

TECHNICAL DATA SHEET: EBM.01

By Emamou



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Language: English

Product Description

EBM.01 (PBAT 100%) is a biodegradable, aliphatic-aromatic copolyester based on the monomers 1,4-butanediol, adipic acid and terephthalic acid in the polymer chain. EBM.01 has properties similar to LDPE because of its high molecular weight and its long chain branched molecular structure. EBM.01 is chain extended grade with Mn 45,000~ 80,000 g/mol.

EBM.01 has excellent performances as below.

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| - High molecular weight substance | - Great processability (at general machinery) |
| - Stronger tensile and tear strength | - M.F.I. (190°C/2.16kg/10min.): 2.0 ~ 5.0 |
| - Sustainable strength & degradability vs time | - Good printability without pre-treatment & good weldability |
| - Semi-crystalline structure | - Colour: white pellet. |
| - Melting point: 125°C | |

Advantages

- ① EBM.01 is widely used for printing, welding applications and can be mechanically recycled
- ② has properties similar to LDPE, a popular plastic thanks to its high molecular weight and long chain
- ③ when incinerated, EBM.02 does not generate noxious side-products or hazardous gases.
- ④ EBM.01 is highly compatible with natural materials such as PLA, PBS, TPS.



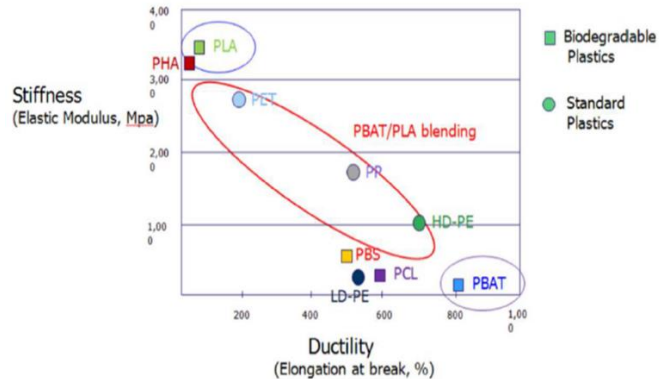


- ⑤ EBM.01 can be processed according to customer's specific or technical requirements
- ⑥ EBM.01 has low acid value
- ⑦ Shelf life: 12 months

Applications

- EBM.01 is designed for flexible packaging films to be extruded through blown or cast processes.

- EBM.01 is compatible with another biodegradable polymers such as PLA, PBS, TPS. To prevent air oxidation of PBAT, a suitable antioxidant was usually prescribed in compound process about 0.1 ~ 0.2% wt.



Processing Information

Item	Unit	Value
Cylinder temperature	°C	130~150
Head	°C	150~160
Dies	°C	160~170

In-line drying is recommended for EBM.01 resins. A moisture content of less than 0.25% (25 ppm) is recommended to prevent viscosity degradation. Polymer is supplied in foil lined boxes or bags dried to <0.25% when packaged.

The resin should not be exposed to atmospheric conditions after drying. Keep the package sealed until ready to use and promptly dry and reseal any unused material. The drying curves for both amorphous and crystalline resins are shown to the right. It is important to consider accurate initial moisture, when calculating necessary drying time.

Average Physical and Mechanical Properties

Item	Conditions	Method	Unit	Value
Density	-	ASTM D792	g/ml	1.22 ~ 1.25
MFI	190°C/2.16kg	ASTM D1238	g/10min	2 ~ 5
Melt Temperature	-	ASTM 3418	°C	125
Tensile Strength (MD)	-	ASTM D638	kgf/cm ²	> 250
Tensile Strength (TD)	-	ASTM D638	kgf/cm ²	> 200
Elongation (MD) -	-	ASTM D638	%	> 350
Elongation (TD)	-	ASTM D638	%	> 400
Tear Strength (MD)	-	ASTM D1004	Kgf/cm	> 110

For a thickness of 30 μm



Food Packaging Status

On 07 August 2020, EBM.01 passed the **European Food Contact Standard - Commission Regulation (EU) No 10/2011** for a) Plastic- Overall Migration and b) Plastic- Specific Migration of Heavy Metals. It also passed the **European Regulation (EC) No. 1907/2006 (REACH)** Annex XVII and its amendments for Polycyclic Aromatic Hydrocarbons (PAHs) content as well as the **European Directive 94/62/EC** (Pb, Cd, Hg, Cr VI).

Test report No: VNHL2007015120HG

No specific migration limit (SML) for the above referenced grade exists following the amended **Plastics Regulation 10/2011** requirements. Emamou would like to draw your attention to the fact that the European Plastics Regulation 10/2011, which applies to all European Member States, includes a limit of 10 mg/dm² of the overall migration from finished plastic articles into food. In accordance with the Plastics Regulation 10/2011 the migration should be measured on finished articles placed into contact with the foodstuff or appropriate food simulants for a period and at a temperature which are chosen by reference to the contact conditions in actual use, according to the rules laid down in Plastics Regulation 10/2011.

Composability Status

EBM.01 fulfils the requirements of the **European Standard EN 13432**, the US standard ASTM D 6400 for compostable and biodegradable polymers, because it can be degraded by micro-organisms. The biodegradation process in soil depends on the specific environment (climate, soil quality, population of micro-organisms).

Bulk Storage Recommendations

The resin silos should be designed to maintain dry air in the silos and for materials to be isolated from the outside air. This design should be in contrast to an open, vented to atmosphere system that is typical for polystyrene resin silos. Key features that are added to a typical (example: polystyrene) resin silo to achieve this objective include a cyclone and rotary valve loading system and pressure vessel relief valves. The dry air put to the system is sized to the resin flow rate out of the silo. Not too much dry air would be needed and there may be excess instrument air (-30°F dew point) available in the plant to meet the needs for dry air. Our estimate is 10 scfm for a 20,000 lb/hour rate resin usage. Typically, resin manufacturers specify aluminum or stainless steel silos for their own use and avoid epoxy-lined steel.



Certification



Equivalent to EN 13432



EN 13432

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