

TEST REPORT

<u>APPLICANT</u>	: Mid Ocean Hong Kong Ltd.
<u>ADDRESS</u>	: 7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
<u>SAMPLE DESCRIPTION</u>	: Bamboo Mug
<u>MODEL NO.</u>	: MO6109; MO8547
<u>PRODUCT MATERIAL</u>	: bamboo/PP、Rubber
<u>SAMPLE RECEIVED DATE</u>	: 31-Mar-2020
<u>TURN AROUND TIME</u>	: 31-Mar-2020 to 10-Apr-2020

The following test item(s) was/were performed on submitted sample(s) and/or component(s) confirmed by applicant

TEST REQUESTED	RESULT
Total Lead Content	Pass
Total Cadmium Content	Pass
Phthalates Content	Pass
Sensorial Examination Odour and Taste Test	Pass
Overall Migration	Pass
Specific Migration of Heavy Metal	Pass
Chromium, Vanadium Zirconium and Hafnium Content	Pass
Pentachlorophenol (PCP) Content	Pass
Extractable Formaldehyde	Pass
Specific Migration of Bisphenol-A(BPA)	Pass
Specific Migration of Primary Aromatic Amine	Pass
Volatile Organic Matter	Pass
Peroxide Value	Pass
Specific Migration of Melamine	Pass

Samples are obtained by express delivery, Results obtained refer only to samples, products or material received in Laboratory, as described in point related to sample description, and tested in conditions shown in present report. Eurofins Product Testing Service (Shanghai) Co., Ltd ensures that this job has been performed according to our Quality System and complying contract and legal conditions. If you happen to have any comments, please do it by sending email to info.sh@eurofins.com and referring to this report number. Reproduction of this document is only valid if it is done completely and under the written permission of Eurofins Product Testing Service (Shanghai) Co., Ltd. If you happen to have any complaints, please do it by sending email to chinacomplaint@eurofins.com and referring to this report number.

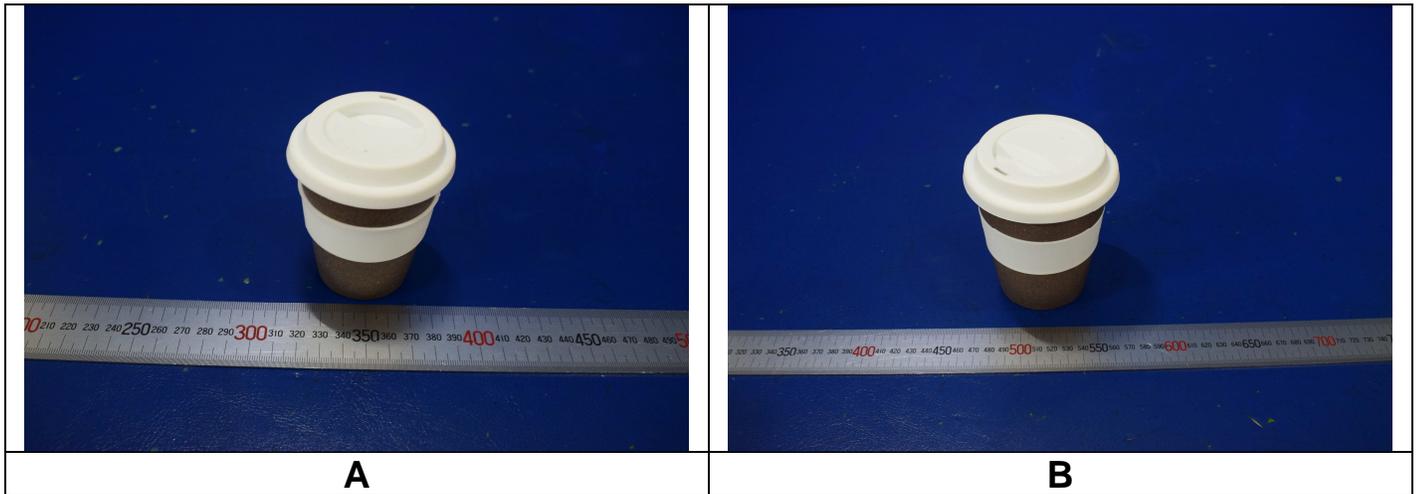
***** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) *****

