



DuPont™ Biomax® 120

**Biomax® Strong resins Product Data Sheet**

**Description**

Product Description

Biomax® Strong 120 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 120 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.

Biomax® Strong 120 is similar to Biomax® Strong 100 but is designed for food packaging applications subject to the regulatory requirements detailed below

**Restrictions**

Material Status

- Commercial: Active

Availability

- Globally

**Typical Characteristics**

Uses

- Plastics Modification

Characteristics / Benefits

Impact Strength / Toughness

Impact strength of BIOMAX® Strong 120 modified PLA, both in the amorphous and crystalline states, is significantly improved even at 2wt% addition level.

Brittleness

BIOMAX® Strong 120 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 120 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 120 is added.

Applications

Polylactic Acid (PLA) Modification

**Typical Properties**

**Physical**

**Nominal Values**

**Test Method (s)**

Density ( )

0.94 g/cm<sup>3</sup>

ASTM D792

Melt Index (190°C/2.16kg)

12 g/10 min

ASTM D1238

ISO 1133

**Thermal**

**Nominal Values**

**Test Method (s)**

Melting Point (DSC)

72°C (162°F)

ASTM D3418

**Processing Information**

## General

Maximum Processing Temperature	280°C (536°F)
General Processing Information	Handling & Storage

Biomax® Strong 120 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 120 and PLA

Blends of Biomax® Strong 120 and PLA can be processed in the same equipment and under the same processing conditions recommended for PLA

The melting point of Biomax® Strong 120 is 72C (162F) 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 120 is not significantly different from that of unmodified PLA.

Melt Thermal stability of PLA is improved through addition BIOMAX® Strong 120 as it has been shown by extended hold-up time (up to two hours) in a capillary viscometer.

## FDA Status Information

Biomax® Strong 120 resin modifier complies with U.S. Food and Drug Administration Regulation CFR 175.105 -- Adhesives. This Regulation describes adhesives that may be used as components of articles intended for use in packaging, transporting or holding food, subject to the limitations and requirements therein.

Biomax® Strong 120 resin modifier may be used at up to a level of 10% in polylactic acid (PLA) resin for direct food contact. The PLA resin containing Biomax® Strong 120 resin modifier is intended for contact with all food types under temperature conditions as severe as Condition of Use C as described in Table 2 of 21 CFR 176.170(c). Such use may be properly said to comply fully with the Federal Food, Drug and Cosmetic Act and all applicable food additive regulations

## Regulatory Information

For information on the compliance of Biomax® Strong 120 with food contact regulations outside the U.S., please consult your local DuPont representative.

## Safety & Handling

Refer to the MSDS for Biomax® Strong 120.

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

## Regional Centres

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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