



Biodegradable Polymers

Product Information

Version 1.0

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G-PM/PB

# ecovio<sup>®</sup> FS2312

**Biodegradable compound for compostable film  
with a bio-based content of 46%\***

<sup>®</sup> = ecovio and ecoflex are registered trademarks of BASF SE

## Product Description

ecovio<sup>®</sup> FS2312 is one of our new biodegradable film products partly based on renewable resources. It is basically a compound of our new biodegradable partly bio-based copolyester ecoflex<sup>®</sup> FS and polylactic acid (PLA). ecovio<sup>®</sup> FS2312 has a bio-based content of 46%\*. ecoflex<sup>®</sup> FS is the continuous phase in the structure of ecovio<sup>®</sup> FS2312 resulting in beneficial film properties of the new product. ecovio<sup>®</sup> FS2312 does not contain slip agents. ecoflex<sup>®</sup> masterbatches have to be used to tailor the slip and antiblock properties required for easy processing on film extrusion and film conversion equipment.

\* Bio-based content is measured according to <sup>14</sup>C method as defined by ASTM D6866-12

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

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ecovio® FS2312 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)
- Printable in 8 colors by flexo printing

ecovio® FS2312 exhibits excellent compatibility to ecoflex®, polylactic acid and other biodegradable polymers. According to our experience pre-drying of ecovio® FS2312 is not required if the granules are taken from an unopened bag.

The processing of ecovio® FS2312 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 have to be used to tailor the slip and antiblock properties of the final product. Detailed information concerning our ecoflex® masterbatches will be sent on request.

Advantages of new ecovio® FS2312 versus ecovio® standard film grades are:

- Softer touch
- Improved contact transparency and clarity
- Higher bio-based content: 46 %\*
- Accelerated biodegradation speed improves composting according to EN 13432
- Better welding performance and hot tack due to lower melting point of ecovio® FS2312

### Certification of Compostability and Biodegradability

ecovio® FS2312 is a biodegradable & compostable compound. Available certificates:



Norm	EN 13432 (EU)		ASTM D 6400 (USA)	AS 4736 (AUS)
Certification Body	DIN Certco	Vinçotte	BPI	ABAM
Certification Number	7W0140	not listed	not listed	not listed

### Food Regulatory Status

ecovio® FS2312 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.

\*Bio-based content is measured according to <sup>14</sup>C method as defined by ASTM D6866-12

## Form Supplied and Storage

ecovio® FS2312 is supplied as lenticular shaped pellets in 1.0t 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® FS2312 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 of the MVR value 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® FS2312.

## Applications

ecovio® FS2312 has been developed for the conversion to flexible films using a blown film process in a thickness range of 20 - 240 µm. Typical applications are packaging films, hygienic films, carrier bags and compost 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® FS2312.

We supply technical service information concerning the blown film process with ecovio® FS2312 on demand.

## Typical Basic Material Properties of ecovio® FS2312

\*see Quality Control

Property	Unit	Test Method	ecovio® FS2312
Mass Density	g/cm <sup>3</sup>	ISO 1183	1.24
Melt volume rate MVR 190°C, 5kg*	ml/10 min.	ISO 1133	2.5 - 6.5
Melting Points	°C	DSC	105 - 115
	°C	DSC	140 - 155

## Typical Properties\* of ecovio® FS2312 Blown Film, 30 µm

\*not to be construed as specifications

Property	Unit	Test Method	ecovio® FS2312
Tensile Modulus MD/TD	MPa	ISO 527	430/190
Tensile Strength MD/TD	MPa	ISO 527	31/35
Elongation at break	%	ISO 527	380/670
Dart Drop	g	ASTM D 1709 Method A	530
Tear Resistance	mN	DIN EN ISO 6383-2	1900/700

**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)