Signed for and on behalf of
Eurofins Product Testing Service (Shanghai) Co., Ltd



Lemon Zhang
Chemical Lab Supervisor

TEST SAMPLE PHOTO(S)



EFSH20032980-CG-01

TO BE CONTINUED

REFERENCE SAMPLE PHOTO(S)



The reference sample(s) has not been tested in current report, but according to customer's request, the picture has also been included. For sample tested in current report, please refer to "Test sample photo".

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TO BE CONTINUED

REFERENCE SAMPLE PHOTO(S)



The reference sample(s) has not been tested in current report, but according to customer's request, the picture has also been included. For sample tested in current report, please refer to "Test sample photo".

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TO BE CONTINUED

COMPONENT LIST

Component No.	Component	Sample No.
1	Brown/grey bamboo/PP cup	A B
2	White silicone cap	A B

TO BE CONTINUED

TEST RESULT

Total Lead Content

Test Request: Total lead content as specified in entry 63 of annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Regulation (EU) No 2015/628.

Test Method: EPA 3050B:1996, EPA 3051A:2007, EPA 3052:1996
Acid digestion/ microwave digestion method was used and total lead content was determined by ICP-OES.

Tested Item(s)	Unit	Limit	MDL	Result	
				1	2
Total Lead(Pb)	%	0.05	0.001	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Total Cadmium Content

Test Request: Total cadmium content as specified in Commission Regulation (EU) 2016/217 amending entry 23 of Annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EPA 3050B:1996, EPA 3052:1996, EN 1122:2001 Method B, acid digestion method was used and total cadmium content was determined by ICP-OES.

Tested Item(s)	Unit	Limit	MDL	Result	
				1	2
Total Cadmium(Cd)	%	0.01	0.0005	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Phthalates Content

Test Request: Phthalates content as specified in entry 51&52 of annex XVII of REACH Regulation (EC) No 1907/2006 and its amendment Commission Regulation (EU) 2018/2005.

Test Method: EPA 3550C:2007, EPA 8270E:2018, solvent extraction and quantification by GC-MS.

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					1	2
Dibutylphthalate (DBP)	84-74-2	%	-	0.005	ND	ND
Benzylbutylphthalate (BBP)	85-68-7	%	-	0.005	ND	ND
Diethylhexylphthalate (DEHP)	117-81-7	%	-	0.005	ND	ND
Diisobutylphthalate (DIBP)	84-69-5	%	-	0.005	ND	ND
Sum (DBP + BBP + DEHP + DIBP)	-	%	0.1	-	ND	ND
Di-n-octylphthalate (DNOP)	117-84-0	%	-	0.005	ND	ND
Diisononylphthalate (DINP)	28553-12-0	%	-	0.005	ND	ND
Diisodecylphthalate (DIDP)	26761-40-0	%	-	0.005	ND	ND
Sum (DNOP + DINP + DIDP)	-	%	0.1	-	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Sensorial Examination Odour and Taste Test

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, Regulation (EC) No. 1935/2004 of the European Parliament and of the Council and BfR recommendation. Sensorial examination odour and taste test

Test Method : Robinson's test with reference to DIN 10955:2004-06
Odour test condition: 70°C 2hrs
Taste test condition: 70°C 2hrs
Test media: Distilled water
No. of panelist: 6

Test Item(s)	Limit	Test Result	
		A	B
Sensorial examination odour (Point scale)	2.5	0	0
Sensorial examination taste (Point scale)	2.5	0	0

Scale evaluation:

- 0: No perceptible odour
- 1: Odour just perceptible (still difficult to define)
- 2: Moderate odour
- 3: Moderately strong odour
- 4: Strong odour

TO BE CONTINUED

TEST RESULT

Overall migration

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, and BfR recommendation and Commission Regulation (EU) No. 10/2011 and its amendments.

