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BIOGREENIC

TDS for BP WD-IMG
CONCENTRATED MASTERBATCH

Description:

BP WD-IMG is a Biobased injection moulding grade masterbatch with PLA as a carrier resin. It is a new age material made from biodegradable & compostable materials like natural wood fibres and PLA. This masterbatch compound reinforced with natural wood fibre has excellent flow properties, balanced stiffness and impact properties. This grade is intended to be used for a wide range of injection molding applications including general purpose household items, consumer goods, Disposable food cutlery items, etc.

This product ensures the absence of heavy metals and harmful substances and the ecotoxicity of humans are well preserved with the use of this compound masterbatch.

BP WD-IMG is processable on all conventional injection molding and extrusion lines with standard screw settings. Preferred screw design is the same as it is for PE.

The major advantages of wood-based bioplastic compounds are:

- Excellent compatibility with PLA, PBAT and PBS biopolymers for Injection molded components
- Very useful for disposable food cutlery like Spoon, fork, bowl, knife etc.
- High content of natural (renewable) resource raw material
- Lower carbon footprint then regular PLA cutlery
- Specific gravity close to PLA biopolymer
- Reduces injection molding cycle time
- Outstanding mechanical properties (similar to LDPE, PP & PS depending on the grade)
- Wide processing window
- Reduces Cost
- Processable on standard injection molded machinery with a high throughput

Dosage:

30-50 % with PLA (Polylactic Acid)

How to use:

Premix PLA and BP WD-IMG Concentrate MB as per desired dosage in highspeed mixer at 40-60 RPM for 10 mins. Then transfer premixed dry blend in Hopper dryer for Preheating. Preheating will give an efficient processing behavior in Injection molding machines.

Technical Characteristics:

Physical Properties	Test Method	Unit	Typical Value
Melt flow rate (190 °C/5 kg)	ASTM D-1238	gm/10min.	7.0-12.0
Melting temperature	AANGEE STD Test Method	°C	170-220
Density	ASTM D 792	g/cc	1.29
Color	Visual	Spectro	Woody
Form	Visual	--	Granules
Biobased content	In house	%	70
Biopolymer content	In house	%	30
Ash Content	ASTM D	%	5
Melting Point			180-200

Pre-drying:

If the moisture content in the material is more than 0.2%, we recommend that the pellets should be dehumidified or pre-dried for 3-4 hours at 75°C - 90°C prior to molding.

Processing information & recommendation:

BP WD-IMG Bio Concentrate compounds blends with PLA, PBAT (30-50%) on conventional injection molding equipment. To prevent or reduce the degradation of this compound during processing, it is recommended to use a barrel with a content of 3-5 times the shot weight, a (general purpose) screw with a L/D ratio of at least 20:1 and if applicable low shear hot runners in the mold. Pre-drying of the compound is highly recommended.

As a general guideline the following temperature profile is recommended for Injection molding process: -

ZONES	Throat	Feed Zone	Compression zone	Melting zone	Nozzle	T_{melt}	T_{mold}	Back Pressure	Screw Speed
Process parameters	20-40ºC	155-175ºC	180^0	200^0	220ºC	180-190ºC	20-30ºC	50-100 bar	Normal

Note: Typical settings, may require optimization depending on process & product.

Start-up and shutdown

1. The equipment needs to be well cleaned and purged to prevent cross contamination.
2. At the start of the run it is recommended to purge the system with polyolefin or a purging compound (e.g. Dyna-Purge, Clean LDPE) followed by purging with this compound at its processing conditions.
3. At the completion of the run it is recommended to purge the system using a purging compound or polyolefin again.

Storage: The material shall be kept in a cool dry place for best results.

Packing: Laminated Moisture proof Bags of 25 kg.