

TEST REPORT

APPLICANT :

ADDRESS :

SAMPLE DESCRIPTION : THERMO MUG, STAINLESS STEEL BOTTLE, COFFEE MUG

MODEL NO. : MO9105, MO9228, MO7490, MO7841, 120305

BUYER : Mid Ocean Brands B.V.
Unit 201, 2/F, Laford Centre, 838 Lai Chi Kok Road, Cheung Sha Wan, Kowloon, Hong Kong

COUNTRY OF ORIGIN : China

COUNTRY OF DESTINATION : EU

PRODUCT MATERIAL : Stainless Steel, PP, Silicone, AS, TPR

SAMPLE RECEIVED DATE : 20-Apr-2017

SAMPLE RESUBMISSION DATE : 16-Jun-2017

TURN AROUND TIME : 20-Apr-2017 to 21-Jul-2017

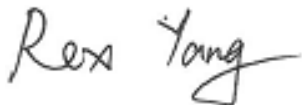
The following test item(s) was/were performed on selected sample(s) and/or component(s) appointed by applicant.

TEST REQUESTED	TEST METHOD/REGULATION	RESULT
Total Lead Content	REACH Annex XVII, Entry 63	Pass
Total Cadmium Content	REACH Annex XVII, Entry 23	Pass
Phthalates Content	REACH Annex XVII, Entry 51 & 52	Pass
Bisphenol A	EPA 3550C:2007, EPA 8270D:2014	See Test Result
Overall Migration for PP	Commission Regulation (EU) No 10/2011 and its amendments	Pass
Overall Migration for Silicone	Council of Europe Resolution AP (2004) 5	Pass
Specific Migration of Heavy Metal	Commission Regulation (EU) No 10/2011 and its amendment Regulation (EU) 2016/1416	Pass
Specific Migration of Primary Aromatic Amine	Commission Regulation (EU) No 10/2011 and its amendments	Pass
Specific Release of Heavy Metals	CM/Res (2013)9	Pass

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., If you happen to have any complaints, please do it by sending email to chinacomplaint@eurofins.com and referring to this report number. Ltd.

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

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



Rex Yang
Assistant Chemical Lab Manager

TEST SAMPLE PHOTO**EFSH17041673-CG-03**

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
1	Black PP
2	Semi-transparent silicone gasket
3	Silver stainless steel (inside cup)
4	Red plastic button
5	Transparent AS
6	White TPR

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	3	4
Total Lead(Pb)	%	0.05	0.001	ND	ND	0.00102	ND

Tested Item(s)	Unit	Limit	MDL	Result	
				5	6
Total Lead(Pb)	%	0.05	0.001	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

As per client's request, only the appointed materials have been tested.

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: 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	3	4
Total Cadmium(Cd)	%	0.01	0.0005	ND	ND	ND	ND

Tested Item(s)	Unit	Limit	MDL	Result	
				5	6
Total Cadmium(Cd)	%	0.01	0.0005	ND	ND

Remark:

MDL = method detection limit

ND = Not detected, less than MDL

As per client's request, only the appointed materials have been tested.

TO BE CONTINUED

TEST RESULT

Phthalates Content

Test Request: Phthalates Content as specified in Regulation (EU) 2015/326 amending entry 51&52 of annex XVII of REACH Regulation (EC) No 1907/2006.

Test Method: EPA 3550C:2007, EPA 8270D:2014, 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
Sum (DBP + BBP + DEHP)	-	%	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

Tested Item(s)	CAS No.	Unit	Limit	MDL	Result	
					5	6
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
Sum (DBP + BBP + DEHP)	-	%	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

"-" = Not Regulated

TO BE CONTINUED

TEST RESULT

Bisphenol A

Test Method: With reference to EPA 3550C:2007, EPA 8270D:2014, Extraction by organic solvent, analysis with LC-MS.

Tested Item(s)	CAS No.	Unit	MDL	Result	
				1	2
Bisphenol A	80-05-7	mg/kg	1	ND	ND

Tested Item(s)	CAS No.	Unit	MDL	Result	
				5	6
Bisphenol A	80-05-7	mg/kg	1	ND	ND

Remark:

mg/kg = milligram per kilogram

MDL = method detection limit

ND = Not detected, less than MDL

TO BE CONTINUED

TEST RESULT

Overall Migration for PP

Test Requested : To determine the Overall Migration for compliance with Commission Regulation (EU) No 10/2011 and its amendments relating to plastic materials and articles intended to come into contact with foodstuffs.

Test Method : By reference to EU 10/2011 for selection of test condition;
With reference to EN 1186-1:2002 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
10% Ethanol (V/V) Aqueous Solution	2hrs	100°C	10	<3.0
3% Acetic Acid (W/V) Aqueous Solution	2hrs	100°C	10	4.5

Simulant used	Time	Temperature	Max. Permissible Limit (mg/dm ²)	Result (mg/dm ²)
				5
10% Ethanol (V/V) Aqueous Solution	2hrs	100°C	10	3.5
3% Acetic Acid (W/V) Aqueous Solution	2hrs	100°C	10	4.3

Simulant used	Time	Temperature	Max. Permissible Limit (mg/dm ²)	Result (mg/dm ²)
				6
10% Ethanol (V/V) Aqueous Solution	2hrs	70°C	10	5.8
3% Acetic Acid (W/V) Aqueous Solution	2hrs	70°C	10	3.7 [#]

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.
- (5) [#] Article used for repeated use, tests carried out three times using fresh simulant on each occasion, and the compliance is checked on the basis of the level of the migration found in the third test.

