



# Hylon<sup>®</sup> Select N1000T(H)L PA6/6 Resin

## Product Attributes

- High Flow
- Low Mold Deposit
- Toughness



| <u>Material Approvals</u> |  |
|---------------------------|--|
| • N1000TL NAT             | General Motors GMP.PA66.063<br>Chrysler CPN1756                      |
| • N1000TL BK              | General Motors GMP.PA66.063<br>Chrysler CPN1720                      |
| • N1000THL NAT            | Ford WSK-M4D706A<br>General Motors GMP.PA66.009                      |
| • N1000THL BK             | Ford WSK-M4D-706A<br>General Motors GMP.PA66.009<br>Chrysler CPN1826 |

| <u>PROPERTY</u>                             | <u>METHOD</u> | <u>UNIT</u>  | <u>DAM</u>         | <u>EQUIL. MOISTURE @ 50% RH</u> |
|---|---------------|--|--------------------|---------------------------------|
| <b>PHYSICAL</b>                             |               |  |                    |                                 |
| Specific Gravity                            | ASTM D792     | -  | 1.09               | -                               |
| Water Absorption (24-Hr Immersion)          | ASTM D570     | %  | 1.2                | -                               |
| Mold Shrinkage (Flow, 1/8 in.) <sup>A</sup> | ASTM D955     | ln/in x 10 <sup>-3</sup>                                   | 16-20 <sup>A</sup> | -                               |
| <b>MECHANICAL @ 73°F *</b>                  |               |  |                    |                                 |
| Tensile Strength                            | ASTM D638     | psi<br>MPa   | 9,500<br>65        | 6,700<br>46                     |
| Elongation                                  | ASTM D638     | %  | 40                 | 125                             |
| Flexural Modulus                            | ASTM D790     | psi<br>MPa   | 315,000<br>2,172   | 130,000<br>895                  |
| Flexural Strength                           | ASTM D790     | psi<br>MPa   | 11,000<br>76       | 5,000<br>35                     |
| Izod Impact Strength (Notched)              | ASTM D256     | ft-lb/in<br>J/m  | 3.0<br>160         | 4.0<br>213                      |
| Hardness (Rockwell)                         | ASTM D785     | -  | 114R               | 94R                             |
| <b>THERMAL *</b>                            |               |  |                    |                                 |
| Heat Deflection Temperature:                | ASTM D648     |  |                    |                                 |
| 66 psi                                      |               | °F   | 443                | -                               |
| 0.46 MPa                                    |               | °C   | 228                | -                               |
| 264 psi                                     |               | °F   | 160                | -                               |
| 1.82 MPa                                    |               | °C   | 71                 | -                               |
| Coefficient of Thermal Expansion            | ASTM D696     | in/in °F x 10 <sup>-5</sup><br>mm/mm °C x 10 <sup>-5</sup> | 6.3<br>11.3        | -<br>-                          |
| <b>ELECTRICAL @ 73°F</b>                    |               |  |                    |                                 |
| Dielectric Strength (Short-Time)            | ASTM D149     | V/mil  | 540                | -                               |
| Volume Resistivity                          | ASTM D257     | ohm-cm   | 10 <sup>15</sup>   | 10 <sup>15</sup>                |
| Dielectric Constant (100HZ)                 | ASTM D150     | -  | 3.5                | 5.8                             |
| <b>FLAME CLASS RATING<sup>®</sup></b>       |               |  | <b>File Number</b> |                                 |
| UL94 HB (Min. Tested Thickness)             | UL 94         | in (mm)  | <b>E157012</b>     |                                 |
|   |               |  | 0.059 (1.5)        |                                 |

†The data listed here fall within the normal range of product properties, but they should not be used to establish specification limits or used alone as a basis for design. This information is not intended as a warranty of any kind. Buyers must make their own representative test and assume all risks of use, whether used alone or in combination with other products. Entec Polymers, LLC assumes no obligation or liability of any advice furnished by it or results obtained with respect to these products. All warranties expressed or implied including warranties of merchantability for a particular purpose or use are excluded and disclaimed. Entec Polymers, LLC assumes no liability for use of products in infringement of any patent. The foregoing limitation of remedy and exclusion of liability is reflected in and is part of the consideration for the price at which the products are sold by Entec Polymers, LLC. All data displayed herein has been obtained via testing of injection-molded specimens of natural color. Pigmentation may affect certain properties to various degrees.

HYLON<sup>®</sup> SELECT N1000T(H)L PA6/6



When a large tier one supplier of automotive fasteners re-tooled and simultaneously re-equipped their plant with the end goal of increasing productivity, they had the unexpected and unpleasant experience of finding out their efforts worked in the other direction. The process associated with the small, hot runner tools created so much shear on the incumbent impact modified nylon that components in the competitors compounds came out and were being deposited on the steel. Any time that may have been saved on cycle improvement was eaten up by the down time associated with the necessity to constantly pull and clean the tools. The idea of running lights out was no longer an option due to the constant care of monitoring that was now needed.

The formulation technology that was in place in Entec Engineered Resins HYLON® Nylon 6/6 line of compounds seemed to be a very encouraging option in solving this huge dilemma. Our N1000TL and THL products were brought in to see if they would be able to flow and perform better while maintaining the physical property aspects of the many different fastener applications. It became immediately evident that these grades were in fact going to allow the molder to process as they had originally intended and make their large cap-ex equipment investments worthwhile. The early success lead to automotive sponsorships at all three major car companies resulting in nineteen separate specification approvals in both toughened and super-toughened grades.

“Small company” technology and agility was able to accomplish what major industry giants and leaders could not. Our abilities allowed us to capture a significant portion of business at a place where the competitor had had a lead and almost sole position for over thirty years.