

BIOCOMP BF 01HP

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General Description

BioComp[®] is an innovative family of bioplastics made with components natural in origin utilizing biodegradable polymers obtained from both renewable materials and fossil fuel. Biodegradability and compostability of BioComp[®] is unchanged using plasticizers and the addition of organic and inorganic charges (such as plant fibres, cellulose, lignin, talc...).

General Information

All BioComp[®] formulations are made from polymeric resins extracted both from biomass and from synthetic polymers made from bio-derived monomers and microorganisms.

The major advantages of bioplastics BioComp[®] are:

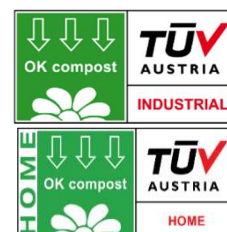
- ❖ High content of natural (renewable) resource raw materials
- ❖ Outstanding mechanical properties (similar to LDPE and EVA depending on the grade)
- ❖ Wide processing window
- ❖ Processable on standard extrusion machinery with a high throughput
- ❖ Printability without corona treatment

Certification of Compostability and Biodegradability

BioComp[®] BF 01HP is a Biodegradable & compostable compound that contain starch.

Available certificates:

Certification body	Norm / Certification Scheme	Certification Number
TÜV AUSTRIA BELGIUM NV	OK Compost Industrial (EN13432)	TA8011802676
	OK Compost Home (EN13432)	O 17-2380-A



This brand ensures the absence of heavy metals and harmful substances in all BioComp[®] formulations. An excellent disintegration of the manufactured products and the ecotoxicity of the humus are assured and certified. The biodegradability of at least 90% is guaranteed within 6 months for industrial and 12 months for home.

Food Regulatory Status

BioComp[®] BF 01HP is one of the few biodegradable plastics, which complies in its composition with the European food stuff legislation for food contact as well as for food packaging. A detailed food law status is given in our specific certificates which are send on request to MICROTEC SRL. The converter must check the suitability of the article for the application.

Packaging and Storage

BioComp® BF 01HP resins are supplied in the form of granules inside a carton box. Temperatures during transportation and storage may not exceed 50 °C at any time. Changes in moisture content (either loss or gain depending on atmospheric conditions) should be avoided during longer term storage. Well packaged product should be stored under 23 °C and used within 3 months with LDPE liner bag or within 10 months with Aluminium liner bag. BioComp® BF 01HP should be stored in closed packaging in a cool, dry place out of direct sunlight. During production, once the bag has been open, exposure to the weather condition must be avoided for more than 5-6 hours. The unused material is recommended to seal it hermetically and to dry it 4 h to 80°C before subsequent reuse.

Quality control

BioComp® BF 01HP is produced as a standard material in a continuous production process. The melt flow index, MFI, at 190°C, 2,16 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 BioComp® BF 01HP granules have to be pre-dried (4 hours at 80°C) before MFI 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 BioComp® BF 01HP.

Processing

BioComp® BF 01HP is an innovative type of bioplastic designed primarily for film blowing. BioComp® BF 01HP is processable on all conventional extrusion film blowing or casting lines with standard screw settings. Preferred screw design is a PE type. The information reported should be considered for general guideline in BioComp® BF 01HP processing. Fine tuning the film blowing process may be needed to obtain the optimum process parameters.

The following extrusion temperatures are recommended:

Processing Temperature Profile	Values
Feed zone temperature	140 – 150 °C
Melt zone temperature	150 – 160 °C
Die temperature	150 – 160 °C
Maximum temperature	170 °C
Melt temperature	150 – 160 °C

Operating Advice

Overheating of products should be avoided (due to degradation of the polymer). Before production, make sure that all temperature zones work correctly. Do not allow material to remain hot inside the extruder for extended periods as the material can degrade. Therefore, do not heat products over 160°C for long times and do not over 150°C when machine is not running. In case the machine used to run with other materials, high melting synthetic polymers (HDPE, PET, PVC, PA), it is recommended to use a correct transition thermoplastic polymer (LDPE with MFI of 4 – 8 g/10 min) and then reduce the temperature gradually to the required setting. The extruder can be usually purged for 10-20 minutes with low melting thermoplastic polymers using the above temperature settings. BioComp® is not compatible with masterbatches or synthetic or olefin additives; they can cause welding problems.

ATTENTION: Any addition of any other material (like other types of brands of biopolymer, colour biodegradable masterbatches, calcium carbonate-based fillers) could compromise the characteristics of biodegradability the physical-mechanical characteristics and aging and weldability of the original BioComp®. Therefore, with the addition of such materials, any quality disputes will not be accepted.

NOTE: We advise you to proceed with printing and welding in a short time, possibly just after extrusion, however within 3-4 days.

Application

BioComp® BF 01HP is an end compound suitable for film blowing applications and is specially developed for carrier bags. BioComp® BF 01HP is a good and sustainable alternative for PE bags and is a competitive alternative for currently used biodegradable plastic bags.

Technical Information

Classification Test Items	Test Method	Unit	Results
Density	ISO 1183	g/cm ³	1,27 – 1,30
MFI (190°C, 2,16 Kg, 10 min)	ISO 1133	190°C/10min	2,0 – 4,5
Moisture Content	AQUATRAC	%	< 0,2
Melting Point	DSC	°C	110 -130
Tensile Strenght - MD -	ISO 527	Mpa	28
Tensile Strenght - TD -	ISO 527	MPa	25
Tensile Elongation – MD -	ISO 527	%	380
Tensile Elongation – TD -	ISO 527	%	530
Elmendorf – MD -	ASTM D 1922-15	mN	1050
Elmendorf – TD -	ASTM D 1922-15	mN	1050
Dart Drop	ASTM D 1709-04	g	180

Disclaimer

The information contained in this Product Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information provided herein is based on technical data that Microtec srl believes to be reliable, however Microtec srl makes no representation or warranty as to the completeness or accuracy therefore and Microtec srl assumes no liability resulting from its use or for any claims, losses, or damages of any third party. Recipients receiving this information must exercise their own judgement as to the appropriateness of its use, and it is the user's responsibility to assess the material's suitability (including safety) for a particular purpose prior to such use.

MICROTEC SRL
Plastics Masterbatch Compound

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