

Test Report

Report No.: AGC03507181104-001S1

Date: Nov.22, 2018

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Applicant: MID OCEAN BRANDS B.V

Address: 7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong

Report on the submitted samples said to be:

Sample Name : Glass tea bottle

Model : MO9636

Manufacturers : 107978

Sample Receiving Date : Nov.13, 2018

Testing Period : Nov.13, 2018 to Nov.20, 2018

Test site : 6/F.,Building 2,No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, Guangdong, China

Test Requested: : Please refer to next page(s).

Test Method : Please refer to next page(s).

Test Result : Please refer to next page(s).

Approved by:



Liulinwen, Lewis

Technical Director



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Test Requested:

1. 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.
2. 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 .
3. 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.
4. As specified by client, to determine Azocolourants and Azodyes in the submitted sample with reference to Entry 43, Annex XVII of the REACH Regulation (EC) No 1907/2006.
5. As specified by client, to test sample with reference to Regulation 1935/2004/EC, Regulation (EU) No.10/2011&(EU)2016/1416&(EU) 2017/752 and (EU) 2018/213 for plastic:
 - Overall Migration(3%(w/v) Acetic acid, 50% (v/v) Ethanol)
 - Specific Migration of Heavy metals
 - Specific Migration of BPA
6. As specified by client, to test sample with reference to Regulation 1935/2004/EC and Council of Europe Resolution AP (2004) 5 and (EU) 2018/213 for silicone:
 - Overall Migration(3%(w/v) Acetic acid, 50% (v/v) Ethanol)
 - Specific Migration of BPA
7. As specified by client, to test sample with reference to food for compliance with Regulation 1935/2004/EC and Technical Guide on Metals and alloys used in food contact materials of Council of Europe Resolution CM/Res(2013)9. for metal:
 - Extractable heavy metal
8. As specified by client, to determine the Leachable Lead and Cadmium content in Ceramic Ware with reference to Regulation NO.84/500/EEC.
9. As specified by client, to determine the color fastness to rubbing of the submitted sample.

Conclusion

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

Pass

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No.18 C

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Test Result(s):
1. Test Result(s) of Cd:

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)					Limit
			1-3	1-5	1-7	1-8	1-9	
Cadmium (Cd)	Refer to EN1122:2001 ICP-OES	5	N.D.	N.D.	N.D.	N.D.	N.D.	100
Conclusion		/	Pass	Pass	Pass	Pass	Pass	/

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)			Reference Limit
			1-1	1-2	1-10	
Cadmium (Cd)	Refer to EPA 3052:1996 EPA 6010C:2007 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)			Reference Limit
			1-4	1-6	1-11	
Cadmium (Cd)	Refer to EPA 3050B:1996 EPA 6010C:2007 ICP-OES	5	N.D.	N.D.	N.D.	100
Conclusion		/	Pass	Pass	Pass	/

- Note:**
1. MDL=Method Detection Limit
 2. N.D.=Not Detected(less than method detection limit)
 3. As specified by client, only test the designated sample
 4. As client's request, test results of No.1-2, No.1-4, No.1-5 copied from test results of No.1-9, No.1-7, No.1-8 of test report No. AGC03507180912-001 respectively.

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2. Test result of phthalates content

Unit: %, w/w

Test Item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			1-3	1-5	1-7	
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.	
Sum of DBP+BBP+DEHP		—	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.	
Sum of DNOP+DINP+DIDP		—	N.D.	N.D.	N.D.	0.1
Di-iso-butyl phthalate (DIBP)*		0.01	N.D.	N.D.	N.D.	/
Conclusion		/	Pass	Pass	Pass	/

