

TECHNICAL DATA-SHEET

Mater-Bi **EF05B**

PHYSICAL & MECHANICAL PROPERTIES

PROPERTY	UNIT	TEST	AVERAGE	NOTES
Melting Temperature	°C	DSC	115-145	raw pellets
Melt Flow Rate	gr/10min	DIN ISO 1133	3.4-4.5	at T=160°C, W=5kg
Density	gr/cm ³	Pycnometer	1,28	raw pellets, T=23°C
Tensile Strength at Break	MPa	ASTM-D882	30	blown film samples 25 µm
Elongation at Break	%	ASTM-D882	250	blown film samples 25 µm
Young Modulus	MPa	ASTM-D882	370	blown film samples 25 µm
Tear Resistance	N/mm	ASTM-D1922	100	MD
	>>	>>	90	TD
Friction Coefficient	dimensionless	DIN 53 375 A	0.27	Static
		film/film	0.21	Dynamic

APPLICATIONS

Mater-bi EF05B is a biodegradable thermoplastic material used for film blowing. Applications include film articles such as bags and shoppers.

TYPICAL EQUIPMENT & EXTRUSION CONDITIONS

- EXTRUDER:** Preferably with L/D ratio=27÷30, equipped with grooved barrel section.
- SCREW:** Screws for LDPE are generally suitable for Mater-Bi, e.g. barrier screws. Screw for LLDPE or HDPE may be in some plants suitable as well.
- THERMAL PROCESSING PARAMETERS:** Hopper: water cooled; Grooved feeding section= 90÷130°C, Barrel zones = 135÷145°C, Filter = 140÷150°C, Die head = 135÷145°C.
- DIE HEAD:** Die Gap=1.0÷1.2mm; avoid sharp deceleration or stagnant melt zones along flow channels.
- BLOW UP RATIO OF BUBBLE (BUR):** Suggested: >3,2.
- DRAW DOWN RATIO OF BUBBLE (DDR):** Blown film produced by different extrusion lines may exhibit some differences in properties. Before starting an industrial production, properties of blown film, along machine direction and transverse direction, should be carefully evaluated in order to identify the best draw down ratio.
- BUBBLE COOLING:** Single type cooling ring or with Internal Bubble Cooling (IBC) system. Chilled cooling air is suggested, T≤18°C.
- FILTERING:** Screen size depends on filtering demand, reps screen (e.g. type 16/88 – french numbering) are generally enough. Pay attention to the high pressure gradient that can built-up in the filtering section.

GENERAL SUGGESTIONS

RAW MATERIAL: Mater-Bi EF05B is air moisture sensitive and tends to absorb (or loose) water vapor when exposed for long time to humid (or dry) environments. Mater-Bi EF05B as shipped into Novamont packaging, is ready to use and does not need pre-drying. In order to preserve the original moisture content, it is highly recommended to open the original packaging just before startup of processing and to reseal it again after use.

EXTRUDER START-UP AND SHUT-DOWN: Purge barrel with LDPE (MFI=2÷4g/10min) at the start-up and at the end of production. Please refer to MSDS with regard to correct handling of molten material and safe processing.

SCRAPS PROCESSING: Scraps, if not continuously reused in-line, must be stored sealed into barrier containers, e.g. LDPE bags, in order to preserve original moisture. Mixing together scraps of different Mater-Bi grades is not recommended.

USE OF RECYCLED MATERIAL

Recycled EF05B material may be added to the virgin raw-material at a percentage not exceeding 10-15% max. by weight. A higher recycled percentage or the use of recycled materials, other than EF05B, may result in decreased properties of films.

DISCLAIMER

The information and data contained herein is believed to be accurate and is given in good faith. However, accuracy is not guaranteed for the product referred to herein and Novamont SpA disclaims all liability accordingly, whether in contract, tort or otherwise *September 2013. Ver1.0*



USE OF COLOR MASTERBATCH AND COMPOSTABILITY

Mater-Bi EF05B is a compostable material, in compliance to the standard EN13432, within a given thickness. Certificates can be requested to Novamont. In order to preserve the compostability characteristics of the material and its compliance to the above mentioned standard, it is suggested to use Color Masterbatches which are based on Mater-Bi. There are for example some Clariant masterbatches available on the market. In any case, any Masterbatch should be used according to the composition rules prescribed by EN13432. In this connection please refer to Annex A of EN13432, chapter A.2.1, concerning non biodegradable ingredients and ingredient whose biodegradability has never been assessed.