TO BE CONTINUED

TEST RESULT

Overall Migration for Silicone

Test Requested : In accordance with Council of Europe Resolution AP (2004) 5.

Test Method : With reference to EN 1186-1:2002 for selection of conditions and test methods;
or EN 1186-3:2002 aqueous food simulants by total immersion method;
or EN 1186-9:2002 aqueous food simulants by article filling method;
or EN 1186-2:2002 olive oil by total immersion method;
or EN 1186-8:2002 olive oil by article filling method;
or EN 1186-14:2002 substitute test.

Simulant used	Time	Temperature	Max. Permissible Limit (mg/dm ²)	Result (mg/dm ²)
				2
10% Ethanol (V/V) Aqueous Solution	2hrs	100°C	10	<3.0
3% Acetic Acid (W/V) Aqueous Solution	2hrs	100°C	10	5.3

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 : To determine the Specific Migration of Heavy Metal for compliance with Commission Regulation (EU) No 10/2011 and its amendment Regulation (EU) 2016/1416 on plastic materials and articles intended to come into contact with food.

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: 10% Ethanol (V/V) Aqueous Solution

Test Condition: 100°C 2hrs

Test Item(s)	Max. Permissible limit	Unit	MDL	Test Result	
				1	5
Aluminium	1	mg/kg	0.1	ND	ND
Barium	1	mg/kg	0.25	ND	ND
Cobalt	0.05	mg/kg	0.05	ND	ND
Copper	5	mg/kg	0.25	ND	ND
Iron	48	mg/kg	0.25	ND	ND
Lithium	0.6	mg/kg	0.5	ND	ND
Manganese	0.6	mg/kg	0.05	ND	ND
Zinc	5	mg/kg	0.5	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 : To determine the Specific Migration of Primary Aromatic Amine in accordance with Commission Regulation (EU) No 10/2011 and its amendments relating to plastic materials and articles intended to come into contact with foodstuffs.

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 : 100 °C 2 hours

Test Item(s)	Limit	Unit	MDL	Result
				6
Specific Migration of Primary Aromatic Amine	0.01	mg/kg	0.01	ND

Note:

- (1) mg/kg = milligram per kilogram
- (2) ND = Not detected
- (3) Test condition & simulant were specified by client.

TO BE CONTINUED

TEST RESULT

Specific Release of Heavy Metals

Test Requested : In accordance with CM/Res (2013)9 on metals and alloys used in food contact materials and articles.

Test Method : Samples were prepared at specific condition, analysed by using ICP-OES/ICP-MS.

Simulant Used: Artificial tap water

Test Condition: 100°C 2hours

Test Item(s)	Unit	MDL	Result			
			3			
			1 st + 2 nd Migration		3 rd Migration	
			Result	7xSRL ^{*2}	Result	SRL ^{*1}
Aluminum (Al)	mg/kg	0.5	ND	35	ND	5
Antimony (Sb)	mg/kg	0.01	ND	0.28	ND	0.04
Chromium (Cr)	mg/kg	0.05	ND	1.75	ND	0.25
Cobalt (Co)	mg/kg	0.005	ND	0.14	ND	0.02
Copper (Cu)	mg/kg	0.5	ND	28	ND	4
Iron (Fe)	mg/kg	5	ND	280	ND	40
Magnesium(Mg)	mg/kg	0.1	ND	-	ND	-
Manganese (Mn)	mg/kg	0.2	ND	12.6	ND	1.8
Molybdenum (Mo)	mg/kg	0.01	ND	0.84	ND	0.12
Nickel (Ni)	mg/kg	0.01	ND	0.98	ND	0.14
Silver (Ag)	mg/kg	0.01	ND	0.56	ND	0.08
Titanium(Ti)	mg/kg	0.1	ND	-	ND	-
Tin*3 (Sn)	mg/kg	5	ND	700	ND	100
Vanadium (V)	mg/kg	0.001	ND	0.07	ND	0.01
Zinc (Zn)	mg/kg	0.5	ND	35	ND	5
Arsenic (As)	mg/kg	0.0005	ND	0.014	ND	0.002
Barium (Ba)	mg/kg	0.1	ND	8.4	ND	1.2
Beryllium (Be)	mg/kg	0.001	ND	0.07	ND	0.01
Cadmium (Cd)	mg/kg	0.001	ND	0.035	ND	0.005
Lead (Pb)	mg/kg	0.001	ND	0.07	ND	0.01
Lithium (Li)	mg/kg	0.005	ND	0.336	ND	0.048
Mercury (Hg)	mg/kg	0.0005	ND	0.021	ND	0.003
Thallium (Tl)	mg/kg	0.00005	ND	0.0007	ND	0.0001

Note:

- (1) mg/kg =milligram per kilogram
- (2) MDL = method detection limit
- (3) ND = not detected (<MDL)
- (4) SRL = Specific Release Limit
- (5) *1 Compliance is established on the result from the third migration test for repeated used articles.
- (6) *2 Meantime, the sum of the results of the first and second tests should not exceed 7 times the SRL
- (7) *3 Except in field of application under Regulation (EC) No.1881/2006.(canned food container)
- (8) Test condition & simulant were specified by client.

*** END OF THE REPORT ***