Unit: %, w/w

Test Item(s)	Test Method/ Equipment	MDL	Result(s)		Limit
			1-8	1-9	
Dibutyl phthalate (DBP)	Refer to EN 14372:2004 GC-MS	0.01	N.D.	N.D.	—
Butylbenzyl phthalate (BBP)		0.01	N.D.	N.D.	
Di- (2-ethylhexyl) phthalate (DEHP)		0.01	N.D.	N.D.	
Sum of DBP+BBP+DEHP		—	N.D.	N.D.	0.1
Di-n-octyl phthalate (DNOP)		0.01	N.D.	N.D.	—
Di-isononyl phthalate (DINP)		0.01	N.D.	N.D.	
Di-isodecyl phthalate (DIDP)		0.01	N.D.	N.D.	
Sum of DNOP+DINP+DIDP		—	N.D.	N.D.	0.1
Di-iso-butyl phthalate (DIBP)*		0.01	N.D.	N.D.	/
Conclusion		/	Pass	Pass	/

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- Note:**
- 0.1%,w/w =1000mg/kg
 - MDL=method detection limit
 - N.D.=not detected (less than method detection limit)
 - “—” =Not regulated
 - As specified by client, only test the designated sample

3. Test result of Lead and Lead compounds content

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			1-4	1-6	1-11	
Lead (Pb)	Refer to EPA 3050B-1996& EPA 6010C-2007 ICP-OES	5	23	24	21	500
Conclusion		/	Pass	Pass	Pass	/

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			1-1	1-2	1-3	1-5	
Lead (Pb)	Refer to EPA 3052-1996& EPA 6010C-2007 ICP-OES	5	N.D.	N.D.	N.D.	N.D.	500
Conclusion		/	Pass	Pass	Pass	Pass	/

Unit: mg/kg

Test item(s)	Test Method/ Equipment	MDL	Result(s)				Limit
			1-7	1-8	1-9	1-10	
Lead (Pb)	Refer to EPA 3052-1996& EPA 6010C-2007 ICP-OES	5	N.D.	N.D.	N.D.	N.D.	500
Conclusion		/	Pass	Pass	Pass	Pass	/

- Note:**
- MDL=Method Detection Limit
 - N.D.=Not Detected(less than method detection limit)
 - As specified by client, only test the designated sample

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4. Test Result(s) of AZO:

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)			Limit
			1-1	1-2	1-10	
4-Aminobiphenyl	Refer to EN ISO 14362-1:2017 EN ISO 14362-3:2017 GC-MS	5	N.D.	N.D.	N.D.	30
Benzidine		5	N.D.	N.D.	N.D.	30
4-Chloro-o-Toluidine		5	N.D.	N.D.	N.D.	30
2-Naphthylamine		5	N.D.	N.D.	N.D.	30
o-Aminoazotoluene		5	N.D.	N.D.	N.D.	30
5-Nitro-o-toluidine		5	N.D.	N.D.	N.D.	30
4-Chloroaniline		5	N.D.	N.D.	N.D.	30
4-Methoxy-m-phenylenediamine		5	N.D.	N.D.	N.D.	30
4,4'-Diaminodiphenylmethane		5	N.D.	N.D.	N.D.	30
3,3'-Dichlorobenzidine		5	N.D.	N.D.	N.D.	30
3,3'-Dimethoxybenzidine		5	N.D.	N.D.	N.D.	30
3,3'-Dimethylbenzidine		5	N.D.	N.D.	N.D.	30
4,4'-Methylenedi-o-toluidine		5	N.D.	N.D.	N.D.	30
p-Cresidine		5	N.D.	N.D.	N.D.	30
4,4'-Methylene-bis-(2-chloro-aniline)		5	N.D.	N.D.	N.D.	30
4,4'-Oxydianiline		5	N.D.	N.D.	N.D.	30
4,4'-Thiodianiline		5	N.D.	N.D.	N.D.	30
o-Toluidine		5	N.D.	N.D.	N.D.	30
4-Methyl-m-phenylenediamine		5	N.D.	N.D.	N.D.	30
2,4,5-Trimethylaniline		5	N.D.	N.D.	N.D.	30
o-Anisidine		5	N.D.	N.D.	N.D.	30
4-Amino azobenzene		5	N.D.	N.D.	N.D.	30
2,4-Xylidine		5	N.D.	N.D.	N.D.	30
2,6-Xylidine		5	N.D.	N.D.	N.D.	30
Conclusion			/	Pass	Pass	Pass

- Note:**
- 1.MDL=method detection limit
 - 2.N.D.=not detected (less than method detection limit)
 - 3.As specified by client, only test the designated sample
 4. The EN ISO 14362-1:2017 methods will enable further cleavage of 4-aminoazobenzene to non-forbidden amines: aniline and 1,4-phenylenediamine, therefore, the test method of EN ISO 14362-3:2017 was employed to verify the presence of 4-aminoazobenzene
 5. The test results of No.1-2 copied from test results of No.1-9 of report No.: AGC03507180912-001.

