DuPont Packaging & Industrial Polymers

DuPont™ Biomax® Strong 100

Biomax® Strong resins Product Data Sheet

**Description**

**Product Description**

Biomax® Strong 100 is an ethylene copolymer designed to modify Polylactic Acid (PLA) for improved toughness properties in packaging and industrial applications. Some of the attributes of Biomax® Strong 100 in PLA include:

- Special Chemistry for PLA. Even small amounts provide toughness benefits;
- Engineered for PLA, rapid melt-dispersion, even with single screw extruders;
- Pelletized, efficient extruder feeding; separately or as a pellet-bend with PLA;

Blends containing 5% (wt.) or less modifier maintain contact clarity similar to clarified Polypropylene (PP), while blends in the 5 - 15% range presents different degrees of translucence, similar to unclarified PP.

**Restrictions**

**Material Status**

- Commercial: Active

**Typical Characteristics**

**Uses**

- Polymer Modifier

**Characteristics / Benefits**

- Impact Strength / Toughness

Impact strength of BIOMAX® Strong 100 modified PLA, both in the amorphous and crystalline estates, is significantly improved even at 2wt% addition level.

- Brittleness

BIOMAX® Strong 100 greatly improves the cutting & trimming of PLA 3001 & 2002. While unmodified PLA 3001 & 2002 exhibits breakage at the edge of the sheet, blends with 2 to 5 wt.% of BIOMAX® Strong 100 show no breakage. There is also a marked improvement of "pinning". While unmodified PLA 3001 breaks at the edge of the sheet, there is no breakage once BIOMAX® Strong 100 is added.

**Applications**

- Polylactic Acid (PLA) Modification

**Typical Properties**

**Physical**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Nominal Values</th>
<th>Test Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (g/cm³)</td>
<td>0.94</td>
<td>ASTM D792, ISO 1183</td>
</tr>
<tr>
<td>Melt Flow Rate (190°C/2.16kg)</td>
<td>12 g/10 min</td>
<td>ASTM D1238, ISO 1133</td>
</tr>
</tbody>
</table>

**Thermal**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Nominal Values</th>
<th>Test Method(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting Point (DSC)</td>
<td>72°C (162°F)</td>
<td>ASTM D3418, ISO 3146</td>
</tr>
</tbody>
</table>
Processing Information

General

* Maximum Processing Temperature 280°C (536°F)

General Processing Information

Handling & Storage

Biomax® Strong 100 is supplied in polyethylene bag lined boxes or bags. The product does not require drying but the material should be handled in a way that minimizes moisture pick-up. For example reseal bags or box liners when partial bags or boxes are not being used.

Processing of blends of Biomax® Strong 100 and PLA

Blends of Biomax® Strong 100 and PLA can be processed in the same equipment and under the same processing conditions recommended for PLA

The melting point of Biomax® Strong 100 is 72°C (162°F) so a split feed extruder hopper will be required in cases where the PLA resin is dried on line and temperature of the hot dried PLA exceeds the melting point of the modifier.

Melt Viscosity and Melt Thermal Stability

Under typical processing conditions melt viscosity of PLA melt blends with BIOMAX® STRONG is not significantly different from that of unmodified PLA.

Melt Thermal stability of PLA is improved through addition BIOMAX® Strong 100 as it has been shown by extended hold-up time (up to two hours) in a capillary viscometer.

FDA Status Information

DuPont Biomax® Strong 100 is designed for non food packaging applications. For more specifics, please contact your DuPont representative.

Safety & Handling

For information on appropriate Handling & Storage of this polymeric resin, please refer to the Material Safety Data Sheet.

A Product Safety Bulletin, Material Safety Data Sheet, and/or more detailed information on extrusion processing and/or compounding of this polymeric resin for specific applications are available from your DuPont Packaging and Industrial Polymers representative.

Read and Understand the Material Safety Data Sheet (MSDS) before using this product

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DuPont operates in more than 70 countries. For help finding a local representative, please contact one of the following regional customer contact centers:

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This data sheet is effective as of 08/07/2010 02:19:18 PM and supersedes all previous versions.