Eastman G™ maleated polyolefins

The superior coupling additive for fiberglass reinforcement

Eastman G-3003 is a maleic-grafted polypropylene with optimum functionality and molecular weight developed to compatibilize glass fibers and polypropylene. Addition of a small percentage of Eastman G-3003 polymer (0.5%–5%) results in a dramatic increase in tensile strength and other physical properties of fiberglass-reinforced polypropylene composites.

The product can be added to the composite to aid not only in strengthening the composite but also to improve composite processability. Incorporating Eastman G-3003 polymer in glass-reinforced polypropylene composites is a cost-effective alternative to various reinforced engineering plastics used in the automotive and appliance industries.

Eastman G-3003 polymer is available in 50 lb (22.7 kg) bags or 1,000 lb (453.6 kg) boxes. Bulk bag packaging is available on a made-to-order basis.

Physical data for 30% fiberglass-reinforced polypropylene

- **Tensile strength**
  - Control: 72 MPa
  - Eastman G-3003 coupler: 90, 93, 93, 96 MPa

- **Unnotched Izod impact, 23°C**
  - Control: 275 J/m
  - Eastman G-3003 coupler: 510, 686, 712, 751 J/m

- **Heat deflection temperature, 1820 kPa**
  - Control: 142 °C
  - Eastman G-3003 coupler: 147, 148, 148, 148 °C

- **Flow rate**
  - Control: 1.67 g/10 min
  - Eastman G-3003 coupler: 1.86, 1.86, 1.87, 1.97 g/10 min
Physical data for 30% fiberglass-reinforced polypropylene containing Eastman G-3003 vs. various reinforced engineering thermoplastics

<table>
<thead>
<tr>
<th>Property</th>
<th>PP with no coupler</th>
<th>PP with G-3003 coupler</th>
<th>Acetal</th>
<th>ABS</th>
<th>Polycarbonate</th>
<th>Nylon 6/6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass content, %</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td>30</td>
<td>30</td>
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<tr>
<td>Tensile strength, MPa</td>
<td>69</td>
<td>93</td>
<td>62</td>
<td>110</td>
<td>131</td>
<td>193</td>
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<tr>
<td>Impact—notched Izod, J/m</td>
<td>53</td>
<td>107</td>
<td>53</td>
<td>69</td>
<td>160</td>
<td>214</td>
</tr>
<tr>
<td>Impact—unnotched Izod, J/m</td>
<td>214</td>
<td>694</td>
<td>—</td>
<td>267</td>
<td>—</td>
<td>641</td>
</tr>
<tr>
<td>Heat deflection temperature, °C @ 1820 kPa</td>
<td>142</td>
<td>148</td>
<td>156</td>
<td>110</td>
<td>149</td>
<td>255</td>
</tr>
</tbody>
</table>

*aInformation taken from Modern Plastics Encyclopedia ’95.

Eastman G™ polymers are products of Eastman and are protected under one or more of the following U.S. patents: 5,955,547; 6,046,279; 7,408,007; 7,683,134; and their foreign equivalents.