DESCRIPTION
This material is a non-Halogenated, non-corrosive injection molding grade nylon. It is lubricated to facilitate machine feed and mold release.

Commercial Name: Nylon 66
Catalog Code: PA66
Chemical Name: Polyamide 66
Used On: Cable ties

GENERAL PERFORMANCE CHARACTERISTICS
Heat Stabilized: None
Impact: Lower resistance to impact.
Moisture Sensitivity: Tensile strength and flexibility will change with change in moisture
UV Resistance: Black ties have good resistance due to the percentage of carbon black. Other colors or natural are poor

PERFORMANCE ADDITIVES
Glass: None
Mineral: None
Carbon: Yes (black only)
Halogens: None in colors or natural. Black has a small amount of iodine for stabilization

PROCESS ADDITIVES
Fillers: None
Lubricants: Internal
Shrink Additives: None

CONDITIONING: Follow standard cable tie conditioning practice

CHEMICAL RESISTANCE
Acids: Limited; attacked by strong acids
Bases: Excellent at room temp.; attacked by strong bases at elevated temps
Solvents: Generally excellent; some absorption causing plasticization and dimension changes
Gasoline: Good
Oil: Good
Salt Water: Very Good
Sodium Chloride: Very Good
Zinc Chloride: Some attack or considerable absorption at 73°F (23°C), material not suitable for contact unless limited product life is acceptable
Calcium Chloride: Little or no attack, little to some absorption, little to some reduction in mechanical properties

MAJOR TOXIC ELEMENTS
No significant hazard associated with this material. This product is slightly toxic based on toxicity studies. No adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed. No adverse effects were reported following studies with rats and dogs fed a similar nylon resin material in their diet for three months.

Latex, Natural Rubber, Natural Rubber Latex, Dry Natural Rubber, Natural Latex, Isoprene, and Polyisoprene are not used in the manufacture of this material and therefore, should not be present at detectable levels.
## General Purpose

**TYPICAL MATERIAL PROPERTIES**

### PROPERTIES CHART

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Dry</th>
<th>Units</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability – Thickness: (0.7, 1.5 &amp; 3.0 mm)</td>
<td>V-2</td>
<td>-</td>
<td>UL 94</td>
</tr>
</tbody>
</table>

### Physical

<table>
<thead>
<tr>
<th>Density</th>
<th>1.14 (0.041)</th>
<th>g/cm³ (lb/in³)</th>
<th>ISO 1183</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Absorption – 24 hrs Immersion</td>
<td>1.3-1.4</td>
<td>%</td>
<td>ISO 62</td>
</tr>
<tr>
<td>Mold Shrinkage – 2.0 mm Parallel</td>
<td>1.4-1.9</td>
<td>%</td>
<td>ISO 294-4</td>
</tr>
</tbody>
</table>

### Mechanical

| Tensile Strength @ Yield | 82.85 (11.9-12.3) | MPa (ksi)  | ISO 527  |
| Elongation @ Yield       | 4.2-4.5          | %          | ISO 527  |
| Tensile Modulus          | 3100-3400 (450-493) | MPa (ksi) | ISO 527  |
| Flexural Modulus         | 2800-3000 (410-435) | MPa (ksi) | ISO 178  |
| Notched Charpy Impact @ -23°C (73°F) | 4.6-6.1 (2.19-2.90) | KJ/m² (ft-lb/in²) | ISO 179 |

### Thermal

| Continuous Operating Temp | -40 to 85 (-40 to 185) | °C (°F) | UL 746 |
| RTI Strength @ 1.5 mm     | 130 (266)              | °C (°F) | UL 746 |
| RTI Electrical @ 0.71, 1.5 & 3.0 mm | 75 (167)              | °C (°F) | UL 746 |
| Heat Deflection Temp @ 0.45 MPa (65 psi) @ 1.80 MPa (261 psi) | 200-205 (392-401) 66-74 (151-165) | °C (°F) | ISO 75 |
| CLTE @ 2mm, Normal 23-55°C (73-130°F) | 0.8-1.2 | 10⁴°C | ISO 11359 / ASTM E381 |
| CLTE @ 2mm, Parallel 23-55°C (73-130°F) | 1.0-1.1 | 10⁴°C | ISO 11359 / ASTM E381 |

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**This document is intended as a general guide, in the material selection for a product, but does not guarantee satisfactory performance. All materials selected must be thoroughly tested in its intended application to determine its suitability. Consult a HellermannTyton Representative for assistance in the final material selection.**

**The information contained herein is believed to be accurate at the time of printing. However, this information has been obtained from a variety of sources and has not been independently verified by HellermannTyton Corporation; therefore, we cannot warrant fitness for a particular application. Furthermore, HellermannTyton Corporation reserves the right to make changes to this document, at any time, without notice to our customers.**