

Ecomann Bioresin EM40010

Biodegradable plastic for sheet extrusion

Product description EM40010 is semi-crystalline biodegradable, aliphatic bio-polyester designed for use in sheet applications. EM40010 is PHA base compound with PLA, minerals and some additives.

EM40010 is certificated to meet EN13432 & ASTM D6400 standards for biodegradable plastics.

Typical applications: Cosmetics packaging, credit cards, thermoforming sheet

Form EM40010 is supplied in pellet form in 25kg bags

Properties EM40010 has excellent properties compare to other bioplastics as well as following:

High stiffness and excellent surface gloss
 Good heat and moisture resistance
 Excellent shelf stability and recyclable
 Good processability and coloration

Typical Property	Unit	Test Method	Result
Density	g/cm ³	ASTM D-792	1.32
MFR 170°C, 2160g	g/10min	ASTM D-1238	4.0
Melting Range	°C	DSC	140--160
Vicat A/50	°C	ASTM D-648	105
Tensile Strength	MPa	ASTM D-638	30
Breaking Extension	%	ASTM D-638	5
Flexural Modulus	MPa	ASTM D-790	1400
Izod Impact nd	Kj/m ²	ASTM D-256	3
Water Absorb	%	ASTM D-570	<0.3

Compatibility Ecomann bioresins are not compatible with legacy plastics such as PE, PP, PET, PS, etc but compatible with biodegradable polymers such as PLA, PBS, PBSA, PBAT or TPS. If combining EM40010 with other resins it is recommended that process trials be conducted to assess the quality of the final product.

Safety and Handling Material Safety Data Sheet (MSDS) for bioresins are available from Ecomann or approved distributors. It is recommended to review the MSDS before handling or using Ecomann bioresins. Temperatures during transportation and storage should not exceed 80 °C. Product should be stored in a dry, well ventilated warehouse.



Avoid high humidity, soil, seawater, and sludge.
Shelf life of product should not exceed 2 years at ambient temperature (23 °C).

Processing

Drying

Pre drying of EM40010 is recommended prior to processing to get the best processing performance;
Typical drying conditions; 3 hours at 175°F (80°C).
Keep the package sealed at all times until ready to use and promptly reseal any unused material.

Machines

Sheet Extruder

EM40010 will process on conventional extruders using general purpose screws Good temperature control is important to achieve excellent sheet.

Start up procedure

Because Ecomann bioresins are not compatible with conventional oil based plastics, **if the machine was used to run conventional oil plastics**, the following purging sequences should be followed to make sure the sheet extrude machine is clean:

1. Set temperature of extrude machine to 150 -180°C.
2. Vacuum out hopper system to avoid contamination.
3. Introduce bioresin into the extrude machine at the operating conditions used in Step 1.
4. Once bioresin is purged and no residual conventional resins are present, reduce barrel temperatures to the temperatures recommended in the processing profile below.
5. Once the extrude machine has reached the required temperature below you can start production.
6. If the machine is specially used for bioplastics processing, step 2 & 3 can be ignored.

Important:

Ecomann bioresins are temperature sensitive. It is important to make sure the sheet extrude machine is closer to the lower temperature setting to start with. If the sheet part is not optimized it is recommended to increase the temperature in 5°C increments.

Processing Temperature Profile for Extruding Sheet		
Feed temperature	293--311°F	145-155°C
Compression Section	302--320°F	150-160°C
Melting Section	302--329°F	150-165°C
Die	311--329°F	155-165°C

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