



## TECHNICAL DATA-SHEET

### Mater-Bi® CE02A

#### AVERAGE PHYSICAL AND MECHANICAL PROPERTIES<sup>1</sup>

Property	Unit	Test	Value	Note
<b>THERMAL</b>				
Melting temperature	°C	ASTM D3418	146	raw pellets
Softening temperature (HDT)	°C	ASTM D648	53	P=455 kPa
<b>RHEOLOGICAL</b>				
Melt Flow Rate (MFR)	g/10'	ISO 1133-1	5	raw pellets, at 190°C; 2.16 kg
<b>MECHANICAL</b>				
Tensile strength at break	MPa	EN ISO 527	28	extruded sheet samples, thickness 0.5 mm
Elongation at break	%	EN ISO 527	149	extruded sheet samples, thickness 0.5 mm
Young modulus	MPa	EN ISO 527	2263	extruded sheet samples, thickness 0.5 mm
<b>OTHER</b>				
Density	g/cm <sup>3</sup>	ASTM D792	1.32	raw pellets, at 23°C
Water Vapour Transmission Rate (WVTR)	g/(m <sup>2</sup> ·24h)	ASTM E96	5	23°C; 50%ΔRH; sheet thickness 300 μm
	g/(m <sup>2</sup> ·24h)		24	38°C; 90%ΔRH; sheet thickness 300 μm
Oxygen Transmission Rate (OTR)	cm <sup>3</sup> /(m <sup>2</sup> ·24h)	ASTM F2622	19	10°C; 0%ΔRH; sheet thickness 300 μm
	cm <sup>3</sup> /(m <sup>2</sup> ·24h)		45	23°C; 50%ΔRH; sheet thickness 300 μm
	cm <sup>3</sup> /(m <sup>2</sup> ·24h)		77	38°C; 90%ΔRH; sheet thickness 300 μm

<sup>1</sup> typical properties; not to be construed as product specifications

#### APPLICATIONS:

Mater-Bi® CE02A is a thermoplastic biodegradable material for sheet extrusion for thermoforming and profiles. It is mainly used for the production of food containers and 3D printing filaments.

#### TYPICAL EQUIPMENT & EXTRUSION CONDITIONS (SHEET EXTRUSION)

- EXTRUDER:** Preferably: single screw, L/D > 25
- SCREW:** Screws for PS, PP and PET extrusion are generally suitable for Mater-Bi® CE02A sheet extrusion
- TEMPERATURE PROFILE:** Hopper: water cooled as much as possible (5÷10°C); Feeding section = 160÷180°C; Barrel zones = 170÷190°C; Filter = 180÷200°C; Die head = 180÷200°C
- CALANDER:** cooled, T ≤ 30°C

#### GENERAL SUGGESTIONS

**HANDLING:** Mater-Bi® CE02A, as supplied by Novamont, is ready to use.

Mater-Bi® CE02A is moisture sensitive; the original packaging must be opened just before production.

When production is finished, reseal hermetically remaining quantities of Mater-Bi® CE02A in its original packaging or other barrier containers. Novamont anyhow recommends to convert all the material, once the original packaging has been opened.

When switching from PS, cleaning the barrel with LDPE before introducing Mater-Bi® CE02A is recommended.

Purge barrel after production, eventually with LDPE.

Please, refer to the Safety Data Sheet for a correct handling of the molten material and for a safe processing.

**STORAGE:** store Mater-Bi® CE02A in a cool and dry warehouse, sealed in its original packaging, away from heat and light. Novamont recommends to convert Mater-Bi® CE02A within 6 (six) months from the delivery date.

Thermoforming scraps can be added to the virgin material up to 40% in weight. For higher quantities check the stability of mechanical properties vs time.

Scraps, if not reused in-line, must be stored into barrier containers, in order to preserve original moisture content.

Please, get in touch with Novamont for further information about scraps management.

Converters are invited to verify the properties of their products depending on storage and in use conditions.



## CERTIFICATES

**COMPOSTABILITY:** Mater-Bi® CE02A has got following certificates:

Ok Compost® Cert. No. O 16-1939-A		
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**FOOD CONTACT APPROVAL:** for Mater-Bi® CE02A the declaration of compliance to the Commission Regulation (EU) 10/2011 (PIM), on plastic materials and articles intended to come into contact with food, is available.

Substances subject to specific migration limit (SML) are present in the material and specific use conditions apply.

Please refer to the Declaration of Conformity according to 10/2011 Regulation:

- to check if the herein material is suitable for your intended application
- to plan adequate testing to check compliance to the relevant food contact legislation

**BIO-BASED CONTENT:** Mater-Bi® CE02A contains renewable raw materials.

The bio-based content (the renewable material content) is  $\geq 70$  (bio-based carbon content by total carbon content, expressed as a percentage of the total carbon content as per ISO 16620-2:2015 or CEN/TS 16640:2014 or EN 16640:2017).

For the purpose of demonstrating compliance to regulatory or voluntary bio-based specifications, the recipient must verify the bio-based content on his finished products and issue his own documentation.

The use of masterbatches, additives and mixing with other materials may affect the bio-based content.