Biodegradable Polymers

Product Information

Version 1.0
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G-PM/PB

ecovio® F2331

Biodegradable compound for compostable film

® = ecovio and ecoflex are registered trademarks of BASF SE

Product Description

ecovio® F2331 is one of our biodegradable film products. It is basically a compound of our biodegradable copolyester ecoflex® and polylactic acid (PLA). Due to its outstanding mechanical strength ecovio® F2331 offers a great down gauging potential needed for very thin film applications. ecovio® F2331 already contains antiblocking and slip agents required for improved processing on film extrusion and film conversion equipment. Due to the high ecoflex® content in the continuous phase of the polymer structure ecovio® F2331 exhibits very good sealing properties required for mono- and multi-layer films.

ecovio® F2331 exhibits the following properties:

- High melt strength
- Good thermostability up to 230 °C
- Excellent processability on conventional LDPE blown film lines
- Good mechanical properties
- Typical thicknesses: 20 - 120 µm
- Good processability on bag making equipment
- Wet strength (e. g. needed in organic waste bag applications)
- Nice white translucent color
- Excellent welding properties
- Printable in 8 colors by flexo printing
- Broad sealing window required for sealing layers of multi-layer film structures

ecovio® F2331 exhibits excellent compatibility to ecoflex®, polylactic acid and other biodegradable polymers. According to our experience pre-drying of ecovio® F2331 is not required if the granules are taken from an unopened bag.

The processing of ecovio® F2331 on extrusion lines depends on the formulation, the extrusion technology and processing conditions. Trials are always recommended to assess the quality of the final product. ecoflex® masterbatches are available to tailor properties of the final product. Detailed information concerning our ecoflex® masterbatches will be sent upon request.

Certification of Compostability and Biodegradability

ecovio® F2331 is a biodegradable & compostable compound. Available certificates:

European standard
EN 13432
Australian standard
AS 4736

American standard
ASTM 6400

European standard
EN 13432

Certification body	DIN Certco	TÜV Austria		BPI
Norm/Certification scheme	EN 13432	OK Compost (EN 13432)	OK Compost Home	ASTM D 6400
Certification Number	7W0085	TA8011702346	TA8021903384	890989-3

Certification body	ABA	
Norm/Certification scheme	AS4736 Compostable	AS5810 Home Compostable
Certification Number	ABAM 10140	ABAM 20044

Food Contact Regulation

Food contact certificates for ecoflex® and ecovio® grades including information about specific limitations and details concerning the food contact status for different regions 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.

Form Supplied and Storage

ecovio® F2331 is supplied as lenticular shaped pellets in 1 t big bags. Temperatures during transportation and storage may not exceed 60 °C at any time. Storage time in an unopened bag may not surpass 12 month at room temperature (23 °C).

Quality Control

ecovio® F2331 is produced as a standard material in a continuous pro-duction process according to DIN EN ISO 9001. The melt volume rate, MVR, at 190 °C, 5 kg, according to ISO 1133 has been defined as specified parameter for quality control. A certificate can be provided with each lot number upon request. The ecovio® granules have to be pre-dried (6 hours at 70 °C) before MVR measurement in order to obtain accurate values. Other data given in our literature are typical values, which are not part of our product specification for ecovio® F2331.

Applications

ecovio® F2331 has been developed for the conversion to flexible films using a blown film process. Typical applications are F&V bags, packaging films etc. In view of numerous factors influencing functionality and shelf life of ecovio® films and finished articles made thereof the production parameters have to be tested by the converters before utilisation. Additionally sufficient field tests are required to ensure the right functionality of the articles made from ecovio® F2331.

We supply technical service information concerning the blown film process with ecovio® F2331 on demand.

Typical Basic Material Properties of ecovio® F2331

*see Quality Control

Property	Unit	Test Method	ecovio® F2331
Mass Density	g/cm³	ISO 1183	**1.24 - 1.26**
Bulk Density	kg/m³	DIN EN ISO 60	**780**
Melt Volume Rate MVR 190 °C, 5 kg*	ml/10 min.	ISO 1133	**8.0 - 12.0**
Melting Points	°C °C	DSC DSC	**110 - 120** **140 - 155**

Typical Properties* of ecovio® F2331 Blown Film, 30 µm

*not to be construed as specifications

Property	Unit	Test Method	ecovio® F2331
Tensile Modulus MD/TD	MPa	ISO 527	**200/130**
Tensile Strength MD/TD	MPa	ISO 527	**37/40**
Ultimate Elongation MD/TD	%	ISO 527	**550/600**
Dart Drop	g	ASTM D 1709-04 Method A	**500**

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. (February 2024)

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