

# Test Report

Report No.: A001R20171108047-2S1

Date: Nov.17, 2017

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Applicant: Mid Ocean Brands B.V.

Address: Unit 201, 2/F, Laford Centre, 838 Lai Chi Kok Road, Cheung Sha Wan, Kowloon, Hong Kong.

## Report on the submitted sample(s) said to be:

Sample Name : Spray water bottle  
Model No. : MO9296  
Material : See description  
Country of origin : CHINA  
Country of destination : EUROPE  
Manufacturers :  
Address :  
Sample Receiving Date : Nov.08, 2017  
Testing Period : Nov.08, 2017 to Nov.17, 2017  
Test Requested : Please refer to next page(s).  
Test Method : Please refer to next page(s).  
Test Result : Please refer to next page(s).

Tested by: *Leon*  
Suhongliang, Leon  
Test Team Leader

Reviewed by: *Jessie.Liang*  
Liangdan, Jessie.Liang  
Technical Supervisor

Approved by: *Lewis*  
Liulinwen, Lewis  
Technical Director



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## Test Requested:

1. As specified by client, to determine the phthalates content in the submitted sample(s) with reference to entry 51 & 52, Annex XVII of the REACH Regulation (EC) No 1907/2006.
2. As specified by client, to determine the Cadmium(Cd)content in the Submitted sample(s) with reference to entry 23, Annex XVII of the REACH Regulation (EC) No 1907/2006.
3. As specified by client, to test sample with reference to Regulation 1935/2004/EC,Regulation(EU) No.10/2011,AP (2004)5 for:
  - Overall Migration(3% (w/v) Acetic acid, 50%(v/v) Ethanol)
  - Migration of Heavy metals
  - Special Migration of Acrylonitrile
4. As specified by client, to determine the Bisphenol A content in the submitted samples in accordance with the French law No 2012-1442.
5. As specified by client, to determine the Lead and Lead compounds content in the submitted sample(s) with reference to entry 63, Annex XVII of the REACH Regulation (EC) No 1907/2006.
6. As specified by client, to determine Specific migration of heavy metal from metal and alloys used in contact with food with reference to German Food, Articles of Daily Use and Feed Code of September, 2005(LFGB), and Technical Guide on Metals and alloys used in food contact materials of Council of Europe Resolution CM/Res(2013)9.

## Conclusion

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

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**Test Result (s):**
**1. Test result of phthalates content**

Unit: %,w/w

Test Item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			1	2	3	
Dibutyl phthalate (DBP)	Refer to EN 14372:2004 GC-MS	0.01	N.D.	N.D.	N.D.	—
Butylbenzyl phthalate (BBP)		0.01	N.D.	N.D.	N.D.	
Di- (2-ethylhexyl) phthalate (DEHP)		0.01	N.D.	N.D.	N.D.	
<b>Sum of DBP+BBP+DEHP</b>		—	N.D.	N.D.	N.D.	0.1
Di-n-octyl phthalate (DNOP)		0.01	N.D.	N.D.	N.D.	—
Di-isononyl phthalate (DINP)		0.01	N.D.	N.D.	N.D.	
Di-isodecyl phthalate (DIDP)		0.01	N.D.	N.D.	N.D.	
<b>Sum of DNOP+DINP+DIDP</b>		—	N.D.	N.D.	N.D.	0.1
<b>Conclusion</b>		/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

Unit: %,w/w

Test Item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			4	5	6	
Dibutyl phthalate (DBP)	Refer to EN 14372:2004 GC-MS	0.01	N.D.	N.D.	N.D.	—
Butylbenzyl phthalate (BBP)		0.01	N.D.	N.D.	N.D.	
Di- (2-ethylhexyl) phthalate (DEHP)		0.01	N.D.	N.D.	N.D.	
<b>Sum of DBP+BBP+DEHP</b>		—	N.D.	N.D.	N.D.	0.1
Di-n-octyl phthalate (DNOP)		0.01	N.D.	N.D.	N.D.	—
Di-isononyl phthalate (DINP)		0.01	N.D.	N.D.	N.D.	
Di-isodecyl phthalate (DIDP)		0.01	N.D.	N.D.	N.D.	
<b>Sum of DNOP+DINP+DIDP</b>		—	N.D.	N.D.	N.D.	0.1
<b>Conclusion</b>		/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

