



**Biodegradable Polymers**

**Product Information**

**Version 1.0**

December 2016

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.

For more information please visit us at [www.ecovio.com](http://www.ecovio.com)

 **BASF**  
We create chemistry

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		American standard ASTM 6400		European standard EN 13432
	Australian standard AS 4736				

Norm	EN 13432 (EU)		ASTM D 6400 (USA)	AS 4736 (AUS)
Certification Body	DIN Certco	Vinçotte	BPI	ABAM
Certification Number	7W0085	O 12-787-A	J-00133884	10009+PLA

**Food Regulatory Status**

ecovio® F2331 is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as with the regulations of the US food and drug administration for food packaging. A detailed food law status is given in our specific certificates which are send on request via a local BASF representative or Plastic Safety (plastics.safety@basf.com). The converter or packer has to check the suitability of the article for the application.

**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 production process according to DIN EN ISO 9001 : 2008. 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 packaging films, hygienic films and carrier bags. 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/cm <sup>3</sup>	ISO 1183	1.24 - 1.26
Bulk Density	kg/m <sup>3</sup>	DIN EN ISO 60	780
Melt Volume Rate MVR 190°C, 5kg*	ml/10 min.	ISO 1133	8.0 - 12.0
Melting Points	°C	DSC	110 - 120
	°C	DSC	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	MPa	ISO 527	200/130
Tensile Strength	MPa	ISO 527	37/40
Ultimate Elongation	%	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. (December 2016)