot size.
	Center Zone	460-520 (238-271)	<b>Mold Temperature:</b> 120-200°F (49-93°C), highly filled grades require 180-200°F (82-93°C) to obtain the best overall surface appearance, higher temperatures will increase crystallinity.
	Front Zone	480-540 (249-282)	<b>Residence Time:</b> should not exceed 6 minutes if possible, less with higher melt temperatures
	Nozzel	480-540 (249-282)	<b>Shot Size:</b> should be between 25-75% of barrel capacity.
	Melt Temp.	480-540 (249-282)	<b>Fill Rate:</b> fast fill rates are suggested for best surface appearance.
PRESSURE	Injection	7-15,000	<b>Regrind Level:</b> typically no more than 25% is recommended, with higher levels possible for unfilled grades depending on the end use requirements. Make certain regrind is properly dried to virgin moisture levels.
	Hold	5-12,000	<b>Drying Temperature:</b> 150-180°F (66-82°C) for 2-4 hours, Nylene® PA6 should be dried to less than 0.20% moisture for optimum performance. Drying longer than 4 hours or at higher temperatures may cause discoloration of the polymer or adversely affect important physical properties.
	Back	0-50	

### CHARACTERISTICS

Resin Type: Nylon 6  
 Product Characteristics:  
 Heat Stabilized, High Impact, Toughened

### INJECTION MOLDING PROCESSING

Prime Grade

### FEATURES

- High impact
- High flexibility

### MARKETS USED

- Automotive Applications
- General Applications
- Sports & Leisure

### APPLICATIONS

- Clips
- Fasteners
- Safety Restraint Components
- Strap Clip

### APPROVALS

- FMVSS 302: DNB

### AUTOMOTIVE SPECIFICATION

- ESF-M4D364-A

### DISCLAIMER

The data set forth herein has been carefully compiled by Nylene in our laboratories. Values shown are typical properties and not specifications. Since processing variables will affect properties, the reproducibility of our data in a customer's testing facility is not guaranteed. There is no warranty of any kind, either expressed or implied, applicable to the use of this information, and the user assumes all risk and liability in connection therewith.



**Headquarters and Facility:**  
 55 Haul Road, Wayne, NJ 07470  
 P: 973-694-4141 | F: 973-694-3549

**North American Sales Office:**  
 31700 Telegraph Rd. Suite 235, MI 48025  
 P: 248-377-6769 | F: 248-377-3845

**Nylene Custom Resins Facility:**  
 1421 Hwy 136 W. Henderson, KY 42420  
 P: 270-826-7641 | TF: 800-626-7050

**Nylene Canada Facility**  
 200 McNab Street, Arnprior ON, K7S 3P2  
 P: 613-623-3191 | TF: 800-267-7394

For a complete listing of our global offices, visit:  
[www.nylene.com/contactus](http://www.nylene.com/contactus)

[www.nylene.com](http://www.nylene.com) | [info@nylene.com](mailto:info@nylene.com)

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