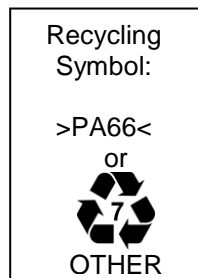


|   |  |  |  |                      |  |
|---|--|--|--|----------------------|--|
| <br><b>TYPICAL<br/>MATERIAL<br/>PROPERTIES</b> | <b>NYLON 12</b><br>Low Viscosity<br>UV & Heat Stabilized | <b>SPECIFICATION NUMBER<br/>MTS1012CSU</b> |  |                      |  |
|   |  | Issued By:<br>VM<br>04/08/13               | REVISION<br>Level:...02<br>Date:...02/18/14<br>By...LG<br>ECN#:...012586 | Page<br>1<br>Of<br>2 |  |
|   |  | Checked By:<br>KAC<br>02/18/14             |  |                      |  |

**DESCRIPTION**

Nylon 12 low viscosity, UV and heat stabilized is a high flow material suitable for injection molding HT cable ties and other less difficult to fill routing and clipping components. This partially crystalline Polyamide 12 base compound has a very low water absorption. Therefore products maintain their dimensions in environments with varying humidity levels, while maintaining a high tenacity, a low coefficient of friction and good chemical resistance. More resistant to chemicals than Nylon 66. This material is excellent for UV light exposure resistance. Current cost comparison: Nylon 12 is 7 times the cost of Nylon 66.

Commercial Name: ..... Nylon 12  
Catalog Code: ..... PA12, N12  
Chemical Name: ..... Polyamide 12  
Typically Used On: ..... Cable Ties



**GENERAL PERFORMANCE CHARACTERISTICS**

|                      |           |
|----------------------|-----------|
| Heat Stabilized      | Good      |
| High Impact          | Good      |
| Moisture Sensitivity | Good      |
| UV Resistance        | Excellent |

**PERFORMANCE ADDITIVES**

|          |   |
|----------|---|
| Glass    | None  |
| Mineral  | None  |
| Carbon   | 0.5 % Carbon black for enhanced UV stability. |
| Halogens | None  |

**PROCESS ADDITIVES**

|                  |          |
|------------------|----------|
| Fillers          | None     |
| Lubricants       | Internal |
| Shrink Additives | None     |

**CONDITIONING**

Not normally needed. This material absorbs little moisture.

**CHEMICAL RESISTANCE**


|            |   |
|------------|---|
| Acids      | Limited; attacked by strong acids; more resistant than nylon 6/6. |
| Bases      | Excellent   |
| Solvents   | Excellent   |
| Gasoline   | Excellent   |
| Oil        | Excellent   |
| Salt Water | Very Good   |

**MAJOR TOXIC ELEMENTS**

None

**APPROVALS**

None

|   |  |  |  |                      |
|---|--|--|--|----------------------|
| <br><b>TYPICAL<br/>MATERIAL<br/>PROPERTIES</b> | <b>NYLON 12</b><br>Low Viscosity<br>UV & Heat Stabilized | <b>SPECIFICATION NUMBER<br/>MTS1012CSU</b>                     |  |                      |
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**PROPERTIES CHART**

|  | <b>Dry</b>              | <b>Units</b>                               | <b>Test Method</b>       |
|--|-------------------------|--|--------------------------|
| <b><u>FLAMMABILITY</u></b>   |                         |  |                          |
| UL Flammability  | HB                      | -  | UL 94, *Mfg              |
| Glow Wire Flammability Index: 0.0787 in (2.0 mm)   | 960 (1760)              | °C (°F)                                    | IEC 60695-2-12           |
| Glow Wire Ignition Temperature: 0.0787 in (2.0 mm)   | 850 (1560)              | °C (°F)                                    | IEC 60695-2-13           |
| <b><u>PHYSICAL</u></b>   |                         |  |                          |
| Density  | 1.01 (0.036)            | g/cm <sup>3</sup> (lb/in <sup>3</sup> )    | ISO 1183                 |
| Water Absorption: Saturation, 73°F (23°C)<br>Equilibrium, 73°F (23°C)                            | 1.4<br>0.7              | %  | ISO 62                   |
| Viscosity Number   | 120                     | cm <sup>3</sup> /g                         | ISO 307                  |
| <b><u>MECHANICAL</u></b>   |                         |  |                          |
| Tensile Strength @ Yield   | 46 (6670)               | MPa (psi)                                  | ISO 527-2                |
| Tensile Strain @ Yield<br>@ Break  | 6.0<br>>50              | %  | ISO 527-2                |
| Tensile Modulus  | 1400 (203k)             | MPa (Psi)                                  | ISO 527-2                |
| Charpy Notched Impact Strength<br>-22°F (-30°C), Complete Break<br>73°F (23°C), Complete Break   | 2.4 (5.0)<br>1.9 (4.0)  | ft-lb/in <sup>2</sup> (KJ/m <sup>2</sup> ) | ISO 179/1eA              |
| Charpy Unnotched Impact Strength<br>-22°F (-30°C), Complete Break<br>73°F (23°C), Complete Break | No Break<br>No Break    | ft-lb/in <sup>2</sup> (KJ/m <sup>2</sup> ) | ISO 179/1eU              |
| <b><u>THERMAL</u></b>  |                         |  |                          |
| Continuous Operating Temp (Type 1A, 4 mm)  | -40 to 120 (-40 to 248) | °C (°F)                                    | *Mfg                     |
| Heat Deflection Temp: 66 psi (0.45 MPa) Unannealed<br>264 psi (1.8 MPa) Unannealed               | 120 (248)<br>50 (122)   | °C (°F)                                    | ISO 75-2/B<br>ISO 75-2/A |
| <b><u>ELECTRICAL</u></b>   |                         |  |                          |
| Comparative Tracking Index:<br>Solution A (50 drops value)<br>Solution A (100 drops value)       | >600<br>600             | V  | IEC 60112                |

\* Mfg: Raw material vendor test results

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.

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