Eastman Tritan™ copolyester for transparent in-mold decoration applications

**Eastman Tritan™ copolyester**
- Eastman Tritan™ is an innovative, new-generation copolyester that retains the versatility of traditional copolyesters while offering higher temperature performance and impact resistance. The unique properties of Tritan™ deliver advantages over other clear thermoplastics.
- Functional attributes of the Eastman Tritan™ copolyester:
  - Toughness
  - Clarity
  - Excellent chemical resistance
  - Lower melt processing temperature
  - Good adhesion to ink/films
  - Low levels of residual stress
  - Can be a drop-in replacement for PC, PMMA, and PC/Polyester with minor or no modifications

**In-mold decoration (IMD)**
- The IMD process is a versatile and economic method of decorating and manufacturing higher value durable plastic parts. In products such as mobile phones, appliances and medical devices, generally IMD is used to produce thin-wall lenses, windows or covers. For such applications, a clear plastic substrate is molded behind a decorative film or foil. Eastman Tritan™ copolyester represents a compelling new option for the substrate material.

**Striking a balance**
- As evidenced by the data below, all materials come with tradeoffs. Eastman Tritan™ copolyester, however, represents a unique balance of properties. Tritan” offers good clarity, toughness, chemical resistance and flow but with melt temperature sufficiently cool enough to avoid ink washout.
- Tritan™ offers this at a cost generally lower than some blended material options.
- Tritan™ boasts inherently low levels of residual stress which suggests it’s well-suited for complex designs and shapes.

**A new substrate option**
Data suggests that Eastman Tritan™ copolyester may be an attractive option that eliminates some of the compromises that are unavoidable with materials such as PMMA, PC and PC/Polyester.

<table>
<thead>
<tr>
<th>Material</th>
<th>Impact resistance, Notched Izod (J/m)¹</th>
<th>Light transmission (%)²</th>
<th>Melt processing temp (°C)³</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastman Tritan™ copolyester</td>
<td>980</td>
<td>91</td>
<td>280</td>
<td>$$</td>
</tr>
<tr>
<td>Polycarbonate</td>
<td>800</td>
<td>87</td>
<td>290</td>
<td>$$</td>
</tr>
<tr>
<td>PC/Polyester</td>
<td>830</td>
<td>88</td>
<td>260</td>
<td>$$$</td>
</tr>
<tr>
<td>Transparent ABS</td>
<td>100</td>
<td>86</td>
<td>230</td>
<td>$</td>
</tr>
<tr>
<td>PMMA</td>
<td>60</td>
<td>91</td>
<td>240</td>
<td>$</td>
</tr>
</tbody>
</table>

¹ASTM D256 @ 23°C
²ASTM D1003
³General recommendations for material type

The value presented above for materials other than Tritan™ are representative of given classes of material and are not intended to represent the performance of a specific product.
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