Test Method : By reference to EU 10/2011 for selection of test condition;
With reference to EN1186-1:2002 for selection of test methods;
or EN1186-3:2002 aqueous food simulants by total immersion method;
or EN1186-9:2002 aqueous food simulants by article filling method;
or EN1186-2:2002 olive oil by total immersion method;
or EN1186-8:2002 olive oil by article filling method;
or EN1186-14:2002 substitute test

Simulant used	Time	Temperature	Max. Permissible Limit (mg/dm ²)	Result (mg/dm ²)
				1
3% Acetic Acid (W/V) Aqueous Solution	2hrs	70°C	10	6.1
20% Ethanol (V/V) Aqueous Solution	2hrs	70°C	10	<3.0
50% Ethanol (V/V) Aqueous Solution	2hrs	70°C	10	5.0

Note:

1. mg/dm² = milligram per square decimeter
2. Analytical tolerance of aqueous simulants is 1 mg/dm²
3. Analytical tolerance of fatty food simulants is 3 mg/dm²
4. Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Overall migration

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, and BfR recommendation.

Test Method : With reference to EN 1186-1:2002 for selection of conditions and test methods;
or EN1186-3:2002 aqueous food simulants by total immersion method;
or EN1186-9:2002 aqueous food simulants by article filling method;

Simulant used	Time	Temperature	Max. Permissible Limit (mg/dm ²)	Result (mg/dm ²)
				2
3% Acetic Acid (W/V) Aqueous Solution	2hrs	70°C	10	<3.0
20% Ethanol (V/V) Aqueous Solution	2hrs	70°C	10	<3.0
50% Ethanol (V/V) Aqueous Solution	2hrs	70°C	10	5.9

Note:

1. mg/dm² = milligram per square decimeter
2. Analytical tolerance of aqueous simulants is 1 mg/dm²
3. Analytical tolerance of fatty food simulants is 3 mg/dm²
4. Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Specific Migration of Heavy Metal

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, BfR recommendation, Commission Regulation (EU) No. 10/2011 and its amendment Regulation (EU) 2017/752

Test Method : With reference to Regulation (EU) 10/2011 and its amendment Regulation (EU) 2016/1416 for selection of test condition and EN 13130-1:2004 for test preparation method; analysis was performed by ICP-OES.

Simulant used: 3% Acetic Acid (W/V) Aqueous Solution

Test condition: 70°C 2hrs

Test Item(s)	Max. Permissible limit	Unit	MDL	Test Result
				1
Aluminium	1	mg/kg	0.1	ND
Barium	1	mg/kg	0.25	ND
Cobalt	0.05	mg/kg	0.05	ND
Copper	5	mg/kg	0.25	ND
Iron	48	mg/kg	0.25	ND
Lithium	0.6	mg/kg	0.5	ND
Manganese	0.6	mg/kg	0.05	ND
Zinc	5	mg/kg	0.5	ND
Nickel	0.02	mg/kg	0.01	ND

Note:

- (1) mg/kg = milligram per kilogram
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected(<MDL)
- (4) Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Chromium, Vanadium Zirconium and Hafnium Content

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, Commission Regulation (EU) No. 10/2011 and its amendments, and BfR recommendation.
For material: PP - Catalyst residue, Chromium, Vanadium, Zirconium and Hafnium content

Test Method : Acid digestion, followed by analysis using ICP-OES.

Test Item(s)	Limit	Unit	MDL	Result
				1
Total Chromium	10	mg/kg	5	ND
Total Vanadium	20	mg/kg	20	ND
Total Zirconium	100	mg/kg	20	27
Total Hafnium	100	mg/kg	20	ND

Note:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = not detected (<MDL)

Pentachlorophenol (PCP) content

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, BfR recommendation.

