Solar Photovoltaic

Ascend Performance Materials’ high-performance nylon 6,6 compounds are ideal for electrical and electronic (E&E) applications. With over 150 grades with more than 100 UL approvals and VDE recognition, Vydyne® grades for E&E applications are designed to meet ever stricter regulatory requirements, including fire and safety standards. Vydyne grades provide superior mechanical and thermal performance while maintaining dimensional integrity, and exhibit excellent flow and moldability for complex designs.

Products Used: 25WSP, ECO315J, ECO366H, 47H BK0644

Application Description
Electrical components in solar panels require materials that can withstand years of sun exposure and harsh elements. Solar photovoltaic (PV) applications require ductility, UV stability, chemical resistance, electrical insulation and, in some cases, flame retardant properties.

Benefits
- UV stability
- High ductility
- Electrical performance
- Flame resistance
- Improved processing

The Vydyne Difference
Ascend’s Vydyne 25WSP, ECO315J, ECO366H and 47G BK0644 products provide superior ductility and electrical insulation properties while allowing for faster cycle times, making them ideal for solar PV applications. 25WSP and 47H BK0644 contain 2% carbon black for maximum UV exposure applications. Additionally, ECO315J and ECO366H are formulated with heat stabilizers that provide additional UV protection. Carbon black can also be added for enhanced UV protection.
Product Properties

<table>
<thead>
<tr>
<th>Property*</th>
<th>Test Method</th>
<th>Units</th>
<th>25WSP</th>
<th>ECO315J</th>
<th>ECO366H</th>
<th>47H BK0644</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>ISO 1183</td>
<td>g/cm³</td>
<td>1.14</td>
<td>1.16</td>
<td>1.17</td>
<td>1.1</td>
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<tr>
<td>Tensile Strength @ Break</td>
<td>ISO 527-2</td>
<td>MPa</td>
<td>83</td>
<td>75</td>
<td>83</td>
<td>60</td>
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<tr>
<td>Tensile Elongation @ Break</td>
<td>ISO 527-2</td>
<td>%</td>
<td>20</td>
<td>25</td>
<td>5</td>
<td>22</td>
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<tr>
<td>Notched Charpy Impact @ 23°C</td>
<td>ISO 179/1eA</td>
<td>kJ/m²</td>
<td>6.0</td>
<td>5.4</td>
<td>3.4</td>
<td>19.0</td>
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<tr>
<td>Notched Charpy Impact @ -30°C</td>
<td>ISO 179/1eA</td>
<td>kJ/m²</td>
<td>4.8</td>
<td>5.4</td>
<td>3.7</td>
<td>17</td>
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<td>Flammability</td>
<td>UL 94</td>
<td>NA</td>
<td>V0</td>
<td>V0</td>
<td>V0</td>
<td>HB</td>
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<tr>
<td>Dielectric Strength</td>
<td>IEC 60243</td>
<td>kV/mm</td>
<td>26</td>
<td>13</td>
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<td>12</td>
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<tr>
<td>Volume Resistivity</td>
<td>IEC 60093</td>
<td>ohms·cm</td>
<td>1.0 E+16</td>
<td>1.0 E+11</td>
<td>1.0 E+19</td>
<td>1.0 E+11</td>
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<tr>
<td>RTI Electrical @ 1.5 mm</td>
<td>UL 746B</td>
<td>°C</td>
<td>130</td>
<td>130</td>
<td>150</td>
<td>130</td>
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<tr>
<td>RTI Strength @ 1.5 mm</td>
<td>UL 746B</td>
<td>°C</td>
<td>75</td>
<td>100</td>
<td>130</td>
<td>115</td>
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<tr>
<td>RTI Impact @ 1.5 mm</td>
<td>UL 746B</td>
<td>°C</td>
<td>85</td>
<td>85</td>
<td>65</td>
<td>75</td>
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</table>

*Dry as molded (DAM)

For more information, contact our expert applications specialists or visit ascendmaterials.com.

Ascend Performance Materials is the world’s largest fully integrated producer of nylon 6,6 resin. We manufacture and reliably supply world-class plastics, fibers and chemicals that are used in thousands of everyday applications such as car parts, electronics and cable ties.

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