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For plastic
5.1. Overall Migration

 Unit: mg/dm²

Test Solution	Test condition	MDL	Test Result(s)		Limit
			1-5	1-7	
50% (v/v) Ethanol	70°C, 2h	5	N.D.	N.D.	10
3%(w/v) Acetic acid		5	N.D.	N.D.	10
Conclusion	/	/	Pass	Pass	/

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

2. MDL=method detection limit

5.2. Special Migration of Heavy metals

Unit: mg/kg

Test Item(s)	Test condition/ Equipment	MDL	Test Result(s)		Limit
			3% (w/v) Acetic acid		
			1-5	1-7	
Aluminum (Al) (M)	70°C, 2h / ICP-OES	0.5	N.D.	N.D.	1
Barium (Ba) (M)		0.25	N.D.	N.D.	1
Cobalt (Co) (M)		0.01	N.D.	N.D.	0.05
Copper (Cu) (M)		0.25	N.D.	N.D.	5
Iron (Fe) (M)		0.25	N.D.	N.D.	48
Lithium (Li) (M)		0.5	N.D.	N.D.	0.6
Manganese (Mn) (M)		0.25	N.D.	N.D.	0.6
Zinc (Zn) (M)		0.5	N.D.	N.D.	5
Nickel (Ni)(M)		0.01	N.D.	N.D.	0.02
Conclusion		/	/	Pass	Pass

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

2. M= Migration

3. MDL= method detection limit

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5.3. Special Migration of BPA

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)		Limit
			3% (w/v) Acetic acid		
			1-5	1-7	
Migration of BPA	70°C, 2h / LC-MS-MS	0.02	N.D.	N.D.	0.05
Conclusion		/	Pass	Pass	/

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

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For silicone
6.1. Overall Migration

 Unit: mg/dm²

Test Solution	Test condition	MDL	Test Result(s)		Limit
			1-8	1-9	
50% (v/v) Ethanol	70°C, 2h	5	N.D.	N.D.	10
3%(w/v) Acetic acid		5	N.D.	N.D.	10
Conclusion	/	/	Pass	Pass	/

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

6.2. Special Migration of BPA

Unit: mg/kg

Test Item(s)	Test Method/ Equipment	MDL	Result(s)		Limit
			3% (w/v) Acetic acid		
			1-8	1-9	
Migration of BPA	70°C, 2h / LC-MS-MS	0.02	N.D.	N.D.	0.05
Conclusion		/	Pass	Pass	/

- Note:**
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 2. N.D.=Not Detected(less than method detection limit)

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For metal
7. Specific migration of heavy metal from metal and alloys

Unit: mg/kg

Test Item(s)	Test condition/ Equipment	MDL	Test Result(s)	Limit
			1-11	
			1 st + 2 nd extractives	
Barium (Ba)	5% citric acid, 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
Aluminum (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	
Conclusion		/	Pass	/

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Unit: mg/kg

Test Item(s)	Test condition/ Equipment	MDL	Test Result(s)	Limit
			1-11	
			3 rd extractives	
Barium (Ba)	5% citric acid, 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
Aluminum (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	
Conclusion		/	Pass	/

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Note:

1. N.D.=Not Detected(less than method detection limit)
2. MDL= method detection limit
3. As specified by client, only test the designated sample.

