Global Marketing Biopolymers

Product Information

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G-PM/PB

ecovio® 70 PS14H6

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Product Description

ecovio® 70 PS14H6 is our industrial and home compostable product for paper coating based on renewable resources. It is essentially a special grade of our new compostable. ecovio® 70 PS14H6 contains biobased carbon content between 70-80 % of renewable resources according to ASTM D 6866.

The unique feature of ecovio® 70 PS14H6 is its beneficial properties – excellent welding and very good adhesion to paper and board. ecovio® 70 PS14H6 can be used for mono and co-extrusion coating on paper and board.

Applications

In general, ecovio® 70 PS14H6 coated paper or board can be used for cold and hot food packaging applications. Typical applications are e. g. fresh food (cheese, meat, fish), snack food, sachets, coffee cups, plates, trays and bowls.

Thanks to its unique combination of sealing and barrier properties against mineral oil, fat and hydrocarbons ecovio® 70 PS14H6 can be processed in mono extrustion or as well as in co-extrusion with other compostable polymers to enhance the barrier properties of a multi-layer with paper and board.

General Properties of Coatings using ecovio® 70 PS14H6

- Good scratch resistance
- Barrier for fat, liquids, aromas and mineral oils
- Relatively high water vapor transmission rate
- Weld strength comparable to LDPE at temperatures 20 to 30 °C (36 to 54 °F) below LDPE level
- Good printability using alcohol and/or water based colors

Special Barrier Properties

ecovio® 70 PS14H6 provides a special combination of sealing, mechanical and barrier properties. ecovio® 70 PS14H6 has an excellent barrier against migration of mineral oil and hydrocarbons e. g. ethylene and various other chemicals from packaging cartons made of recycled paper and board.

Food Contact Compliance

The composition of ecovio® 70 PS14H6 complies with the requirements of the Comission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food as well as with the requirements of the Federal Food, Drug and Cosmetic Act, 21 CFR for the use in single use polyester films, coatings, and molded articles. Specific limitations and further details concerning the food contact compliance status of this product can be obtained upon request via a local BASF representative or by contacting plastics.safety@basf.com. The suitability of the article for the application concerned must be ensured in each case by the person who places any finished food contact article on the market.

Certification of Compostability and Biodegradability

ecovio® 70 PS14H6 can be degraded by micro-organisms under industrial and home composting conditions. The biodegradation process depends on the specific environment (e. g. climate, substrate, population of micro-organisms).

Certification scheme Norm	OK compost INDUSTRIAL EN13432	OK compost HOME	BPI compostable ASTM D6400
Certification Body	TÜV Austria	TÜV Austria	BPI
Certification Number	TA8012307331	TA8022307332	890989-35

Recycling of Paper and Board Coated with ecovio® 70 PS14H6

ecovio® 70 PS14H6 coated paper or board is as repulpable as LDPE coatings in a paper recycling process.

Drying Conditions

Because of the moisture sensitivity of ecovio® 70 PS14H6 at melt temperatures in the order of > 230 °C (446 °F) we have to assure a maximum moisture content of below 600 ppm, better below 250 ppm prior to production. In most cases the high extruder output rate will allow the use of material directly from the big bag without drying. If necessary – e. g. after storage of an opened big bag – drying of ecovio® 70 PS14H6 in desiccated air dryers with a dew point of -40 °C (-40 °F) at maximum 60 °C (140 °F) for a minimum of 4 hours or overnight drying at 50 °C (122 °F) is recommended.

Purging out of LDPE and Start-up of Production

Extrusion coating with ecovio® 70 PS14H6 starts with purging of biopolyester purge (BASF product) or LDPE in the extruder. The purging procedure is very important for the melt stability of ecovio® 70 PS14H6 during production. Detailed information on processing is available upon request.

Extrusion Coating Process

In general we can summarize our results of extrusion coating trials as follows:

- Excellent processing on conventional extrusion coating lines e.g. for LDPE lines
- Constant extruder output rate determines achievable line speed. Thus best results using a melt pump

- A typical coating thickness of LDPE can be achieved in most cases. Due to higher density (1.25 g/cm³ instead of 0.92 g/cm³) a higher coating weight is needed.
- Minimum coating weights depending on application requirements and equipment. In general coating weights of 12 to 30 g/m² (~10 to 24 µm) can be obtained.

- No sticking to the chill roll – matt and glossy chill rolls can be used
- Good cutting performance on regular cutting devices
- Excellent adhesion to paper and board – depending on card board or paper grade, maximum melt temperature and coating technology. Adhesion to paper or board can be increased via different pre-treatments (e.g. corona)

- Good thermo-stability up to 260 °C (500 °F) after drying to < 250 ppm residual moisture content
- Appropriate viscosity for extrusion coating: MVR (190 °C (374 °F), 2.16 kg): 16.5 +/- 2 ml/10 min.

Cup Making

ecovio® 70 PS14H6 has a good processing performance on cup making machines for LDPE coated board if high air temperatures of 500 °C (932 °F) can be reached. The full speed of 330 cups/minute could be achieved on high speed cup making machines using 20 - 25 g/m² of ecovio® 70 PS14H6.

LDPE cup making speeds can also be achieved on slow running lines with e. g. 50 - 70 cups/minute.

Form supplied and storage

ecovio® 70 PS14H6 is supplied as pearl- or cylinder-shaped pellets in 25 kg bags or 1t big bags with barrier inliner. Temperatures during transportation and storage may not exceed 60 °C (140 °F) at any time. Storage time in an unopened bag may not surpass 12 months at room temperature (23 °C / 73 °F).

Quality Control

ecovio® 70 PS14H6 is produced as a standard material in a continuous production process according to DIN EN ISO 9001. The melt volume rate, MVR, at 190 °C (374 °F), 2.16 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate of the MVR value can be provided with each lot number upon request. Other data given in our literature are typical values, which are not part of our product specification for ecovio® 70 PS14H6.

Typical basic material properties of ecovio® 70 PS14H6

Property	Unit	Test Method	ecovio® 70 PS14H6
Mass density	g/cm³	ISO 1183	**1.24 – 1.26**
Melt volume rate MVR 190 °C, 2.16 kg	ml/10 min.	ISO 1133	**14.5 – 18.5**
Water Vapor Transmission Rate (23 °C, 85 % r. H.)	g/(m²·d)	ASTM F 1249	**220**
Oxygen Transmission Rate (23 °C, 0 % r. H.)	cm³/ (m²·d·bar)	ASTM D 3985	**1400**

Note

The information submitted in this document is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance for a special purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed. (April 2023)

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