

**Test Report No.:** 244230676a 001

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**Identification/Model No(s):** Bamboo biodegradable material(BBM)

**Sample Receiving date:** 2020-03-30

**Sample obtaining method:** Sending by customer

**Testing Period:** 2019 04-16 to 2020-09-10

**Test specification:**

With reference to DIN EN13432:2000,  
Testing according to customers specification for the following parameters:  
Heavy metals and other toxic substances  
Volatile solids content  
Total dry solids content  
Plastic identification by Fourier Transform Infrared Spectroscopy  
Compost Production Test (ISO 16929:2019)  
Plant Test (OECD 208:2006)

**Test result:**

Pass  
Pass  
Please refer to page 6  
Please refer to page 7  
Please refer to page 8-18  
Pass

**Other Information:**

Country of Origin: China

**For and on behalf of**  
**TÜV Rheinland (Shanghai) Co., Ltd.**



2020-10-19      Lucy Lu / Senior Technical Executive  
Date                      Name/Position

*Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed.  
This test report relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.*

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**Picture and detailed description of the test sample**



M001

**Material list:**

Material no.	Material	Color	Location	Remark
M001	Plastic	White	Refer to photo	-

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**1. Heavy metals and other toxic substances**

**Test method:** For Fluorine (F) content, Refer to EN 14582.  
 For other contents, In-house method, Microwave digestion, analyzed by ICP-MS.

**Test Result:**

Test Parameter	Unit	RL	Test No.
			Material No.
			T001
			M001
Zn	mg/kg	5	15.1
Cu	mg/kg	5	n.d.
Ni	mg/kg	5	n.d.
Cd	mg/kg	0.25	n.d.
Pb	mg/kg	5	n.d.
Hg	mg/kg	0.25	n.d.
Cr	mg/kg	5	n.d.
Mo	mg/kg	0.25	n.d.
Se	mg/kg	0.25	n.d.
As	mg/kg	0.25	n.d.
F	mg/kg	50	56
Co	mg/kg	3	n.d.

Abbreviation: n.d. = Not Detected (&lt; RL)

RL = Reporting Limit

mg/kg denotes milligram per kilogram

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**Remark :**

1. The requirement is following DIN EN13432:2000 Annex A.
2. The concentrations of regulated metals and other toxic substances in the plastic product or material shall be less than 50 % of those prescribed for sludges, fertilizers and composts in the country where the final product will be placed on the market or disposed of ,refer to below Table 1 for examples.

Table 1 — Examples of maximum concentrations of regulated metals and other toxic substances

Values given in mg/kg of dry material

Element	ASTM D6400/ASTM D6868		EN13432 <sup>c</sup> / AS4736/AS5810 <sup>d</sup>	China <sup>e</sup>	Japan <sup>f</sup>
	US <sup>a</sup>	Canada <sup>b</sup>			
Zn	1400	463	150	—	180
Cu	750	189	50	—	60
Ni	210	45	25	—	30
Cd	17	5	0.5	1.5	0.5
Pb	150	125	50	50	10
Hg	8.5	1	0.5	2.5	0.2
Cr	—	265	50	150	50
Mo	—	5	1	—	—
Se	50	4	0.75	—	—
As	20.5	19	5	15	5
F	—	—	100	—	—
Co	—	38	—	—	—

<sup>a</sup> The maximum metal concentrations given here for the US are 50 % of those prescribed by 40 CFR 503.13, Table 3 (as per ASTM D6400 requirements).

<sup>b</sup> The maximum metal concentrations for Canada are those prescribed in 6.1 of BNQ 9011-911-I/2007.

<sup>c</sup> The maximum metal concentrations for the EC are 50 % of those prescribed in ecological criteria for the award of the Community eco-label to soil improvers (EC OJ L 219, 7.8.1998, p. 39).

<sup>d</sup> The maximum metal concentrations given here for Australia refers to EN 13432, Table A.1.

<sup>e</sup> The maximum metal concentrations for China are 50 % of those prescribed by CJ/T 3059-1996 for Quality of Composts.

<sup>f</sup> The maximum metal concentrations for Japan are 10 % of those prescribed in the Fertilizer Control Law (Ministry of Agriculture, Forestry and Fisheries) and Guidelines for Quality of Composts (Central Union of Agricultural Co-operatives).

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**2. Volatile solids content**

**Test Method:** Refer to DIN EN 13432:2000.

**Test result**

Test No.	Material No.	requirement	Result
T001	M001	≥50%	92.9%

Abbreviation: % = Percentage

**Remark:**

1. The requirement is following DIN EN 13432: 2000 annex A.