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Unit: %,w/w

Test Item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			7	8	9	
Dibutyl phthalate (DBP)	Refer to EN 14372:2004 GC-MS	0.01	N.D.	N.D.	N.D.	—
Butylbenzyl phthalate (BBP)		0.01	N.D.	N.D.	N.D.	
Di- (2-ethylhexyl) phthalate (DEHP)		0.01	N.D.	N.D.	N.D.	
<b>Sum of DBP+BBP+DEHP</b>		—	N.D.	N.D.	N.D.	0.1
Di-n-octyl phthalate (DNOP)		0.01	N.D.	N.D.	N.D.	—
Di-isononyl phthalate (DINP)		0.01	N.D.	N.D.	N.D.	
Di-isodecyl phthalate (DIDP)		0.01	N.D.	N.D.	N.D.	
<b>Sum of DNOP+DINP+DIDP</b>		—	N.D.	N.D.	N.D.	0.1
<b>Conclusion</b>		/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

- Note:**
- 0.1%,w/w =1000mg/kg
  - MDL=method detection limit
  - N.D.=not detected (less than method detection limit)
  - “—”=Not regulated

## 2. Test Result(s) of Cd

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			1	2	3	
<b>Cadmium (Cd)</b>	Refer to EN1122:2001 ICP-OES	5	N.D.	N.D.	N.D.	100
<b>Conclusion</b>		/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

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Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			4	5	6	
Cadmium (Cd)	Refer to EN1122:2001 ICP-OES	5	N.D.	N.D.	N.D.	100
Conclusion		/	Pass	Pass	Pass	/

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			7	8	9	10	
Cadmium (Cd)	Refer to EN1122:2001 ICP-OES	5	N.D.	N.D.	N.D.	N.D.	100
Conclusion		/	Pass	Pass	Pass	Pass	/

- Note:** 1. MDL=Method Detection Limit  
 2. N.D.=Not Detected(less than method detection limit)

### 3.1. Test Result(s) of Overall Migration

 Unit: mg/dm<sup>2</sup>

Test Solution	Test condition	MDL	Test Result(s)			Limit
			1	2	3	
3% (w/v) Acetic acid	70°C, 2h	5	N.D.	N.D.	N.D.	10
50% (v/v) Ethanol		5	N.D.	N.D.	N.D.	10
Conclusion	/	/	Pass	Pass	Pass	/

 Unit: mg/dm<sup>2</sup>

Test Solution	Test condition	MDL	Test Result(s)			Limit
			4	5	6	
3% (w/v) Acetic acid	70°C, 2h	5	N.D.	N.D.	N.D.	10
50% (v/v) Ethanol		5	N.D.	N.D.	N.D.	10
Conclusion	/	/	Pass	Pass	Pass	/

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 Unit: mg/dm<sup>2</sup>

Test Solution	Test condition	MDL	Test Result(s)			Limit
			7	8	9	
3% (w/v) Acetic acid	70°C, 2h	5	N.D.	N.D.	N.D.	10
50%(v/v) Ethanol		5	N.D.	N.D.	N.D.	10
<b>Conclusion</b>	/	/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

**Note:** 1. N.D.=not detected (less than method detection limit)

2. MDL=method detection limit

### 3.2. Test Result(s) of Special Migration of Heavy metals

Unit: mg/kg

Test Item(s)	Test condition/ Equipment	MDL	Test Result(s)				Limit
			3% (w/v) Acetic acid				
			1	2	3	4	
Barium ( Ba )	70°C, 2h/ICP-OES	0.25	N.D.	N.D.	N.D.	N.D.	1
Cobalt (Co)		0.01	N.D.	N.D.	N.D.	N.D.	0.05
Copper (Cu)		0.25	N.D.	N.D.	N.D.	N.D.	5
Iron (Fe)		0.25	N.D.	N.D.	N.D.	N.D.	48
Lithium (Li)		0.5	N.D.	N.D.	N.D.	N.D.	0.6
Manganese (Mn)		0.25	N.D.	N.D.	N.D.	N.D.	0.6
Zinc (Zn)		0.5	N.D.	N.D.	N.D.	N.D.	25
<b>Conclusion</b>		/	/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