Test Method : With reference to LFGB § 64 BVL B 82.02.8 - 2001.

Test item(s)	Limit	Unit	MDL	Result
				1
Pentachlorophenol (PCP)	5	mg/kg	0.5	ND

Note:

(1) mg/kg = milligram per kilogram

(2) MDL = Method Detection Limit

(3) ND = Not Detected(<MDL)

TO BE CONTINUED

TEST RESULT

Extractable formaldehyde

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, BfR recommendation.

Test Method : Sample preparation with reference to EN 13130-1: 2004 with selection of simulant and condition, followed by analysis by UV-vis.

Simulant used : 3% Acetic Acid (W/V)

Test condition : 70 °C, 2hrs

Test Items	Max. Permissible Limit	Unit	MDL	Result
				1
Extractable formaldehyde	15	mg/kg	1	ND

Note:

- (1) Test condition & simulant were specified by client.
- (2) mg/kg = milligram per kilogram

Specific Migration of Bisphenol-A(BPA)

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, and BfR recommendation, Commission Regulation (EU) No. 10/2011 and its amendments.

Test Method : With reference to Regulation (EU) 10/2011 for selection of test condition and EN 13130-1:2004 for test preparation method; analysis was performed by HPLC-MS

Simulant used: 3% Acetic Acid (W/V) Aqueous Solution

Test condition: 70°C 2hrs

Test Item(s)	Limit	Unit	MDL	Result	
				1	2
Bisphenol-A(BPA)	0.6	mg/kg	0.02	ND	ND

Note:

- (1) mg/kg = milligram per kilogram
- (2) MDL = method detection limit
- (3) ND = not detected (<MDL)
- (4) Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Specific Migration of Primary Aromatic Amine

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, and BfR recommendation, Commission Regulation (EU) No. 10/2011 and its amendments.

Test Method : With reference to Regulation (EU) 10/2011 for selection of test condition and EN 13130-1:2004 for test preparation method; analysis was performed by UV-Vis.

Simulant used: 3% Acetic Acid (W/V) Aqueous Solution

Test condition: 70°C 2hrs

Test Item(s)	Limit	Unit	MDL	Result
				1
Specific Migration of Primary Aromatic Amine	Not Detectable	mg/kg	0.01	ND

Note:

- (1) mg/kg = milligram per kilogram
- (2) MDL = method detection limit
- (3) ND = not detected (<MDL)
- (4) Test condition & simulant were specified by client.

Volatile Organic Matter

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, BfR recommendation.

Test Method : With reference to 61st Communication on testing of silicon in Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz 46 (2003) 362.

Test Condition : 70 °C, 2hrs

Test Item(s)	Limit	Unit	MDL	Test Result
				2
Volatile Organic Matter	0.5	%(w/w)	0.1	0.4

Note:

- (1) %w/w = percentage of weight by weight
- (2) MDL = method detection limit

TO BE CONTINUED

TEST RESULT

Peroxide Value

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, BfR recommendation.

Test Method : With reference to European Pharmacopoeia 8.0 part 2.5.5. Peroxide Value method A.

Test Item(s)	Limit	Test Result
		2
Peroxide Value	Absent	Absent

Specific Migration of Melamine

Test Requested : In accordance with German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 and 31, Commission Regulation (EU) No 10/2011 and its amendments, and BfR recommendation.

Test Method : Sample preparation with reference to EN 13130-1:2004 with selection of simulants and condition, followed by analysis using High Performance Liquid Chromatography/ Mass Spectrometer (HPLC/MS).

Simulant used: 3% Acetic Acid (W/V)

Test condition: 70 °C 2 hrs

Test Items	Max. Permissible Limit	Unit	MDL	Result
				1
Specific migration of Melamine	2.5	mg/kg	2.5	ND

Note:

- (1) mg/kg = milligram per kilogram
- (2) MDL = method detection limit
- (3) ND = not detected (<MDL)
- (4) Test condition & simulant were specified by client.

END OF THE REPORT