Remark:

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

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

8. For glass

Unit: mg/L

Test Item(s)	Test Condition/ Equipment	MDL	Result(s)	Limit
			4% (v/v) Acetic acid	
			1-12	
Lead (Pb)	Refer to EN 1388-1:1996 22°C, 24h/ICP-OES	0.1	N.D.	4.0
Cadmium (Cd)		0.01	N.D.	0.3
Conclusion		/	Pass	/

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

9. Test Results of Color fastness to rubbing

Item	Test method	Result		Client's requirement	
		/	1-2		1-10
Color fastness to rubbing (Grade)	ISO 105-X12-2016	wet	4-5	4-5	2-3
		dry	4-5	4-5	2-3
Conclusion		/	Pass	Pass	/

Note:

- Color fastness grade: grey scale (5 grade is good, 1 grade is bad).

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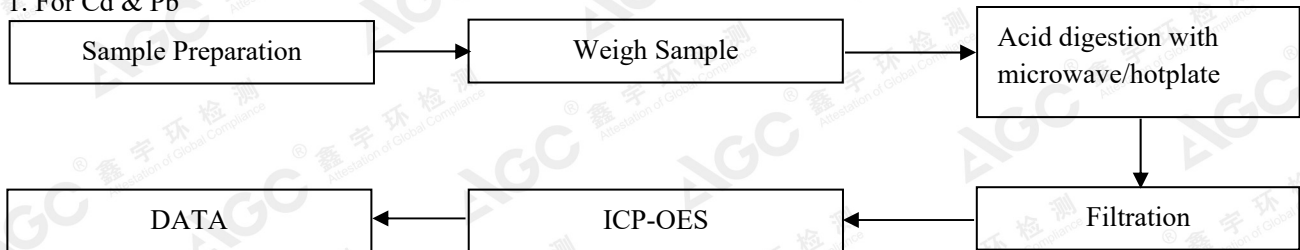
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Sample Description

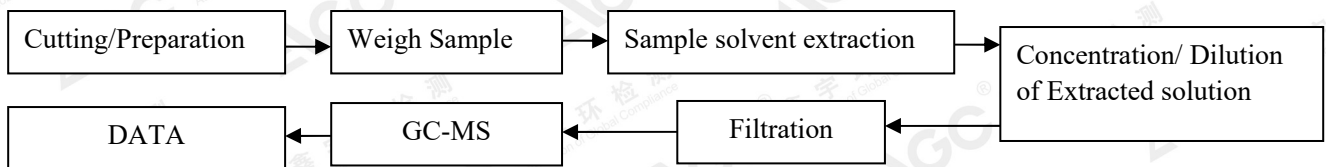
1-1	Gray small rope
1-2	Gray thick rope
1-3	Black plastic
1-4	Small cover stainless steel201
1-5	Small cover gray plastic
1-6	Big cover stainless steel201
1-7	Big cover gray plastic
1-8	Big silicone ring
1-9	Small silicone ring
1-10	Black diving cloth
1-11	304 filter net
1-12	Glass

Test Flow Chart

1. For Cd & Pb



2. For phthalates



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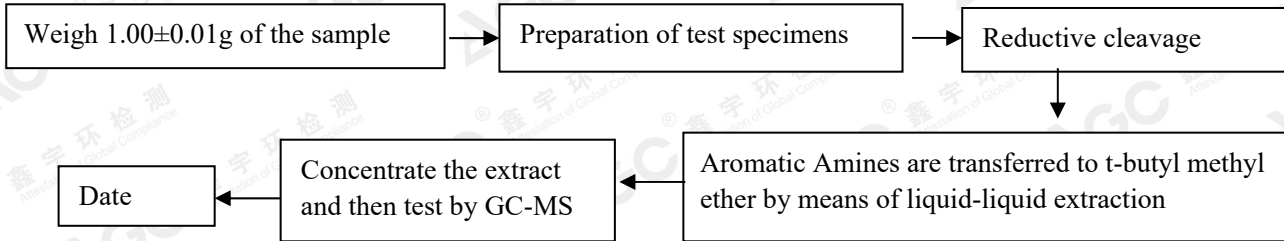
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3. For AZO



This report is to supersede the report with No.: AGC03507181104-001 dated on Nov.20, 2018.

The photo of the sample



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AGC authenticate the photo on original report only

*** End of Report***

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