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Unit: mg/kg

Test Item(s)	Test condition/ Equipment	MDL	Test Result(s)					Limit
			3% (w/v) Acetic acid					
			5	6	7	8	9	
Barium ( Ba )	70°C, 2h/ICP-OES	0.25	N.D.	N.D.	N.D.	N.D.	N.D.	1
Cobalt (Co)		0.01	N.D.	N.D.	N.D.	N.D.	N.D.	0.05
Copper (Cu)		0.25	N.D.	N.D.	N.D.	N.D.	N.D.	5
Iron (Fe)		0.25	N.D.	N.D.	N.D.	N.D.	N.D.	48
Lithium (Li)		0.5	N.D.	N.D.	N.D.	N.D.	N.D.	0.6
Manganese (Mn)		0.25	N.D.	N.D.	N.D.	N.D.	N.D.	0.6
Zinc (Zn)		0.5	N.D.	N.D.	N.D.	N.D.	N.D.	25
<b>Conclusion</b>		/	/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

**Note:** 1. N.D.=not detected (less than method detection limit)

2. MDL= method detection limit

### 3.3. Special Migration of Acrylonitrile

Unit: mg/kg

Test Solution	Test condition/ Equipment	MDL	Test Result(s)		Limit
			1	5	
3% (w/v) Acetic acid	70°C, 2h/HPLC	0.1	N.D.	N.D.	0.1
<b>Conclusion</b>	/	/	<b>Pass</b>	<b>Pass</b>	/

**Note:** 1. N.D.=not detected (less than method detection limit)

2. MDL=method detection limit

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**4. Test Result(s) of BPA**

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			1	2	3	4	
BPA	Refer to EPA 3540C:1996& EPA 8321B:2007 HPLC	1	N.D.	N.D.	N.D.	N.D.	Absent
<b>Conclusion</b>		/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)					Limit
			5	6	7	8	9	
BPA	Refer to EPA 3540C:1996& EPA 8321B:2007 HPLC	1	N.D.	N.D.	N.D.	N.D.	N.D.	Absent
<b>Conclusion</b>		/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

- Note:**
1. MDL=Method Detection Limit
  2. N.D.=Not Detected(less than method detection limit)

**5. Test Result(s) of Lead content**

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			1	2	3	
<b>Lead (Pb)</b>	Refer to EPA3052-1996& EPA6010C-2007 ICP-OES	5	N.D.	N.D.	N.D.	500
<b>Conclusion</b>	/	/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

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Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			4	5	6	
<b>Lead (Pb)</b>	Refer to EPA3052-1996& EPA6010C-2007 ICP-OES	5	N.D.	N.D.	N.D.	500
<b>Conclusion</b>	/	/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			7	8	9	10	
<b>Lead (Pb)</b>	Refer to EPA3052-1996& EPA3050B-19996& EPA6010C-2007 ICP-OES	5	N.D.	N.D.	N.D.	23	500
<b>Conclusion</b>	/	/	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>	/

- Note:**
1. MDL=Method Detection Limit
  2. N.D.=Not Detected(less than method detection limit)

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**6. Specific migration of heavy metal**

Unit: mg/kg

Test Item(s)	Test condition/ Equipment	MDL	Test Result(s)		Limit
			10		
			1 <sup>st</sup> + 2 <sup>nd</sup> extractives		
Barium ( Ba )	Artificial tap water, 70°C, 2h ICP-OES	0.1	N.D.		8.4
Copper (Cu)		0.1	N.D.		28
Iron (Fe)		0.1	N.D.		280
Tin (Sn)		0.1	N.D.		700
Chromium (Cr)		0.01	N.D.		1.75
Manganese (Mn)		0.1	N.D.		12.6
Zinc (Zn)		0.1	N.D.		35
Aluminium (Al)		0.1	N.D.		35
Lithium (Li)		0.01	N.D.		0.336
Beryllium (Be)		0.005	N.D.		0.07
Vanadium (V)		0.005	N.D.		0.07
Nickel (Ni)		0.01	N.D.		0.98
Cobalt (Co)		0.01	N.D.		0.14
Arsenic (As)		0.002	N.D.		0.014
Molybdenum(Mo)		0.01	N.D.		0.84
Silver (Ag)		0.01	N.D.		0.56
Cadmium (Cd)		0.002	N.D.		0.035
Antimony (Sb)		0.01	N.D.		0.28
Mercury (Hg)		0.002	N.D.		0.021
Thallium (Tl)		0.0001	N.D.		0.0007
Lead (Pb)	0.01	N.D.		0.07	
<b>Conclusion</b>		/	<b>Pass</b>		/

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Unit: mg/kg

Test Item(s)	Test condition/ Equipment	MDL	Test Result(s)	Limit
			10	
			3 <sup>rd</sup> extractives	
Barium ( Ba )	Artificial tap water, 70°C, 2h ICP-OES	0.1	N.D.	1.2
Copper (Cu)		0.1	N.D.	4
Iron (Fe)		0.1	N.D.	40
Tin (Sn)		0.1	N.D.	100
Chromium (Cr)		0.01	N.D.	0.25
Manganese (Mn)		0.1	N.D.	1.8
Zinc (Zn)		0.1	N.D.	5
Aluminium (Al)		0.1	N.D.	5
Lithium (Li)		0.01	N.D.	0.048
Beryllium (Be)		0.005	N.D.	0.01
Vanadium (V)		0.005	N.D.	0.01
Nickel (Ni)		0.01	N.D.	0.14
Cobalt (Co)		0.01	N.D.	0.02
Arsenic (As)		0.002	N.D.	0.002
Molybdenum(Mo)		0.01	N.D.	0.12
Silver (Ag)		0.01	N.D.	0.08
Cadmium (Cd)		0.002	N.D.	0.005
Antimony (Sb)		0.01	N.D.	0.04
Mercury (Hg)		0.002	N.D.	0.003
Thallium (Tl)		0.0001	N.D.	0.0001
Lead (Pb)	0.01	N.D.	0.01	
<b>Conclusion</b>		/	<b>Pass</b>	/

**Note:**

1. N.D.=Not Detected(less than method detection limit)
2. MDL= method detection limit

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**Remark:**

Results from all three extractives are to be considered for compliance:

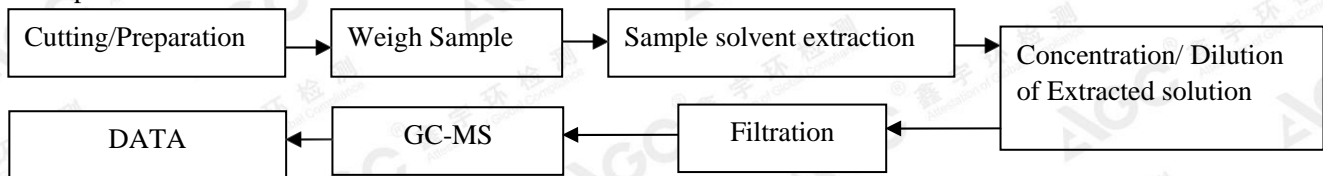
- (1). Result of 3<sup>rd</sup> extractive shall not exceed the SRL;
- (2). Sum of result of 1<sup>st</sup> and 2<sup>nd</sup> extractives shall not exceed 7 times of SRL.

**Sample Description:**

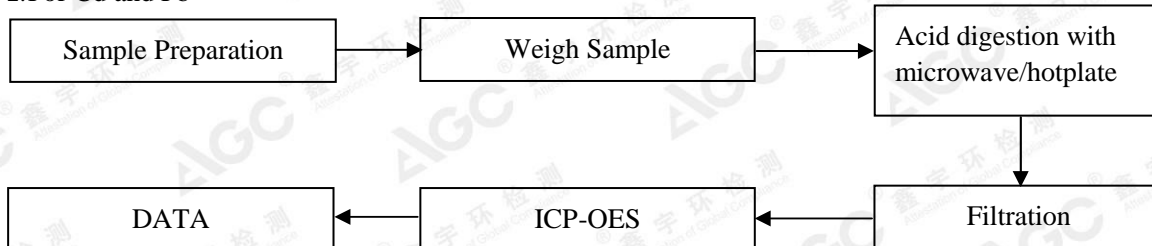
No.	Sample Description	Material
1	Transparent lid	ABS
2	Blue plastic	TPR
3	White plastic	PP
4	White plastic straws	PP
5	Dark blue plastic	ABS
6	White Silicone ring	Silicone
7	Transparent pipette	PP
8	Blue plastic portable	PE
9	Transparent blue bottle body	Tritan
10	Spring	Metal

**Test Flow Chart**

1.For phthalates



2.For Cd and Pb



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This report is to supersede the report with No.: A001R20171108047-2 dated on Nov.17, 2017.

## The photo of the sample

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AGC authenticate the photo on original report only

\*\*\* End of Report\*\*\*

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